AWS re:Invent

NOV. 29 – DEC. 3, 2021 | LAS VEGAS, NV

CON201

You have a container image: Now what?

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AWS

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Containers are becoming the new normal

Containers as the new deployment unit

They are faster and smaller than VMs

They fully embrace immutability, Git, and CI/CD methodologies

Same artifact can be deployed on laptop, data center, and cloud

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AWS customers are broad and diverse

AWS serves millions of customers

They come from mixed backgrounds and industries

They want to optimize for different dimensions

Simplicity (because they are not an operations powerhouse)

Flexibility (because they have unique requirements)

Agility (because for them, speed is everything)

Hybridity (because they have regulatory requirements)

… and more

There is no “one containers-based solution” that can serve them all

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The challenge and the goal

Can we build a decision tree that can authoritatively point to a product?

“Tell me which product I should use to run my container(s)”



“Give me a checklist to land a Boeing 747”

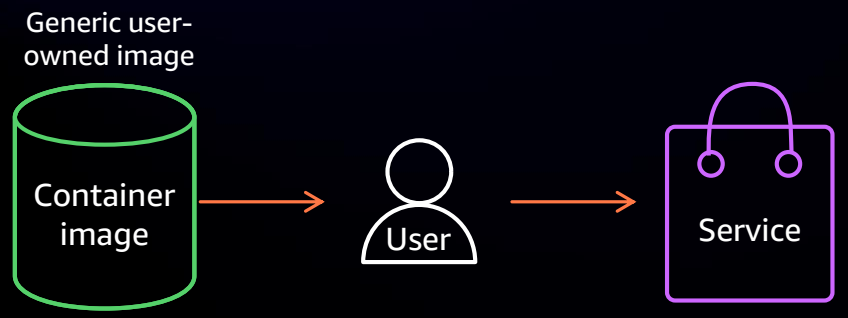
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There are (not) ~~17~~ 34 ways to run containers on AWS

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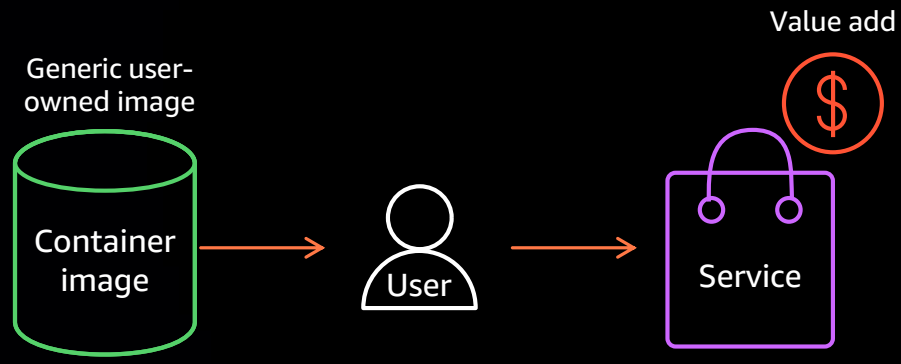
#1 The svc runs generic container images

[Amazon ECS, Amazon EKS, AWS Lambda, AWS App Runner, etc.]



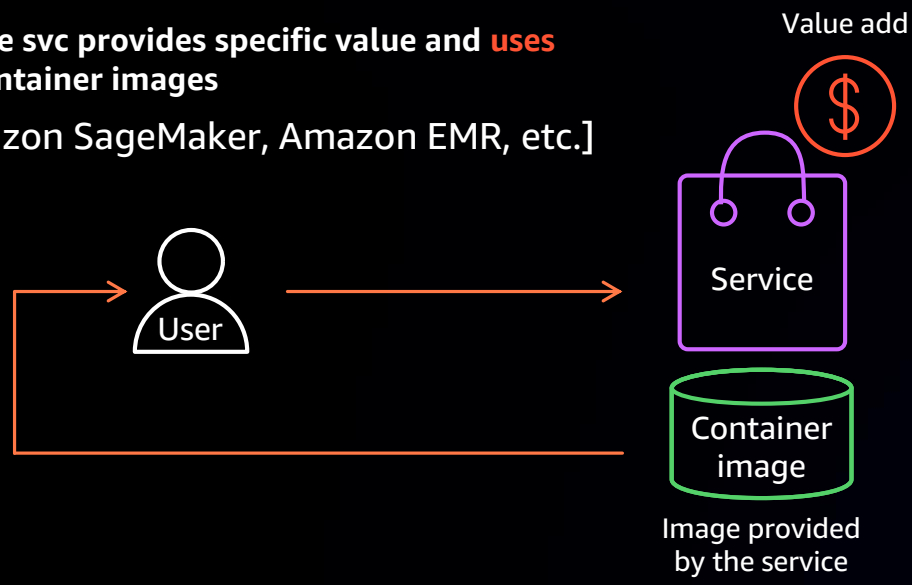
#2 The svc provides specific value but also runs generic container images

[AWS Amplify, AWS IoT Greengrass, AWS Elastic Beanstalk, etc.]



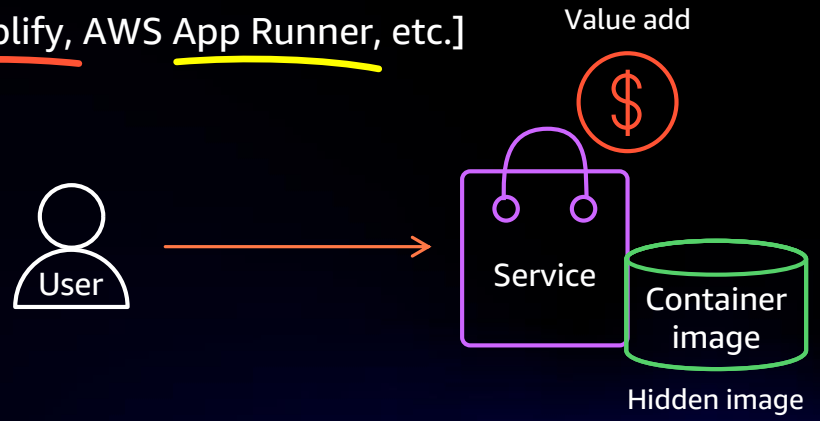
#3 The svc provides specific value and uses container images

[Amazon SageMaker, Amazon EMR, etc.]



#4 The svc provides specific value and produces (and deploys) container images

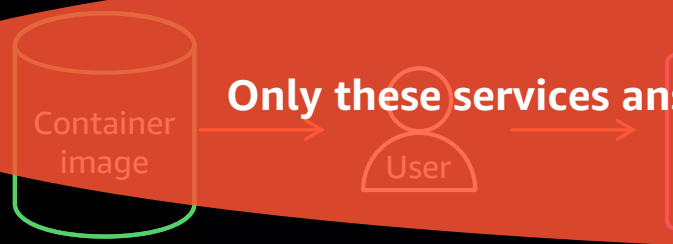
[AWS Amplify, AWS App Runner, etc.]



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#1 The svc runs generic container images

[Amazon ECS, Amazon EKS, AWS Lambda, AWS App Runner, etc.]



#2 The svc provides specific value but also runs generic container images

[AWS Amplify, AWS IoT Greengrass, AWS Elastic Beanstalk, etc.]



Only these services answer the question, "How can I run my container image on AWS?"

#3 The svc provides specific value and uses container images

[Amazon SageMaker, Amazon EMR, etc.]



#4 The svc provides specific value and produces (and deploys) container images

[AWS Amplify, AWS App Runner, etc.]



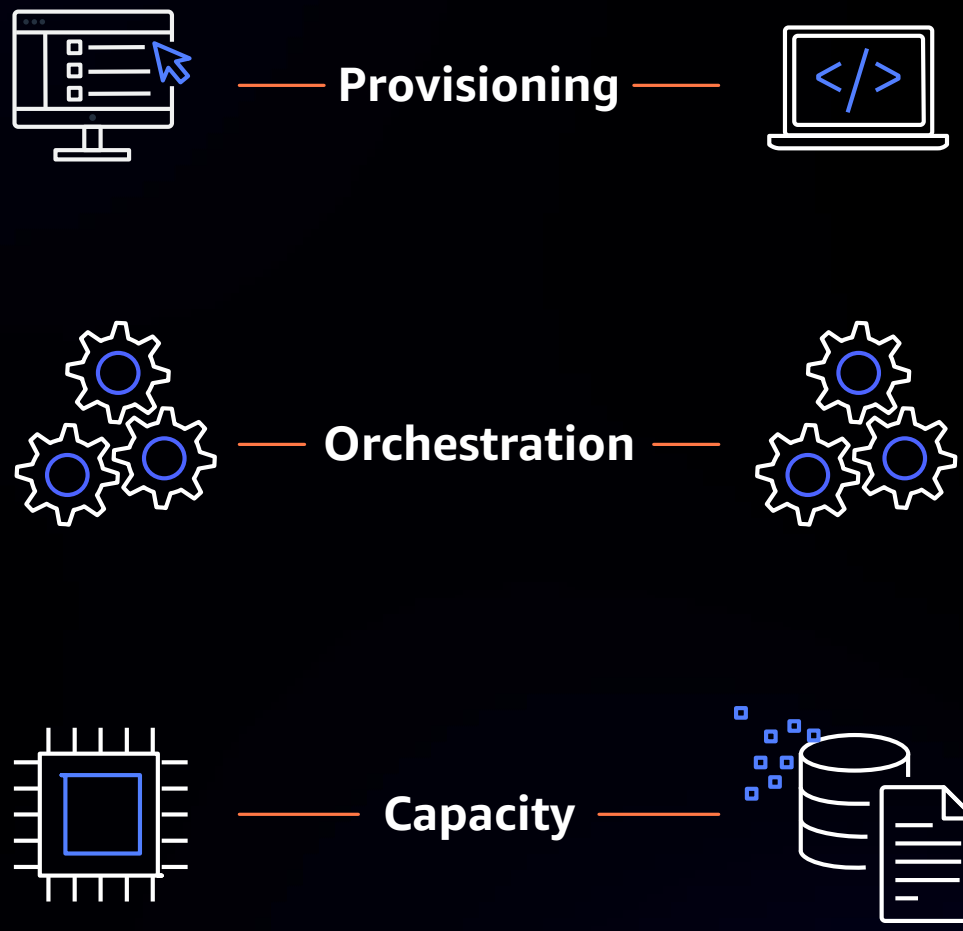
In the fullness of time, all AWS products may (potentially) fall in these buckets

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Options available to run containers on AWS

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The layers

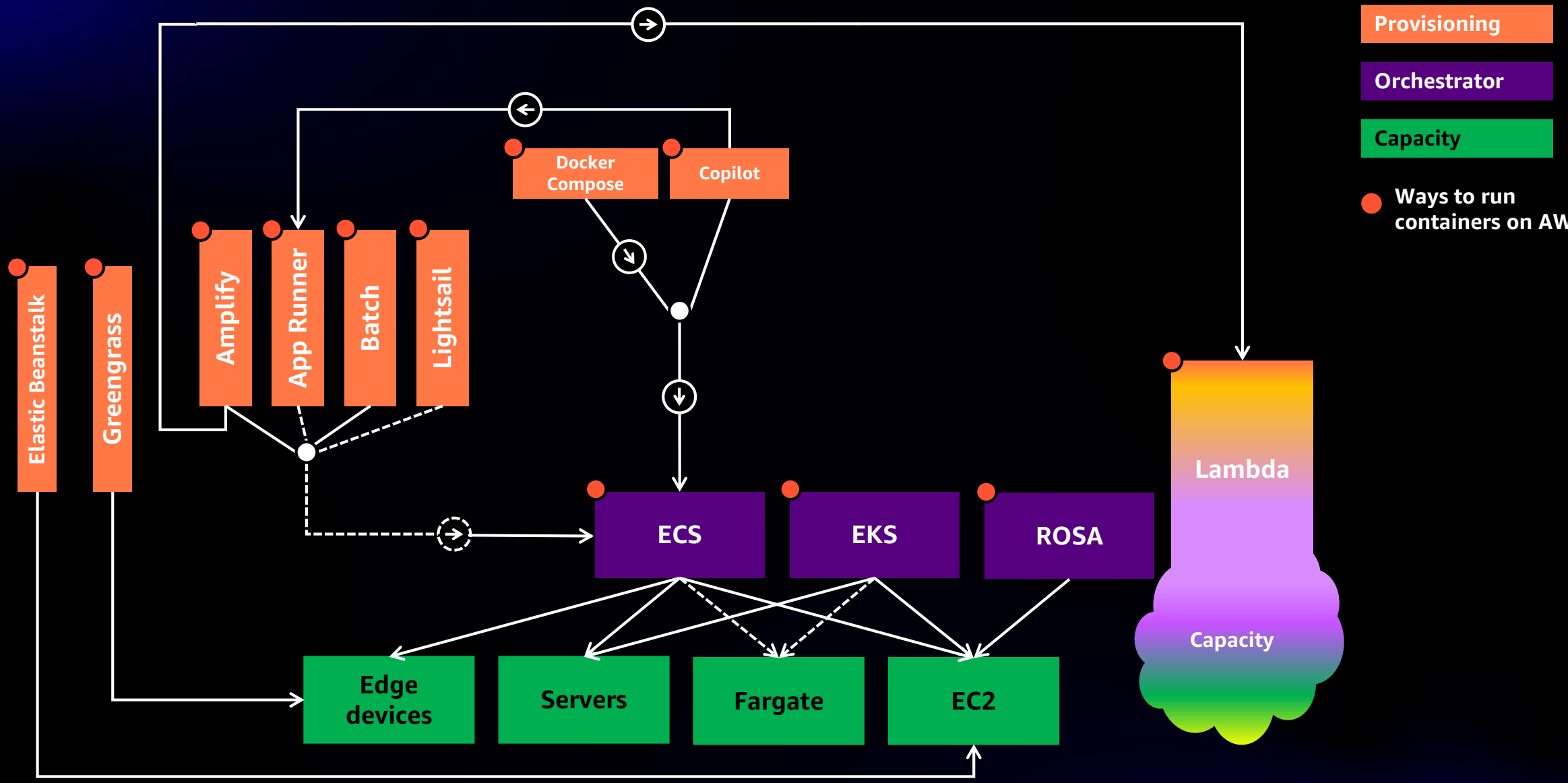


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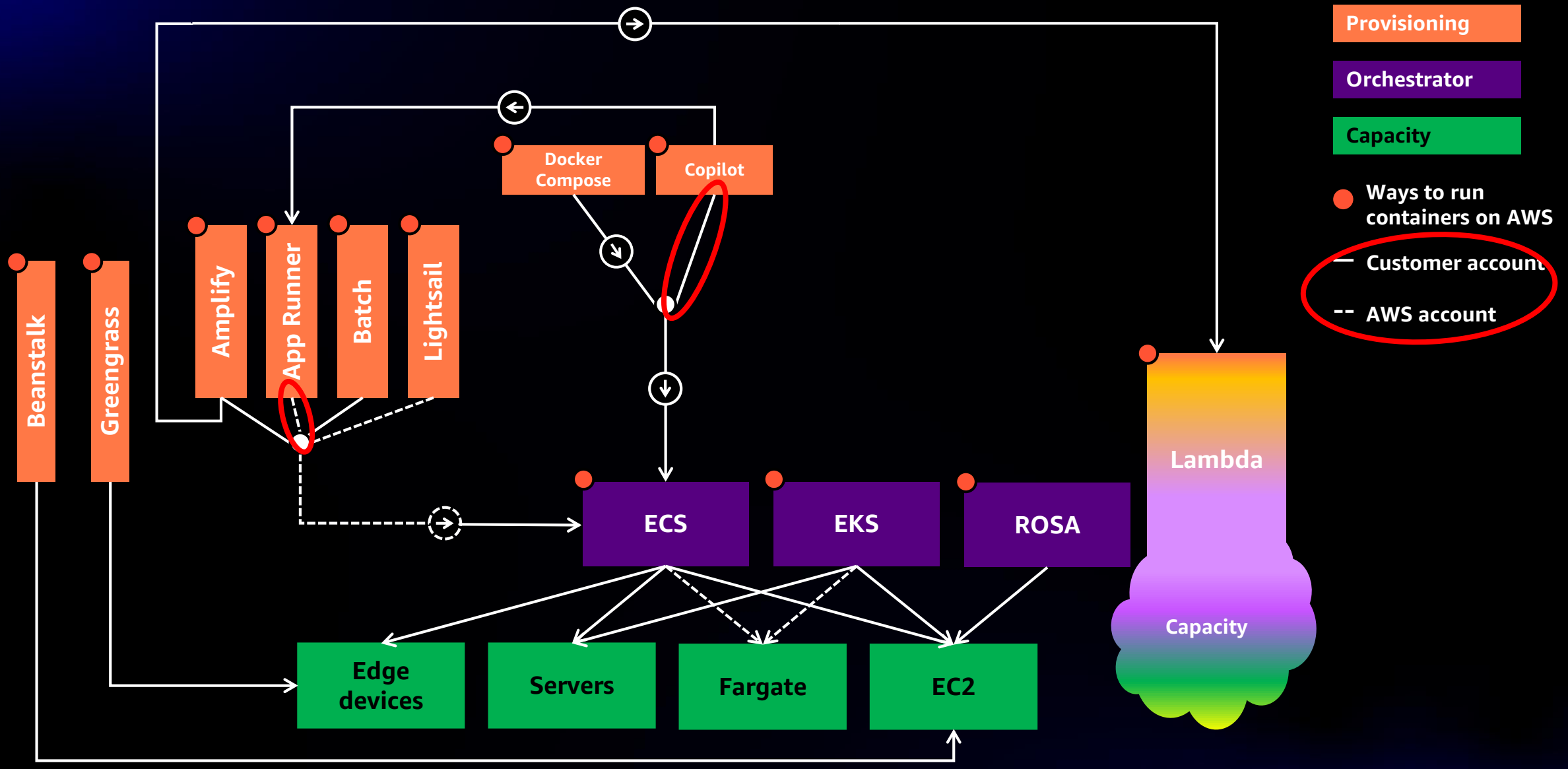
The services in scope



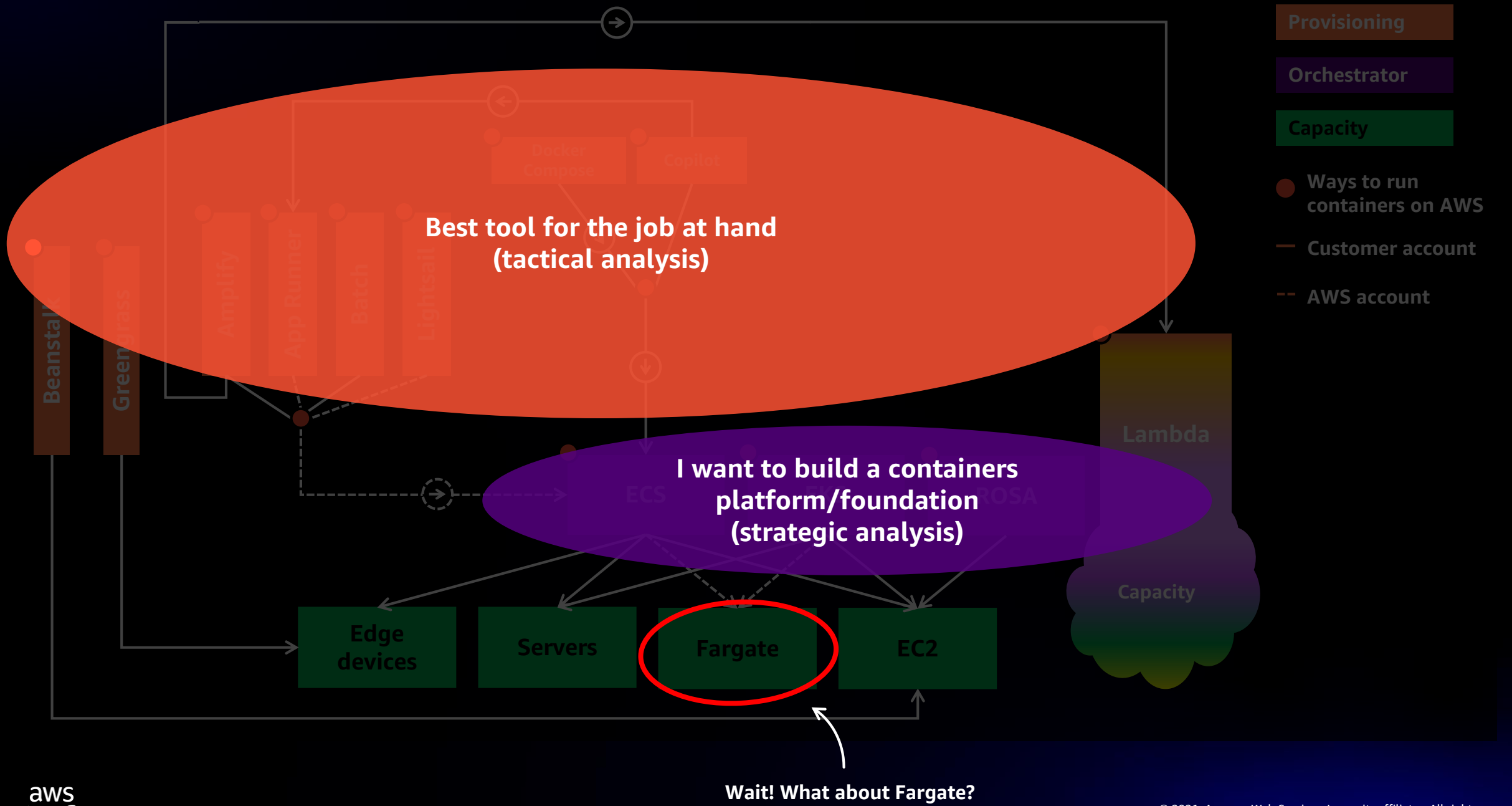
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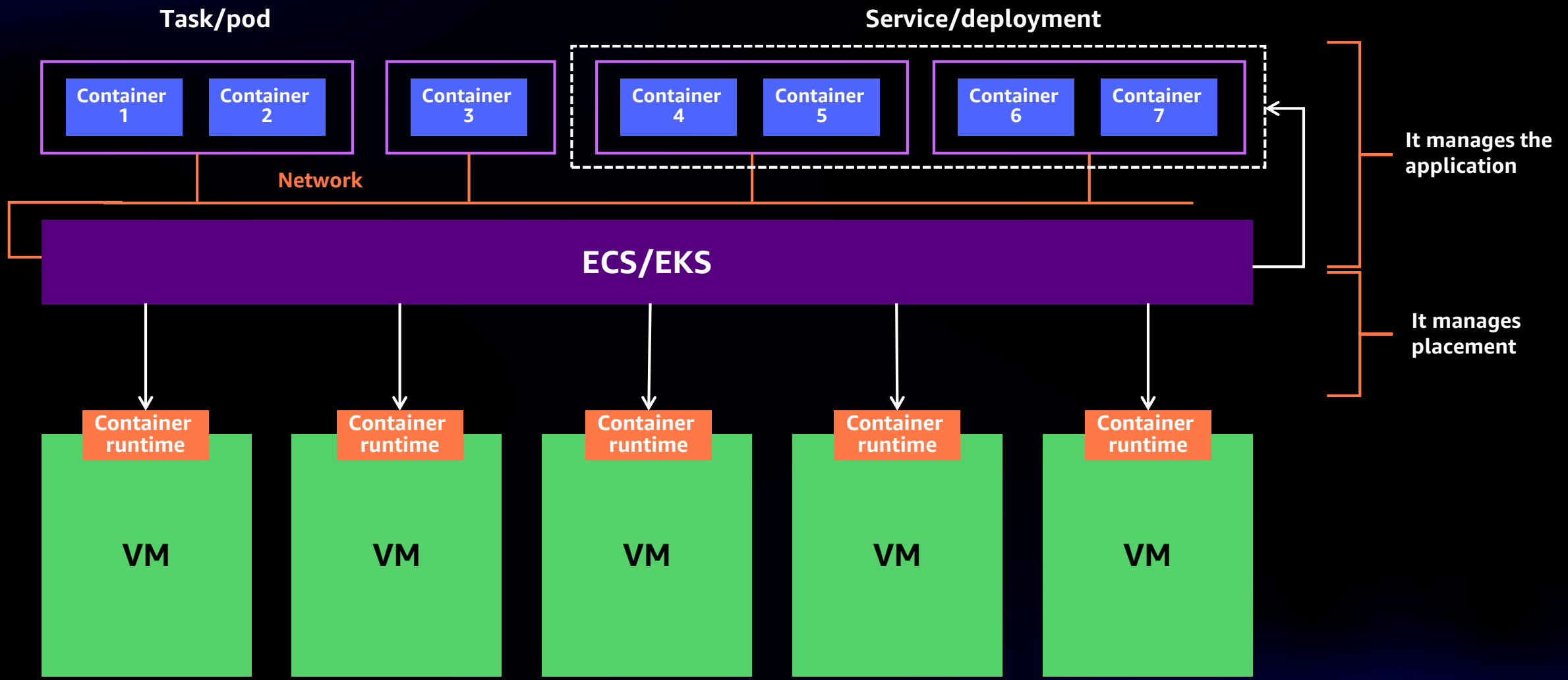


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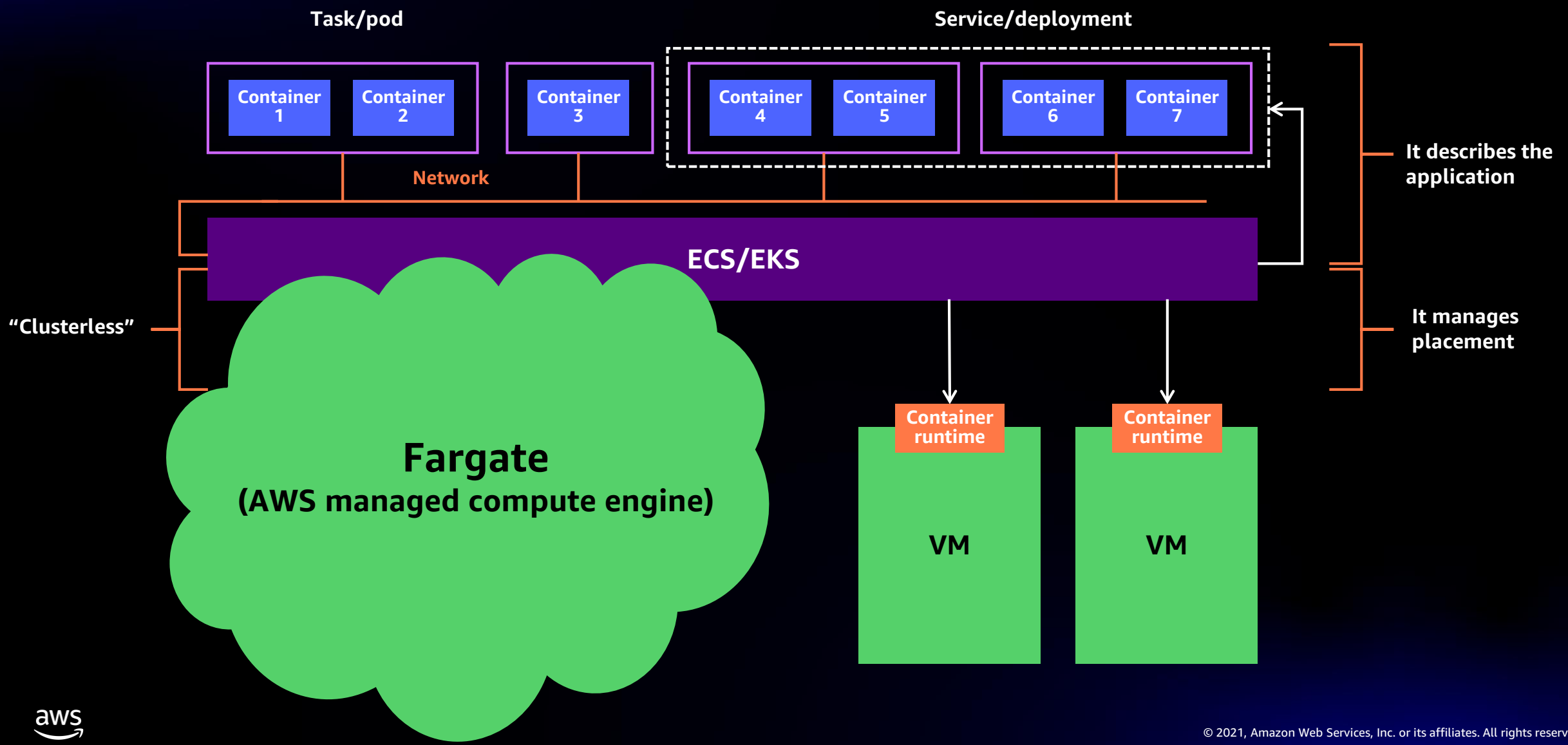
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What is AWS Fargate?



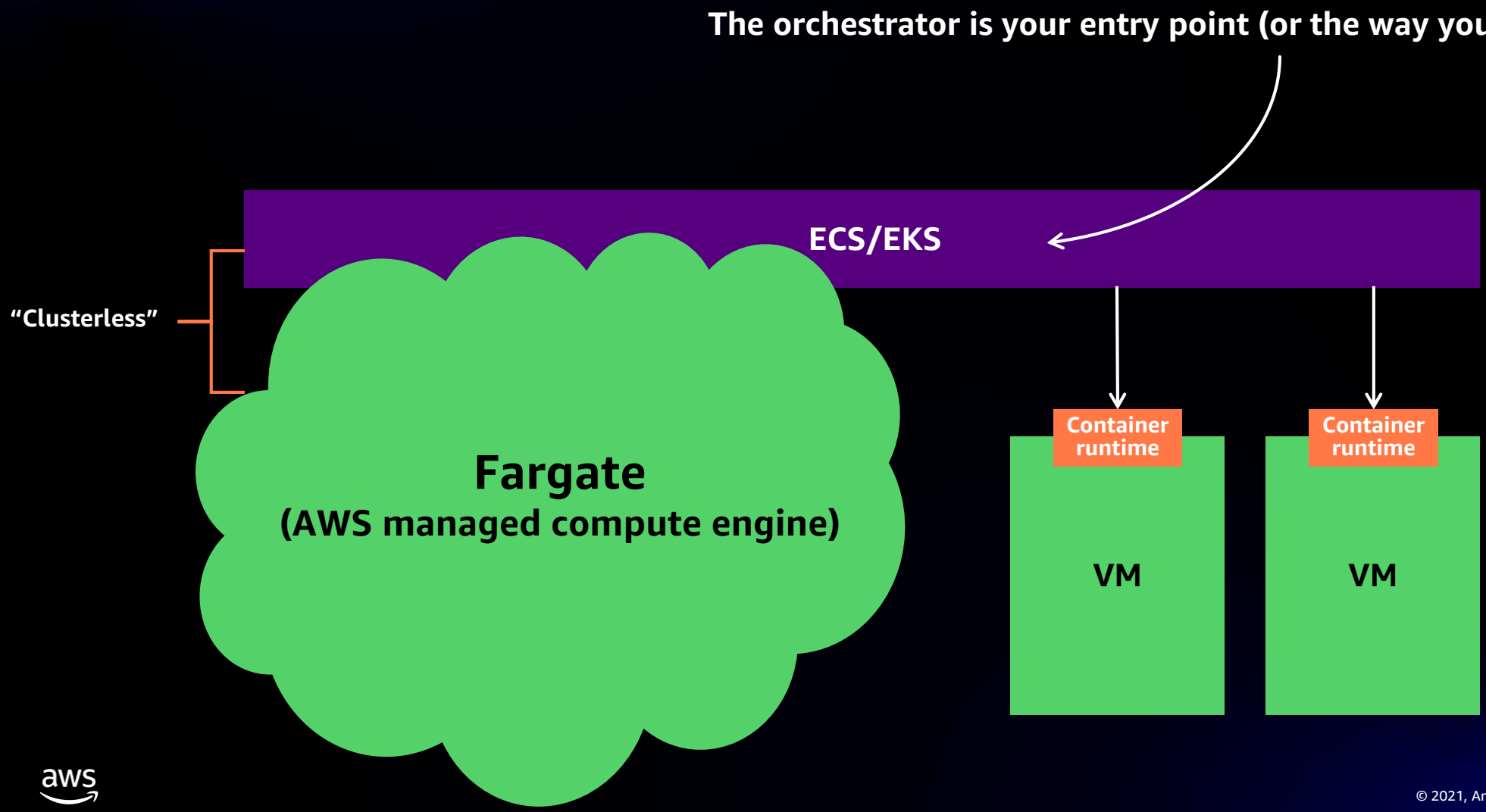
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What is Fargate?



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What is Fargate?



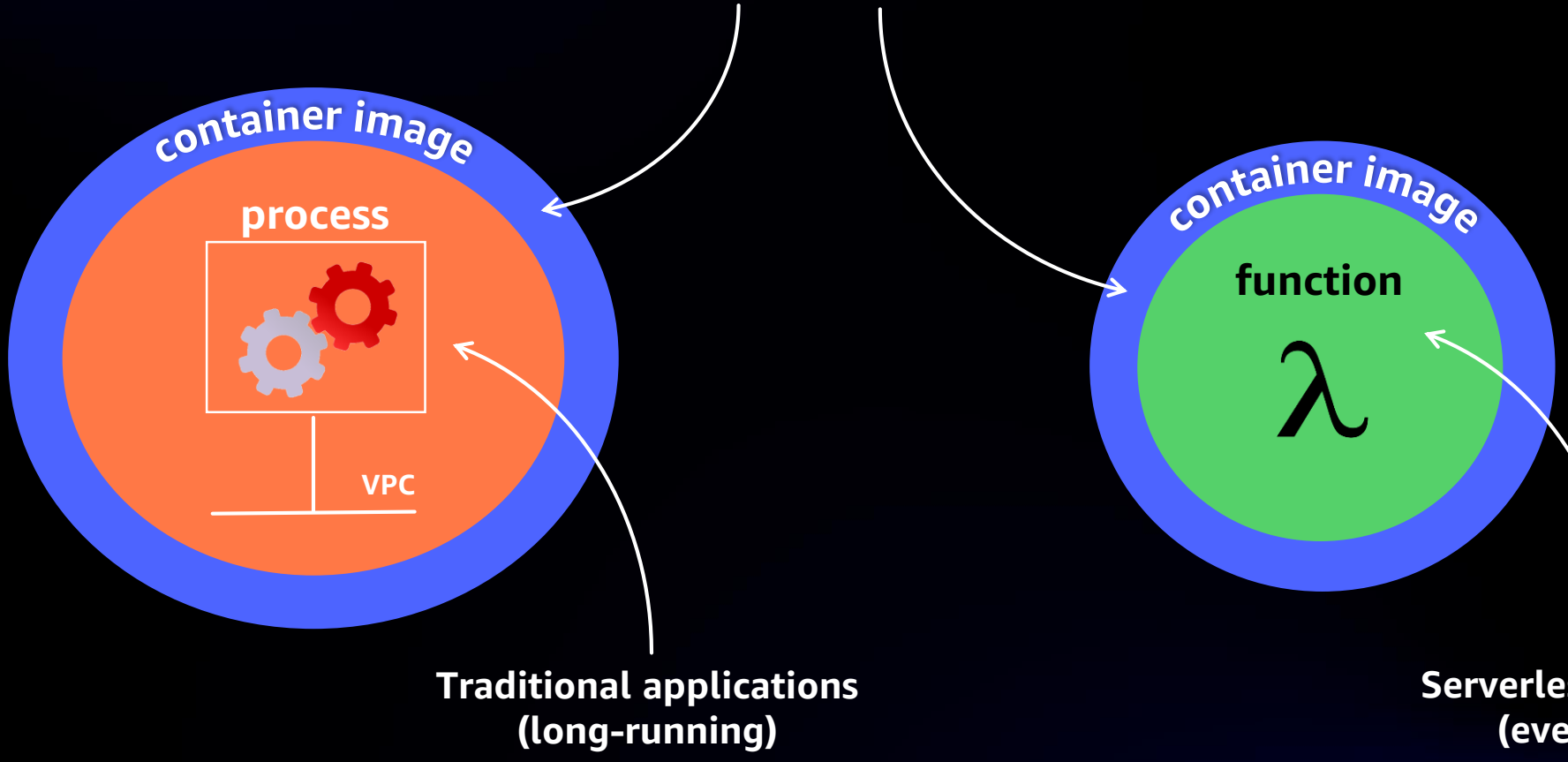
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Let’s talk about the strategic decisions…

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Containers: Programming model or package?

The container image format (OCI) as a universal packaging mechanism



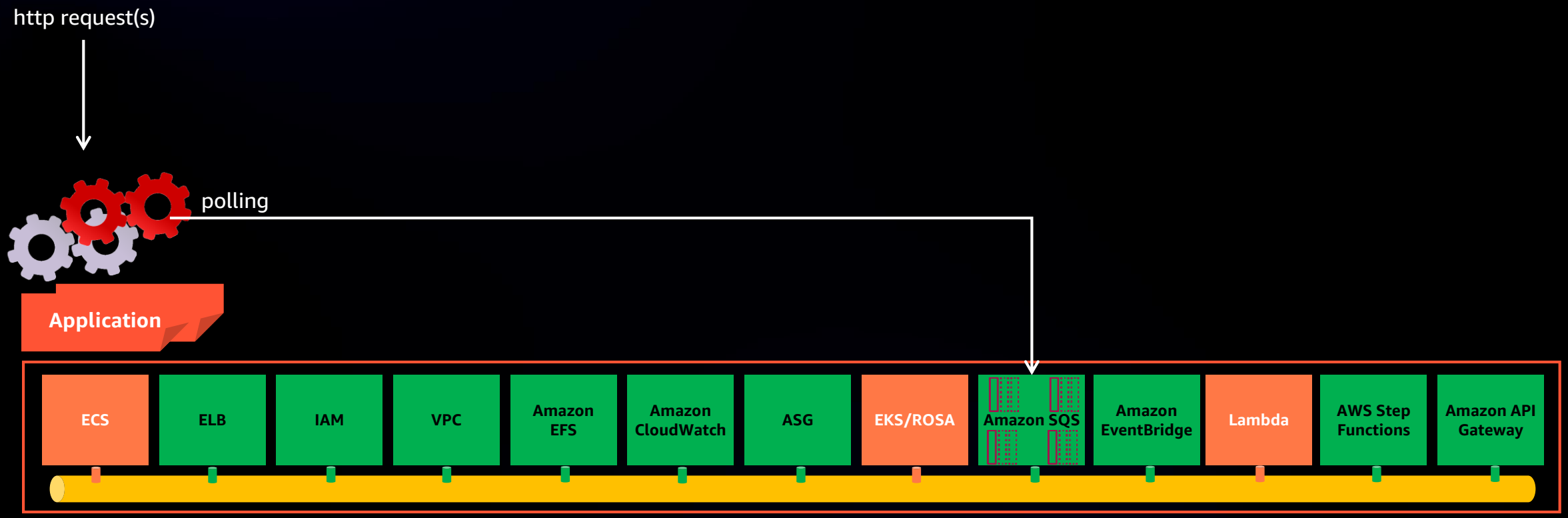
Traditional applications
(long-running)

Serverless applications
(event-driven)

aws

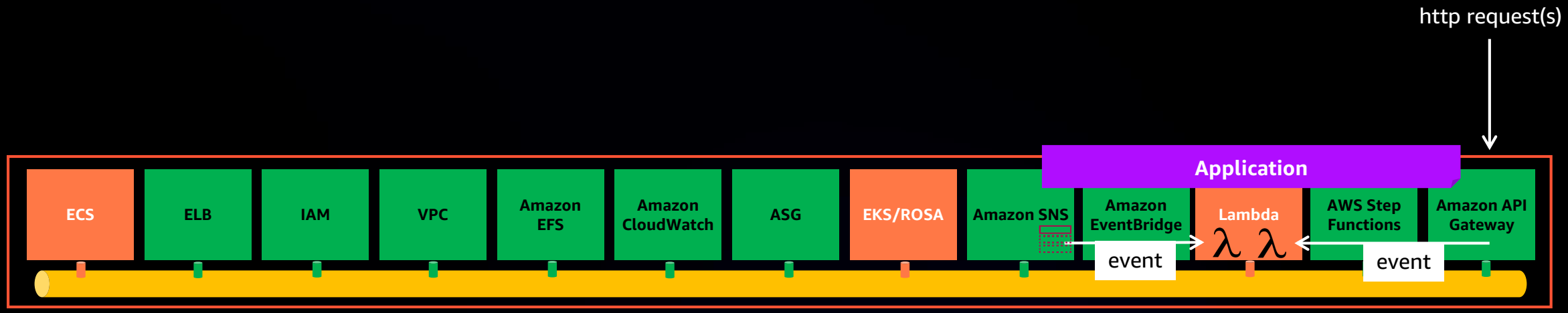
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A day in the life of a traditional application



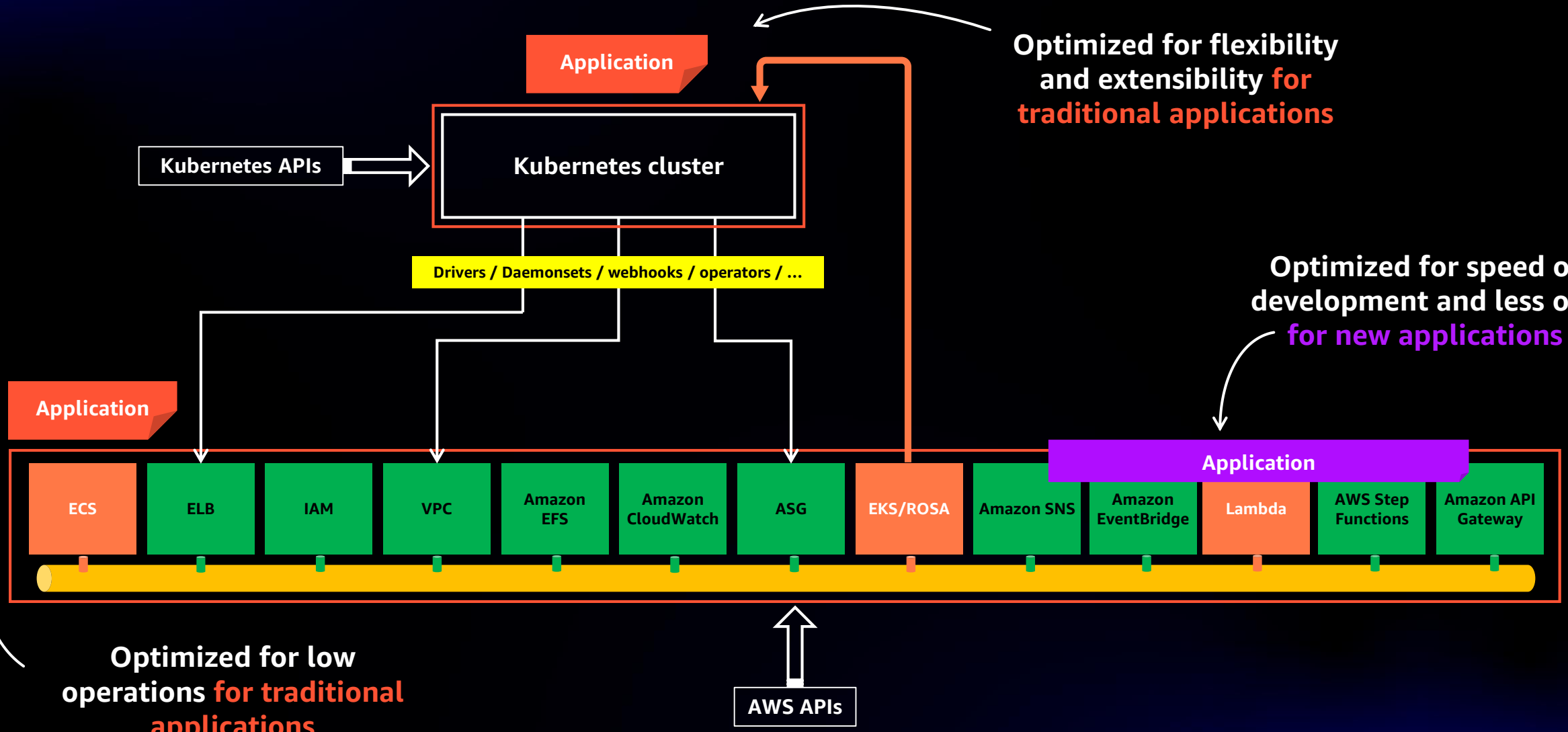
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A day in the life of a serverless application



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How to think about Lambda, ECS, and K8s



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The provisioning products

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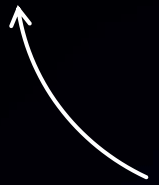
How are customers adopting provisioners?

Some will start with a provisioner and won't care about what's underneath (orchestrator)



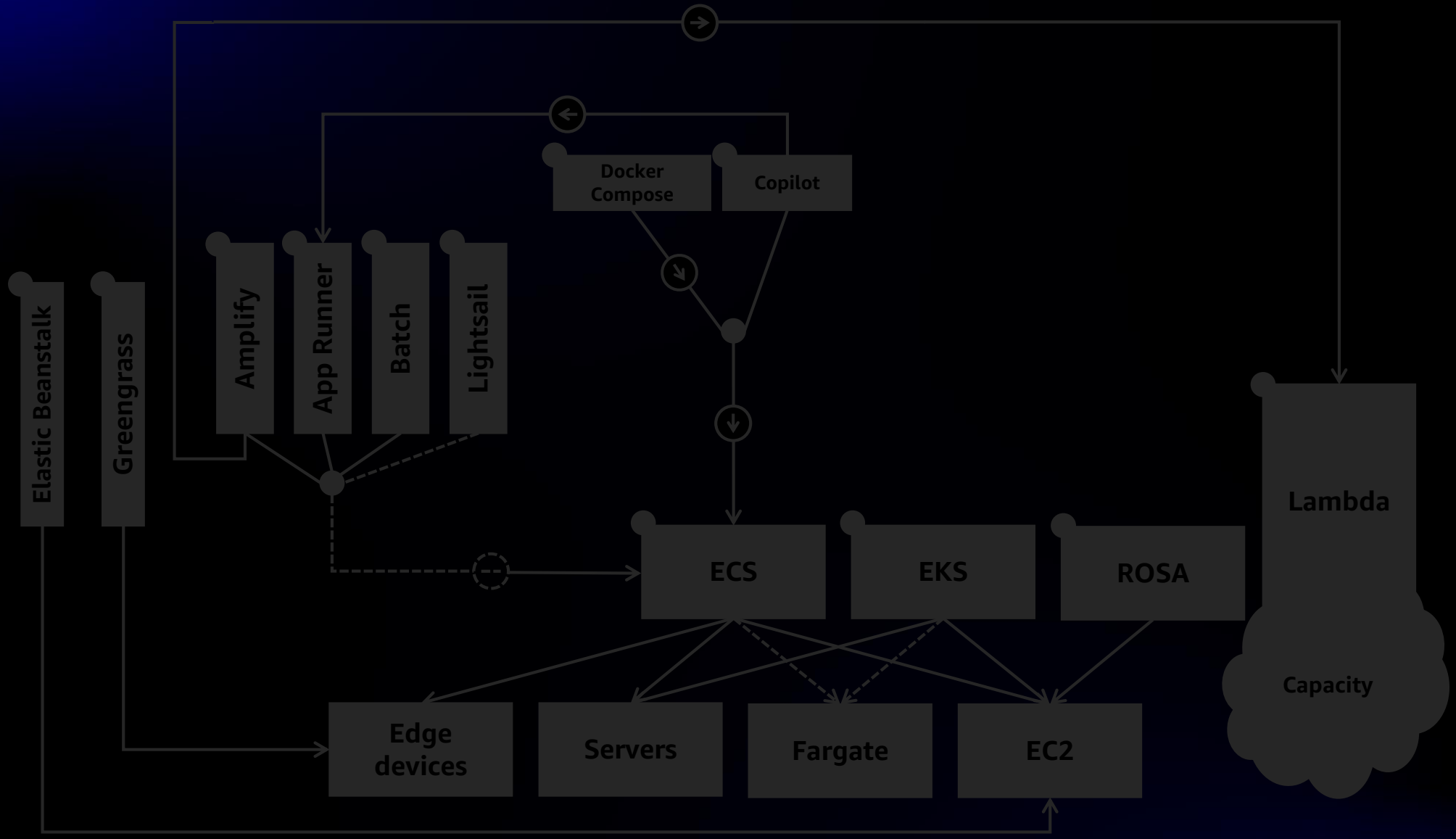
"I am going to use App Runner because I love the simplicity (I don't care about its mechanics)"

Others will make a strategic decision underneath (orchestrator) and optionally work backwards to find a proper provisioner(s)

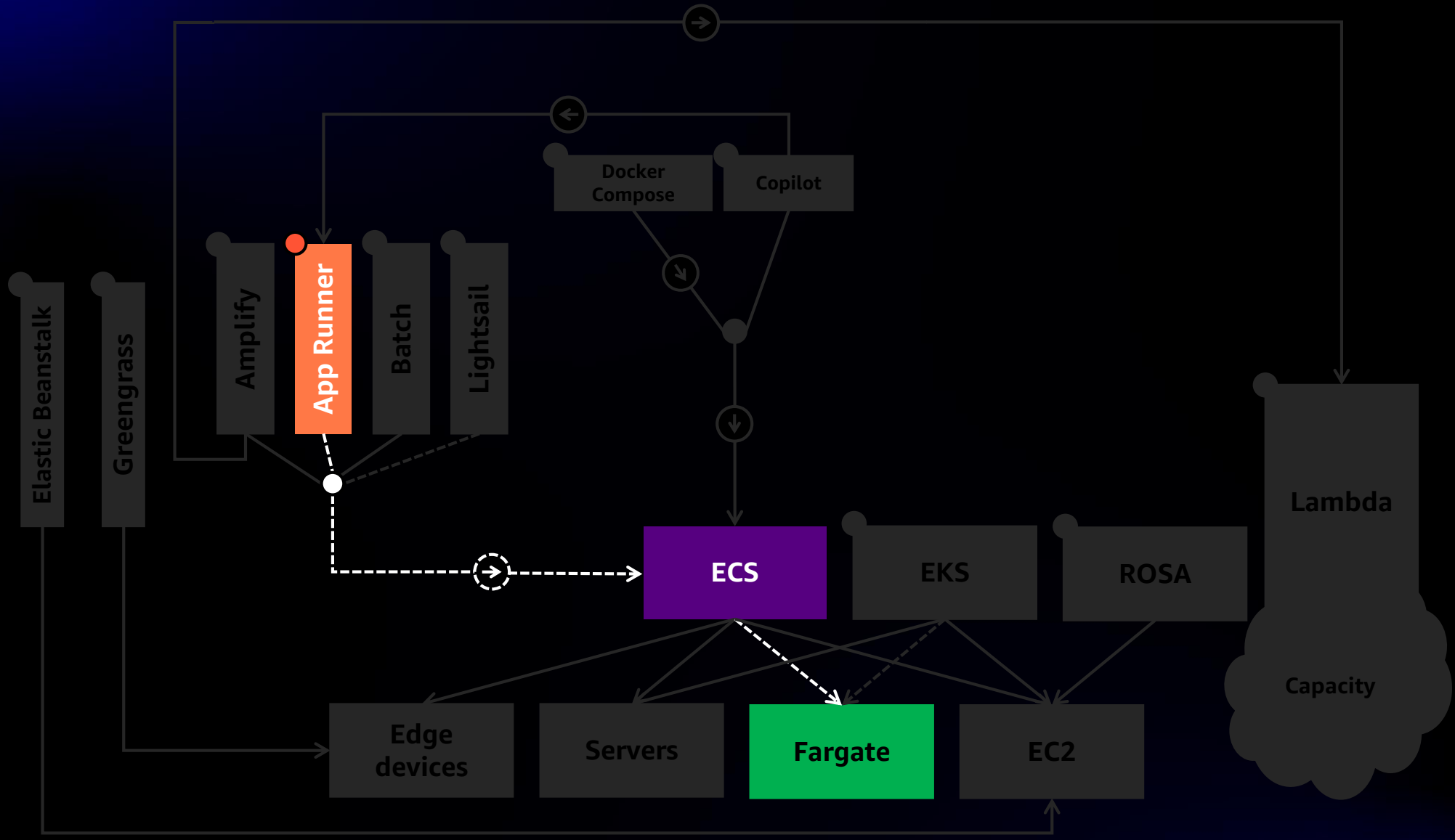


I have opted to use ECS but I need to find an easy way for my devs to consume it (and Copilot seems to fit the bill)

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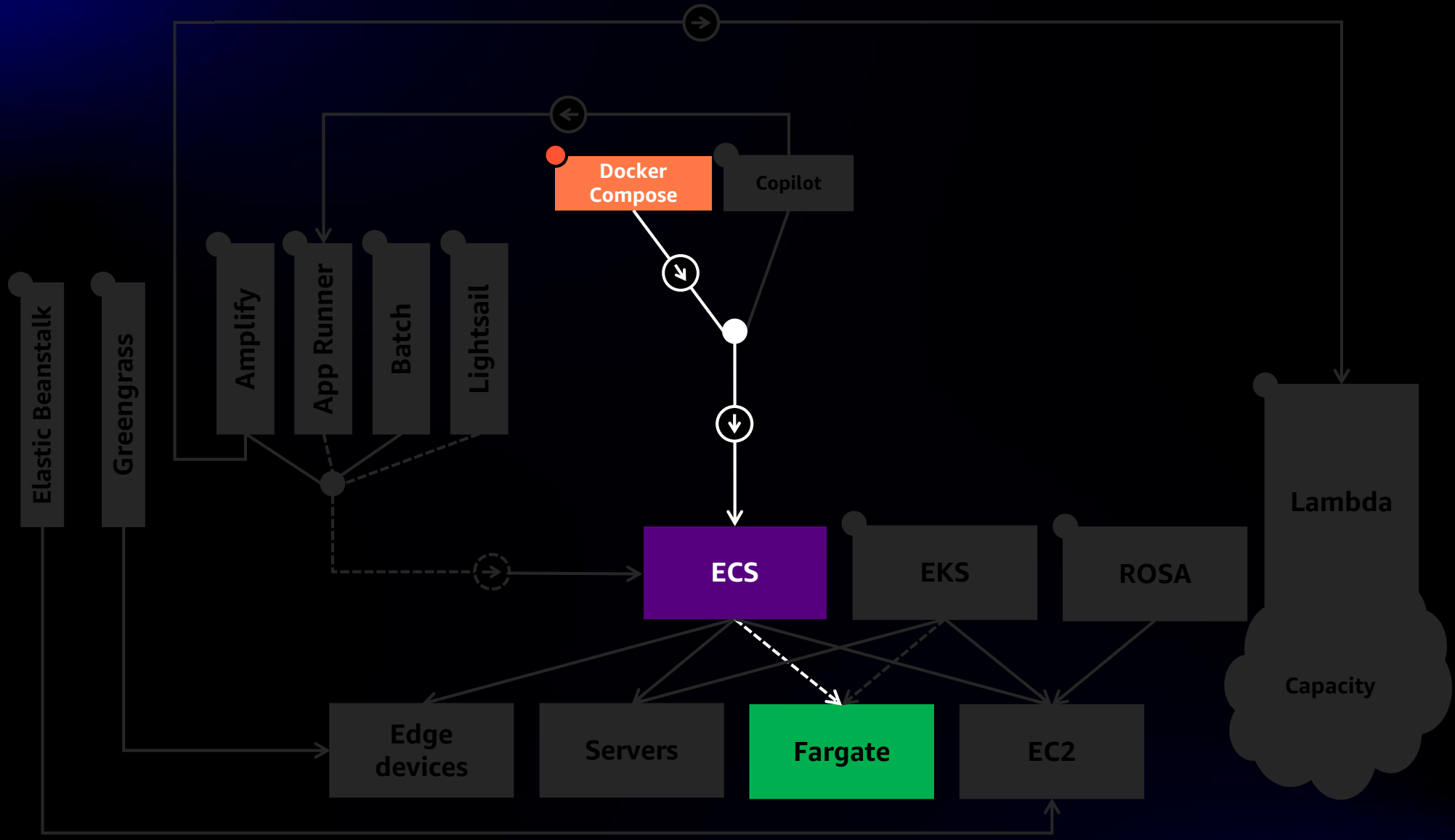


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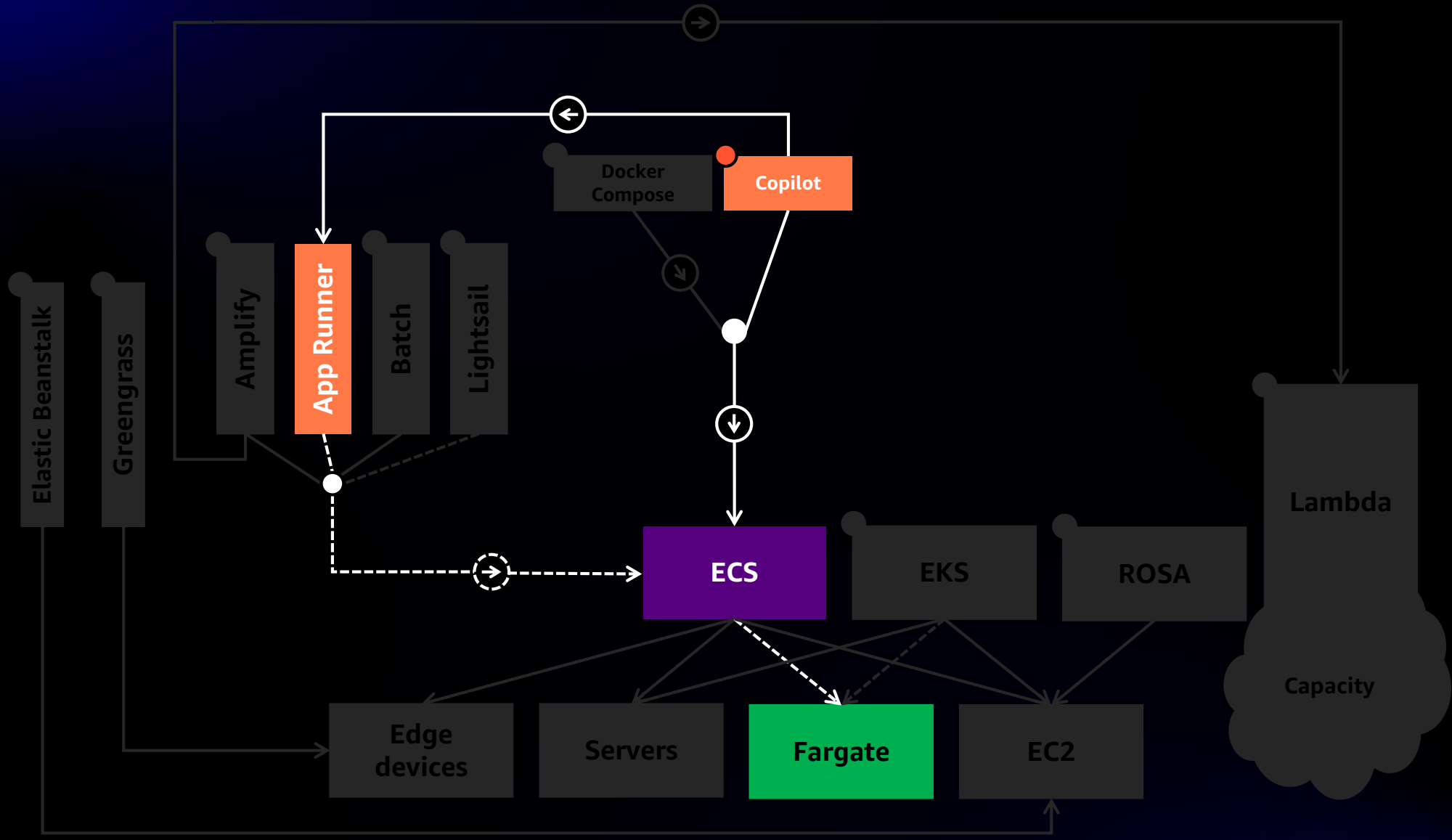
An easy way to run request/response web services on AWS that leverages integrations with the vast AWS platform

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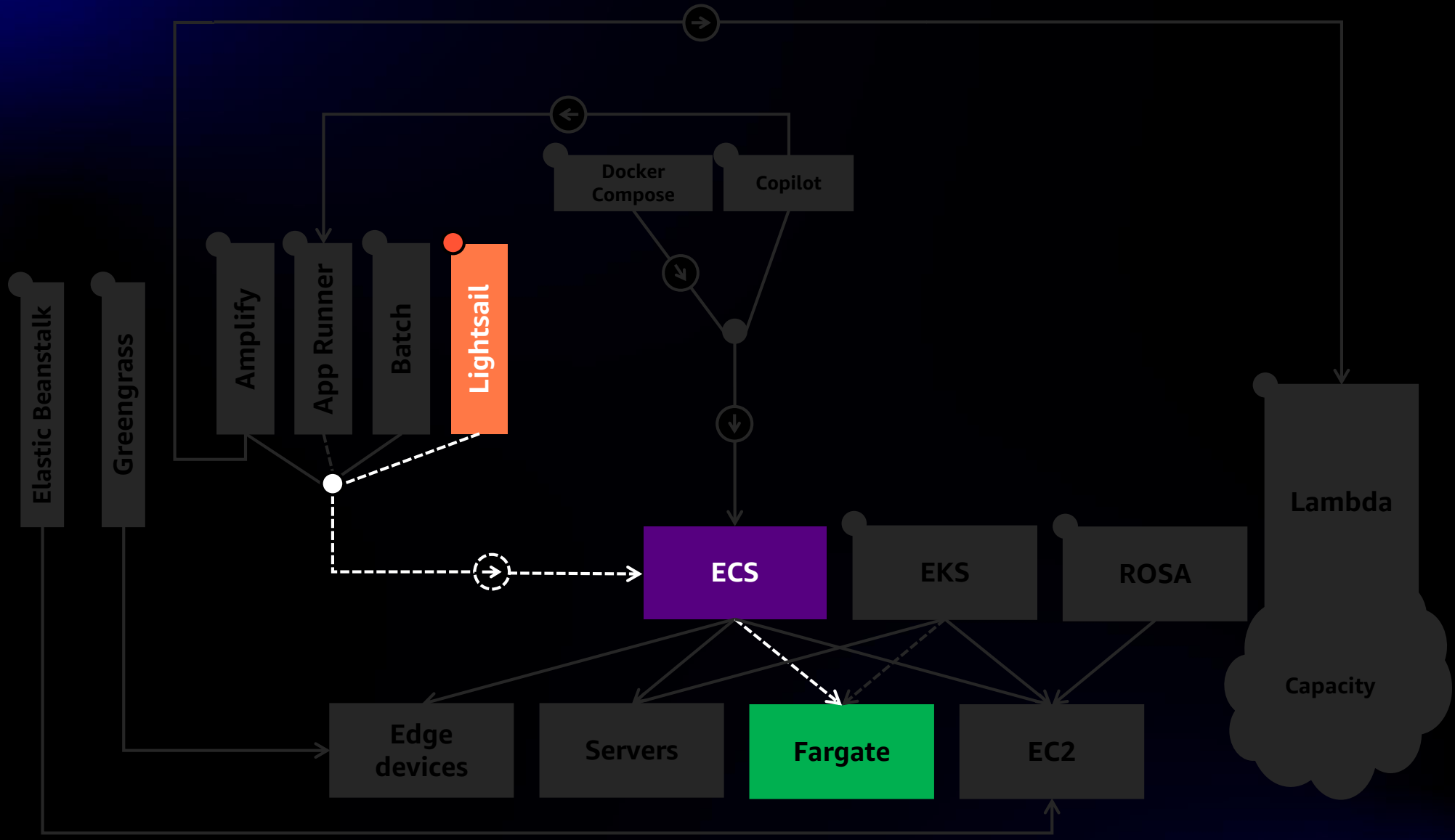
If you know Docker Compose, you can start deploying containers on AWS in minutes with “docker-compose up"

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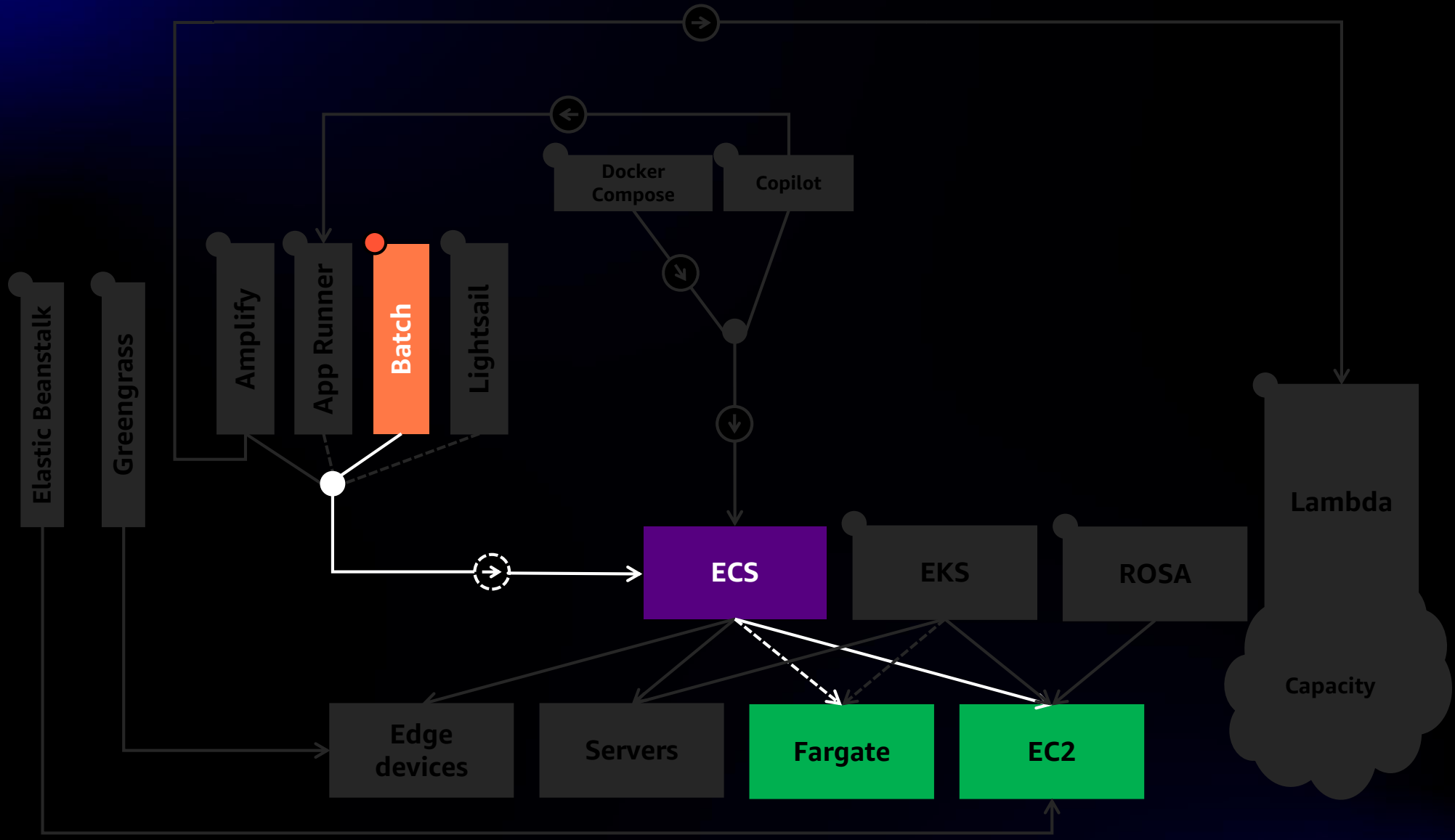
Easy to use and easy to start with CLI with embedded patterns and best practices to deploy to different AWS services

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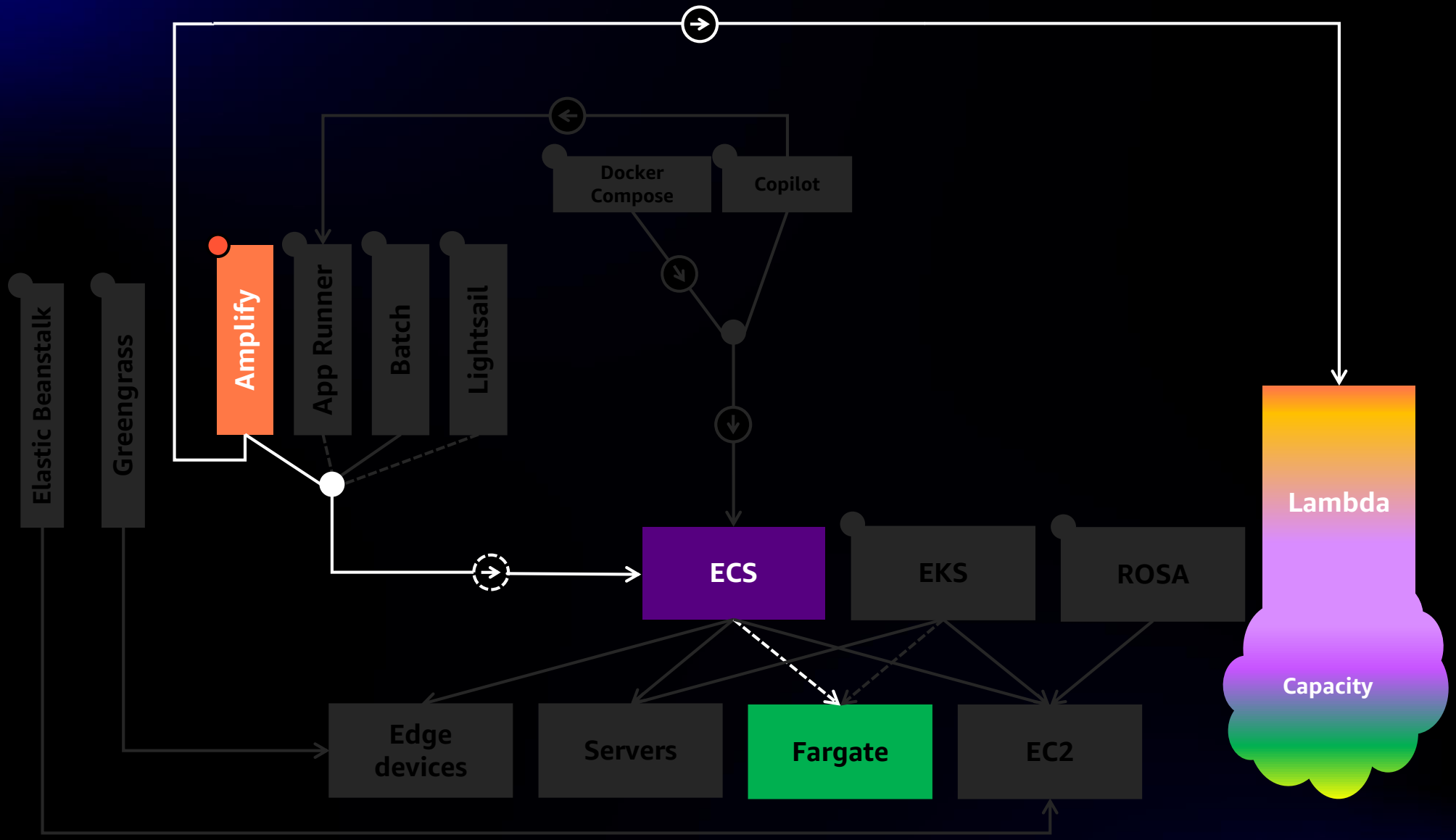
An intuitive way to run containers (and more) on AWS with all-in-one, simple pricing

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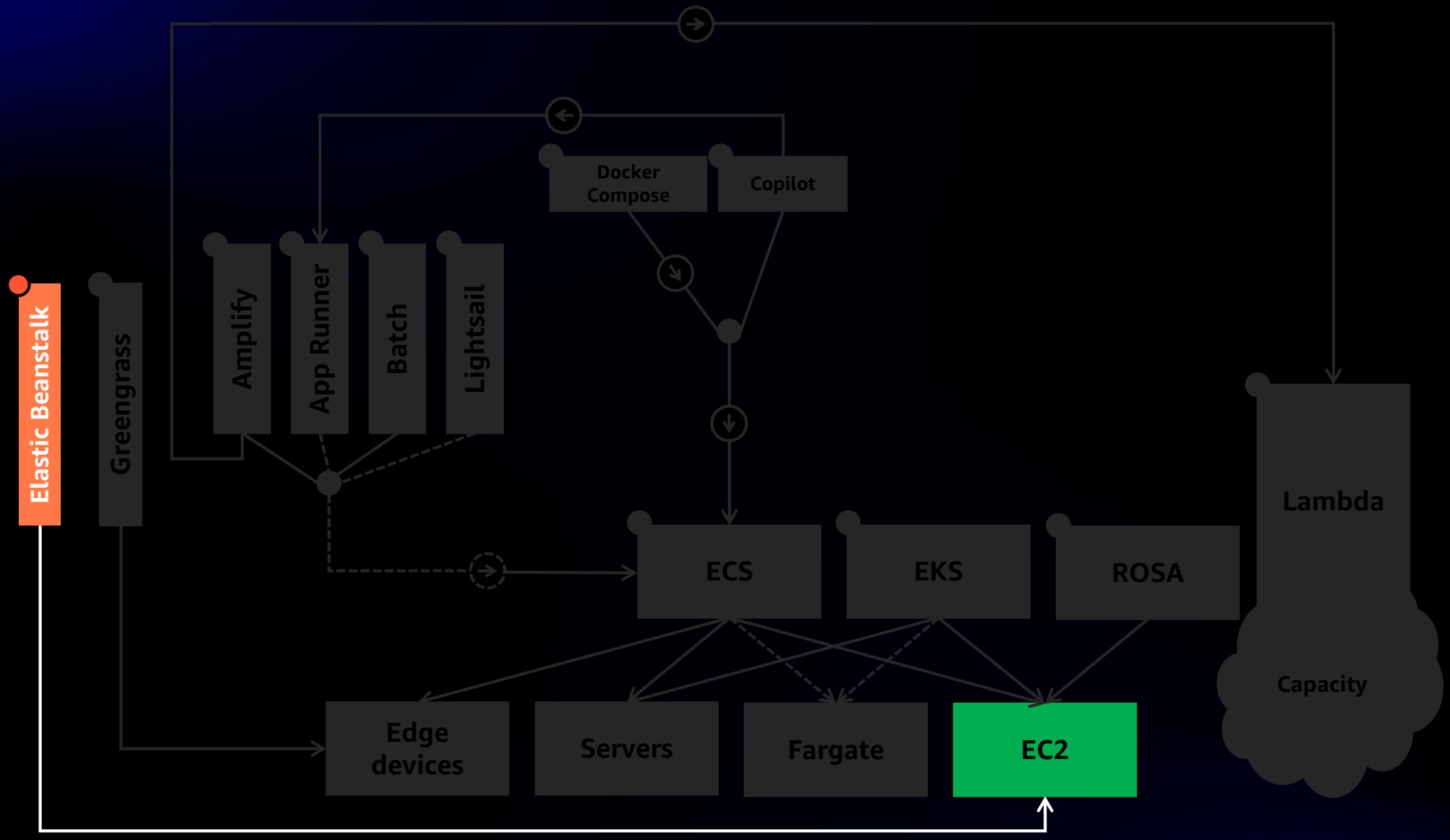
A fully managed and sophisticated batch jobs scheduler that comes at no additional cost

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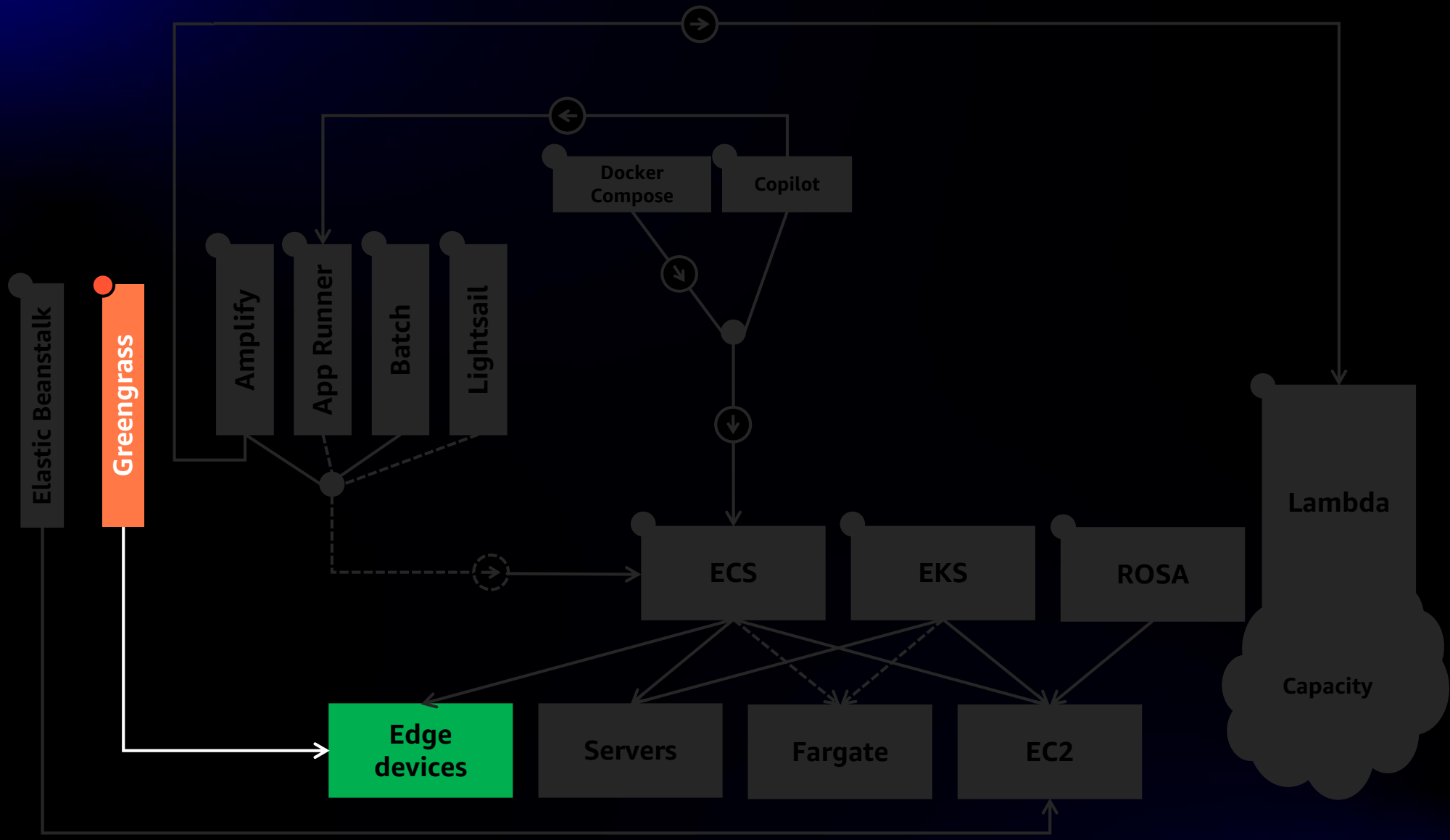
A guided and opinionated way to deploy containerized and serverless services as part of front-end development workflows

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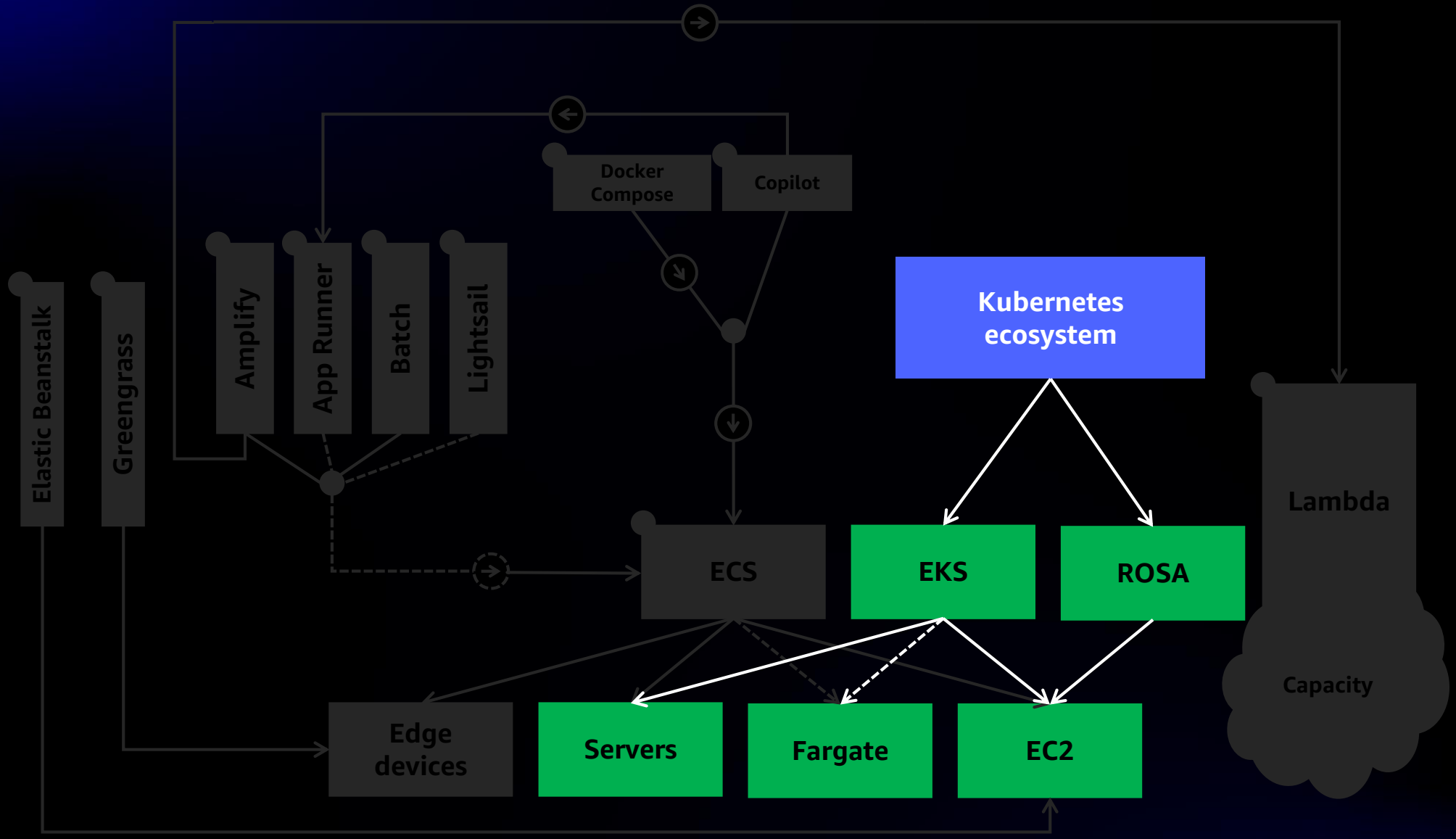
Proven solution that provides simple container deployments as part of a fully automated “from code” release experience

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A fully managed IoT cloud service that is part of a large IoT products portfolio with embedded container deployment capabilities for the edge

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EKS and ROSA both have access to the vast Kubernetes ecosystem, which includes a number of provisioning tools

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AWS container service profiling and selection (prototypes)

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Products score cards

How can we describe products in a way that can help segment them?

Products can be scored against these dimensions:

Workload types (is the product flexible in the type of workloads it supports?)

Capacity (what type of infrastructure capacity does the product support?)

Ease of consumption (are the product's abstractions easy to understand/consume for a developer?)

Ease of operations (is the product easy to operate? Is the lifting on the customer or on AWS?)

Extensibility (is the product extensible and configurable to a customer's one-time needs?)

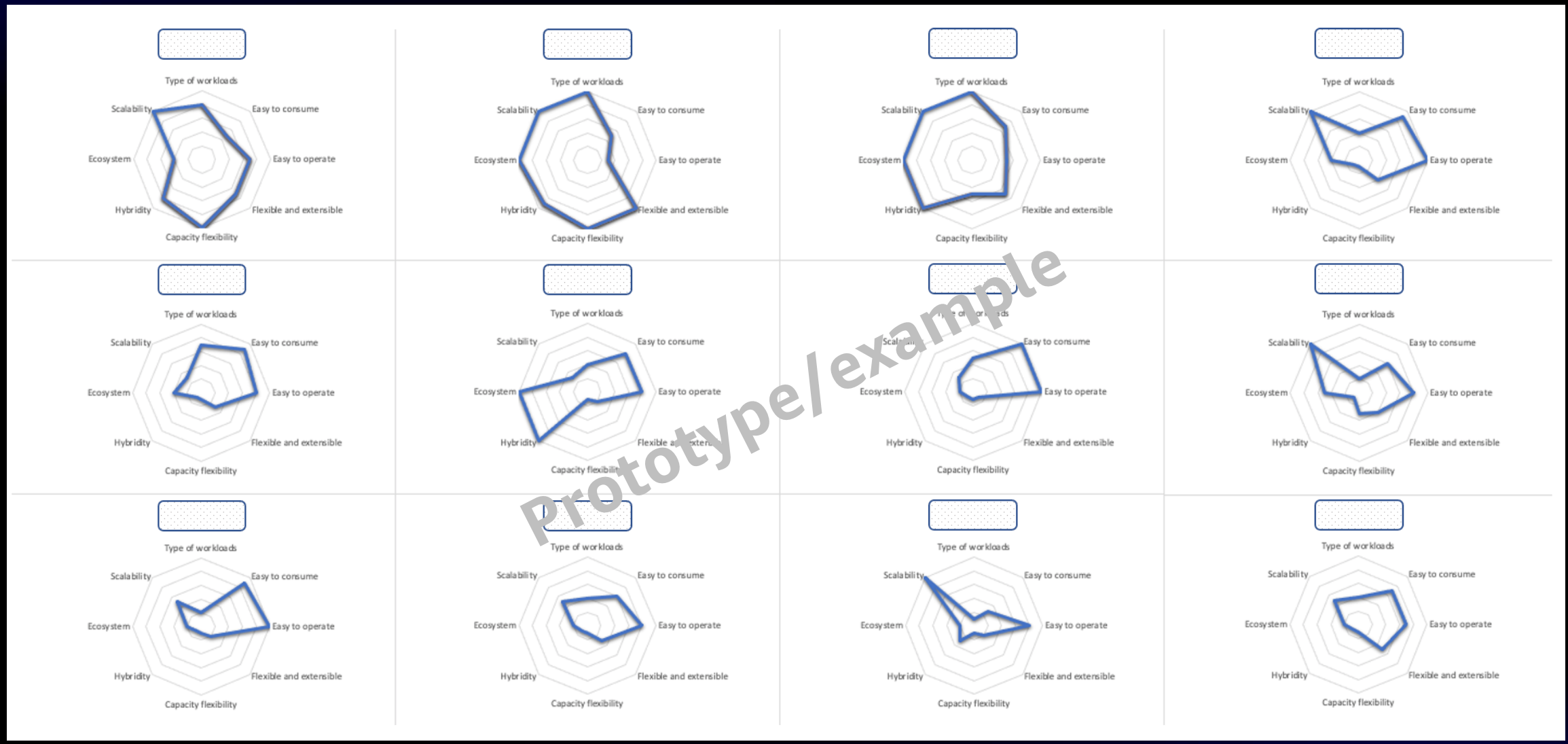
Hybrid support (can the product be used in a hybrid scenario?)

Ecosystem (is the product backed by a strong ecosystem?)

Scalability (does the product scale with demand?)

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Products score cards



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Thank you!

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