

# AWS Gyakorlat

## Docker

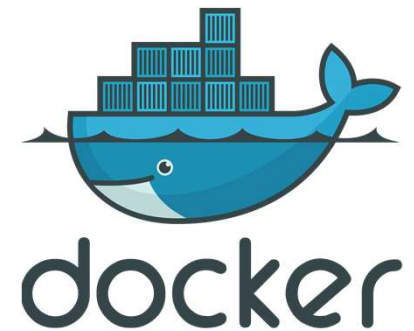
Felde Imre

# ECS – Elastic Container Service

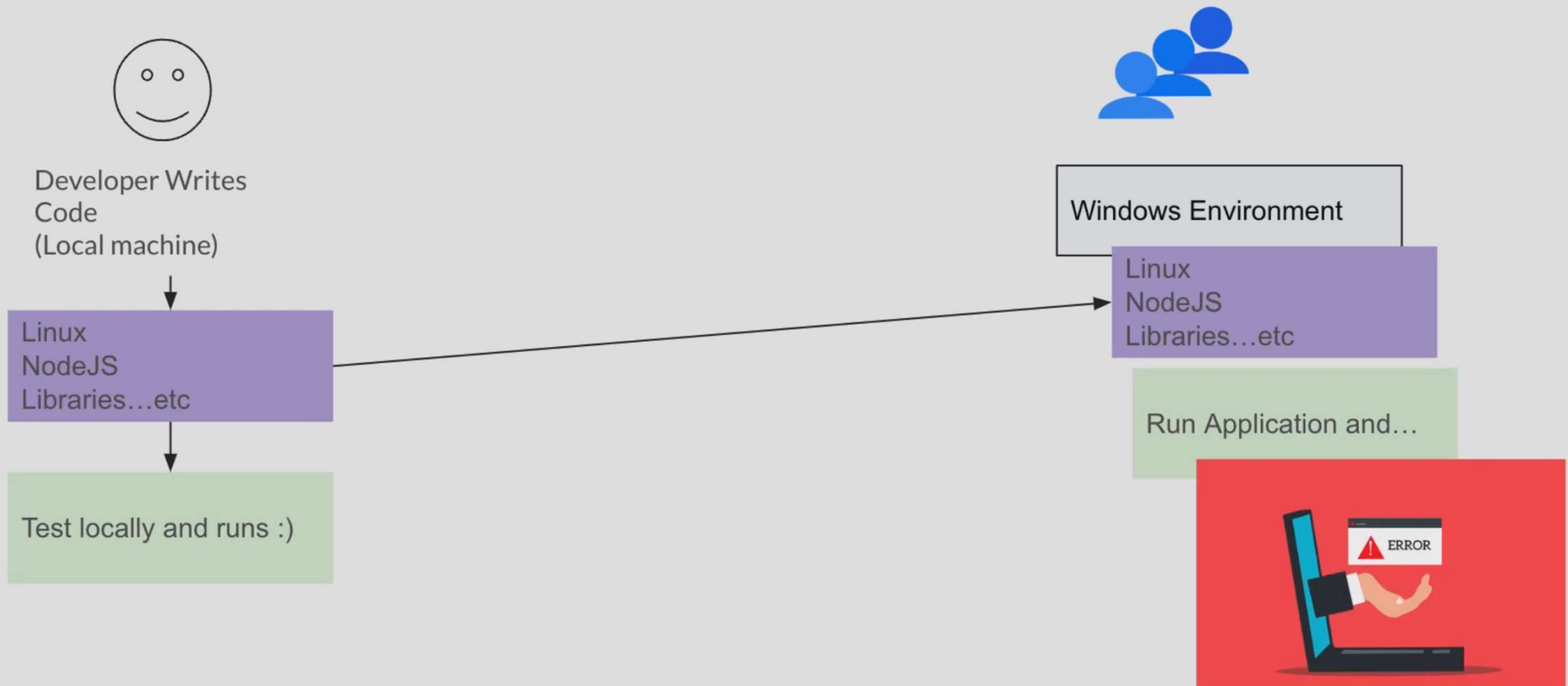
- **Amazon Elastic Container Service**
  - Egy skálázható és gyors konténerkezelő szolgáltatás
  - Orchestrálja (összehangolja) a klaszter konténereit – egyszerűen futtathatod, leállíthatod és kezelheted a konténereket
- **De miért is olyan fontos/érdekes mindez?**

# Mi a Docker?

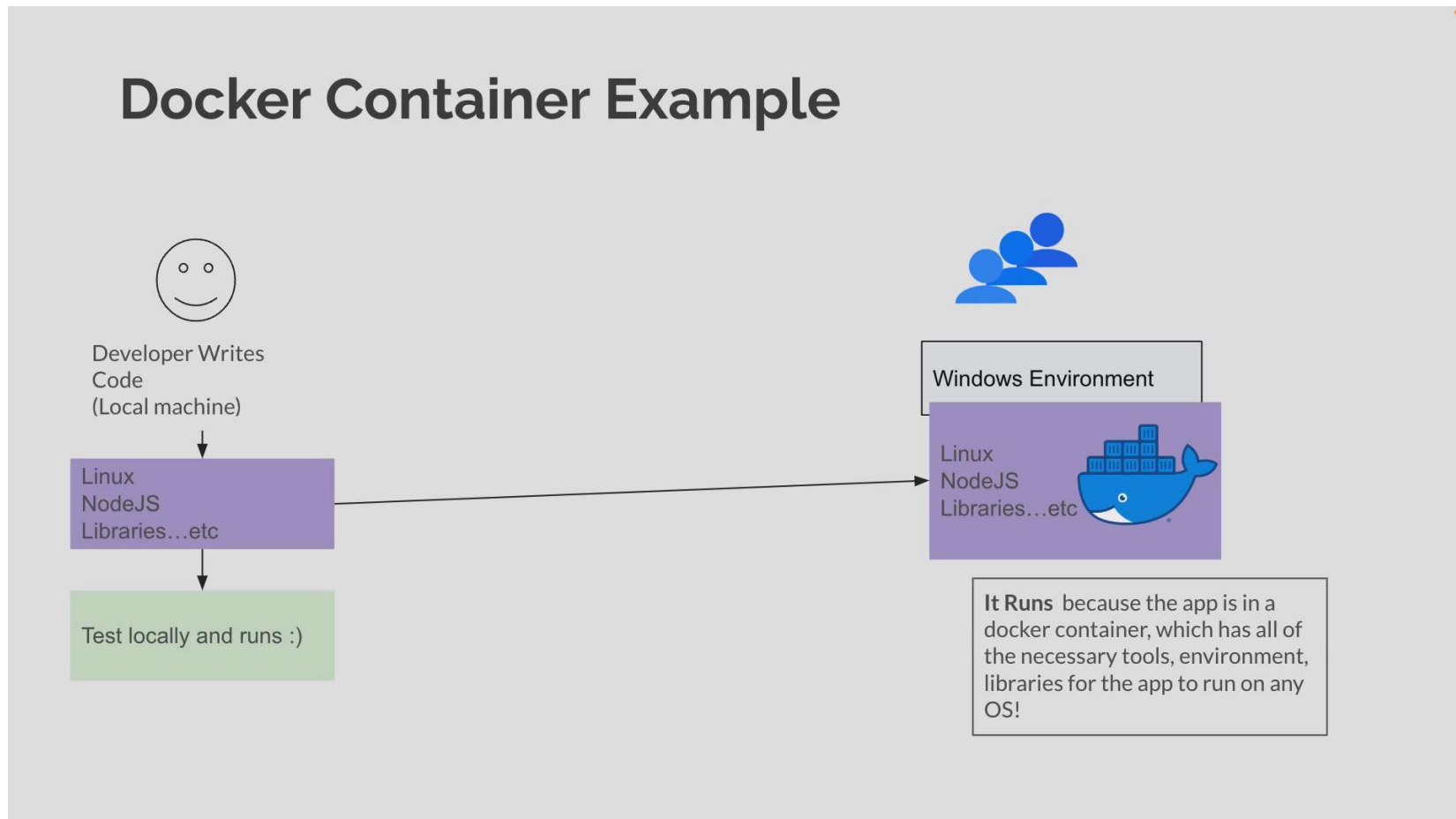
- A Docker egy szoftverfejlesztési platform, amelyet alkalmazások telepítésére használnak.
- Az alkalmazások **konténerekbe** vannak csomagolva, amelyeket bármilyen operációs rendszeren lehet futtatni.
- **Az alkalmazások mindenhol ugyanúgy futnak – függetlenül attól, hol futtatják őket.**
  - Bármilyen gépen
  - Nincsenek kompatibilitási problémák
  - Előre kiszámítható működés
  - Kevesebb munka
  - Könnyebb karbantartani és telepíteni
  - Bármilyen nyelvvvel, operációs rendszerrel vagy technológiával működik
  - A konténerek nagyon gyorsan skálázhatók fel és le (másodpercek alatt)



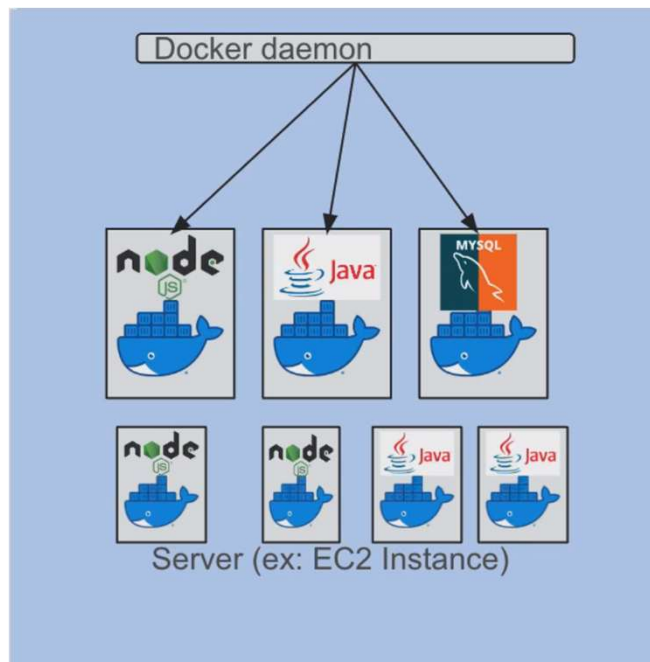
# Mi a Docker?



# Docker Container példa



# Docker egy OS-n fut

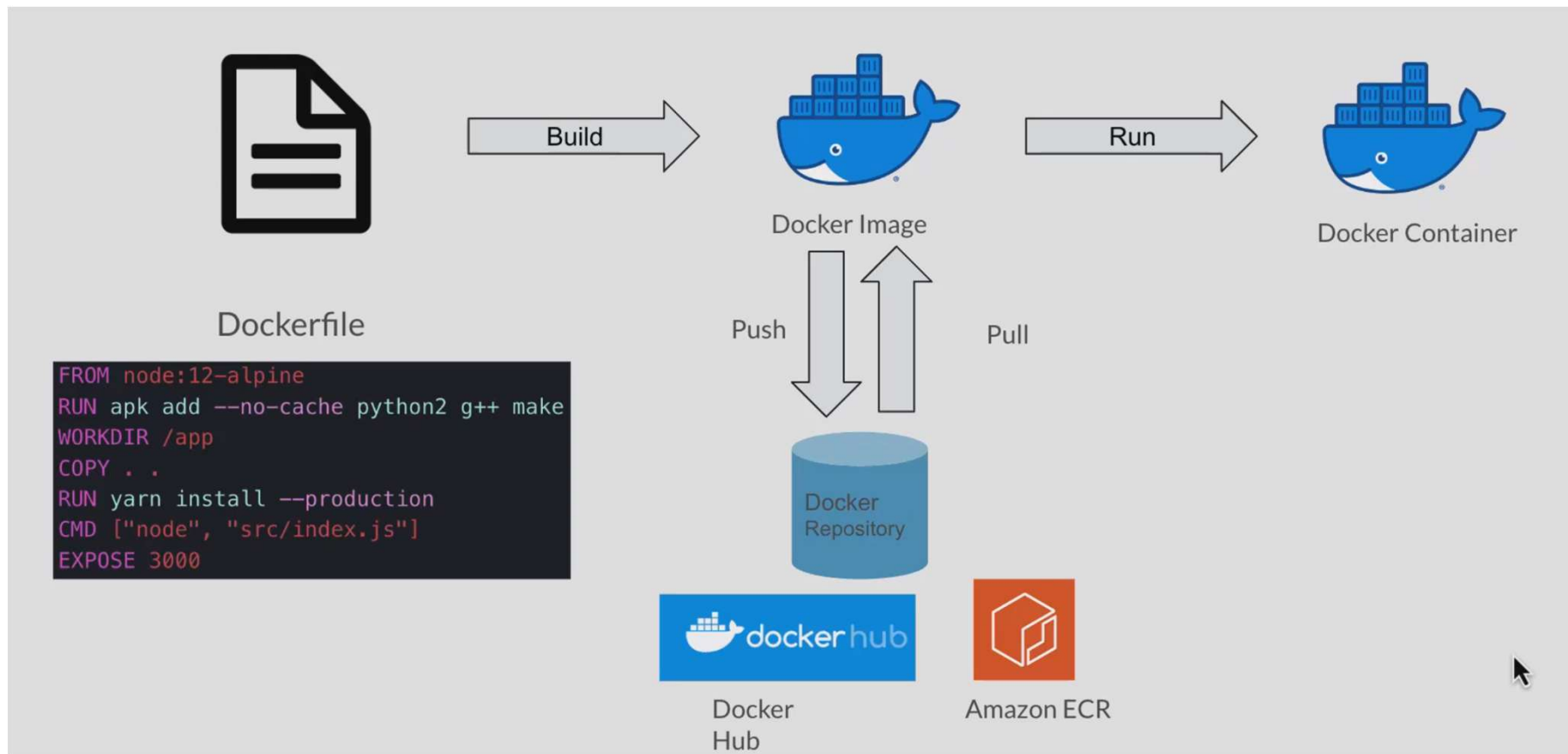


**Docker daemon** – kezeli, építi és futtatja a Docker konténereket (a Docker ügynökkel együtt).

# Docker image – Hol tárolódik?

- **Docker tárolók (Repositories)**
- **Nyilvános:** Docker Hub <https://hub.docker.com/> és mások
- Itt alap image-eket (képfájlokat) találhatsz sokféle technológiához vagy operációs rendszerhez, például:
  - **Ubuntu**
  - **MySQL**
  - **NodeJS, Java...**
- **Privát:** Amazon ECR (Elastic Container Registry)

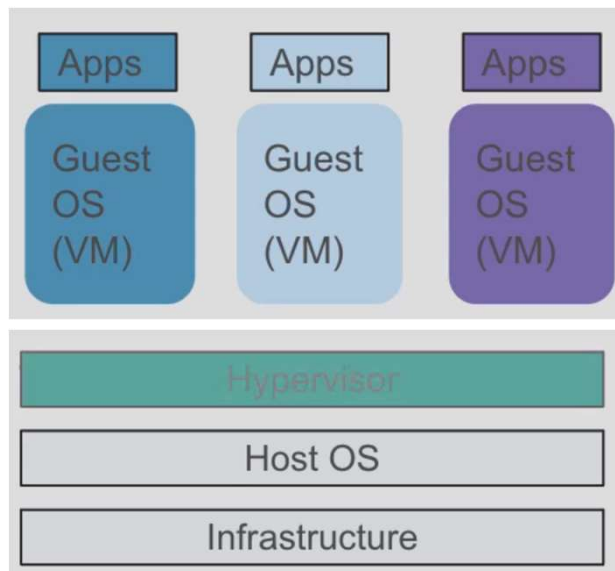
# Docker alapok





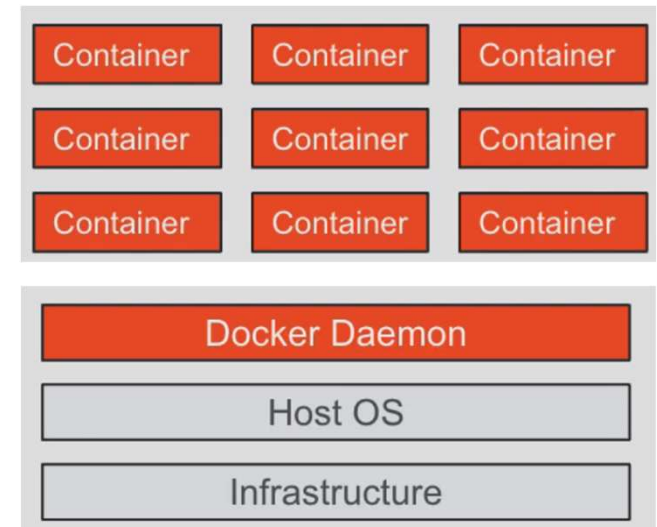
# Docker vs VM

- A Docker „fél-meddig” virtualizációs technológia, de nem teljesen az – konténertechnológia.
- Az erőforrások megosztva vannak a gazdagéppel (host) → így sok konténer futhat egyetlen szerveren.



Virtual Machine

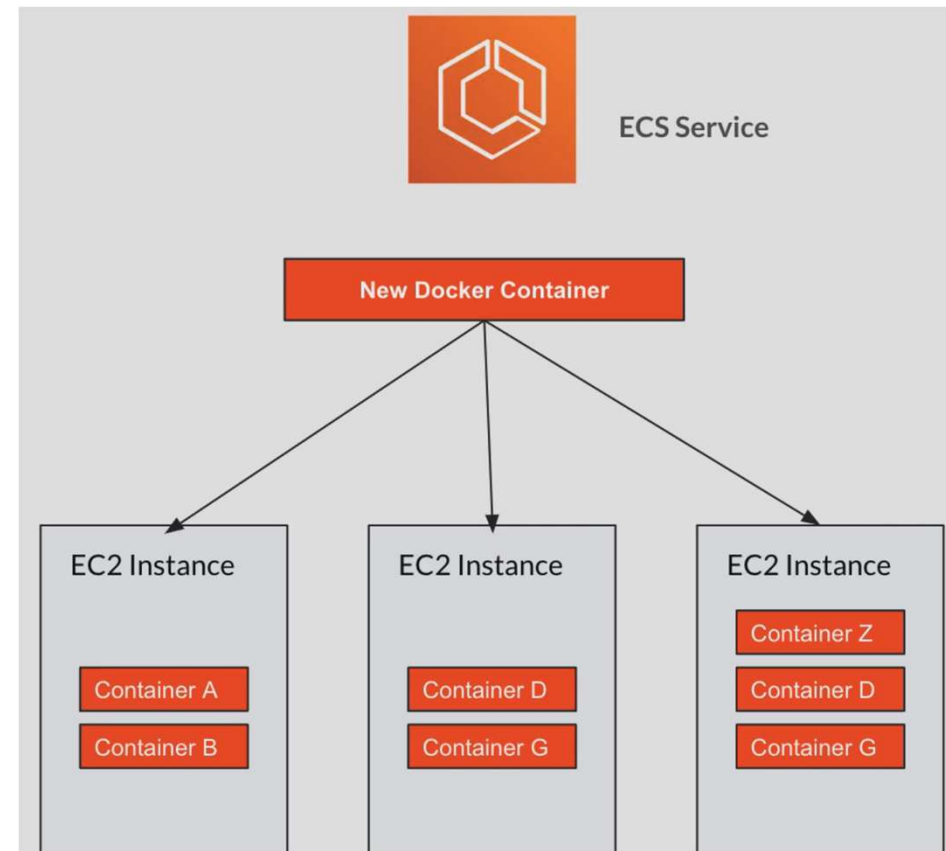
- A Docker daemon könnyűsúlyú (nem igényel sok erőforrást).
- Kevesebb az elkülönítés a konténerek között – meg tudják osztani az erőforrásokat, és kommunikálni tudnak egymással.



Docker

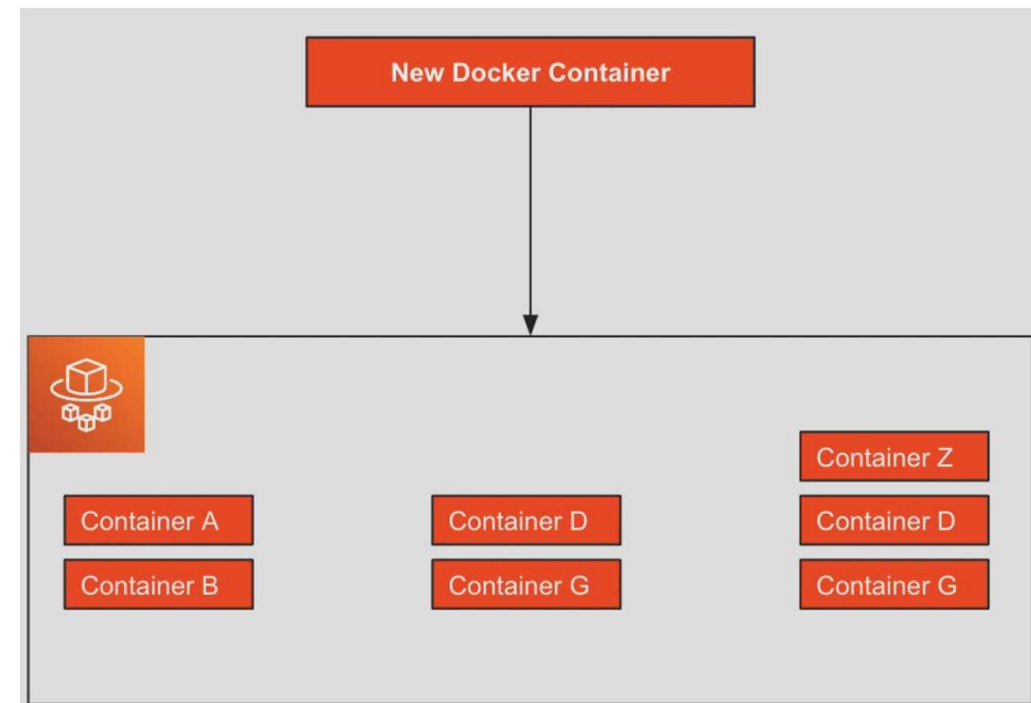
# ECS - Elastic Container Service

- **ECS – Elastic Container Service**
- **Docker konténerek indítása az AWS-en**
- **Neked kell biztosítanod és karbantartanod az infrastruktúrát (azaz az EC2 példányokat)**
- **Az AWS gondoskodik a konténerek indításáról és leállításáról**
- **Össze tudod kapcsolni az Application Load Balancerrel (Alkalmazás-terheléselosztóval)**



# Mi az a FARGATE?

- **Docker konténerek futtatása az AWS-en**
- **Nem kell** a felhasználónak biztosítani és karbantartani az infrastruktúrát **(nincsenek EC2 példányok)**
- **Serverless (szerver nélküli) megoldás**
- Az **AWS automatikusan futtatja a konténereket**, az általad megadott **CPU- és memóriaigény** alapján



# Mi az a Fargate?

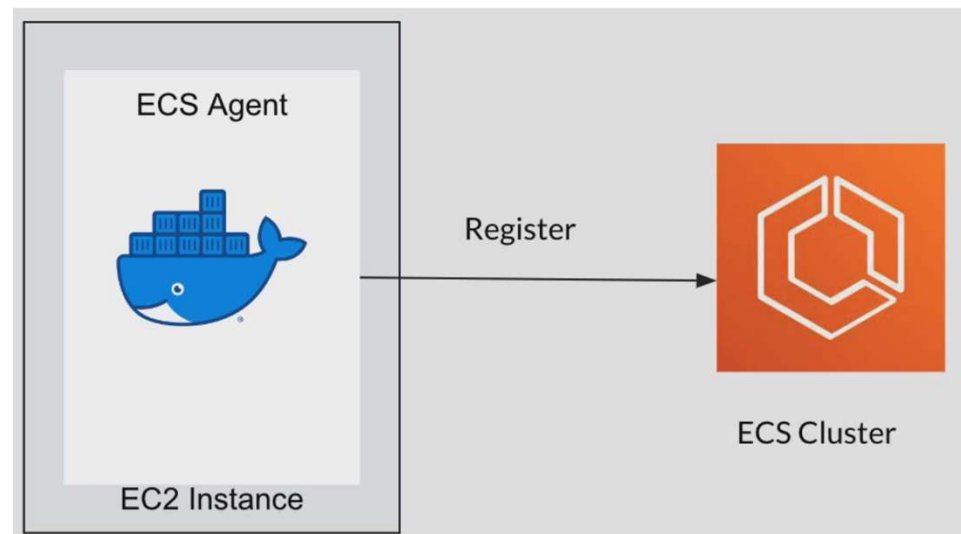
- Fargate egy serverless (szerver nélküli) konténer-futtatási szolgáltatás.
- Ez azt jelenti, hogy nem kell saját szervereket (EC2 példányokat) indítanod, beállítanod vagy karbantartanod.
- Az AWS automatikusan gondoskodik az infrastruktúráról – te csak megmondod, mennyi CPU-t és memóriát szeretnél, és milyen Docker konténert futtatsz.

Egyszerűen:

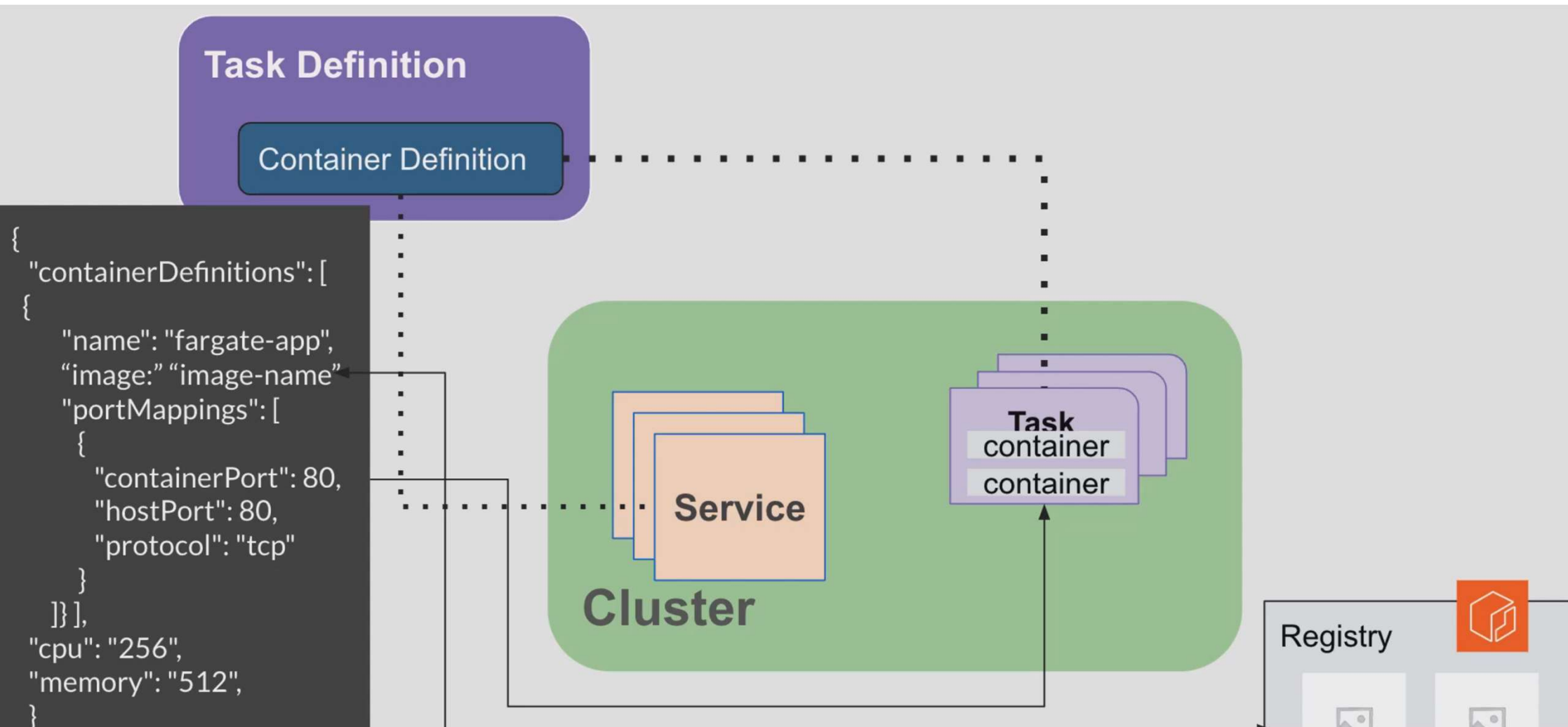
- **Csak a konténert és az erőforrásigényt kell megadni**
- **Az AWS elindítja, futtatja és leállítja a konténert, amikor kell.**
- **Nem kell szervereket kezelni (serverless).**
- **Kisebbsztráció, gyorsabb skálázás és kevesebb hiba.**

# ECS Cluster

- Az **ECS klaszterek** az **EC2 példányok logikai csoportosításai**.
- Az **EC2 példányok** futtatják az **ECS Agentet** (ami egy Docker konténer).
- Az **ECS Agent** regisztrálja a példányt az **ECS klaszterhez**.
- Az **EC2 példányok** egy **speciális AMI-t (Amazon Machine Image)** futtatnak, amit **kifejezetten az ECS-hez** készítettek



# Amazon ECS



# ECS

This screenshot shows the AWS console for the Amazon Elastic Container Service (ECS). The top navigation bar includes the AWS logo, a search icon, and the region 'Europe (Stockholm)'. The left sidebar contains a menu with 'Amazon Elastic Container Service' selected, and sub-items like 'Clusters', 'Namespaces', 'Task definitions', and 'Account settings'. The main content area features a large header with the text 'Amazon Elastic Container Service Fully managed container' and a description of the service. Below this, a section titled 'Deploy your containerized applications' contains a 'Get started' button, which is circled in red.

Amazon Elastic Container Service

Containers

## Amazon Elastic Container Service

Fully managed container

Amazon Elastic Container Service (Amazon ECS) is a highly scalable and reliable container management service that makes it easy to run, stop, and manage containers on a cluster.

### Deploy your containerized applications

Amazon ECS makes it easy to deploy, manage, and scale Docker containerized applications, services, and batch processes.

[Get started](#)

This screenshot shows the 'Clusters' page in the AWS console for Amazon Elastic Container Service. The top navigation bar includes the AWS logo, a search icon, and the region 'Europe (Stockholm)'. The left sidebar contains a menu with 'Amazon Elastic Container Service' selected, and sub-items like 'Clusters', 'Namespaces', 'Task definitions', and 'Account settings'. The main content area shows 'Clusters (0)' with a search bar and a 'Create cluster' button. Below this, a table with columns 'Cluster', 'Services', and 'Tasks' is displayed. The table is currently empty, and the 'Create cluster' button is circled in red.

Amazon Elastic Container Service

Clusters

Clusters (0) Info

Last updated October 21, 2025, 16:10 (UTC+2:00)

[Create cluster](#)

Search clusters

Cluster	Services	Tasks
No clusters		

[Create cluster](#)

# ECS

aws Europe (Stockholm) Account ID: 4933-5428-0892

Amazon Elastic Container Service > Create cluster

**Amazon Elastic Container Service**

- Clusters
- Namespaces
- Task definitions
- Account settings

Amazon ECR

Repositories

AWS Batch

Documentation

Discover products

Subscriptions

Tell us what you think

and common configurations. All of your tasks, services, and capacity must belong to a cluster.

**Cluster configuration**

Cluster name

trusty-crocodile-dho8vf

Cluster name must be 1 to 255 characters. Valid characters are a-z, A-Z, 0-9, hyphens (-), and underscores (\_).

► Service Connect defaults - optional

▼ Infrastructure - optional **Serverless**

Your cluster is automatically configured for AWS Fargate (serverless) with two capacity providers. Add Amazon EC2 instances.

☒ AWS Fargate (serverless)

Pay as you go. Use if you have tiny, batch, or burst workloads or for zero maintenance overhead. The cluster has Fargate and Fargate Spot capacity providers by default.

☐ Amazon EC2 instances

Manual configurations. Use for large workloads with consistent resource demands.

External instances using ECS Anywhere can be registered after cluster creation is complete.

► Monitoring - optional

Configure observability, encryption, and logging options to maintain compliance and operational visibility of your container environment.

► Encryption - optional

Choose the KMS keys used by tasks running in this cluster to encrypt your storage.

► Tags - optional

Tags help you to identify and organize your clusters.

[Cancel](#) [Create](#)

aws Europe (Stockholm) Account ID: 4933-5428-0892

Amazon Elastic Container Service > Clusters

**Amazon Elastic Container Service**

- Clusters
- Namespaces
- Task definitions
- Account settings

Amazon ECR

Repositories

--

Cluster helpful-horse-j2025111155222 has been created successfully. [View cluster](#)

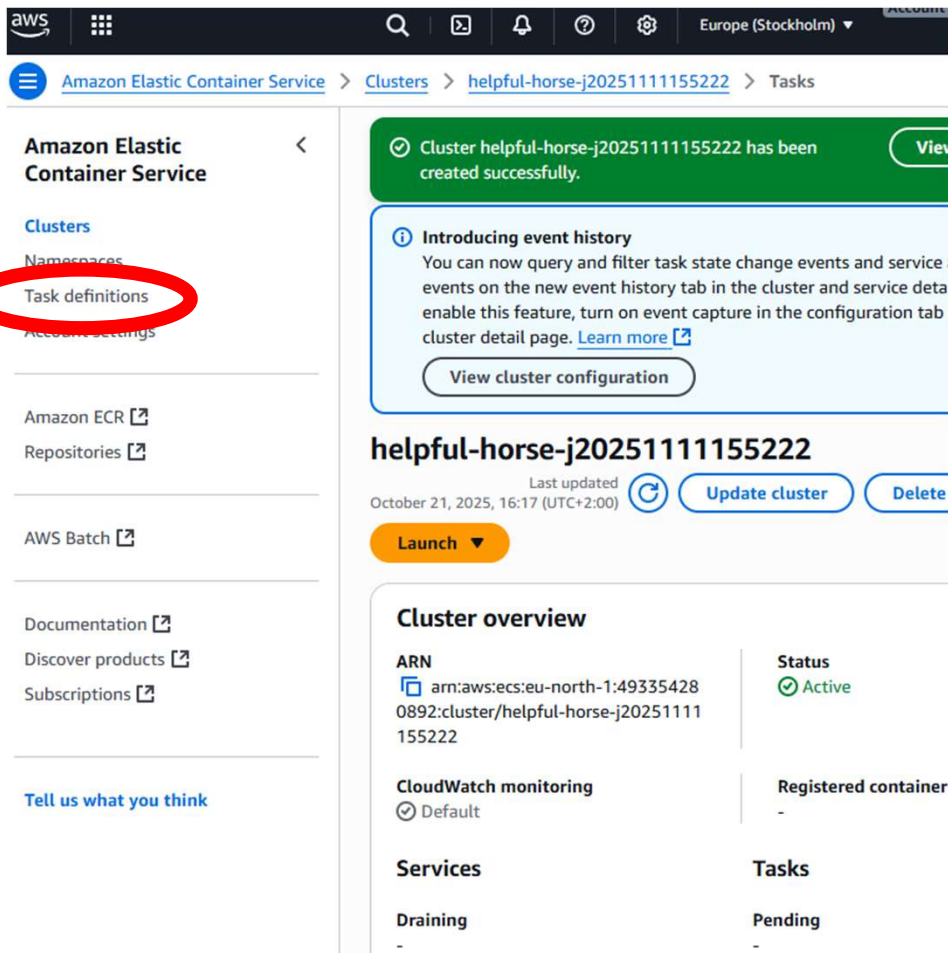
Clusters (1) Last updated October 21, 2025, 16:14 (UTC+2:00) [Create cluster](#)

Search clusters

Cluster	Services	Tasks
<a href="#">helpful-horse-j2025111155222</a>	0	No tasks running



# ECS



The screenshot shows the AWS Management Console for Amazon Elastic Container Service (ECS). The left sidebar contains the following links: Amazon Elastic Container Service, Clusters, Namespaces, Task definitions (highlighted with a red circle), Account settings, Amazon ECR, Repositories, AWS Batch, Documentation, Discover products, and Subscriptions. The main content area shows a green notification banner stating 'Cluster helpful-horse-j20251111155222 has been created successfully.' Below this is an 'Introducing event history' section. The cluster 'helpful-horse-j20251111155222' is listed with a status of 'Active' and a 'Launch' button. The 'Cluster overview' section displays the ARN, CloudWatch monitoring status, and a table with columns for Services and Tasks.

Amazon Elastic Container Service

Clusters

Namespaces

Task definitions

Account settings

Amazon ECR

Repositories

AWS Batch

Documentation

Discover products

Subscriptions

Tell us what you think

Cluster helpful-horse-j20251111155222 has been created successfully.

Introducing event history

You can now query and filter task state change events and service events on the new event history tab in the cluster and service detail pages. To enable this feature, turn on event capture in the configuration tab of the cluster detail page. [Learn more](#)

View cluster configuration

helpful-horse-j20251111155222

Last updated October 21, 2025, 16:17 (UTC+2:00)

Update cluster

Delete

Launch

Cluster overview

ARN

arn:aws:ecs:eu-north-1:49335428:0892:cluster/helpful-horse-j20251111155222

Status

Active

CloudWatch monitoring

Default

Registered container

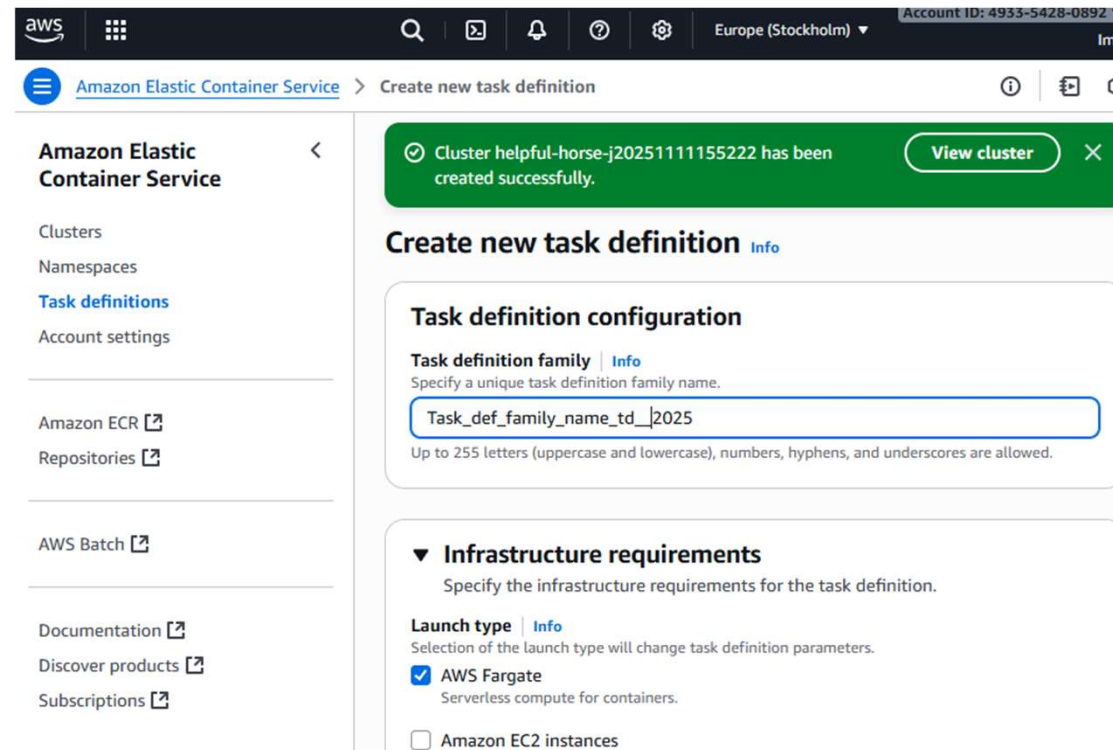
-

Services

Tasks

Draining

Pending



The screenshot shows the 'Create new task definition' page in the AWS Management Console for Amazon Elastic Container Service (ECS). The left sidebar is identical to the previous screenshot. The main content area shows a green notification banner stating 'Cluster helpful-horse-j20251111155222 has been created successfully.' Below this is the 'Create new task definition' section with a 'Task definition configuration' subsection. The 'Task definition family' field is set to 'Task\_def\_family\_name\_td\_2025'. The 'Infrastructure requirements' section shows 'AWS Fargate' selected as the launch type.

Amazon Elastic Container Service

Clusters

Namespaces

Task definitions

Account settings

Amazon ECR

Repositories

AWS Batch

Documentation

Discover products

Subscriptions

Create new task definition

Cluster helpful-horse-j20251111155222 has been created successfully.

View cluster

Create new task definition

Task definition configuration

Task definition family

Task\_def\_family\_name\_td\_2025

Up to 255 letters (uppercase and lowercase), numbers, hyphens, and underscores are allowed.

Infrastructure requirements

Specify the infrastructure requirements for the task definition.

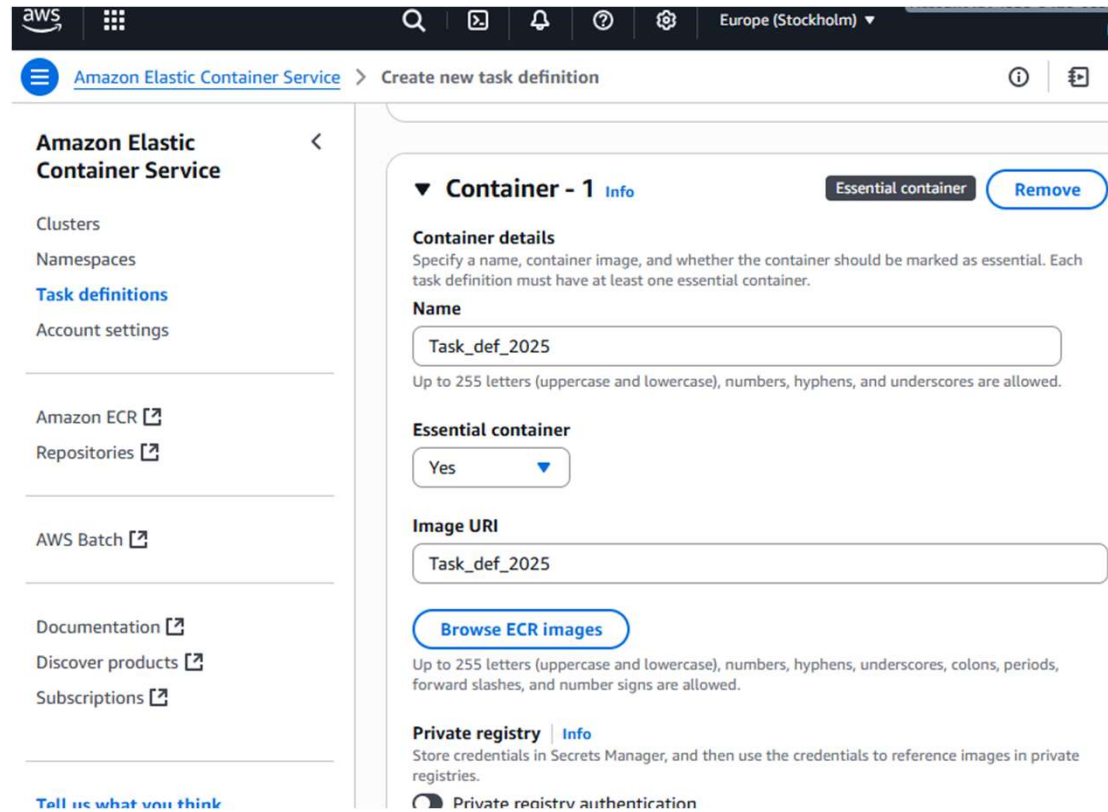
Launch type

AWS Fargate

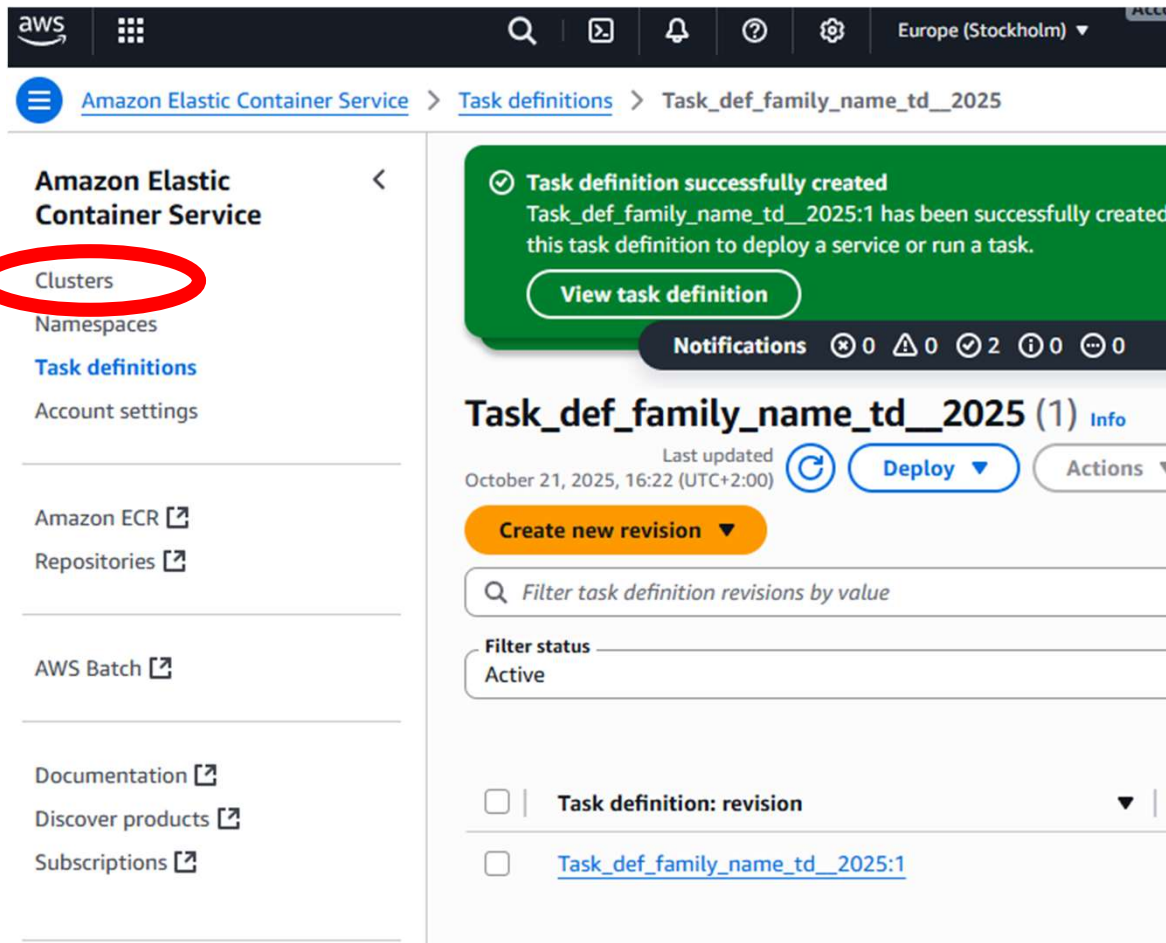
Serverless compute for containers.

Amazon EC2 instances

# ECS



# ECS – Run a task



aws | Europe (Stockholm)

Amazon Elastic Container Service > Task definitions > Task\_def\_family\_name\_td\_2025

**Amazon Elastic Container Service**

- Clusters**
- Namespaces
- Task definitions
- Account settings
- Amazon ECR
- Repositories
- AWS Batch
- Documentation
- Discover products
- Subscriptions

**Task definition successfully created**  
Task\_def\_family\_name\_td\_2025:1 has been successfully created. this task definition to deploy a service or run a task.

[View task definition](#)

Notifications: 0 errors, 0 warnings, 2 successes, 0 info, 0 details

### Task\_def\_family\_name\_td\_2025 (1) Info

Last updated: October 21, 2025, 16:22 (UTC+2:00)

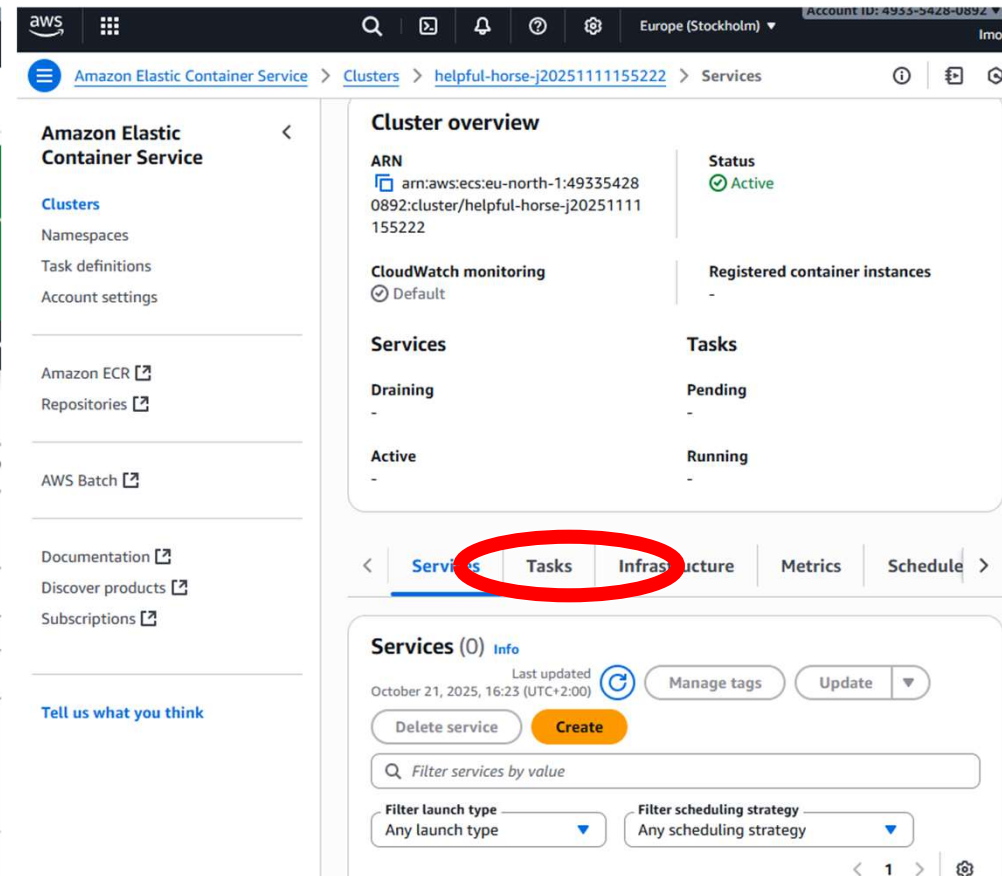
[Deploy](#) [Actions](#)

[Create new revision](#)

Filter task definition revisions by value

Filter status: Active

Task definition: revision
<a href="#">Task_def_family_name_td_2025:1</a>



aws | Europe (Stockholm) | Account ID: 4953-5428-0892

Amazon Elastic Container Service > Clusters > helpful-horse-j20251111155222 > Services

### Cluster overview

**ARN**  
arn:aws:ecs:eu-north-1:49335428-0892:cluster/helpful-horse-j20251111155222

**Status**  
Active

**CloudWatch monitoring**  
Default

**Registered container instances**  
-

**Services**

Draining	Pending	Running
-	-	-

**Tasks**

**Services (0) Info**

Last updated: October 21, 2025, 16:23 (UTC+2:00)

[Delete service](#) [Create](#) [Manage tags](#) [Update](#)

Filter services by value

Filter launch type: Any launch type

Filter scheduling strategy: Any scheduling strategy

< 1 > ⚙️

# ECS - Run a task

The screenshot displays the AWS Management Console for Amazon Elastic Container Service (ECS). The breadcrumb navigation at the top indicates the path: Amazon Elastic Container Service > Clusters > helpful-horse-j20251111155222 > Tasks. The left-hand navigation pane lists various ECS-related options, including Clusters, Namespaces, Task definitions, Account settings, Amazon ECR, Repositories, AWS Batch, Documentation, Discover products, and Subscriptions. The main content area is titled 'Cluster overview' for the cluster 'helpful-horse-j20251111155222'. It shows the cluster's ARN, status (Active), CloudWatch monitoring (Default), and registered container instances (0). Below this, there are sections for Services, Draining, Active, Tasks, Pending, and Running. The 'Tasks' tab is selected, showing 'Tasks (0)'. A red circle highlights the 'Run new task' button, which is located below the task count and above the filter options. The button is orange and labeled 'Run new task'. Other elements visible include a 'Manage tags' button, a 'Stop' button with a dropdown arrow, and filter options for 'Filter tasks by property or value', 'Filter desired status' (set to 'Any desired status'), and 'Filter launch type' (set to 'Any launch type').

Amazon Elastic Container Service > Clusters > helpful-horse-j20251111155222 > Tasks

**Cluster overview**

ARN  
arn:aws:ecs:eu-north-1:49335428:0892:cluster/helpful-horse-j20251111155222

Status  
Active

CloudWatch monitoring  
Default

Registered container instances  
-

**Services**

Draining  
-

Active  
-

**Tasks**

Pending  
-

Running  
-

**Tasks (0)**

October 21, 2025, 16:24 (UTC+2:00) Manage tags Stop ▾

**Run new task**

Filter tasks by property or value

Filter desired status  
Any desired status ▾

Filter launch type  
Any launch type