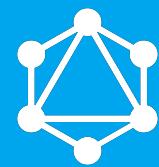




GRAPHQL

BY EXAMPLE AT TV 2 PLAY



AarhusJS - Nov 2019



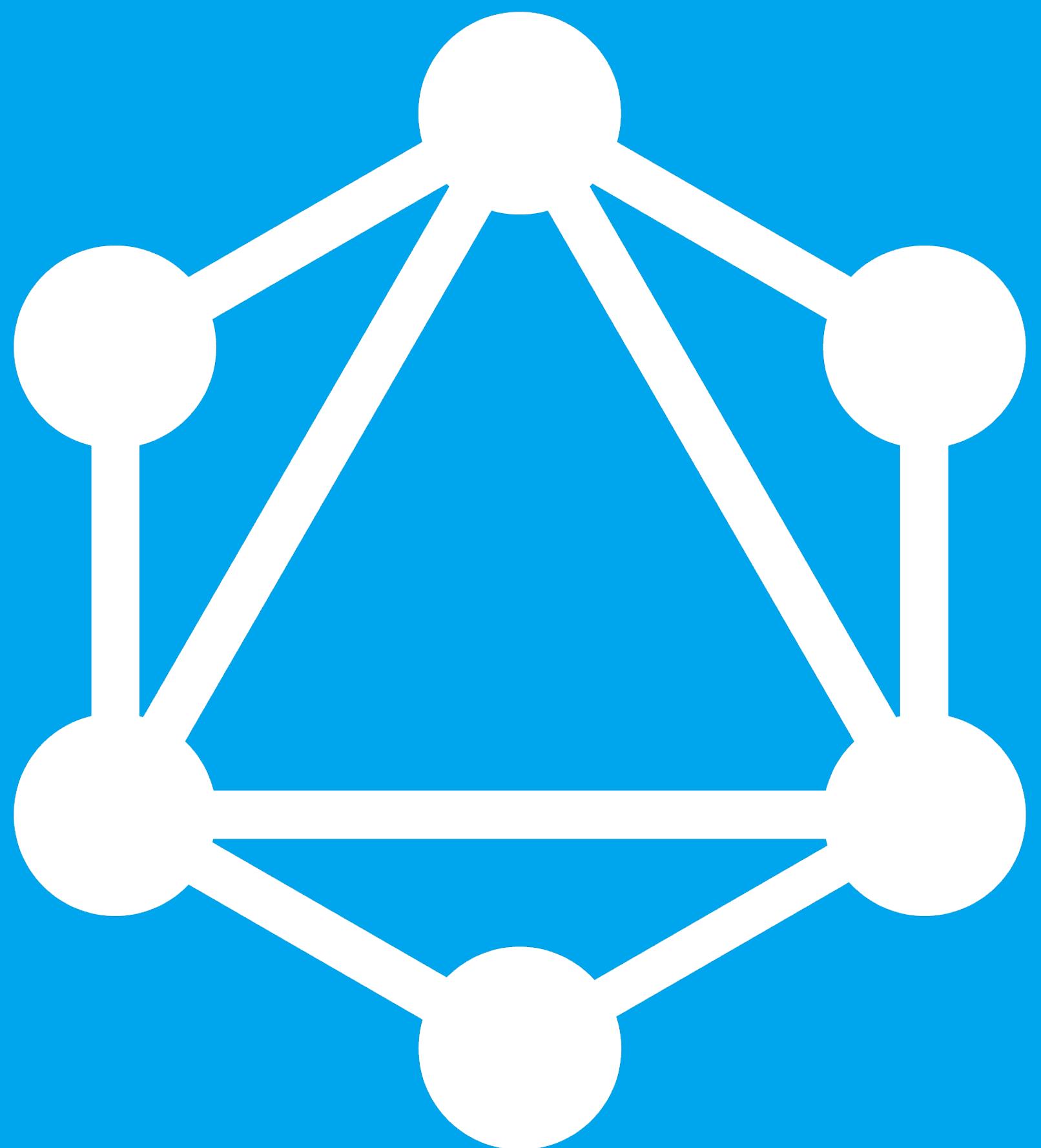
Hello!

I am **Jesper Rasmussen**
Software Engineer at TV 2 Danmark



@jesperrasmussen

API abstraction layer



Schema-based

JSON

Queries / Mutations

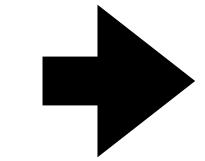
Typed language

Declarative

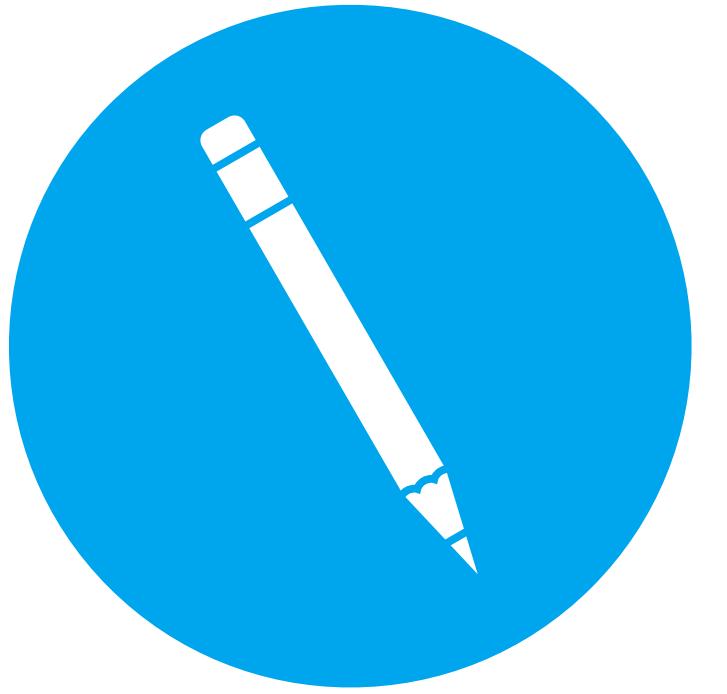


Queries

```
{  
  navigation(platform: play_web) {  
    nodes {  
      title  
      path  
    }  
  }  
}
```



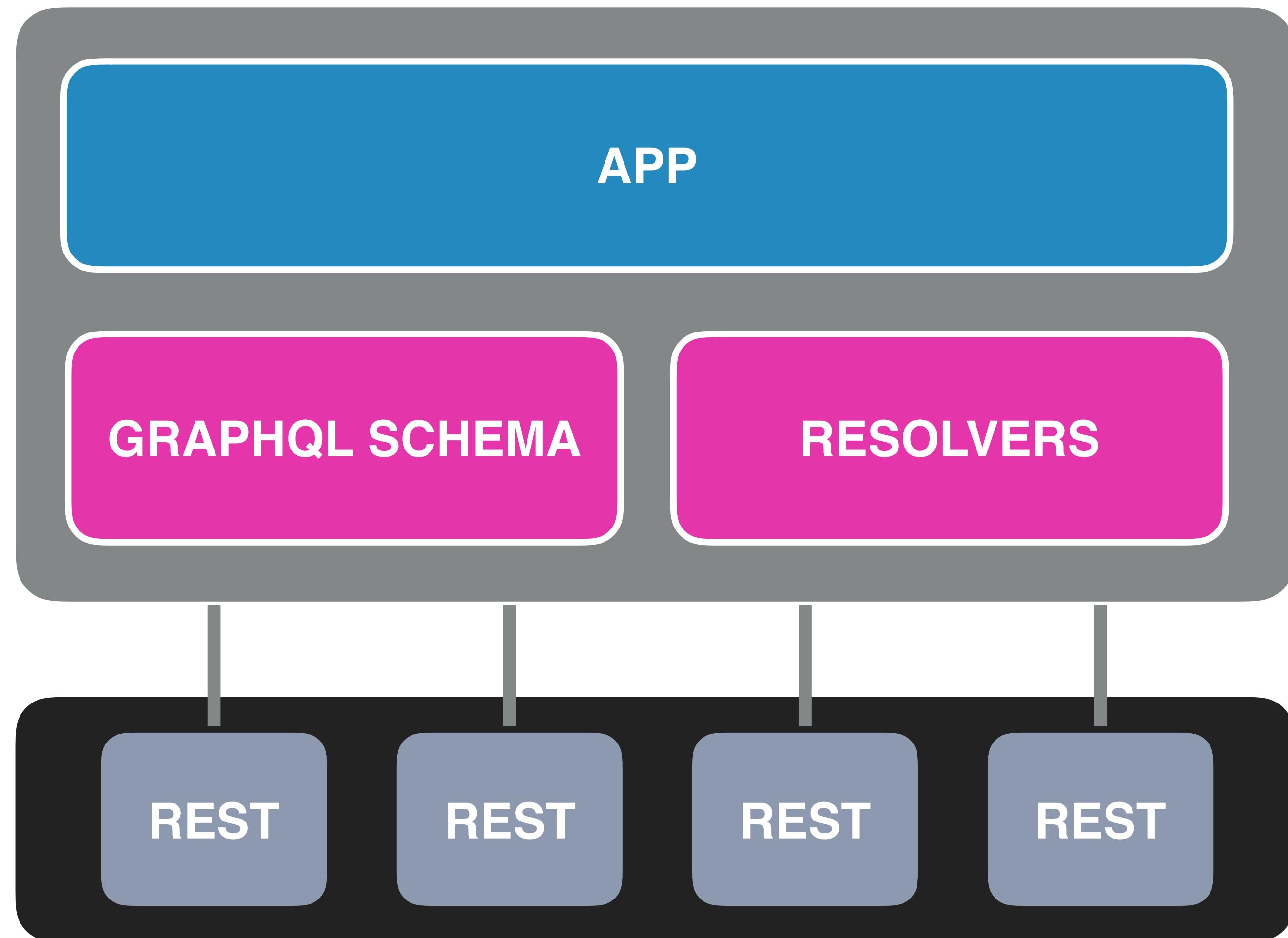
```
{  
  "data": {  
    "navigation": {  
      "nodes": [  
        {  
          "title": "Forside",  
          "path": "/"  
        },  
        {  
          "title": "Live TV",  
          "path": "/live"  
        }  
      ]  
    }  
  }  
}
```



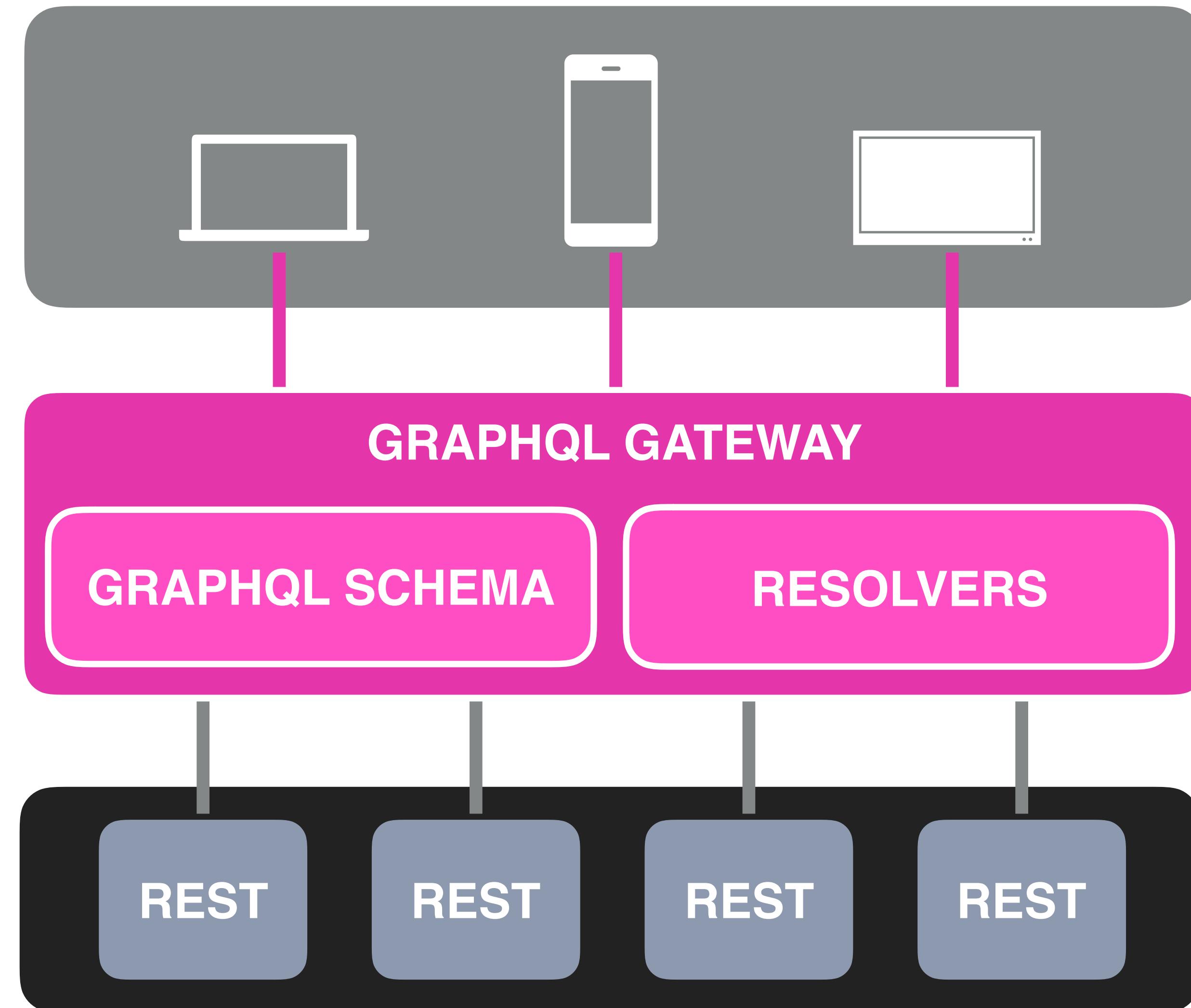
Mutations

```
mutation progress {  
  progress(  
    guid: "r7-program-123"  
    position: 10  
    duration: 600  
  )  
}
```

CLIENT SIDE GRAPHQL



GRAPHQL AS AN API GATEWAY





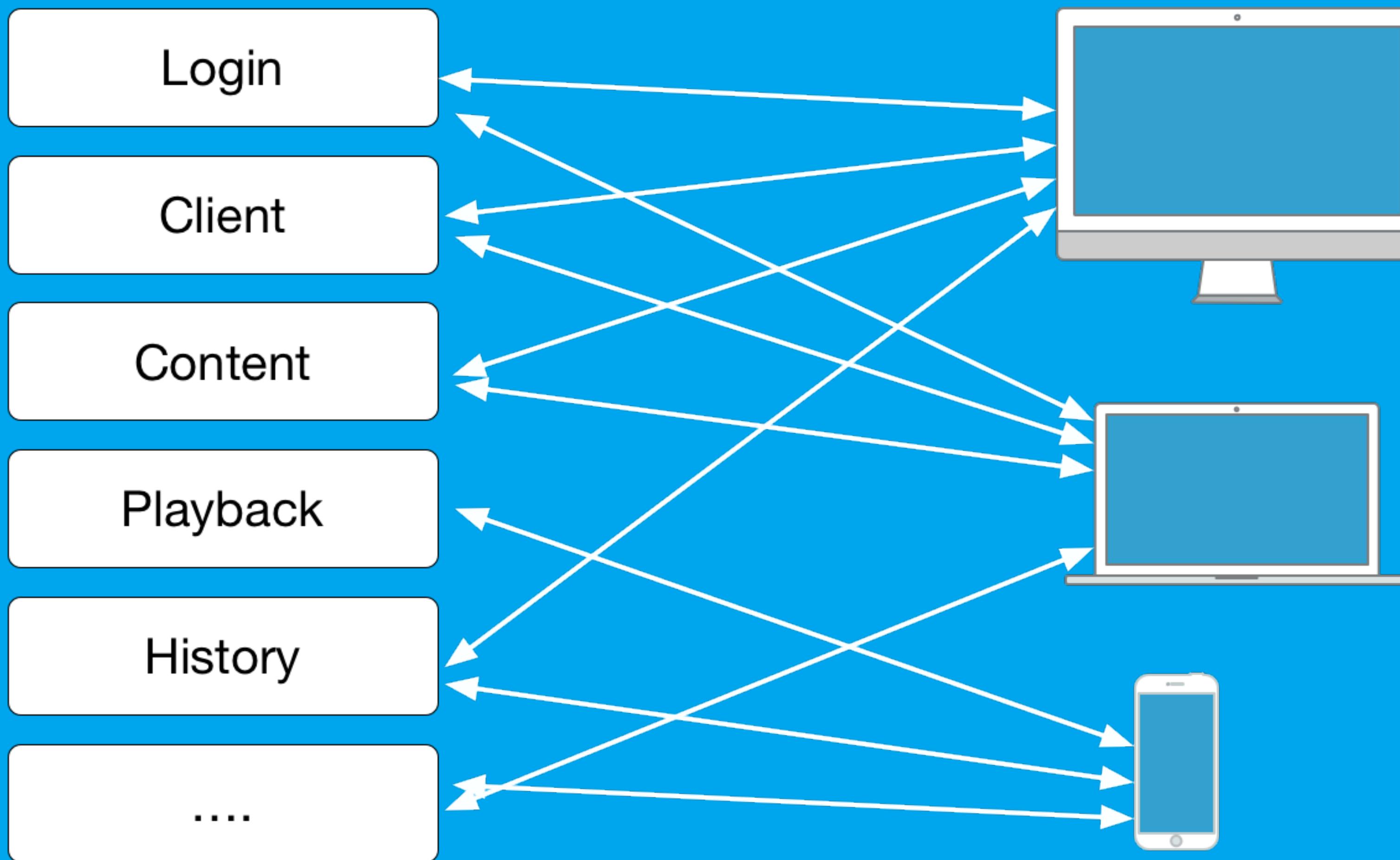
Largest commercial TV
broadcaster in Denmark



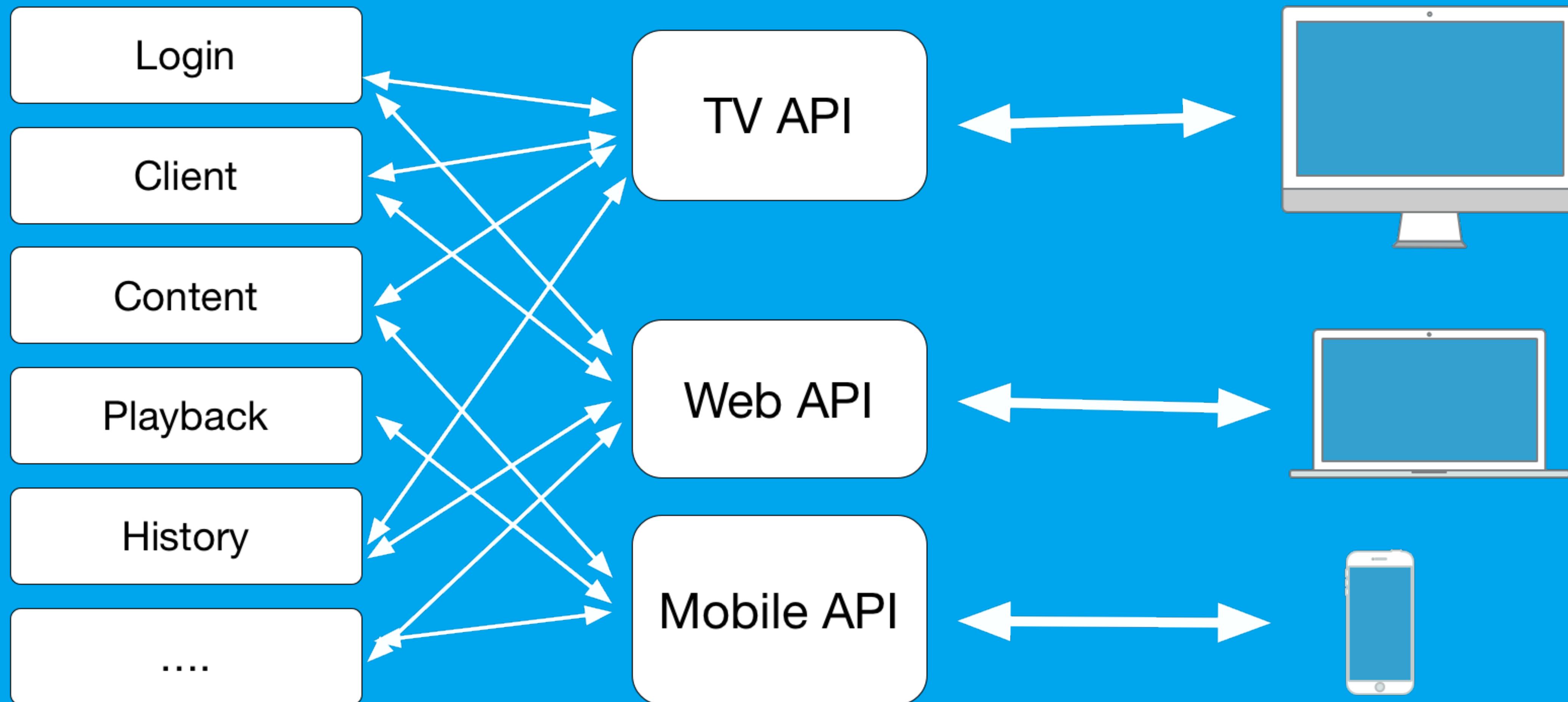
One of the most popular streaming
services in Denmark*

- 10+ year old PHP monolith
- 500.000+ paying subscribers
- High demand for availability
- Increasingly different clients

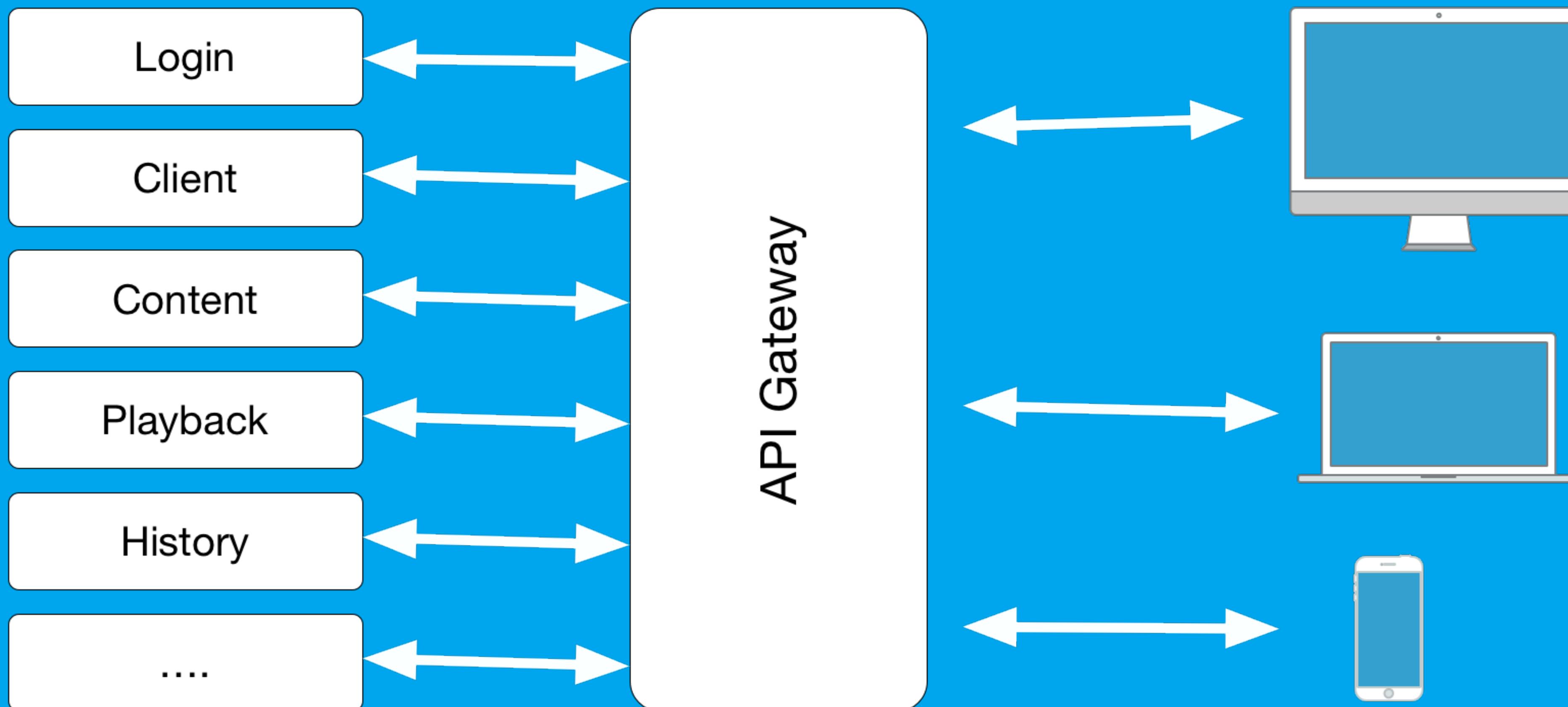
Multiple services per client



BFF (Backend For Frontend)



GraphQL as an API gateway





- **GraphQL API Gateway since 2016**
Based on Apollo Server 1 running in Node.js with DataLoader
- **Most (all) platforms using GraphQL**
Web, iOS, Android, Apple TV, Android TV, Google Cast, Smart TV
- **~23M queries on an average day**



Things we've gained from GraphQL

- Fewer requests
- Parallel, asynchronous execution
- (Much) smaller payloads
- Less unused data
- Less complexity
- Easier monitoring of used data

GRAPHQL IN EFFECT

FRONTPAGE RENDERING - iOS

REST MONOLITH

Navigation:

6KB

Structures (scaffolding):

7.6 KB

Content for all structures:

~3.2 MB

21 calls, ranging from 122KB - 350KB
Total:

~3.3 MB

GRAPHQL + MICROSERVICES

Navigation:

533 B

Structures AND content:

1 call. Yes. One.

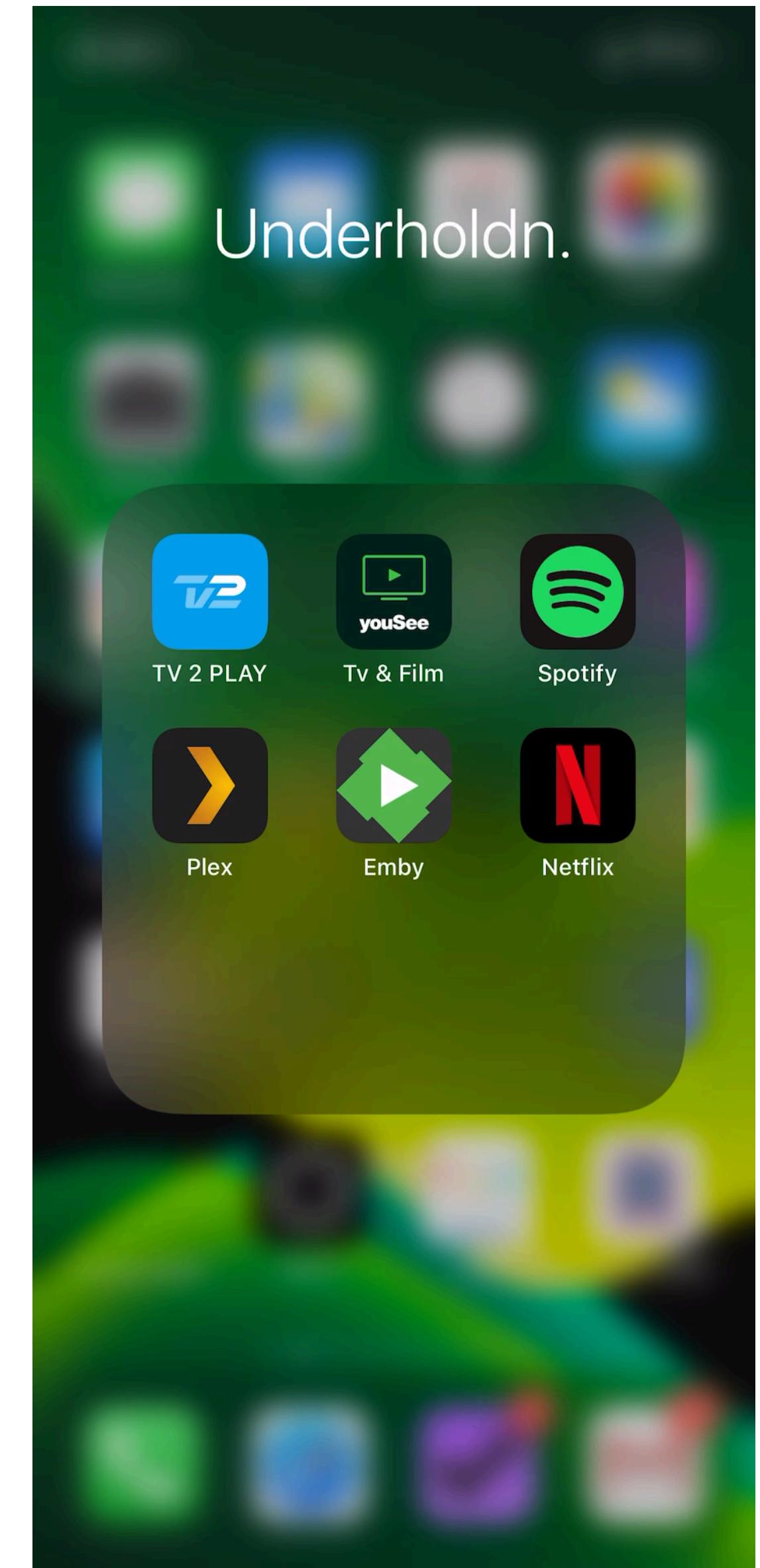
94 KB

Current EPG data:
(Electronic Program Guide)

3,81 KB

Total:

~98.5 KB



DEMO

A FEW TIPS

1. Start small
2. Build the objects you know clients need
Not the ones defined by your datalayer
3. Revisit your caching strategies
4. Go for speed!
Cross-service resolving may add latency and a chatty gateway

Thanks!

