CLOUD DAY 2022

Evoluzione di una piattaforma cloud managed in un'applicazione serverless moderna

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Evoluzione di una piattaforma cloud managed in un'applicazione serverless moderna

- Spreaker is a **podcast platform**
- Within **Spreaker,** podcasts can be hosted, distributed, monetized, discovered and listened to
- Part of **iHeartMedia** family since 2020

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From iHeart

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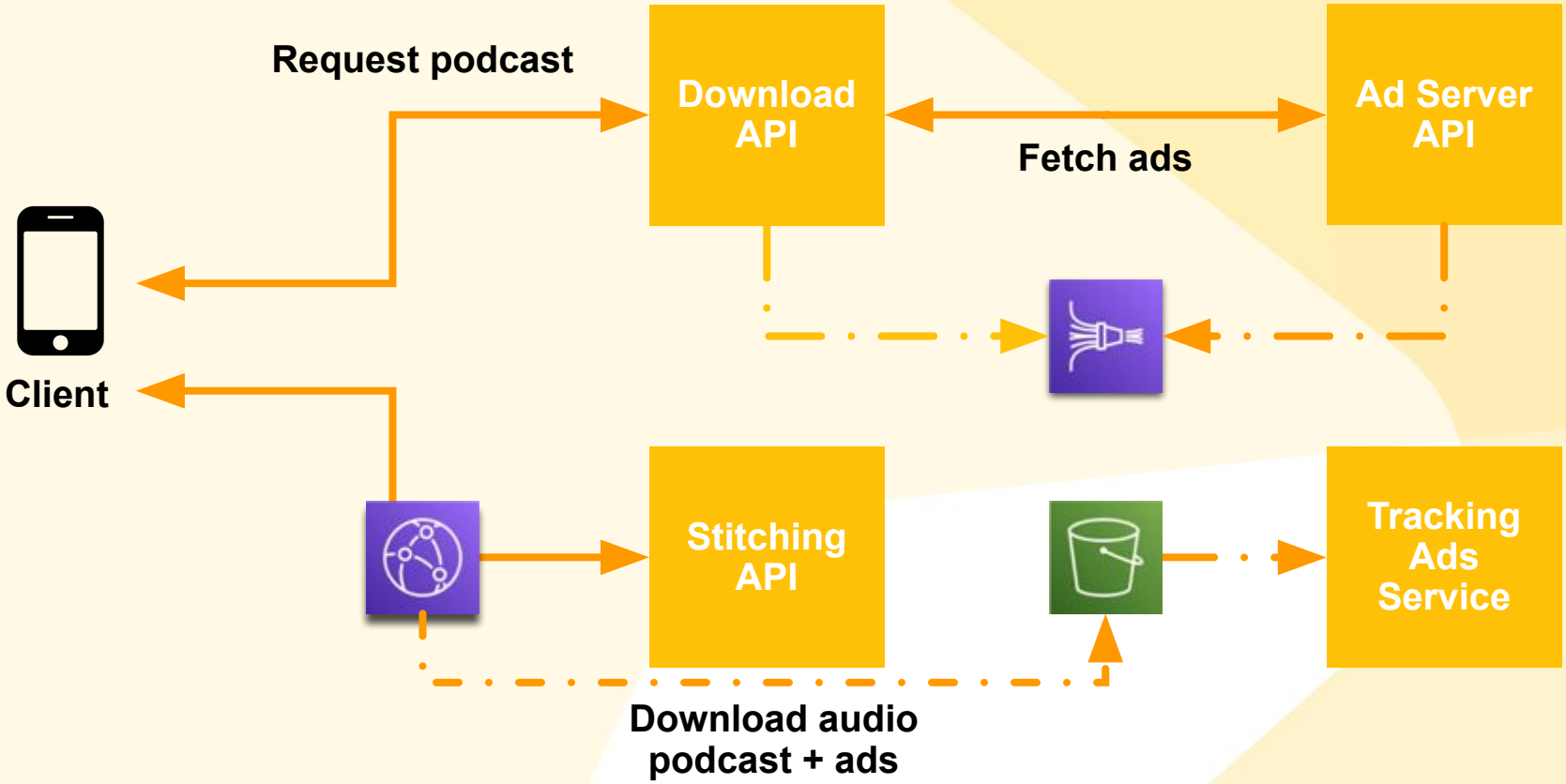
Spreaker From iHeart

Data from April 2022

400 Millions IAB Certified Downloads

25 PB of audio delivered through Cloudfront

Podcast Delivery Network

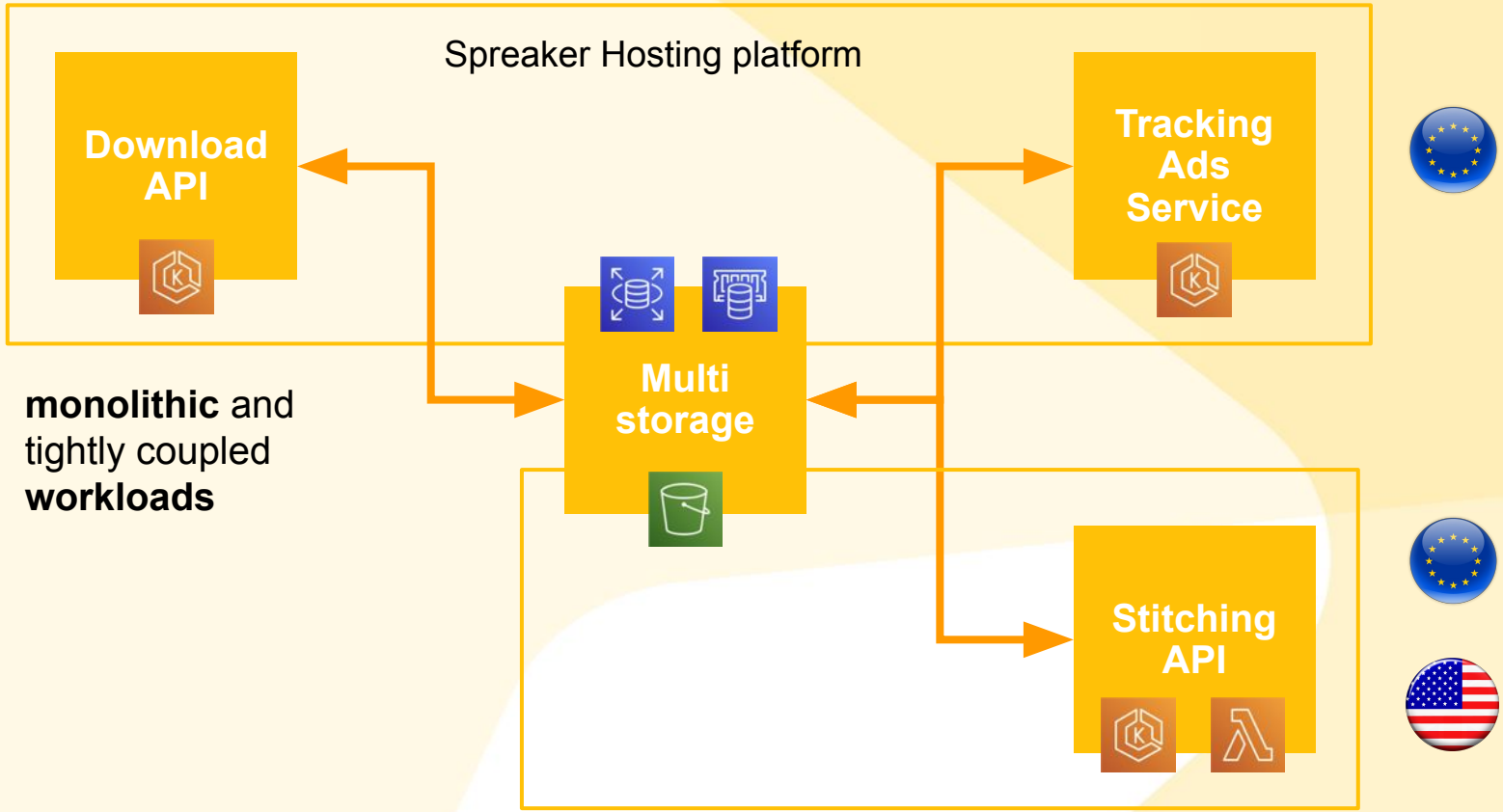


Podcast Delivery Network

The Big Rewrite

Why

Podcast Delivery Network in 2021



Multi Storage

What do we need to store?

Media

With media we mean the file audio of a podcast and its metadata.

Variant

A variant is a combination of Ads and one episode.

4.5M variants per day

Session

It is a download from a specific user (IP+UA) of a specific episode (variant)

avg 22M sessions

Multi Storage in 2021

- RDS Aurora Postgres “media-ads”
- S3 buckets
- Redis “Cache”
- Redis “Session-state”

What’s wrong?

What were the options?

We were looking into consolidating as much as possible into a single storage. Without increasing cost and ruining user experience.

Postgres

- Expertise in Spreaker
- SQL Database;

Redis

- Fast;
- Key/value database
- Automatically delete old items;

DynamoDB

- Fast;
- Flexible NoSQL database;
- Automatically delete old items;
- Serverless;

Which one should we use?

What were the options?

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Can we use S3?

PRO:
- **Scale automatically**
- **Lifecycle events**
- **“Cheap”**

CONS:
- **“Performance”**

We ran some test to understand how S3 would perform and it turned out that…

avg 50ms
UPLOAD

avg 25ms
GET

Note: Head 15ms

Simple Storage Service

Yes, we can!

S3 - Optimizing Performance

- Amazon S3 automatically scales to high request rates
  - Your application can achieve at least 3,500 PUT/COPY/POST/DELETE and 5,500 GET/HEAD requests per second per **prefix** in a bucket.
  - There are **no limits** to the number of prefixes in a bucket.
  - Example:
    - *variant/1234-567-89.json* WRONG
    - *variant/1234/567/89.json* CORRECT

https://docs.aws.amazon.com/AmazonS3/latest/userguide/optimizing-performance.html

S3 - Optimizing Performance

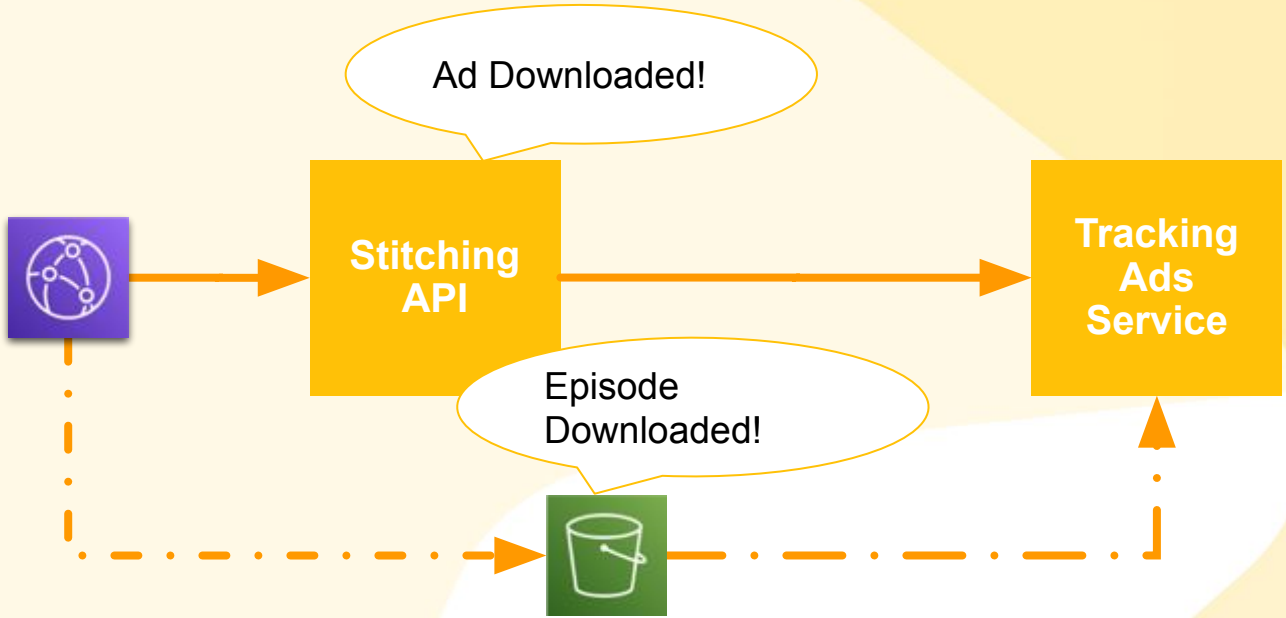
- Make sure your AWS SDK reuses existing connection.
  - AWS SDK for Javascript v2 has this option **disabled** by default
  - AWS SDK for Javascript v3 has this option **enabled** by default
  - You can enable it using the env var `AWS_NODEJS_CONNECTION_REUSE_ENABLED`

https://docs.aws.amazon.com/AmazonS3/latest/userguide/optimizing-performance.html

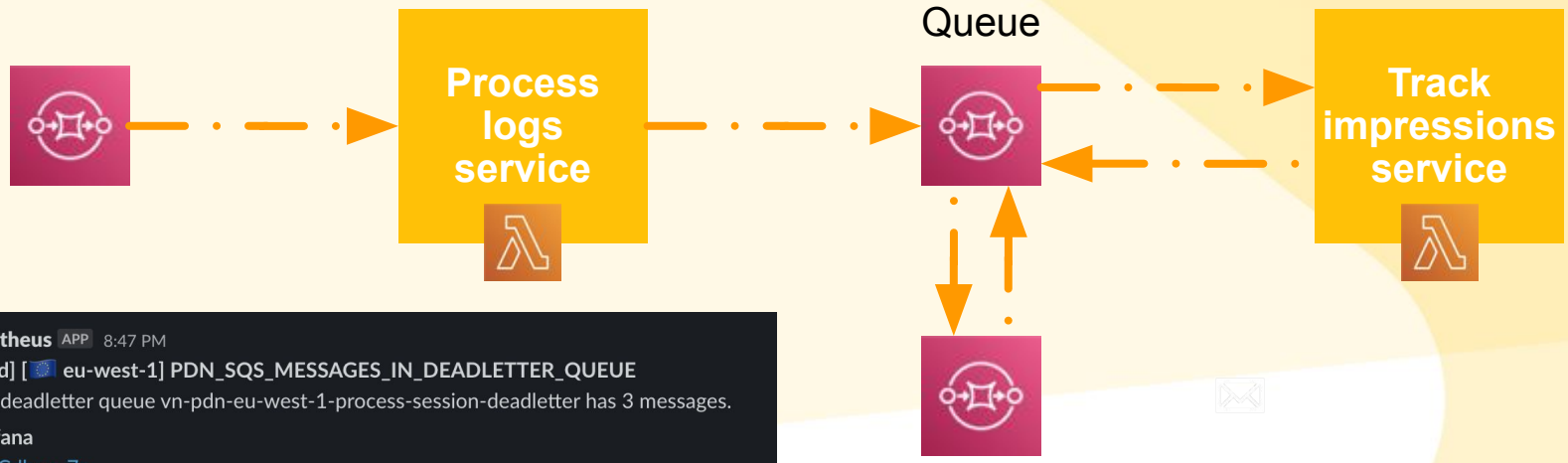
~~- Multi Storage~~

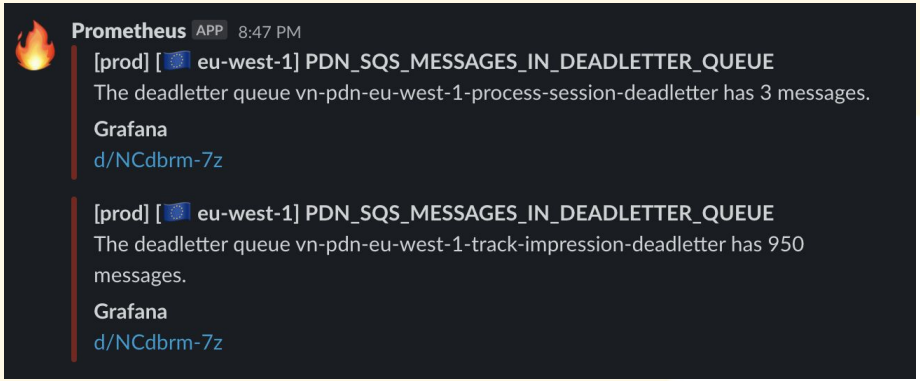
- Decoupling

Event driven application: Tracking ads service

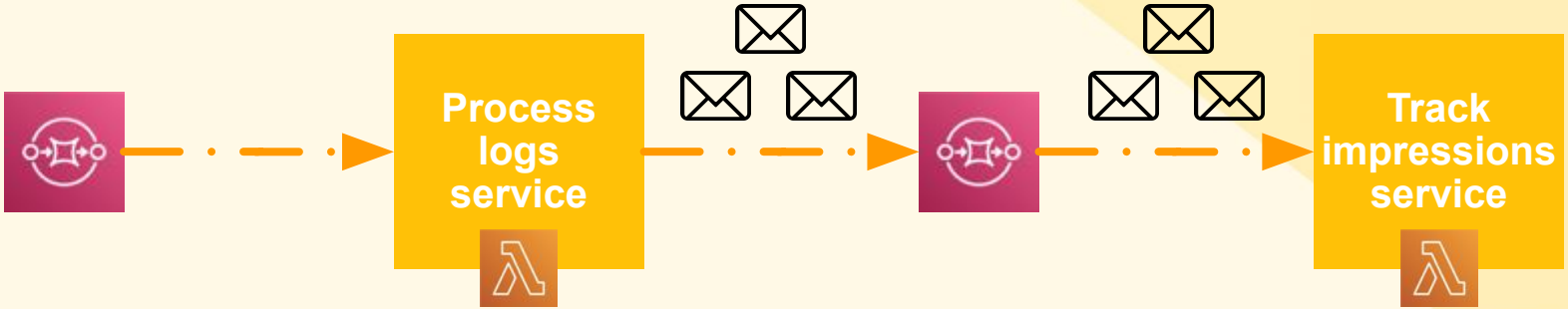


Decoupling, handle failures and data recovery

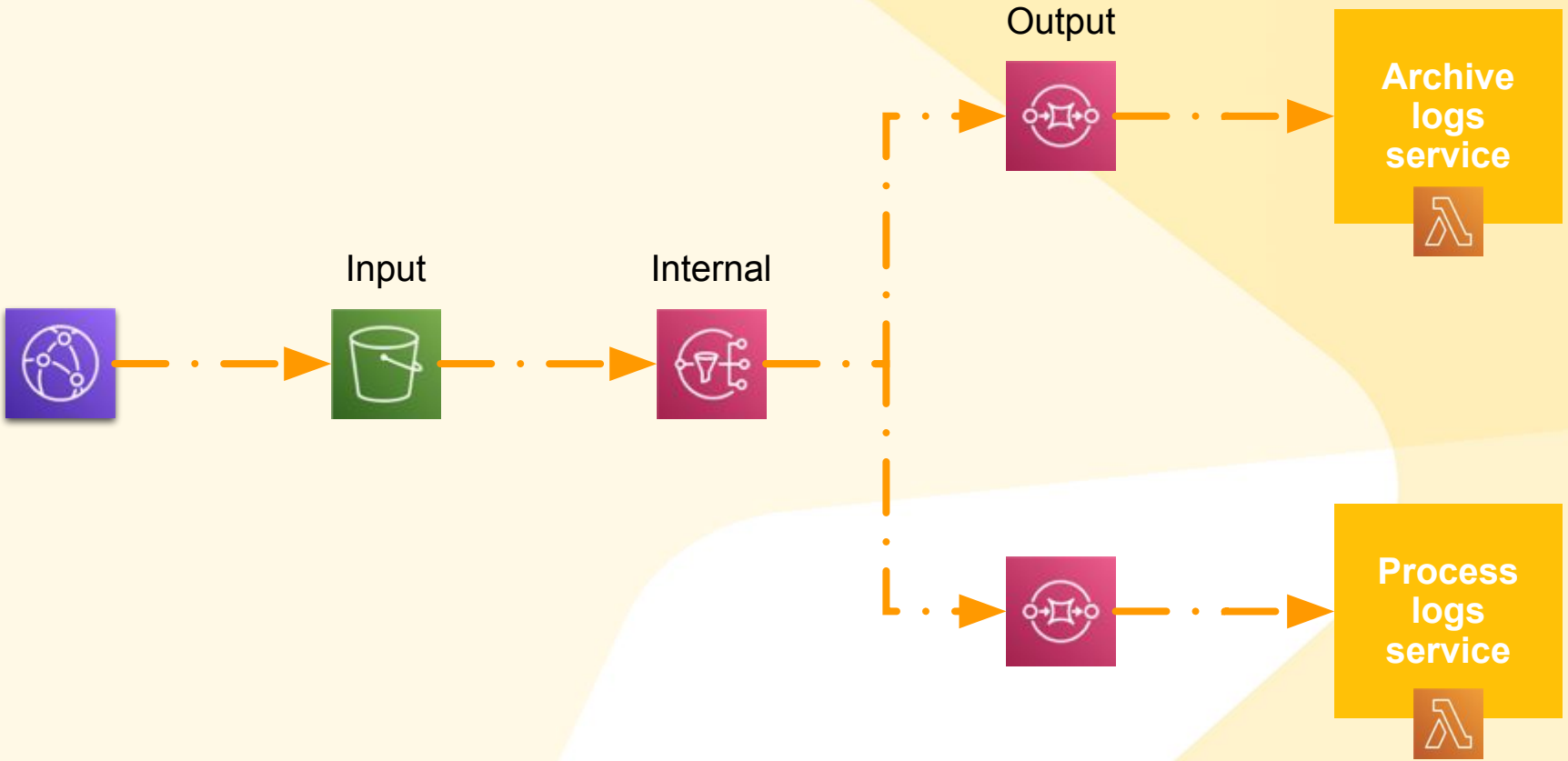




Scalability and reduce costs with batches



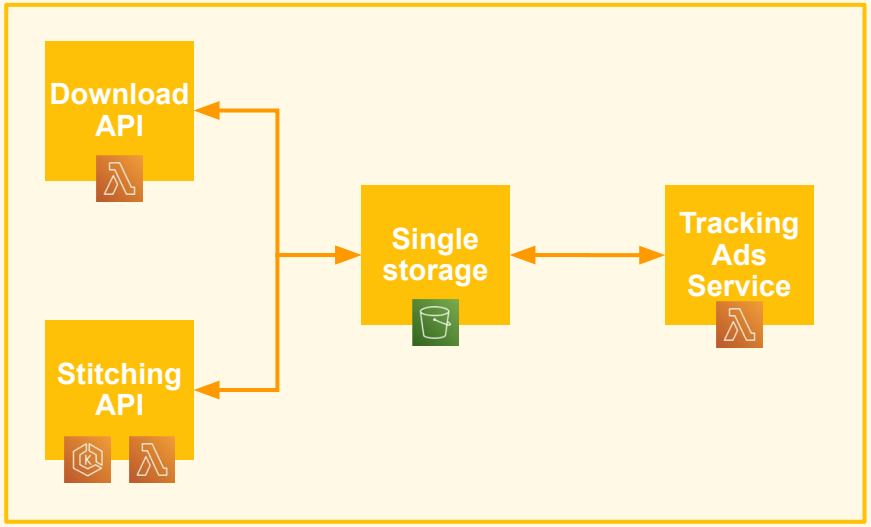
One single event, multiple triggers

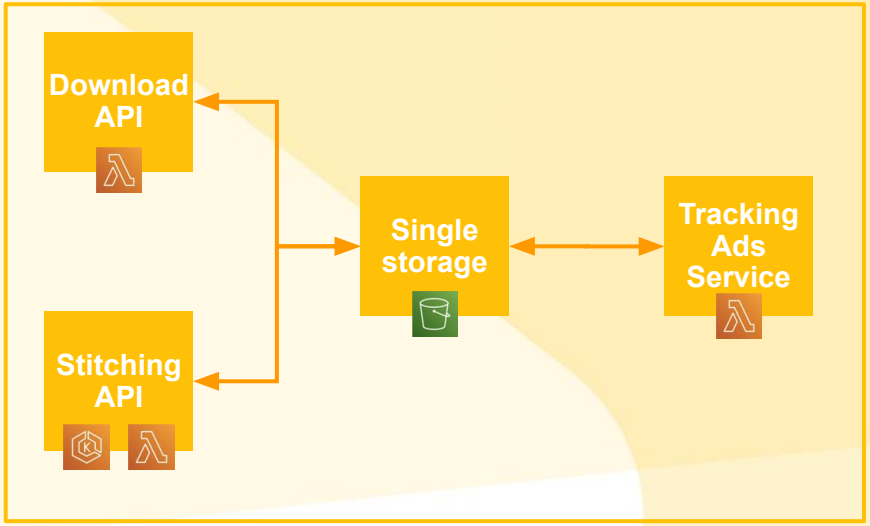


~~- Multi Storage~~

~~- Decoupling~~

Podcast Delivery Network in 2022





Podcast Delivery Network in 2022

Reduced TCO

We no longer have to:

- upgrade/apply security patch to our db
- scale up or out db and ec2 instances

Scale 10x the traffic

We removed the main bottleneck of the previous implementation.

Single storage

Thanks to S3 we got

- high availability
- scalability
- multi-region
- retention
- event driven

Conclusions

- Can we use serverless?
  - yes, we can. but...
- What is the best ...?
  - It depends

We are hiring

https://careers.spreaker.com/

Grazie!