

JustFootball's Journey to gRPC + Linkerd in Production

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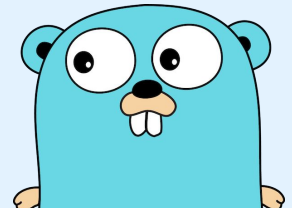
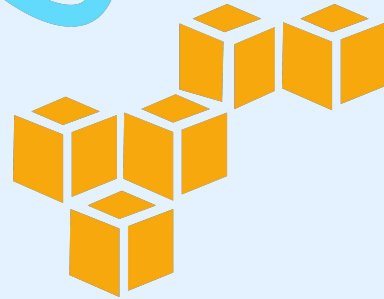
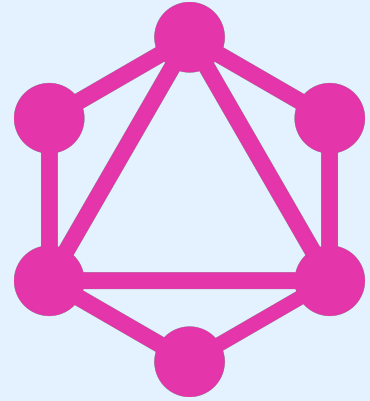
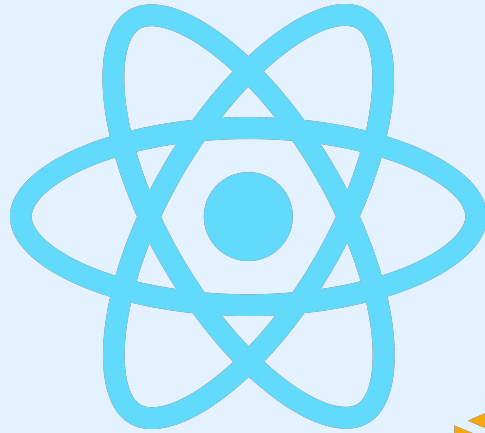
Just Football

What is Just Football?

- Startup founded in 2016
- Based in Stockholm
- App for getting more kids playing more football

- Need some app screenshots here //todo - Blam

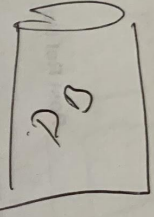
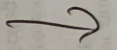
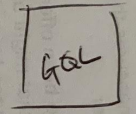
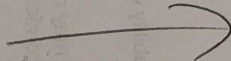
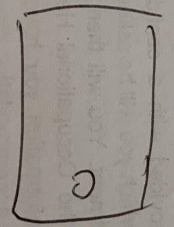
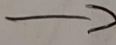
Tech Stack



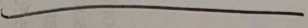


Monolith to Microservices

① + ②



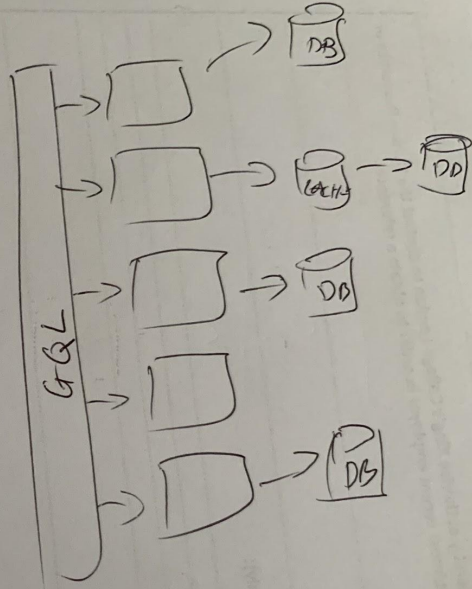
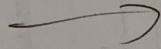
2016



LONDON COLLEGE

2018

OR





↑GRPC↓



- HTTP/2
- **One connection** per service
- Multiplexing
- **Protobuf Schema** for request/response

```
https://service.local/v1/user/${user_id}/edit
```

```
{ username: 'ben' }
```

```
https://service.local/game/edit
```

```
{ game_id: $game_id, status: 'complete' }
```

```
service UserService {  
    rpc Edit(EditUserRequest) returns (UserResponse);  
    ...  
}
```

```
message EditUserRequest {  
    string id = 1;  
    string username = 2;  
}
```

```
message UserResponse {  
    string id = 1;  
    string username = 2;  
    string token = 3;  
}
```

GRPC @ Just Football



- Protobuf's lived with the service
- Schema + Clients published
- TypeScript definitions

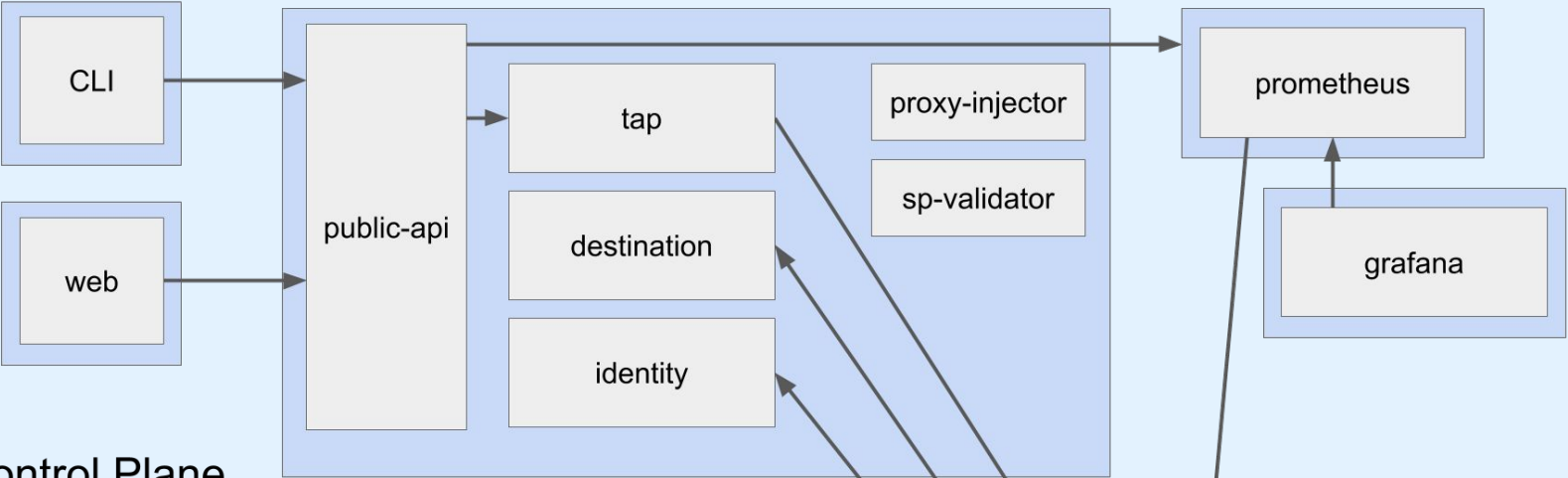
Still some problems

- Hard to understand the system
- gRPC load balancing



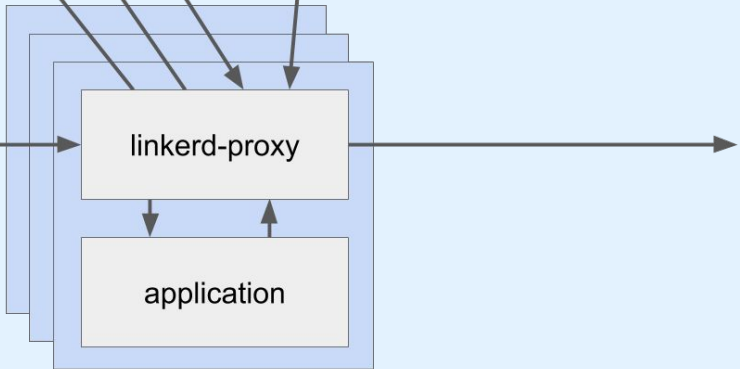
Linkerd

controller



Control Plane

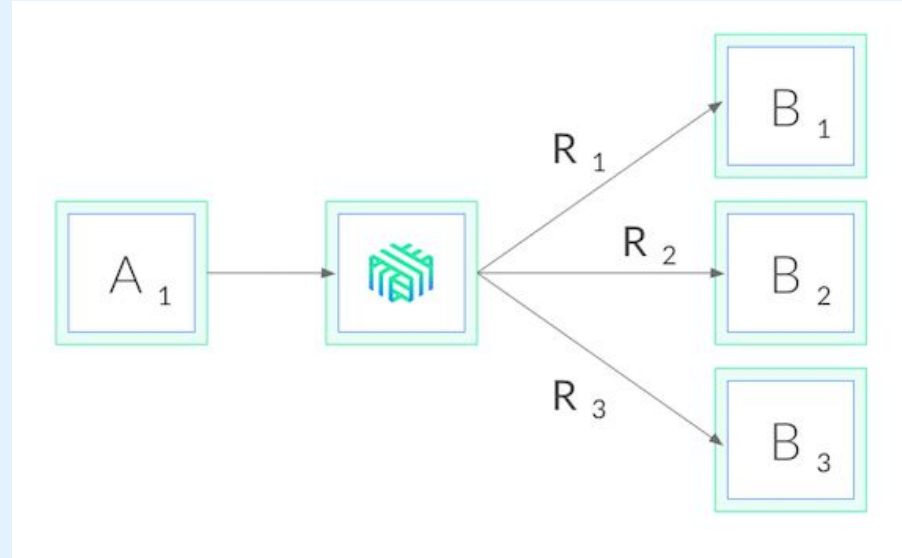
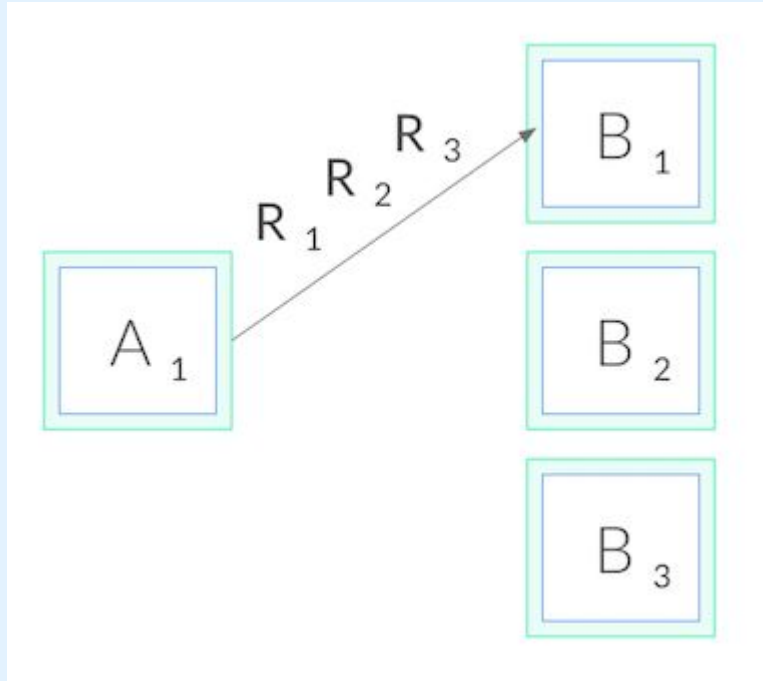
Data Plane



Linkerd ❤️ your APIs



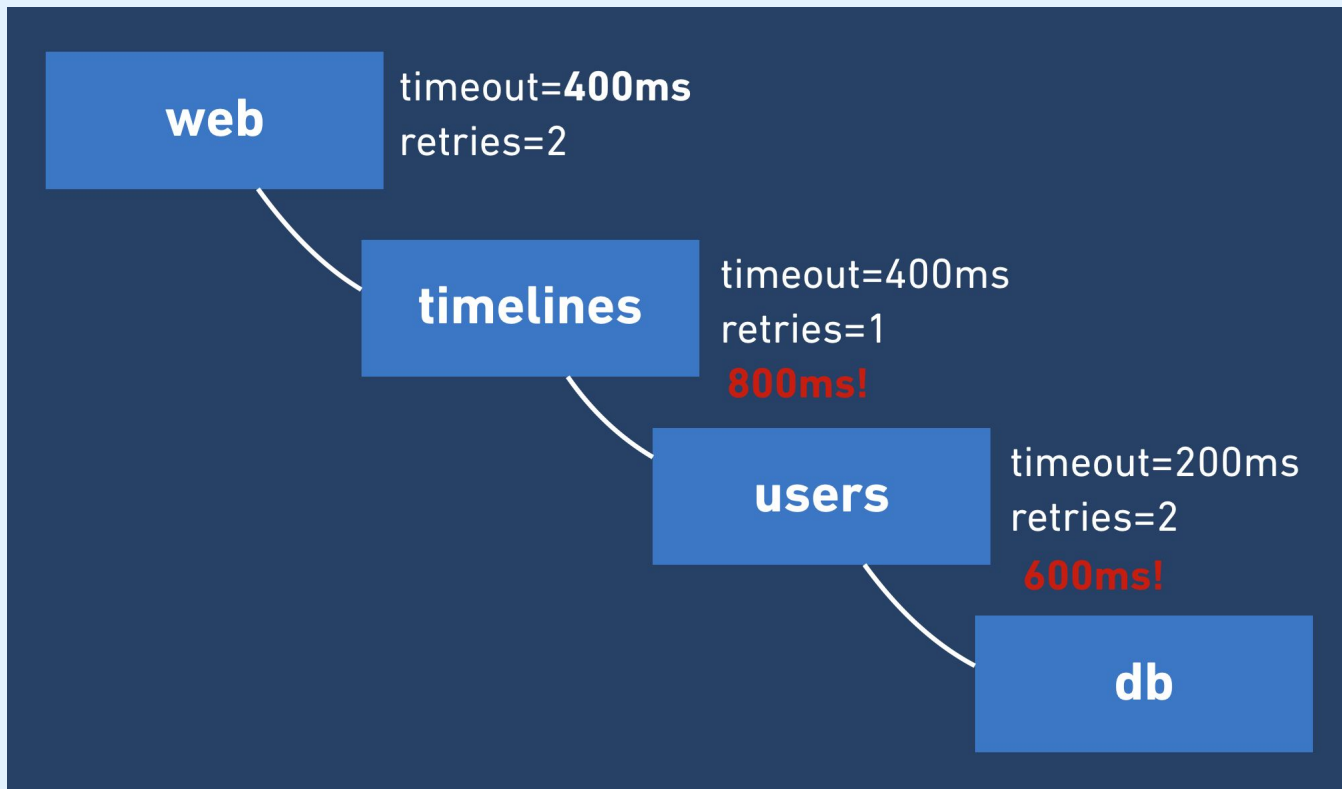
Request level load-balancing



Application-aware observability

```
$ linkerd routes svc/voting-svc -n emojivoto
ROUTE          SUCCESS      RPS      P50      P99
Vote100        100.00%     0.2rps   8ms     20ms
VoteBalloon    100.00%     0.1rps   8ms     10ms
VoteBulb       100.00%     0.1rps   15ms    20ms
VoteCat2       100.00%     0.1rps   1ms     10ms
VoteDoughnut   0.00%       2.5rps   2ms     19ms
VoteFire       100.00%     0.2rps   2ms     10ms
VoteFlushed    100.00%     0.2rps   2ms     10ms
VoteGhost      100.00%     0.1rps   4ms     20ms
```

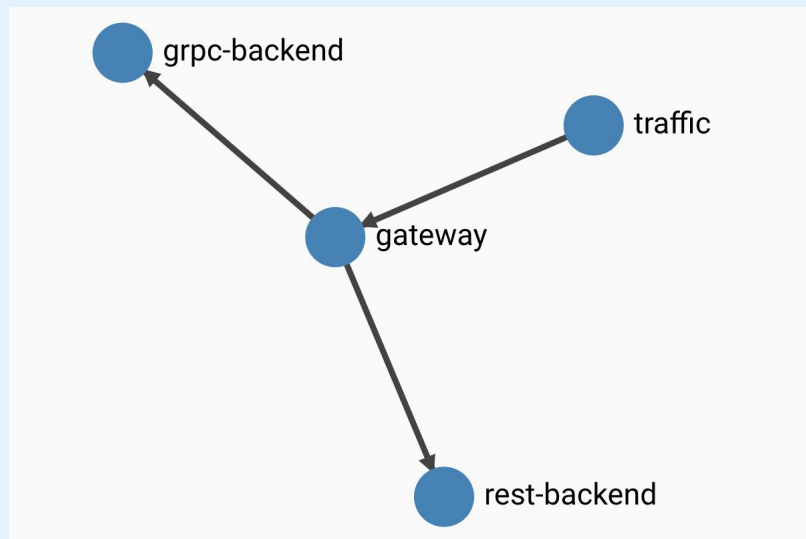
Centralized client configuration





Demo Time

Demo overview



- *Kubernetes*, runs our application
- *gRPC*, service-to-service communication
- *Linkerd*, provides metrics and reliability
- *Prometheus*, by way of Linkerd
- *Grafana*, by way of Linkerd
- *Building Blocks*, builds a sample app
- *Slow Cooker*, sends traffic

Full demo available at github.com/klingerf/grpc-linkerd-demo

Demo recap

Deployed gRPC app with Linkerd

Verified distributed load to gRPC backend

Dug into gRPC-specific stats provided by Linkerd

Checked out the Linkerd dashboard

Applied client policy to a gRPC route



+



LINKERD

Thank you!

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