Amazon EKS Terminologies and Their Purposes

Amazon EKS (Elastic Kubernetes Service)

A managed Kubernetes service that makes it easy to run Kubernetes on AWS without needing to install and operate your own Kubernetes control plane or nodes.

Kubernetes Control Plane

Manages the Kubernetes cluster and makes global decisions about the cluster, like scheduling, and detecting and responding to cluster events. Amazon EKS automatically manages the availability and scalability of the control plane.

Node

A worker machine in Kubernetes (either EC2 instances or Fargate) where containers are run. EKS supports both self-managed and managed node groups.

Pod

The smallest deployable unit in Kubernetes. A pod encapsulates one or more containers with shared storage and network resources.

Cluster

A set of nodes managed by the Kubernetes control plane. Amazon EKS provisions and manages the cluster for high availability and scalability.

Node Group

A group of EC2 instances that Amazon EKS can use to run Kubernetes pods. Node groups can be managed (by EKS) or self-managed (by users).

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Fargate

A serverless compute engine for containers that works with EKS, allowing you to run containers without managing servers or clusters.

IAM (Identity and Access Management)

Used to manage permissions in EKS. IAM roles and policies define what actions users and services can perform on the cluster.

VPC (Virtual Private Cloud)

Enables you to launch AWS resources in a logically isolated virtual network. EKS clusters are launched within a VPC for network security.

Security Groups

Act as virtual firewalls to control inbound and outbound traffic to AWS resources, including EKS nodes and services.

Kubelet

An agent that runs on each node in the cluster. It makes sure that containers are running in a Pod.

kubectl

A command line tool for communicating with the Kubernetes API server. It is used to deploy and manage applications on Kubernetes.

EKS Add-ons

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Pre-packaged and maintained operational software components for EKS such as CoreDNS, kube-proxy, and VPC CNI plugin.

Amazon VPC CNI Plugin

Allows Kubernetes pods to have the same IP address inside the pod as they do on the VPC network, simplifying network management.

Amazon CloudWatch

Monitors and observes EKS resources and workloads. It collects and tracks metrics, collects and monitors log files, and sets alarms.