

# AWS EKS

Topics : [AWS](#)

Written on [December 08, 2023](#)

Amazon Elastic Kubernetes Service (EKS) is a fully managed Kubernetes service provided by Amazon Web Services (AWS). Kubernetes is an open-source container orchestration platform that automates the deployment, scaling, and management of containerized applications. EKS makes it easier to deploy, manage, and scale containerized applications using Kubernetes. Here are key aspects of AWS EKS:

## 1. Managed Kubernetes Control Plane:

- **Description:** EKS provides a managed Kubernetes control plane, which includes the API server and other necessary components. AWS takes care of the operational aspects, such as patching and upgrades.

## 2. Clusters:

- **Description:** An EKS cluster is a logical grouping of Amazon EC2 instances or AWS Fargate pods. It represents the Kubernetes environment that you can use to deploy and manage containerized applications.
- **Features:**
  - Clusters are created with a specific version of Kubernetes, and you can upgrade them to newer versions.

## 3. Node Groups:

- **Description:** Node groups are a set of Amazon EC2 instances (nodes) that run containerized applications. They are associated with an EKS cluster and can be scaled independently.
- **Features:**
  - EKS supports managed node groups and self-managed node groups.
  - Node groups can be configured to run on-demand instances, spot instances, or a mix of both.

## 4. AWS Fargate Integration:

- **Description:** EKS integrates with AWS Fargate, a serverless compute engine for containers. With Fargate, you don't need to manage the underlying EC2 instances; AWS takes care of scaling and provisioning resources.
- **Features:**
  - Allows you to run Kubernetes pods directly on Fargate without managing the infrastructure.

## 5. IAM Roles:

- **Features:**
  - EKS uses IAM roles to control access to resources and services.
  - IAM roles are used by EKS to allow worker nodes to join the cluster securely.

## 6. VPC Networking:

- **Description:** EKS leverages Amazon VPC (Virtual Private Cloud) for networking. It creates a VPC and configures networking components, including subnets and security groups.
- **Features:**
  - EKS uses Amazon VPC CNI (Container Network Interface) for networking between pods.

## 7. Kubectl Integration:

- **Features:**
  - EKS integrates seamlessly with the Kubernetes command-line tool, kubectl. You can use kubectl to interact with your EKS clusters in the same way you would with any other Kubernetes cluster.

## 8. EKS Console and AWS CLI:

- **Features:**
  - EKS provides a web-based console for managing clusters and resources.
  - The AWS Command Line Interface (CLI) can be used to interact with EKS and perform operations such as creating and updating clusters.

## 9. Cluster Auto Scaling:

- **Features:**
  - EKS supports cluster auto scaling, allowing the automatic adjustment of the number of worker nodes based on resource demand.

## 10. Logging and Monitoring:

- **Description:** EKS integrates with AWS CloudWatch for monitoring and logging.
- **Features:**
  - CloudWatch can be used to monitor EKS clusters, collect logs, and set up alarms for various metrics.

## 11. EKS Anywhere:

- **Description:** EKS Anywhere extends the EKS service to on-premises environments or other cloud providers, allowing you to run Kubernetes clusters in hybrid or multi-cloud scenarios.