Easy HTTPS For Your Microservice Architectures - Julien Salleyron, Containous

Open Source Summit Europe - Lyon 2019

Whoami

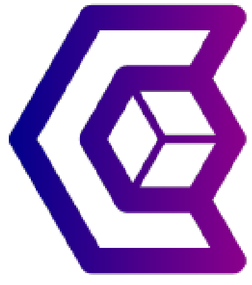
Julien Salleyron

- Træfik's Senior Software Engineer @ Containous
- juliens

Containous

https://containo.us

- We Believe in Open Source
- We Deliver Traefik and Traefik Enterprise Edition
- Commercial Support
- 30 people distributed, 90% tech



Evolution Of Software Design

THE EVOLUTION OF

SOFTWARE ARCHITECTURE

1990's

SPAGHETTI-ORIENTED
ARCHITECTURE
(aka Copy & Paste)

2000's

LASAGNA-ORIENTED
ARCHITECTURE
(aka Layered Monolith)

2010's

RAVIOLI-ORIENTED
ARCHITECTURE
(aka Microservices)

WHAT'S NEXT?

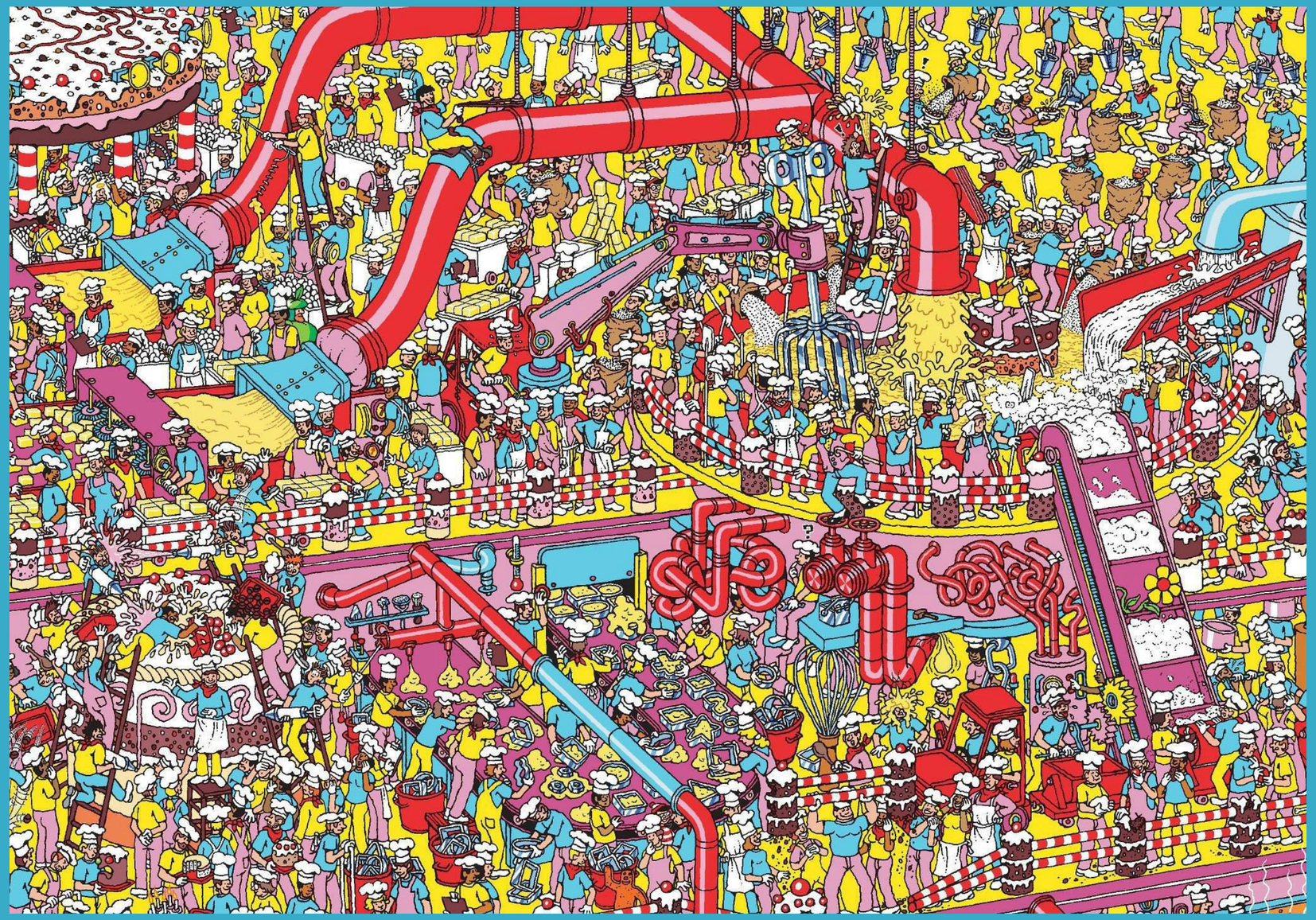
PROBABLY PIZZA-ORIENTED ARCHITECTURE

By @benorama

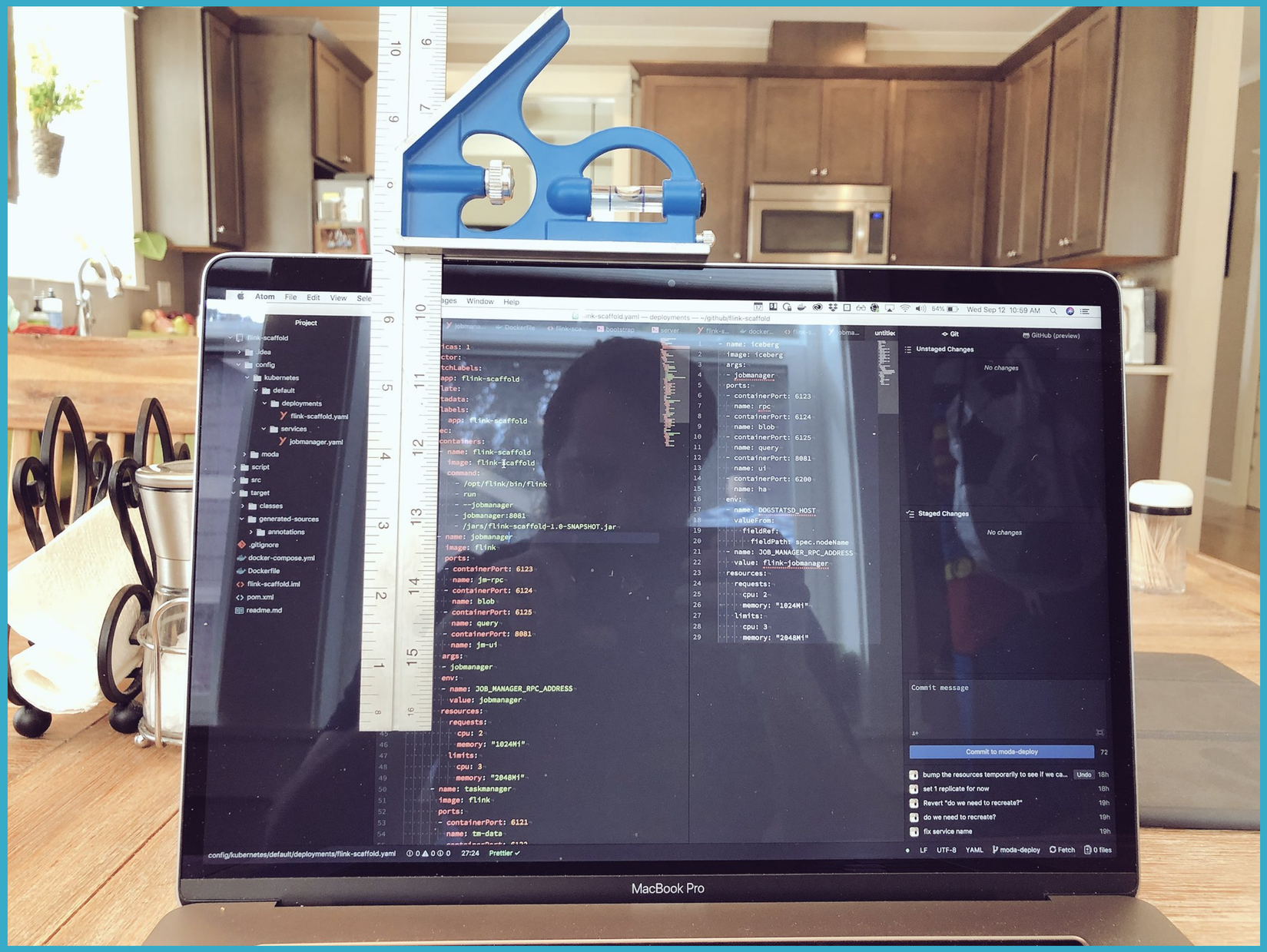
The Premise Of Microservices…

···And What Happens

Where’s My Service?



Tools Of The Trade



Source: https://twitter.com/Caged/status/1039937162769096704

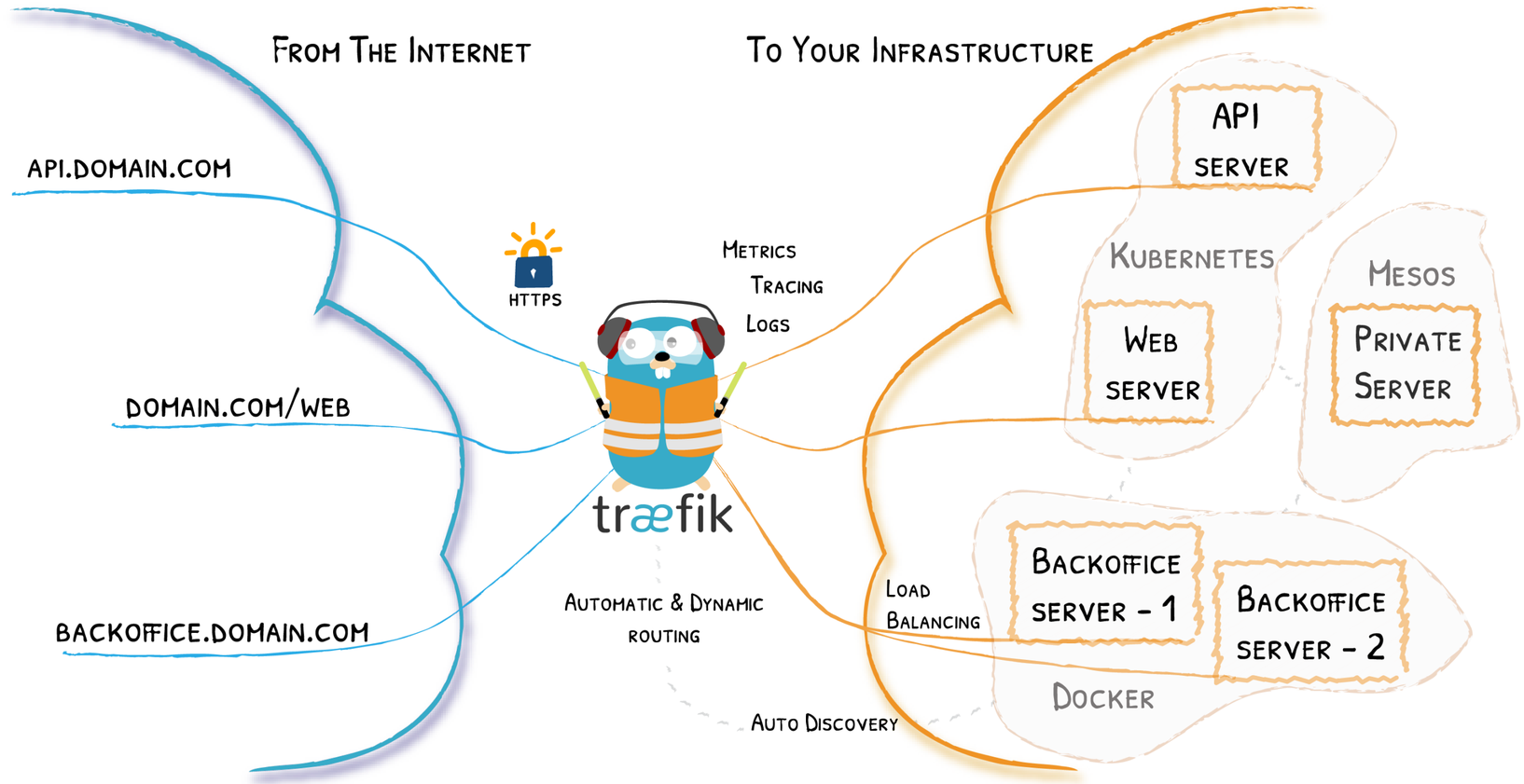
Why Traefik?

Why, Mr Anderson?

What If I Told You?

That You Don’t Have to Write This Configuration File…?

Here Comes Traefik!



Traefik Project

- https://github.com/containous/traefik
- MIT License
- Written in Go
- 25,000+ ☆ 1B+ ⬇ 400+
- Created in 2015, 4Y
- Current stable branch: `v2.0`

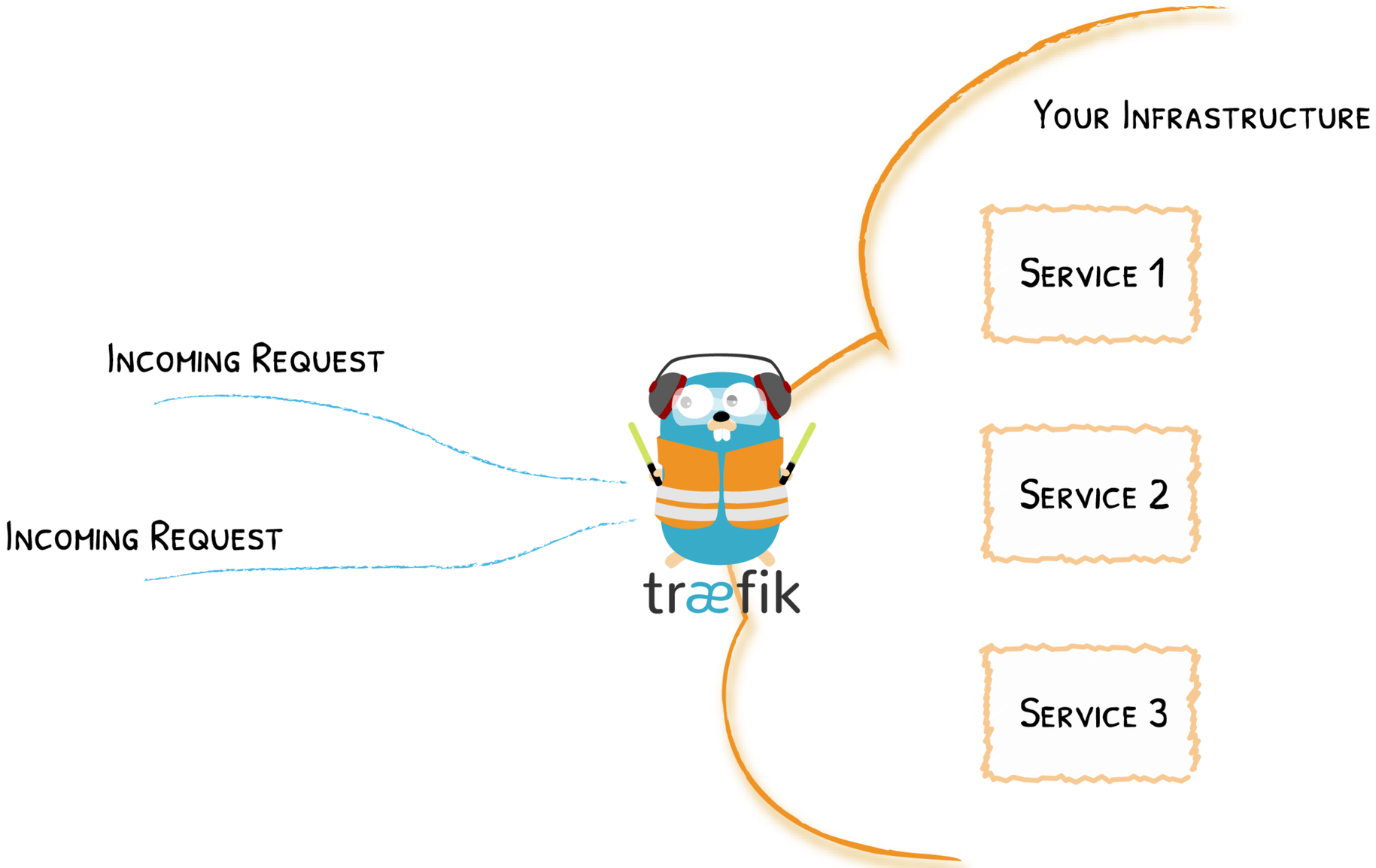
Traefik 2.0 Quick Overview

- Revamped Documentation
- Clarified Concepts
- Expressive Routing Rule Syntax
- Middlewares
- TCP Support
- Canary / Mirroring
- And so Much More…

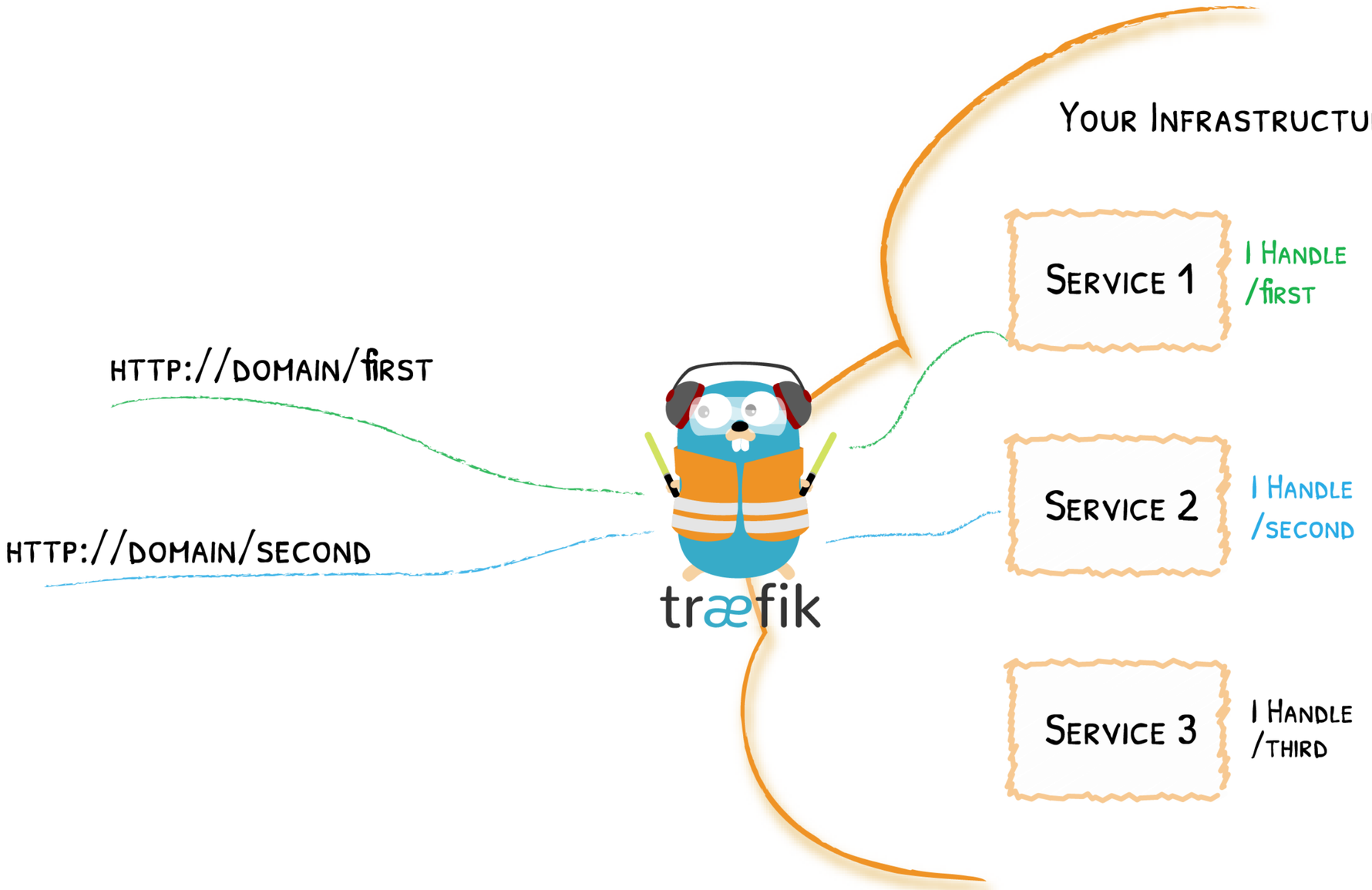
Learn more on the blog post

Traefik (V2.0) Core Concepts

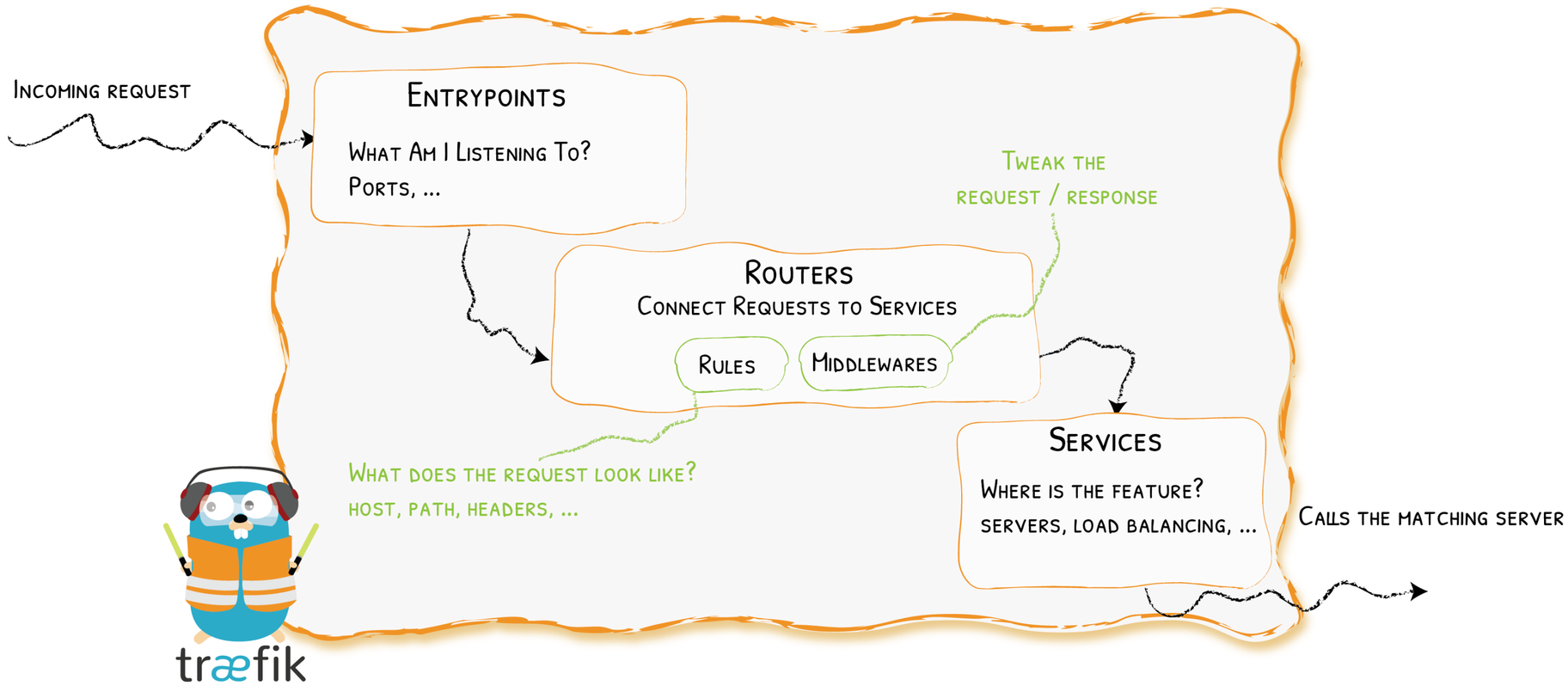
Traefik Is An Edge Router



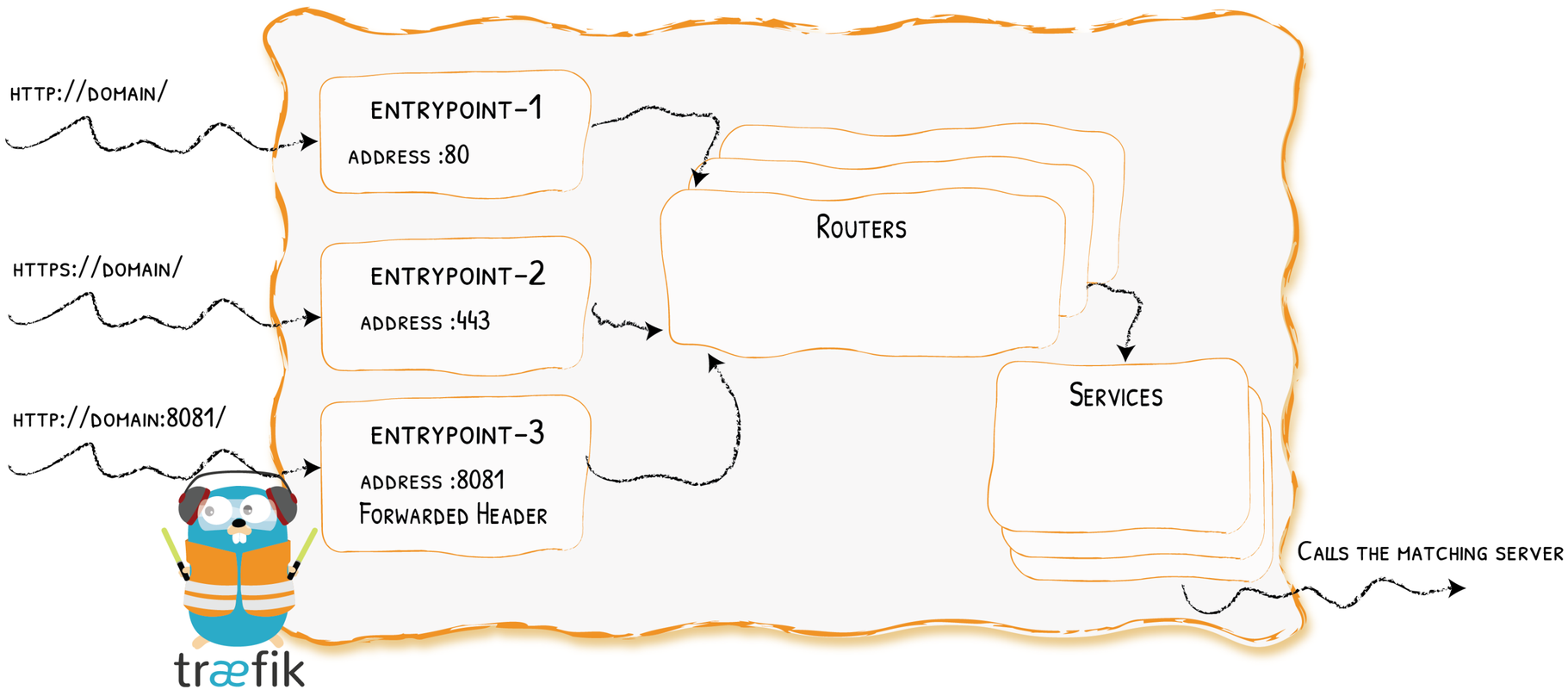
Dynamically Discovers Services



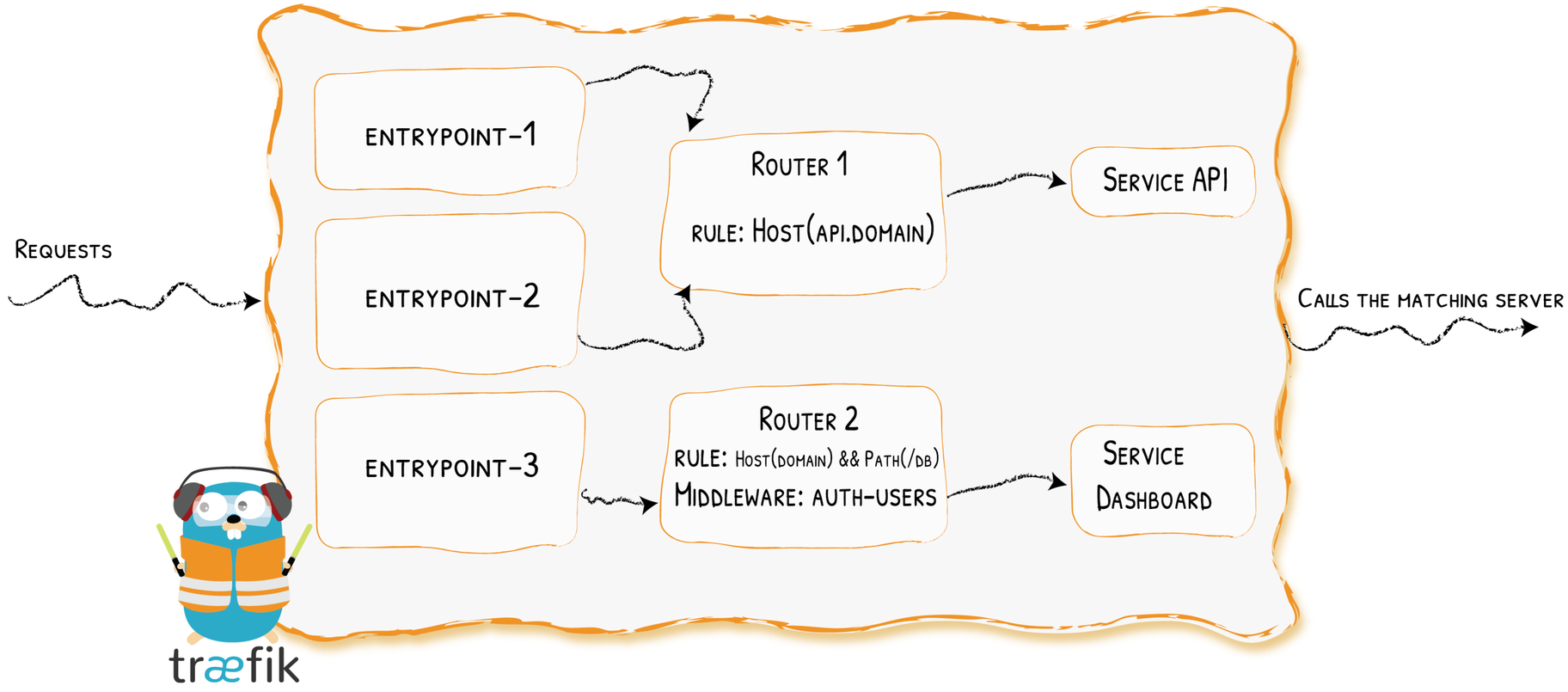
Architecture (V2.0) At A Glance



Entrypoints



Routers


ENTRYPOINT-1
ROUTER 1
RULE: HOST(API.DOMAIN)
SERVICE API
REQUESTS
ENTRYPOINT-2
CALLS THE MATCHING SERVER
ENTRYPOINT-3
ROUTER 2
RULE: HOST(DOMAIN) && PATH(/DB)
MIDDLEWARE: AUTH-USERS
SERVICE
DASHBOARD
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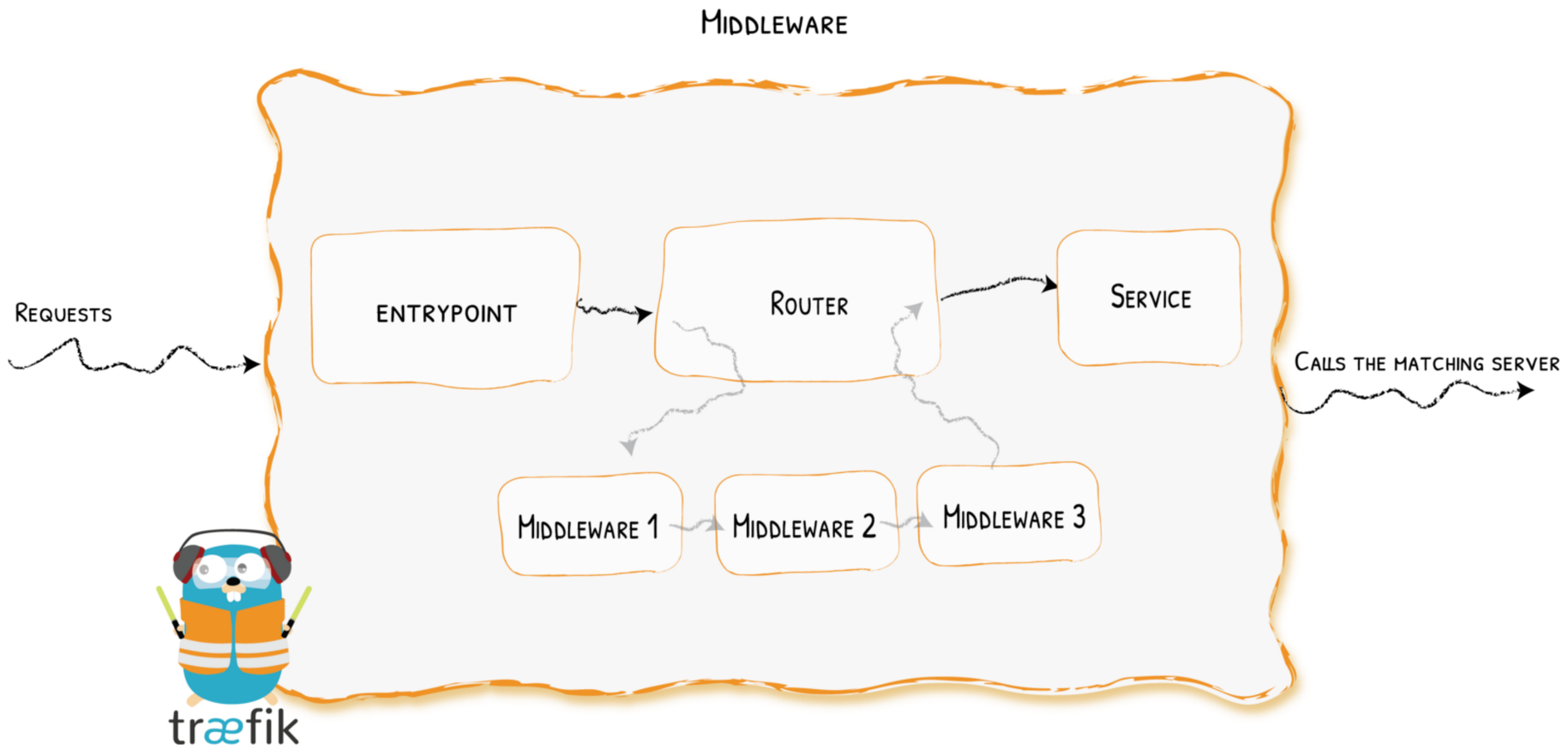
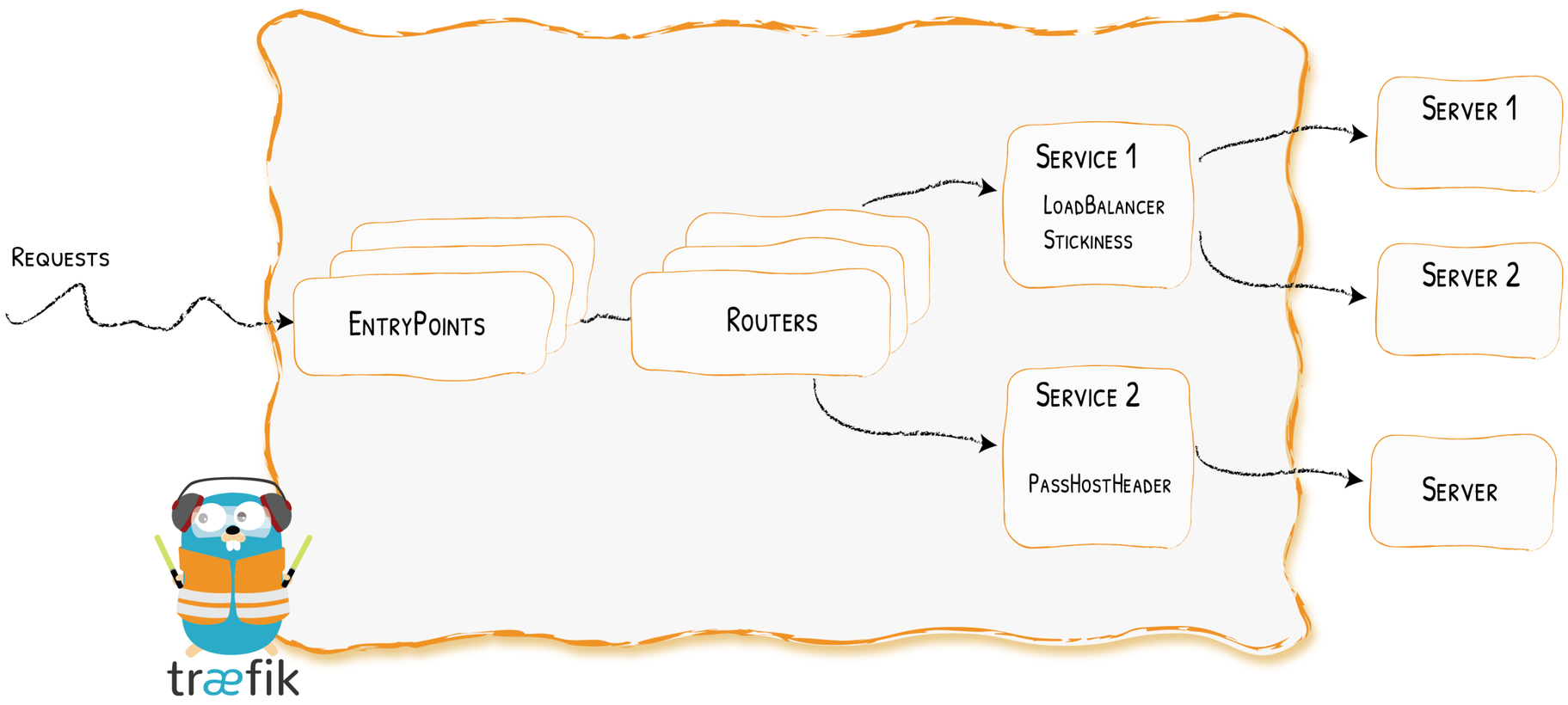
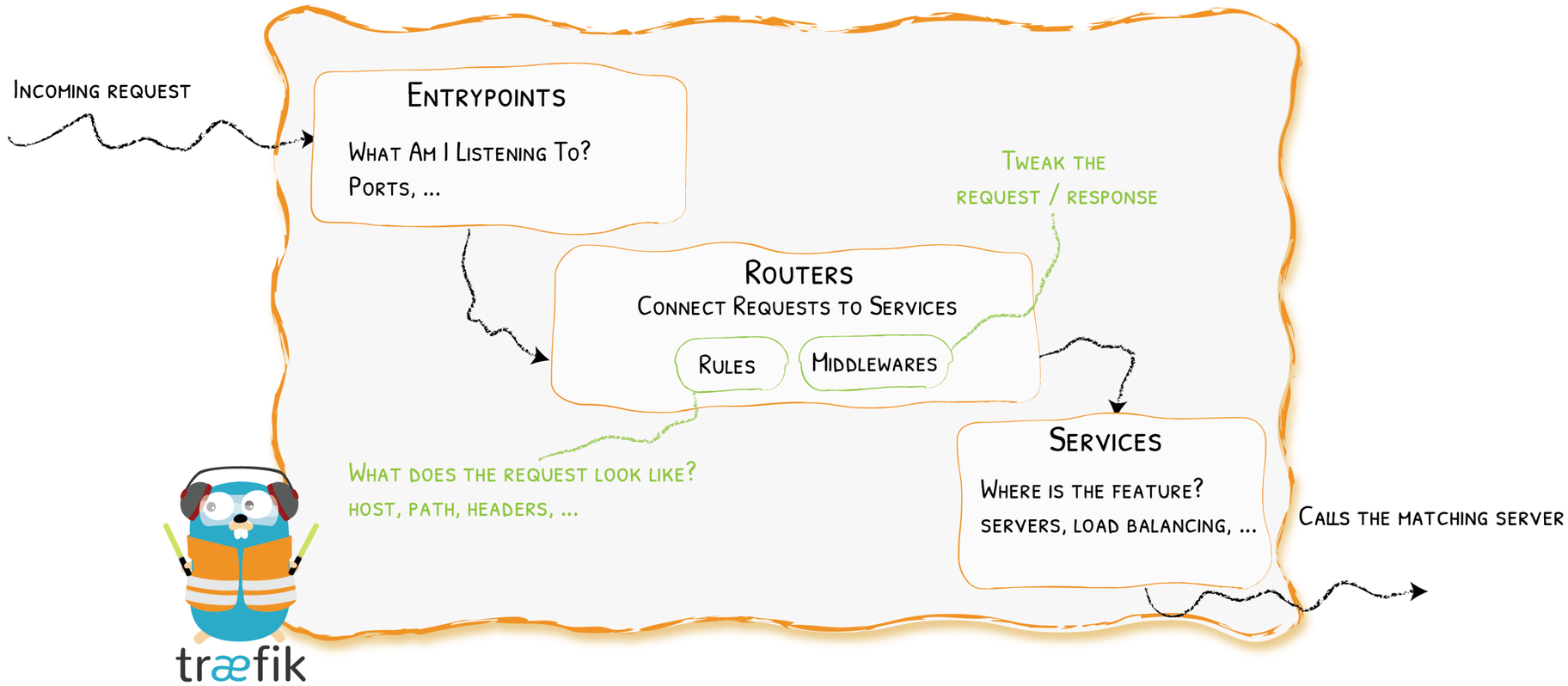
Middlewares



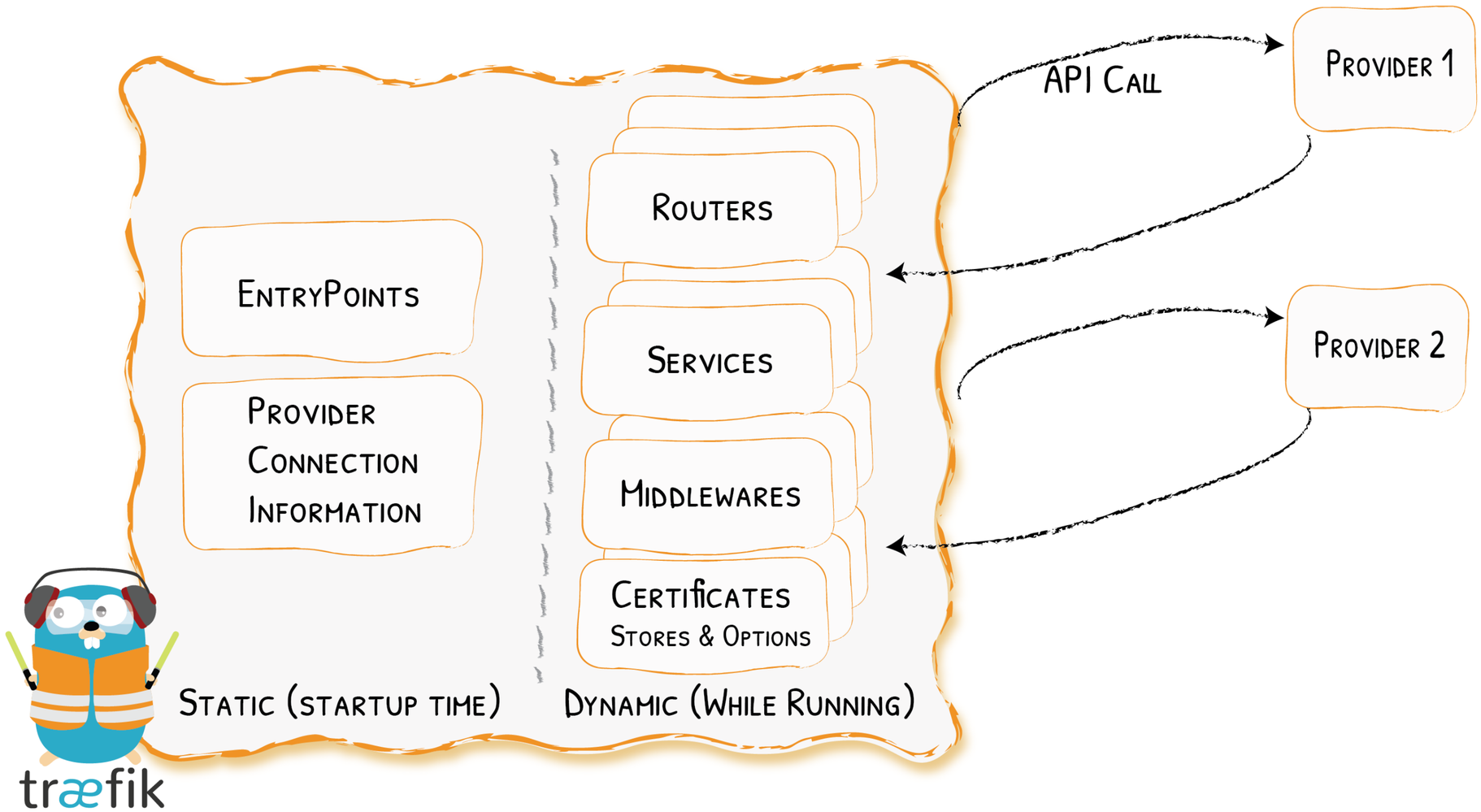
Services


Requests
EntryPoints
Routers
Service 1
LoadBalancer
Stickiness
Service 2
PassHostHeader
Server 1
Server 2
Server
træfik

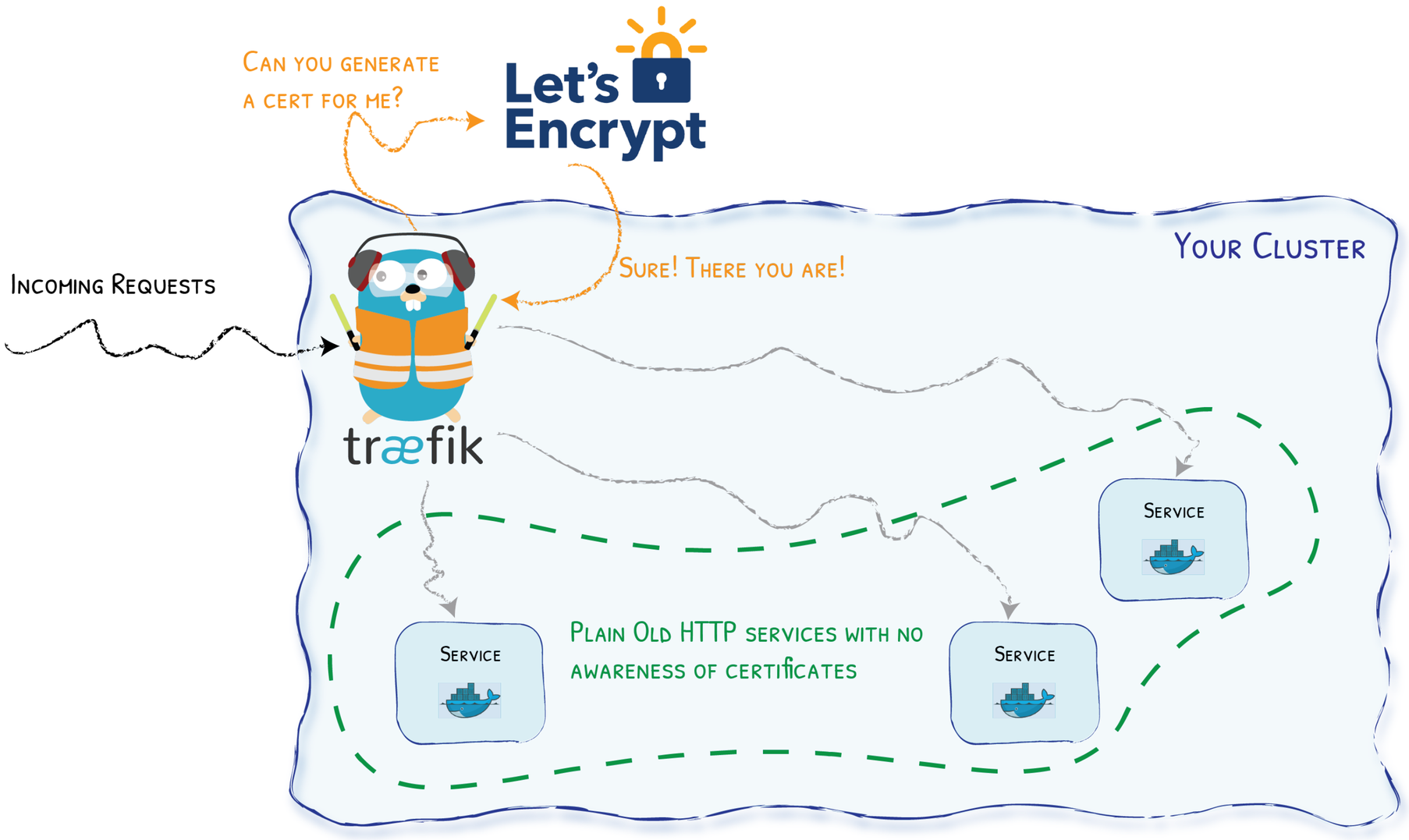
Architecture (Again) At A Glance



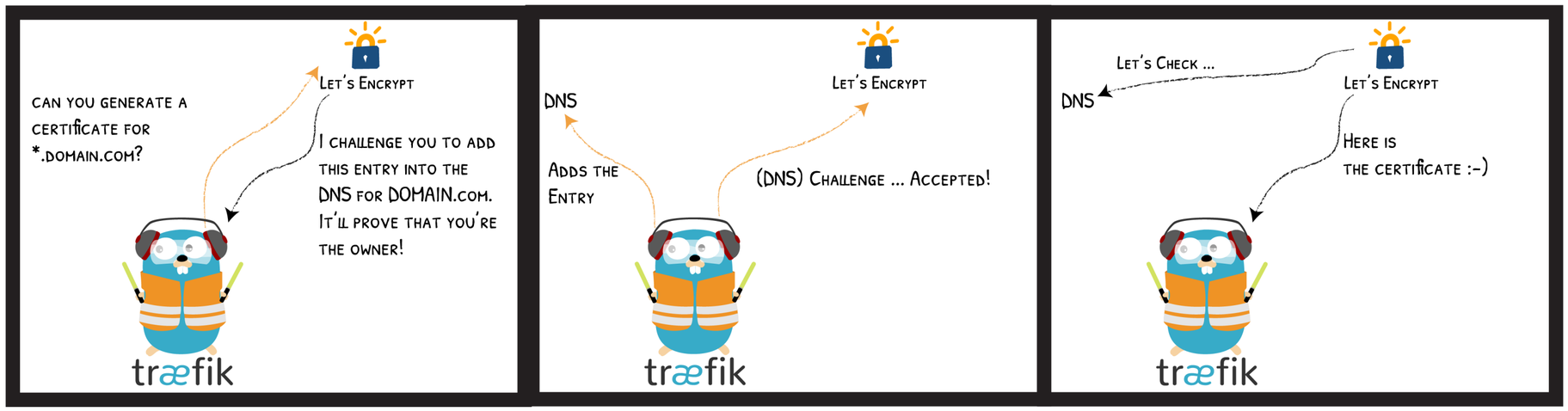
Static & Dynamic Configuration



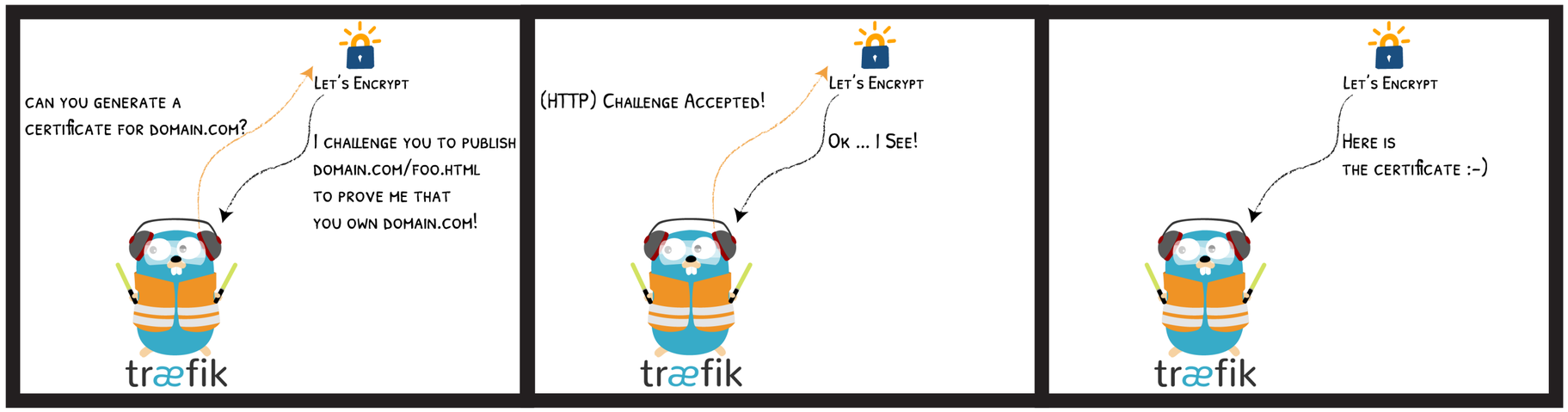
HTTPS & Let's Encrypt



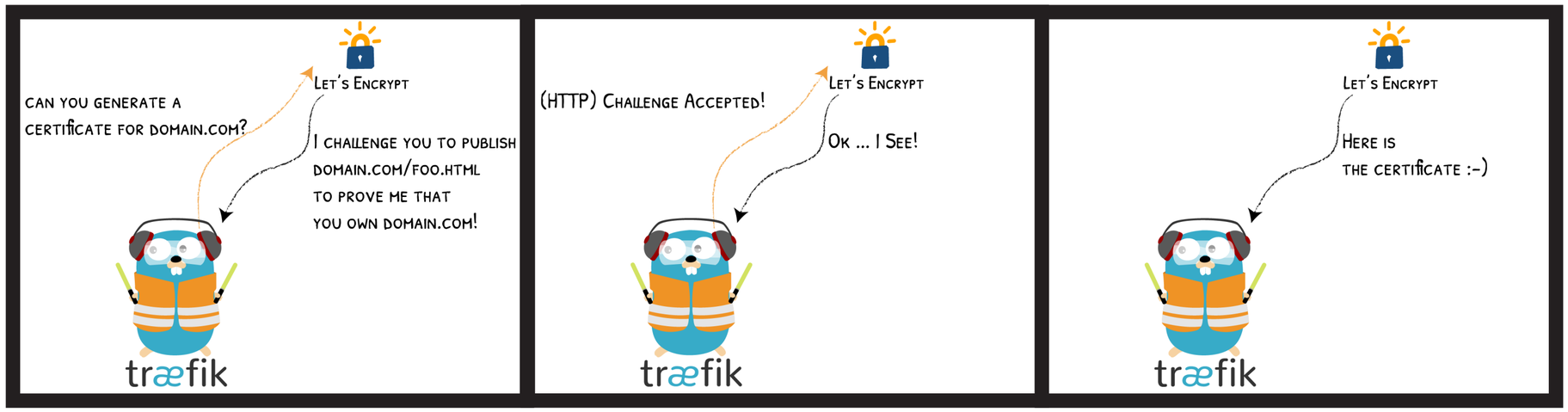
Let’s Encrypt DNS Challenge



Let's Encrypt HTTP Challenge



Let’s Encrypt TLS Challenge



Demo

Demo Menu

1. Deploying Traefik and configure a service
2. Configure a dashboard
3. Configure the load balancing for scaled service
4. Configure a service on a specific path
5. Configure Let’s encrypt in Traefik
6. Generate certificates for our services

Deploying Traefik And Configure A Service

Configure A Dashboard

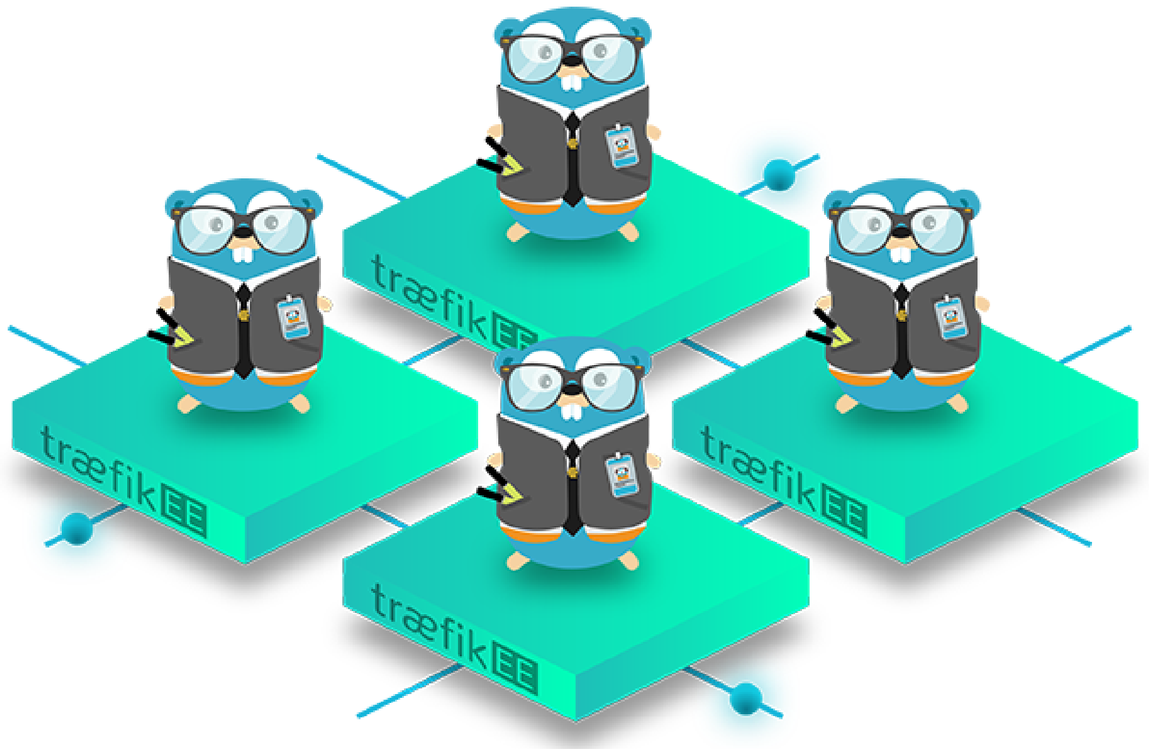
Configure The Load Balancing For Scaled Service

Configure A Service On A Specific Path

Configure Let’s Encrypt In Traefik

Generate Certificates For Our Services

Traefik Also Comes In Herd



HIGH AVAILABILITY

træfik ENTERPRISE EDITION

SECURITY

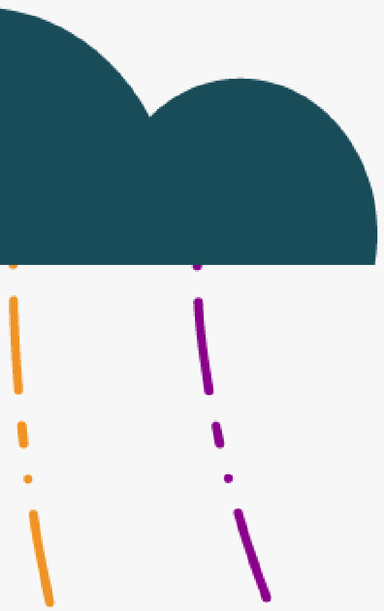
træfik ENTERPRISE EDITION

SCALABILITY

træfik ENTERPRISE EDITION

NTERNET

TO YOUR INFRA



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ORCHESTR

træfikEE

As Simple As Traefik

- Install it:

```
# Cluster Installation
traefikeectl install \
    --licensekey="SuperSecretLicence" \
    --dashboard \
    --kubernetes # Or --swarm
```

- Configure it:

```
# Routing Configuration, same as Traefik's
traefikeectl deploy \
    --acme.email=ssl-admin@mycompany.org
    --acme.tlsChallenge
    ...
```

Free Trial

https://containo.us/traefikee

We Also Missed Talking About …

What's Next

- KV Store
- UDP
- And More…

More Info

- Back to Traefik 2.0
- Community Forum
- Official Documentation

Thank You!

- juliens

- Slides (HTML): https://containous.github.io/slides/oss-summit-lyon-2019
- Slides (PDF): https://containous.github.io/slides/oss-summit-lyon-2019/slides.pdf
- Source on : https://github.com/containous/slides/tree/oss-summit-lyon-2019