Elastic Container Service (ECS)

Another one of the three aforementioned major compute options made available by AWS, **Elastic Container Service (ECS)** is Amazon's fully managed container orchestration service, designed to simplify the deployment and management of Docker containers. Since we've already discussed containers and Docker in previous sections, I will spare the reader from a repeat explanation.

ECS allows you to run containerized applications in two main ways: on a scalable cluster of EC2 instances, where you control the underlying infrastructure, or using **AWS Fargate**, a serverless compute option that abstracts away infrastructure management, allowing administrators/developers to focus solely on the containers themselves without having to worry about the hardware it is running on.

Especially useful for administrators that wish to avoid the operational overhead of managing the container's compute infrastructure (such as provisioning and scaling of EC2 instances), AWS Fargate is a relatively painless method of operating containerized workloads. However, this does mean relinquishing a great deal of control over the infrastructure used over to AWS. However, Fargate is neither universally desirable, nor universally adoptable, as organizations and workloads that desire a certain amount of control over the infrastructure or need specialized configurations, will always find running ECS on EC2 Instances to be the more appropriate option.

Now, while ECS is an extremely powerful tool for container orchestration, many organizations prefer to use Kubernetes, an open-source container orchestration tool and platform. Kubernetes offers more flexibility and extensibility, with a rich ecosystem of plugins and integrations which has led to the platform becoming somewhat of an industry standard. To meet this demand for Kubernetes

workloads, AWS also started offering **Elastic Kubernetes Service (EKS)**, a fully managed Kubernetes service that allows you to run Kubernetes clusters on AWS without the complexity of managing the Kubernetes control plane yourself.

With EKS, much like ECS, you can run Kubernetes workloads on either EC2 instances or AWS Fargate, providing flexibility based on your operational needs. When working with a team or organization which is already experienced with Kubernetes or when working with workloads that require Kubernetes-specific features and integrations, using EKS over ECS might be the right choice.

TLDR;

AWS provides two main services for managing containers: **Elastic Container Service (ECS)** and **Elastic Kubernetes Service (EKS)**.

Both services simplify the deploying and managing of Docker containers, with the option to run workloads on EC2 instances (which offers more control and flexibility) or AWS Fargate.

An extension on the ECS and EKS offerings, **AWS Fargate** hands over the responsibility of managing the infrastructure required to operate the containers, and is ideal for teams avoiding the operational overhead associated with such tasks.