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Launch a Kubernetes Cluster



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Node groups (1) [Info](#)

Node groups implement basic compute scaling through EC2 Auto Scaling groups.

Group name	▲	Desired size	▼	AMI release version	▼	Launch template	▼	Status	▼
nextwork-nodegroup	3	1.31.7-20250610	eksctl-nextwork-eks-cluster-nodegroup-nextwork-nodegroup (1)	Active					



Introducing Today's Project!

In this project, I will make a Kubernetes Cluster and use IAM to access it

What is Amazon EKS?

Amazon EKS is a cluster of containers. I used CloudFormation to automate the process and IAM to give me access

One thing I didn't expect

I didnt expect to use CloudFormatin to automate the process

This project took me...

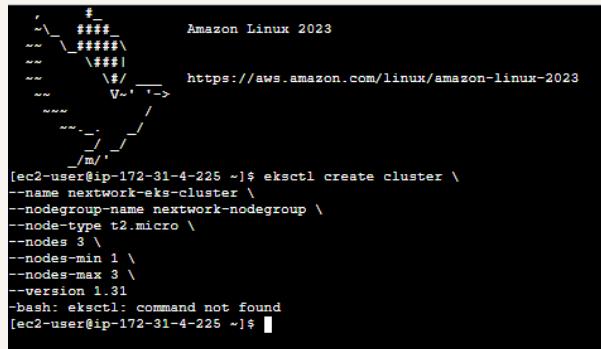
This project took about 2 hours

What is Kubernetes?

Kubernetes is a container orchestration platform, which coordinates containers so they're running smoothly across all your servers.

I used eksctl to create and name the cluster and nodes

Initially I didnt have eksctl installed. Then the EC2 instance didnt have the permission to create an EKS cluster.



```
Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023

[ec2-user@ip-172-31-4-225 ~]$ eksctl create cluster \
--name nextwork-eks-cluster \
--nodegroup-name nextwork-nodegroup \
--node-type t2.micro \
--nodes 3 \
--nodes-min 1 \
--nodes-max 3 \
--version 1.31
-bash: eksctl: command not found
[ec2-user@ip-172-31-4-225 ~]$ 
```

eksctl and CloudFormation

CloudFormation help to automate the process of creating all the resources needed. For every instance created, a VPC is created

The second stack is specifically for your node group, which is a group of EC2 instances that will run your containers. CloudFormation separates the core EKS cluster stack from the node group stack to make it easier to manage and troubleshoot each part independently, especially if one half fails.

The screenshot shows the AWS CloudFormation console with the title "Stacks (2)". The interface includes a search bar, filter status dropdown (set to "Active"), and a "Create stack" button. Below is a table with the following data:

Stack name	Status	Created time	Description
eksctl-nextwork-eks-cluster-nodegroup-nextwork-nodegroup	CREATE_IN_PROGRESS	2025-06-20 16:05:02 UTC-0500	EKS Managed Nodes (SSH access: false) [created by eksctl]
eksctl-nextwork-eks-cluster-cluster	CREATE_COMPLETE	2025-06-20 15:54:59 UTC-0500	EKS cluster (dedicated VPC: true, dedicated IAM: true) [created and managed by eksctl]

The EKS console

I had to create an IAM access entry in order to have access to the cluster

It took about 45 min to create the cluster

Node groups (1) Info				
Node groups implement basic compute scaling through EC2 Auto Scaling groups.				
	Group name	▲ Desired size ▼	AMI release version ▼	Launch template
<input type="radio"/>	nextwork-nodegroup	3	1.31.7-20250610	eksctl-nextwork-eks-cluster-nodegroup-nextwork-nodegroup (1)



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