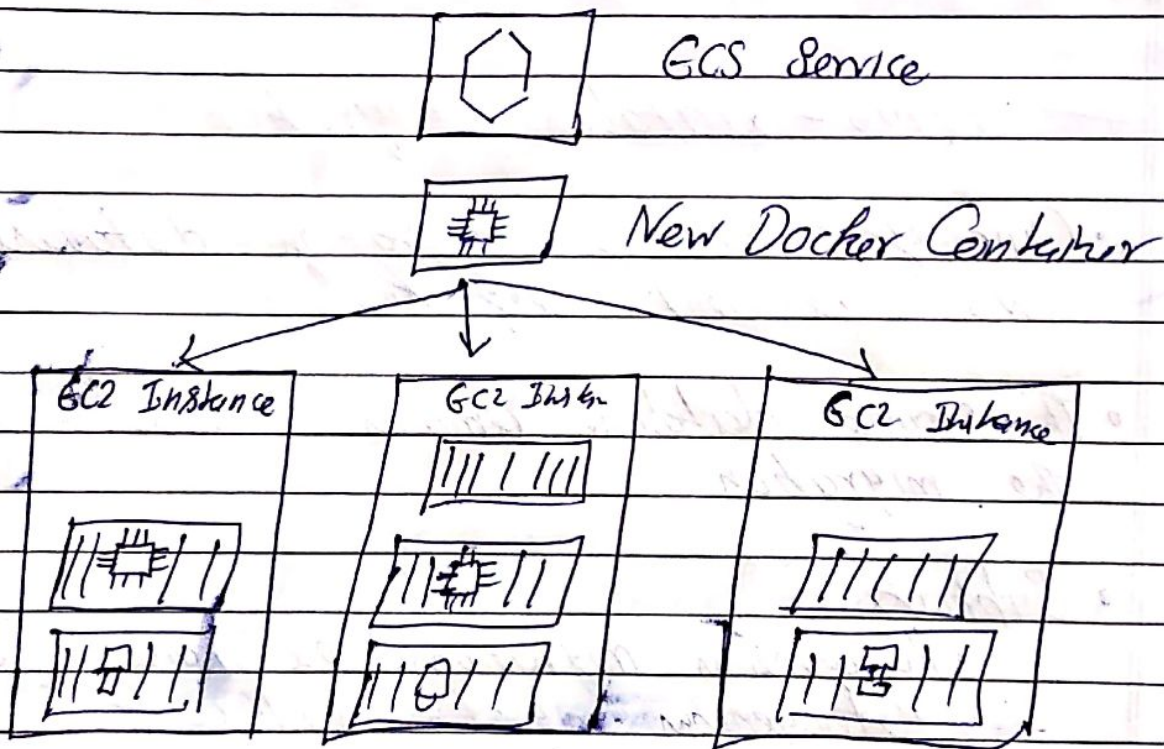


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AWS

ECS

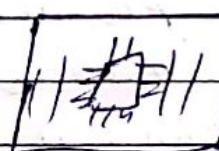
- ECS [elastic Container Service]
- Launch Docker Container on AWS
- You must provision & maintain the infrastructure (the EC2 instance)
- AWS take care of starting/stopping containers
- Has integrations with ALB

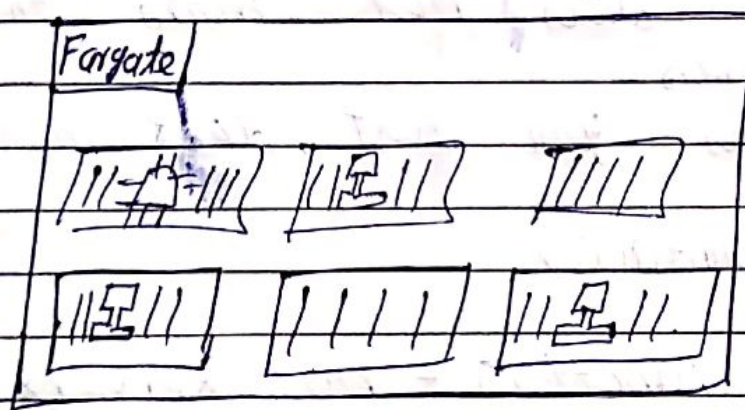


Any time ECS have new Container it is smoothly enough on which ~~ec2~~ place of EC2 instance place that ~~ecs~~ Docker Container

Fargate

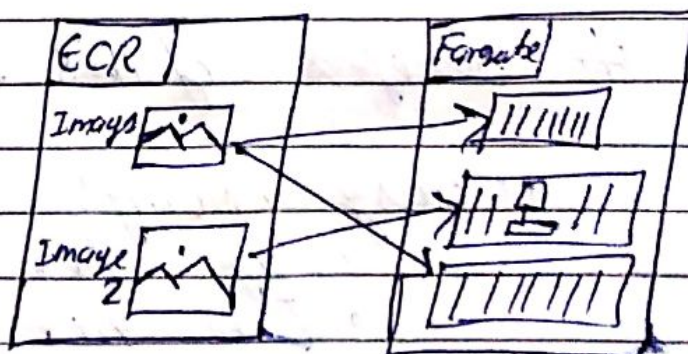
- Launch Docker Containers on AWS
- You don't provision the infrastructure (no EC2 instances to manage - simpler)
- Serverless offering
- AWS just runs Containers for you based on the CPU/RAM you need

 New Docker Container



ECR [Elastic Container Registry]

- Private Docker Registry on AWS.
- This is where you store your Docker images so they can be run by ECS or Fargate



Serverless

- Serverless is new paradigm in which the developers don't have to manage servers anymore.
- They just deploy code.
- They just deploy functions.
- Initially Serverless = FaaS (Function as a Service)
- Serverless was pioneered by AWS Lambda, but now also includes anything that's managed: "databases, messaging, storage etc."
- Serverless does not mean there are no servers — it means you just don't manage/provision / see them

AWS Lambda (?)

- Virtual functions - no servers to manage
- Limited by time - short executions
- Run On-demand
- Scaling is automated

Benefits of AWS Lambda

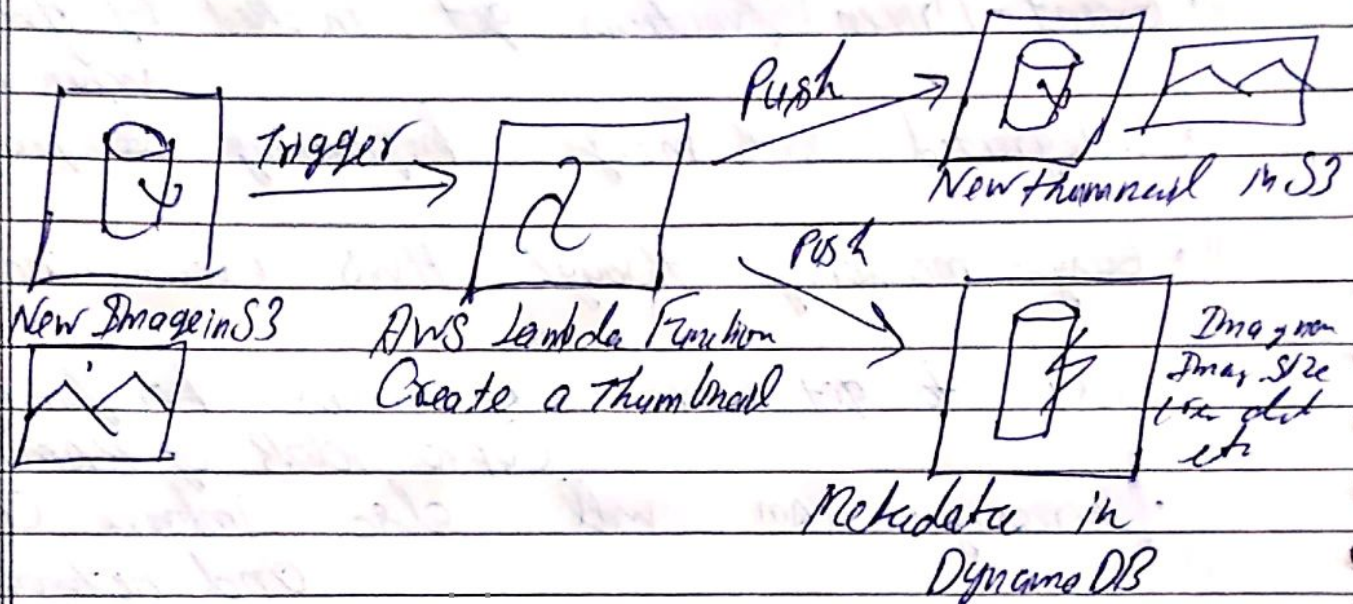
- Easy Pricing!
 - Pay per request and compute time
- Free tier of 1,000,000 AWS Lambda requests & 40,000 GBs of compute time.

- Integrated with the whole AWS suite of services
- Event-Driven: Functions get invoked by AWS when needed
- Integrated with many programming languages.
- Easy monitoring through AWS CloudWatch
- Easy to get more resources per function (up to 10GB of RAM)
- Increasing RAM will also improve CPU and network!

AWS Lambda Language Support

- Node.js (JavaScript)
- Python
- Java (Java 8 Compatible)
- C# (.NET Core)
- GoLang
- C# / Powershell
- Ruby
- Custom Runtime API [Community support, create Runtime]
- Lambda Container Image
 - The Container image must implement the Lambda Runtime API.
 - ECS/Fargate is preferred for running arbitrary Docker image

Example: Serverless Thumbnail Creation



AWS Lambda Pricing

- Pay per calls
 - First 1,000,000 requests are free
 - \$0.20 per 1 million requests thereafter (\$0.0000002 per request)
- Pay per duration: (in increment of 1 ms)
 - 400,000 GB-seconds of compute time per month for free
 - == 400,000 seconds if function is 1GB RAM.
 - == 3,200,000 seconds if function is 12GB RAM
 - After that \$1.00 for 600,000 GB-seconds

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• It is usually very cheap to run AWS Lambda so it's very popular