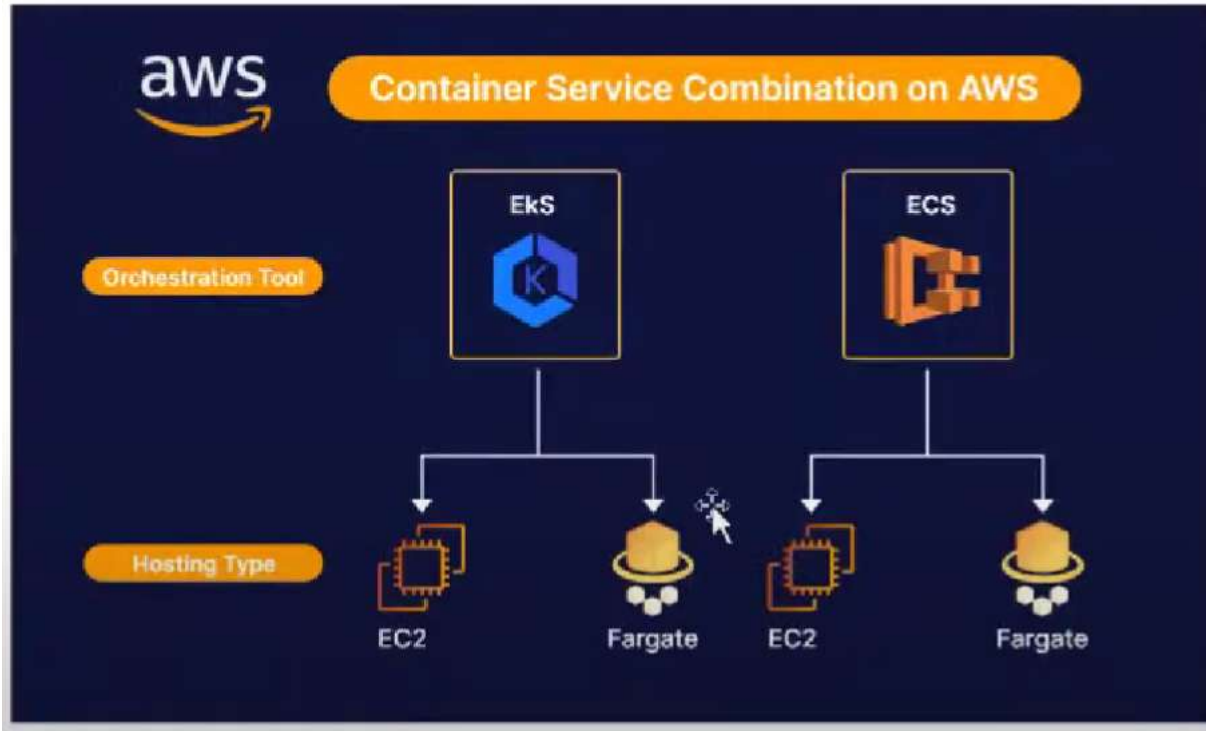

aws
Amazon ECS vs EKS
Which Container Orchestration
Service Is Right for Your Business?
v/s
Amazon ECS
Amazon EKS


aws
Container Service Combination on AWS
EkS
ECS
Orchestration Tool
Hosting Type
EC2
Fargate
EC2
Fargate

What is Elastic Container Service (ECS)?

AWS ECS stands for AWS Elastic Container Service. It's a scalable container orchestration platform owned by AWS. It was designed to run, stop, and manage containers in a cluster. The containers themselves are defined here as part of *task definitions* and driven by ECS in the cloud.

You can use ECS with EC2 instances (best for long-running tasks) or AWS Fargate (good for serverless tasks). Let's take a closer look at these two options:

ECS with EC2 instances

In this model, containers are deployed to EC2 instances (VMs) created for the cluster. ECS manages them together with tasks that are part of the task definition.

ECS with AWS Fargate

In this variant, you don't need to worry about EC2 instances or servers anymore. Just choose the CPU and memory combo you need, and your containers will be deployed there.

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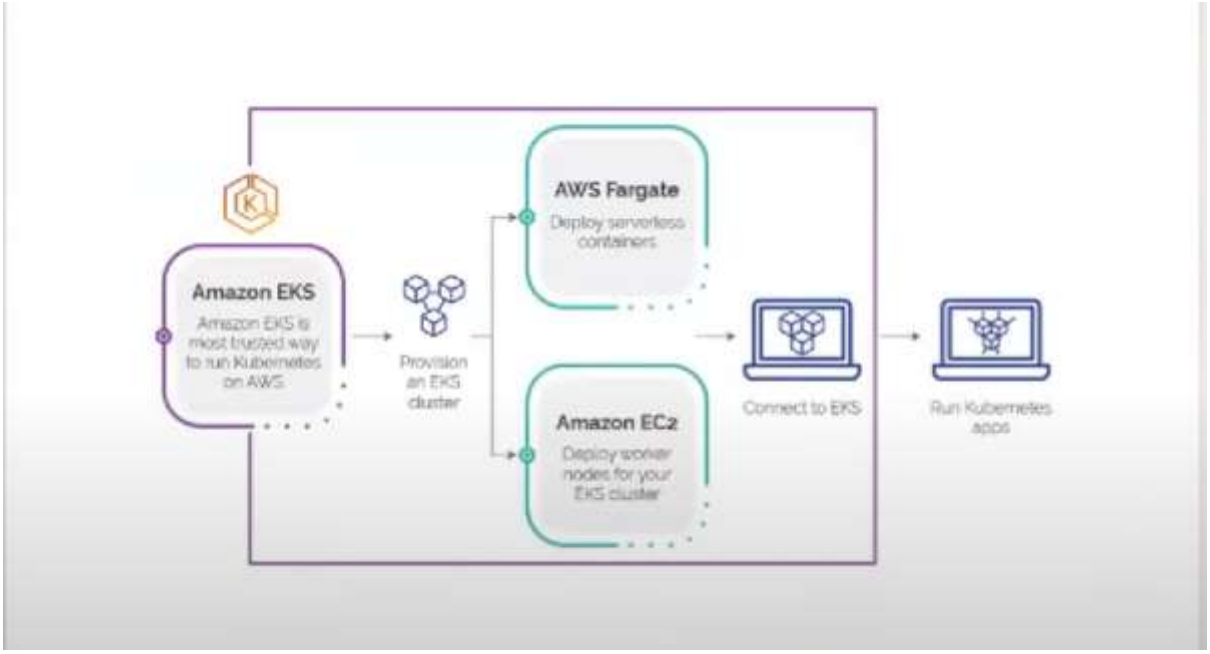
What is Elastic Kubernetes Service (EKS)?
AWS **EKS (Elastic Kubernetes Service)** is a **managed Kubernetes service** that simplifies deploying, managing, and scaling Kubernetes clusters on AWS. It allows you to run Kubernetes workloads without managing the underlying control plane.

EKS with EC2 Instances (Self-Managed Nodes)
In this model, Kubernetes worker nodes are EC2 instances that you manage inside an EKS cluster.
The Kubernetes control plane is managed by AWS, but you are responsible for the worker nodes.
You need to:
Choose and provision EC2 instances manually or via Auto Scaling Groups (ASGs).
Handle node scaling and upgrades.
Use Amazon VPC CNI for networking.
Best for: Workloads requiring customization, control over nodes, and optimized performance.
Downside: You manage the EC2 instances, which adds operational overhead.

EKS with AWS Fargate (Serverless Kubernetes)
AWS Fargate allows you to run Kubernetes pods without managing EC2 instances.
You only specify CPU and memory, and AWS takes care of provisioning and scaling.
No need to worry about patching, scaling, or managing worker nodes.
Best for: Running serverless Kubernetes workloads where you don't want to manage infrastructure.
Downside: Limited support for DaemonSets, privileged co

	ECS	EKS
Open Source	AWS proprietary	Yes, Kubernetes
Container Unit	Task	Pod
Effort	Easy	Harder - AWS plus Kubernetes knowledge
Security IAM	Managed Service	Add-on software and configuration
Security ENI	Per Task serving one container	Per Pod which can serve multiple containers
VM container limit	120	750 pods
Multi-cloud integration	AWS proprietary	Yes, Kubernetes


AWS Fargate
Deploy serverless containers
Amazon EKS
Amazon EKS is most trusted way to run Kubernetes on AWS
Provision an EKS cluster
Amazon EC2
Deploy worker nodes for your EKS cluster
Connect to EKS
Run Kubernetes apps


On Premise
EC2
ECS on EC2
ECS or EKS on EC2
ECS or EKS Fargate
AWS Lambda
Value
Business Logic
Integration
Runtime
Scalability
Orchestration
Containerisation
OS
Virtualisation
Physical
Custom
Evolution
Commodity

Frequently Asked Questions About ECS Vs. EKS Vs. Fargate

What is the difference between ECS, EKS, and Fargate?
Amazon ECS is an AWS-owned service for managing Docker containers. The Amazon EKS service manages Kubernetes-based containers on the AWS public cloud, while AWS Fargate is a serverless compute service that can run containers on ECS or EKS.

Is Fargate for ECS or EKS?
You can use AWS Fargate to run containers on either EKS or ECS.

Which is better, EKS or ECS?
This depends on your needs. Amazon EKS delivers a fully managed service for Kubernetes containers while Amazon ECS is ideal for running Docker containers.

What is cheaper or more cost effective, ECS or EKS?
With Amazon ECS, you pay only for compute capacity to run your containers. The EKS service is not free and costs $0.1 per hour per Kubernetes cluster, or $74 per month, on top of the compute costs.

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Why use EC2 instead of AWS Fargate?
If you want significant control over your container runtime and performance, use Amazon EC2 instead.

When should you use Fargate instead of EC2 for containers?
With Fargate, you let AWS handle management tasks such as provisioning, configuring, and scaling clusters of virtual machines to run your containers, saving you time and resources. All that manual management is required when using EC2 instances.

Is Fargate better than Kubernetes?
This will depend on your specific use case. Fargate is best suited for small to medium-sized applications, microservices, and short-lived jobs where ease of use and reducing operational overhead are priorities. Kubernetes is ideal for large-scale applications, complex workloads, multi-cloud strategies, and environments where fine-grained control and customization are necessary.

Can Fargate be used without EKS?
Yes, AWS Fargate can be used without EKS. Fargate is a serverless compute engine for containers that works with both Amazon Elastic Container Service (ECS) and Amazon Elastic Kubernetes Service (EKS). If you prefer not to use Kubernetes, you can run your containerized applications directly on ECS using Fargate.