

(🔊) Quoi De Neuf Avec Traefik 2.0, Le Edge Router À 1 Milliard De Téléchargements?



Toulouse Devops Meetup - 2019

How To Use These Slides?

- **Browse the slides:** Use the arrows
 - Change chapter: Left/Right arrows
 - Next or previous slide: Top and bottom arrows
- **Overview of the slides:** keyboard's shortcut "o"
- **Speaker mode (and notes):** keyboard's shortcut "s"

Whoami

Jean-Baptiste Doumenjou

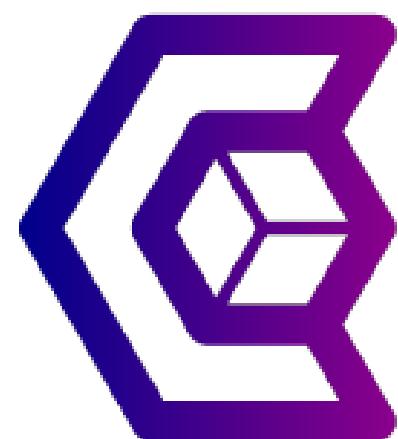
- 🎨 Developer
- Maintainer of Træfik
- 🐦 @jboumenjou
- 🐱 jbdoumenjou



Containous

<https://containo.us>

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



Why Traefik?



Why, Mr Anderson?

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

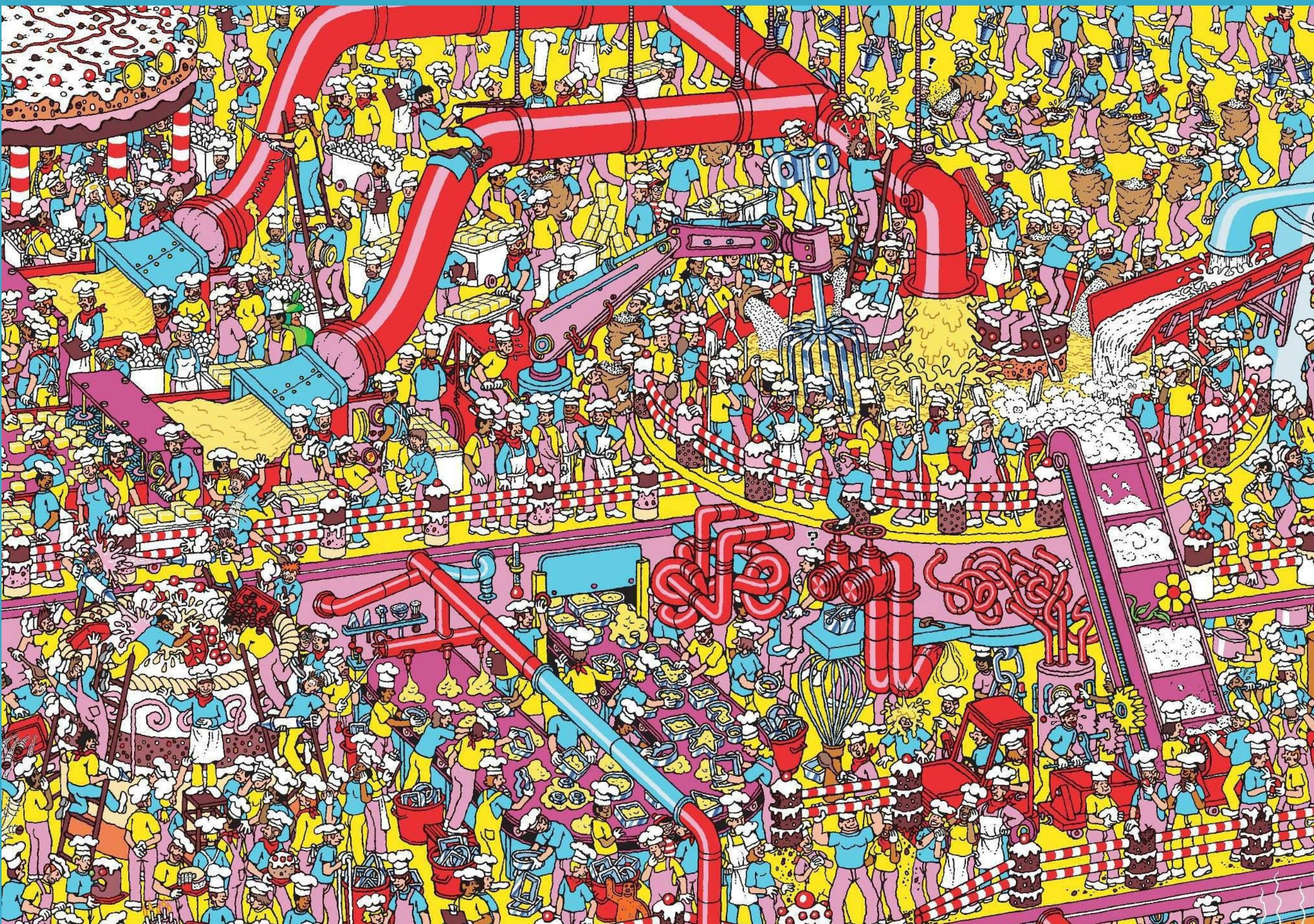
The Premise Of Microservices...



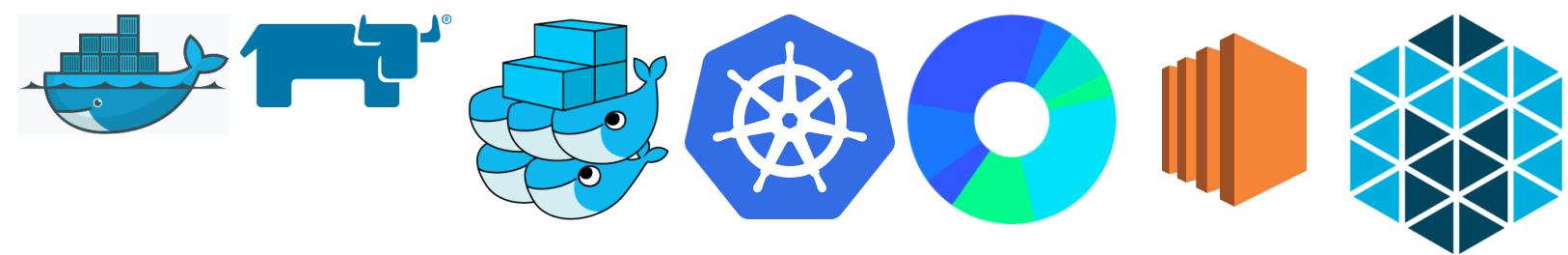
...And What Happens

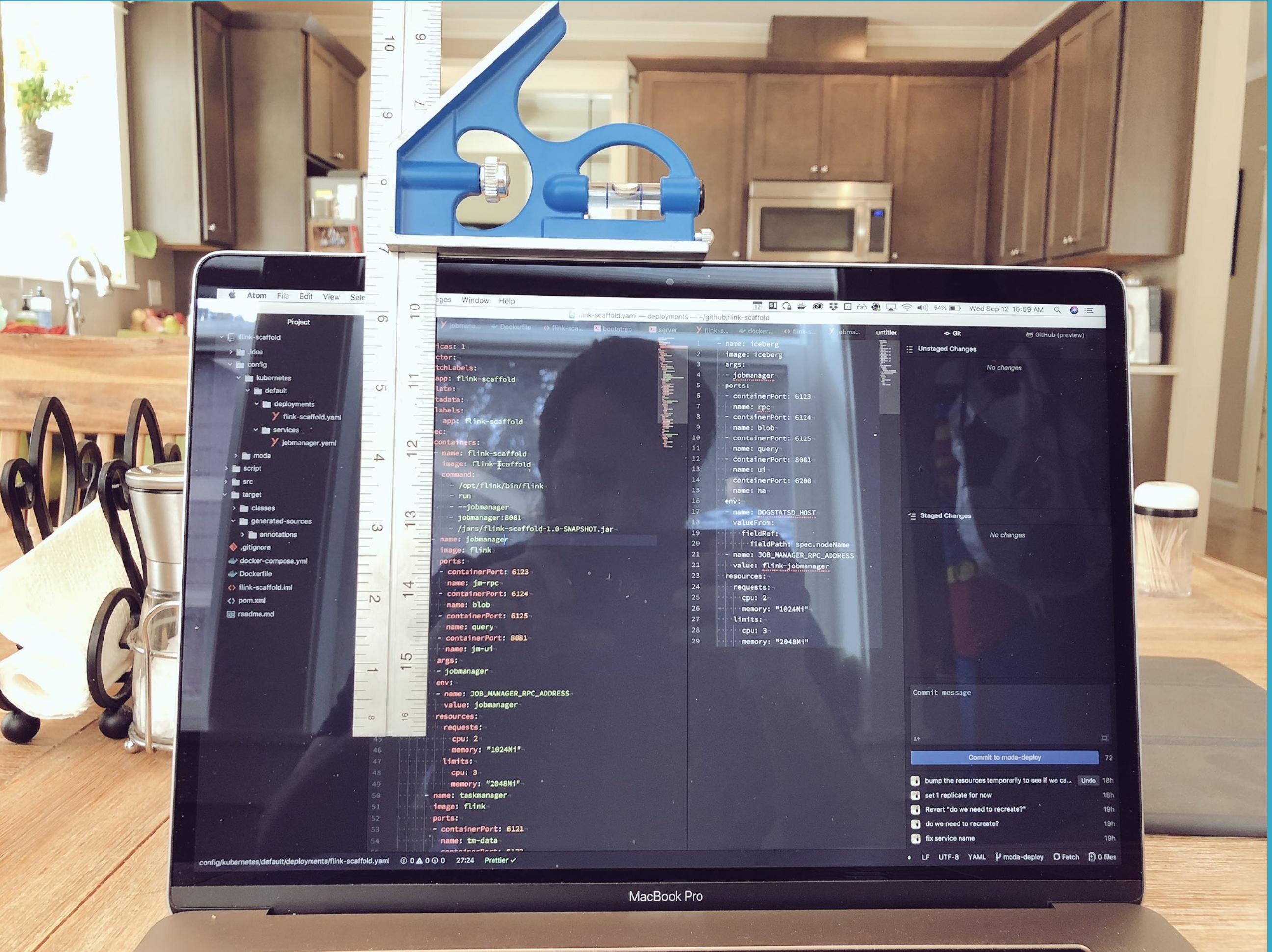


Where's My Service?



Tools Of The Trade





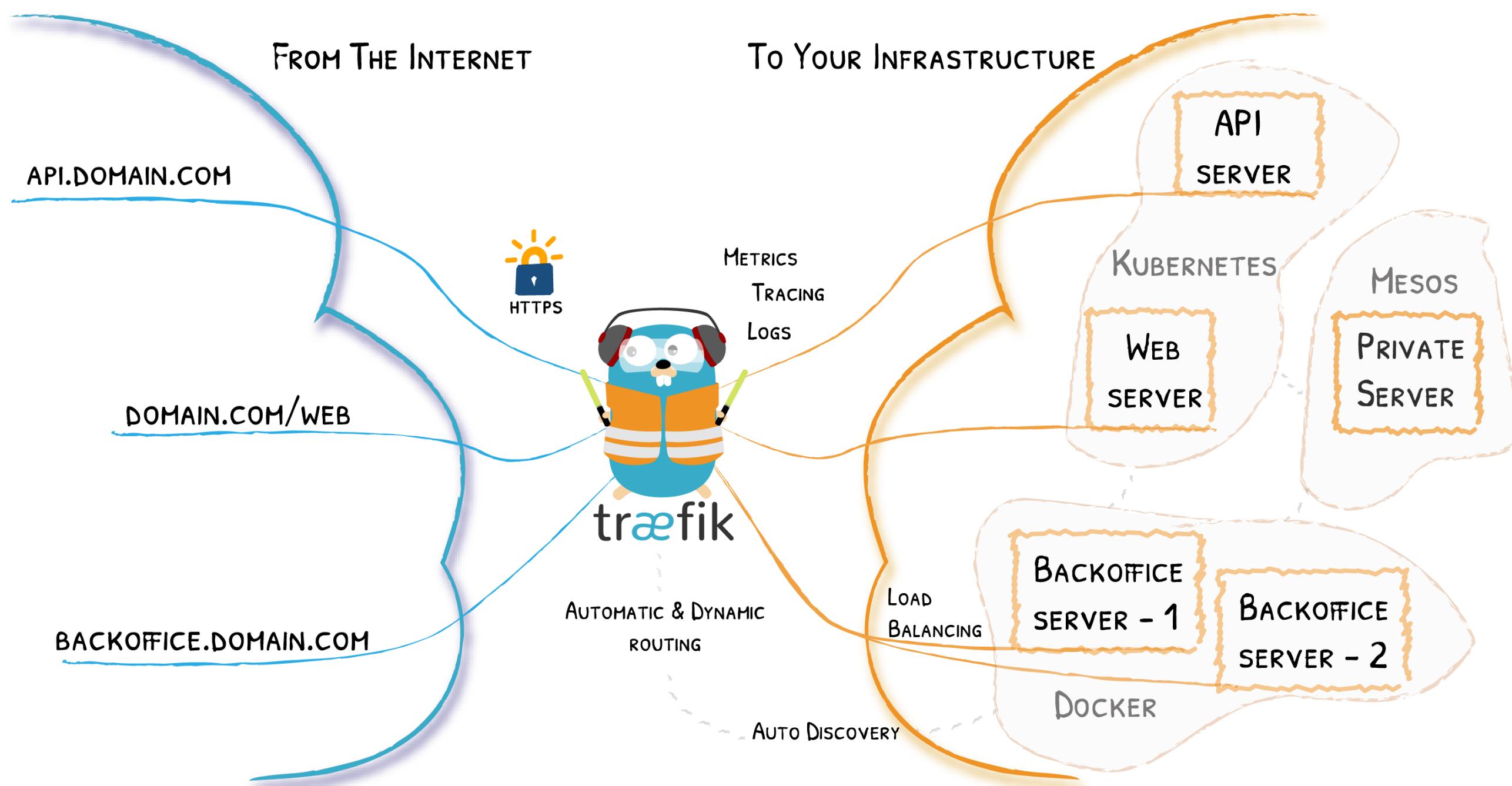
Source: <https://twitter.com/Caged/status/1039937162769096704>

What If I Told You?



That You Don't Have to Write This Configuration File...?

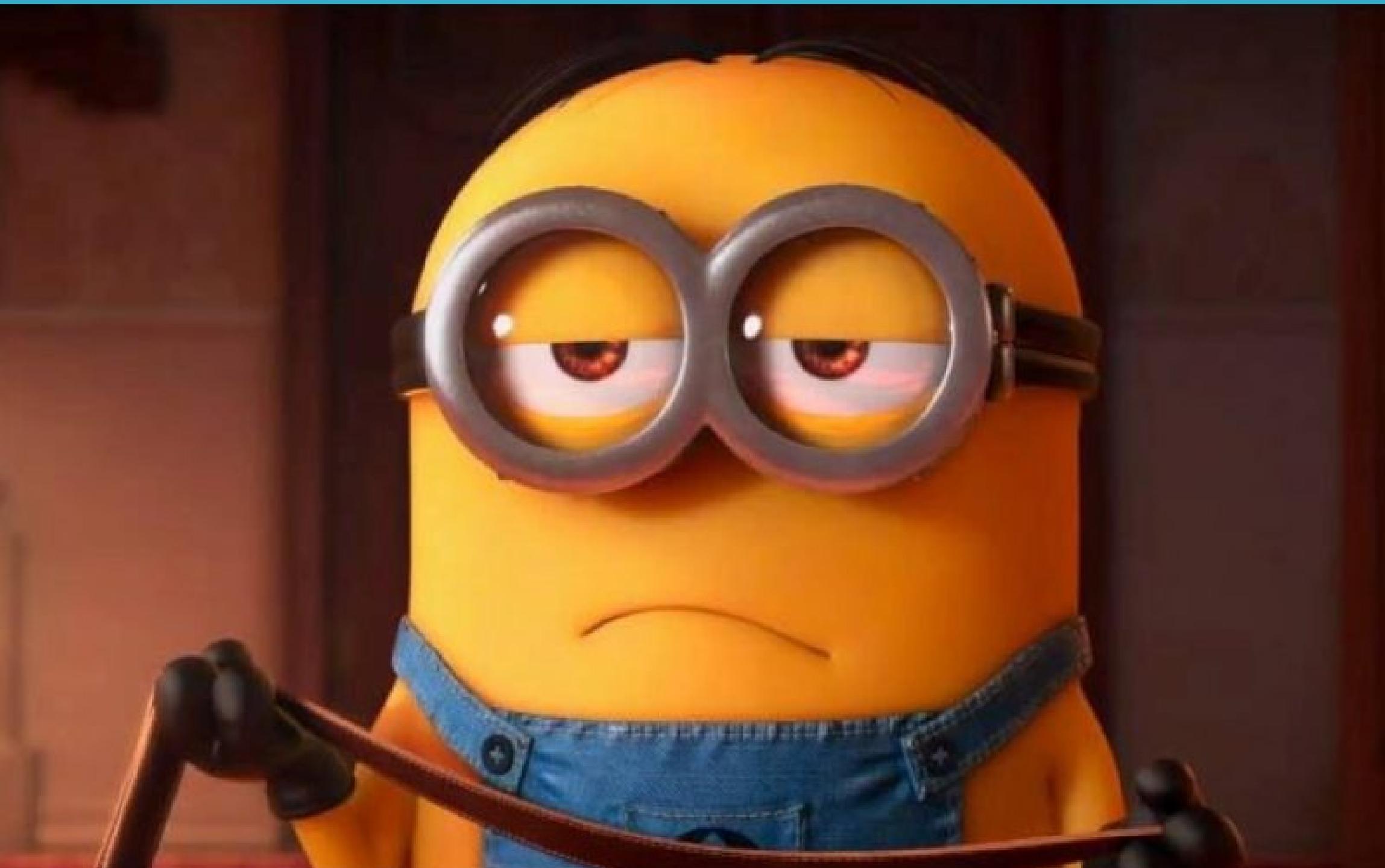
Here Comes Traefik!



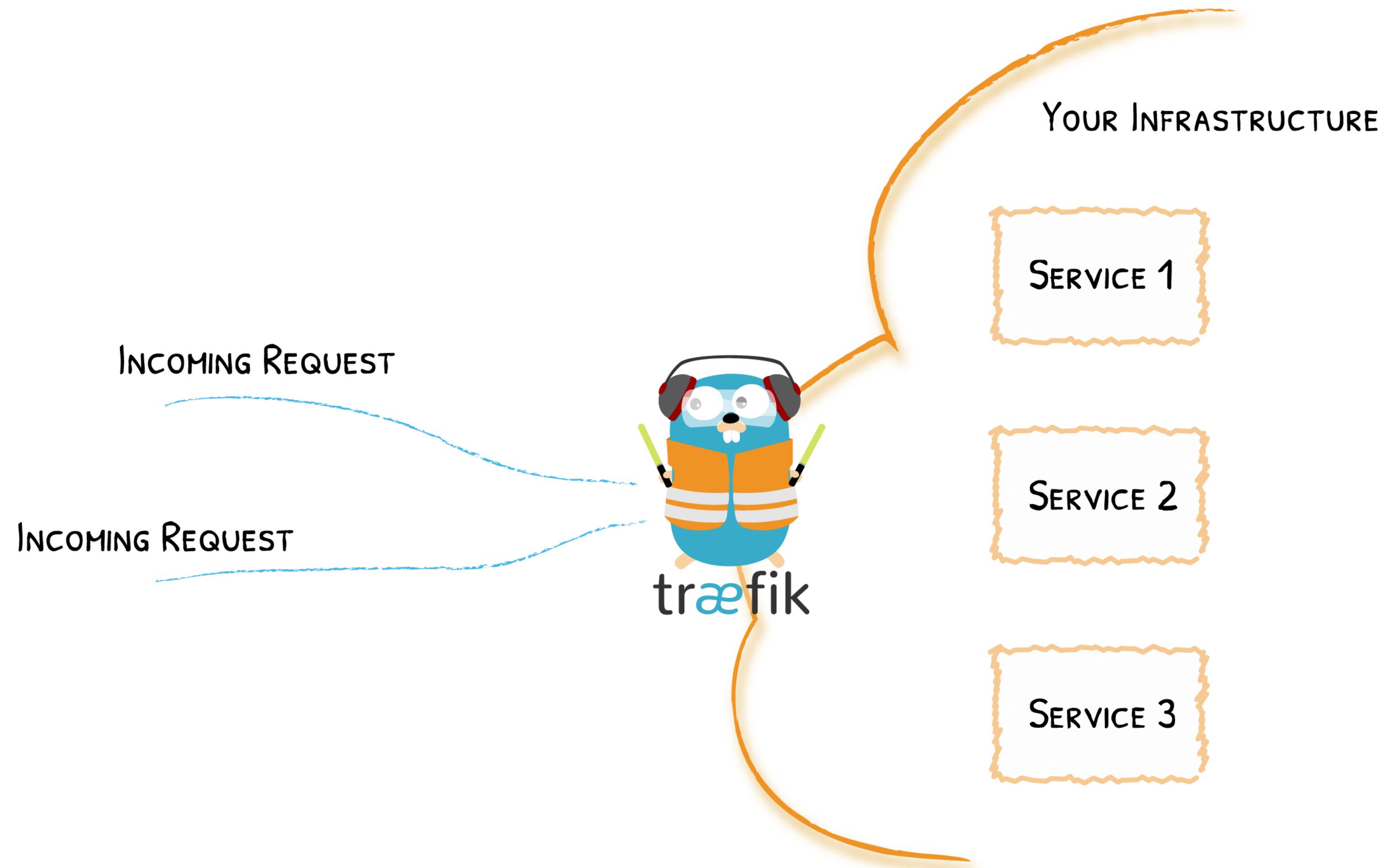
Traefik Project

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

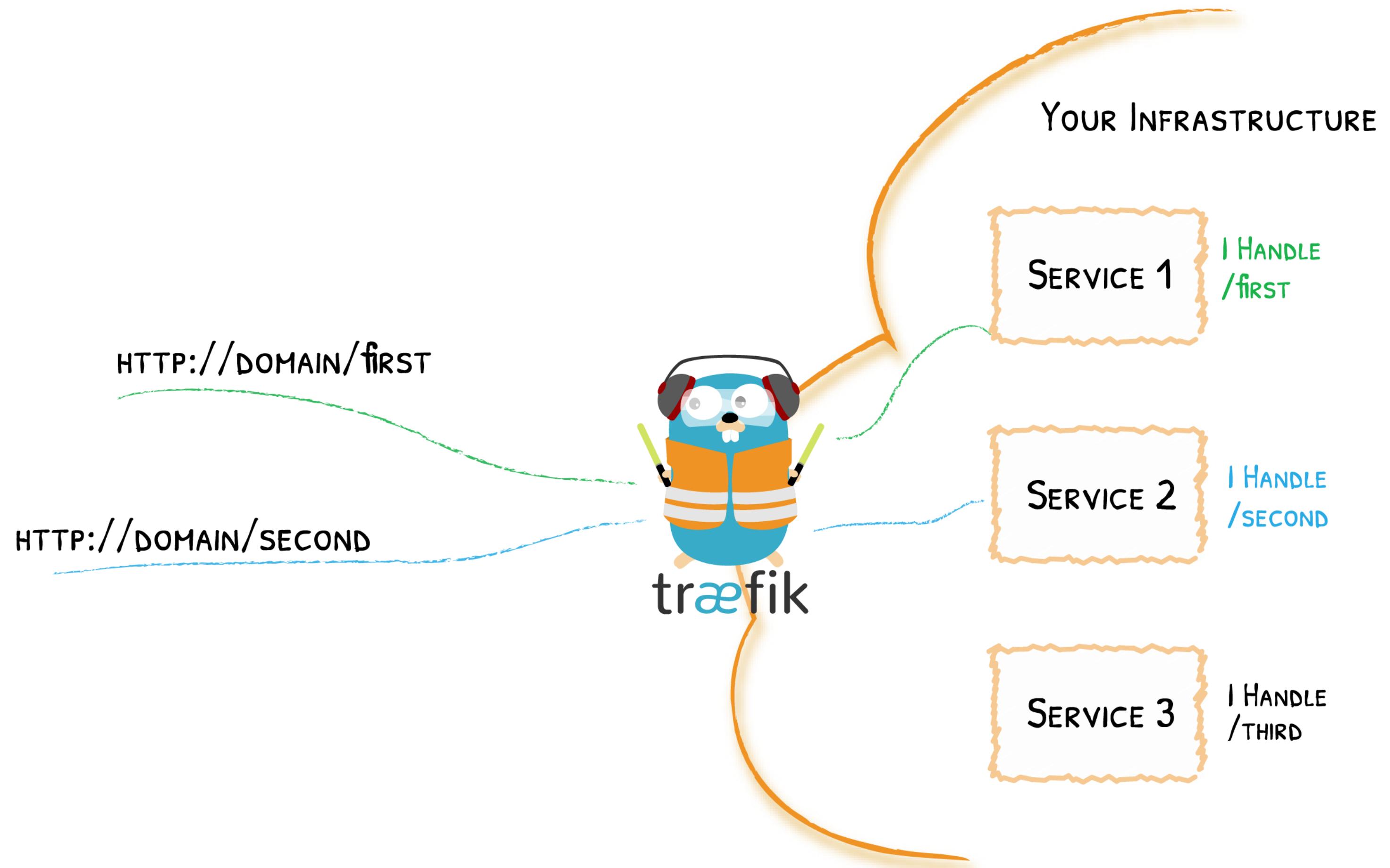
Traefik (V2.0) Core Concepts



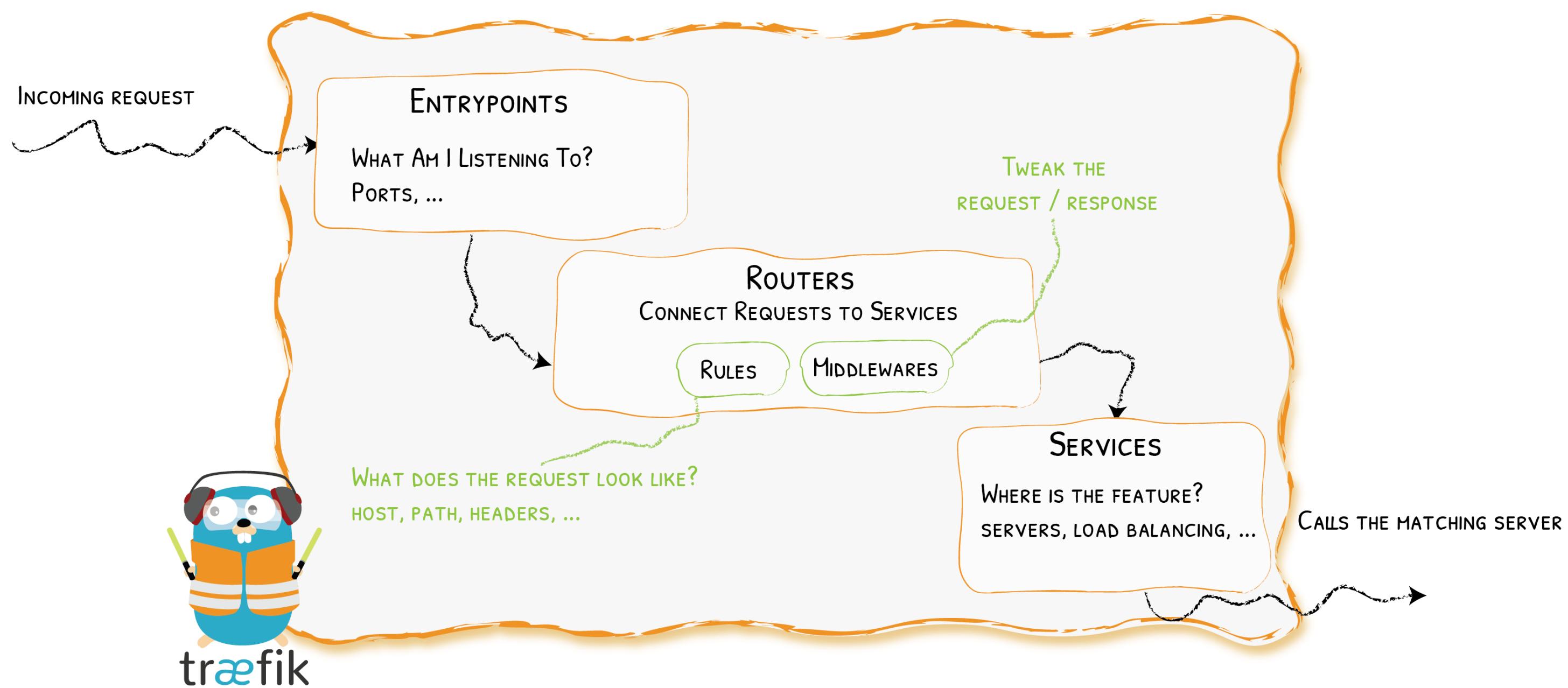
Traefik Is An Edge Router



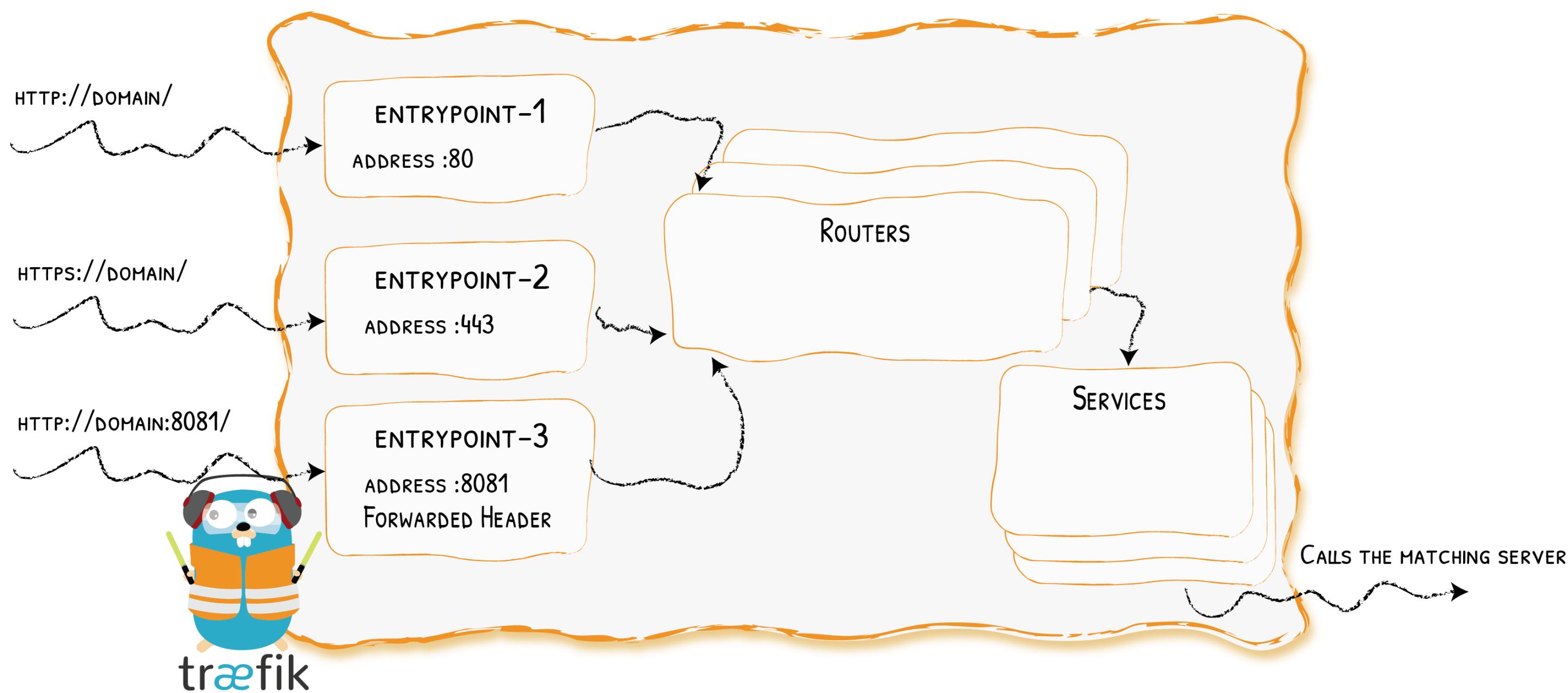
Dynamically Discovers Services



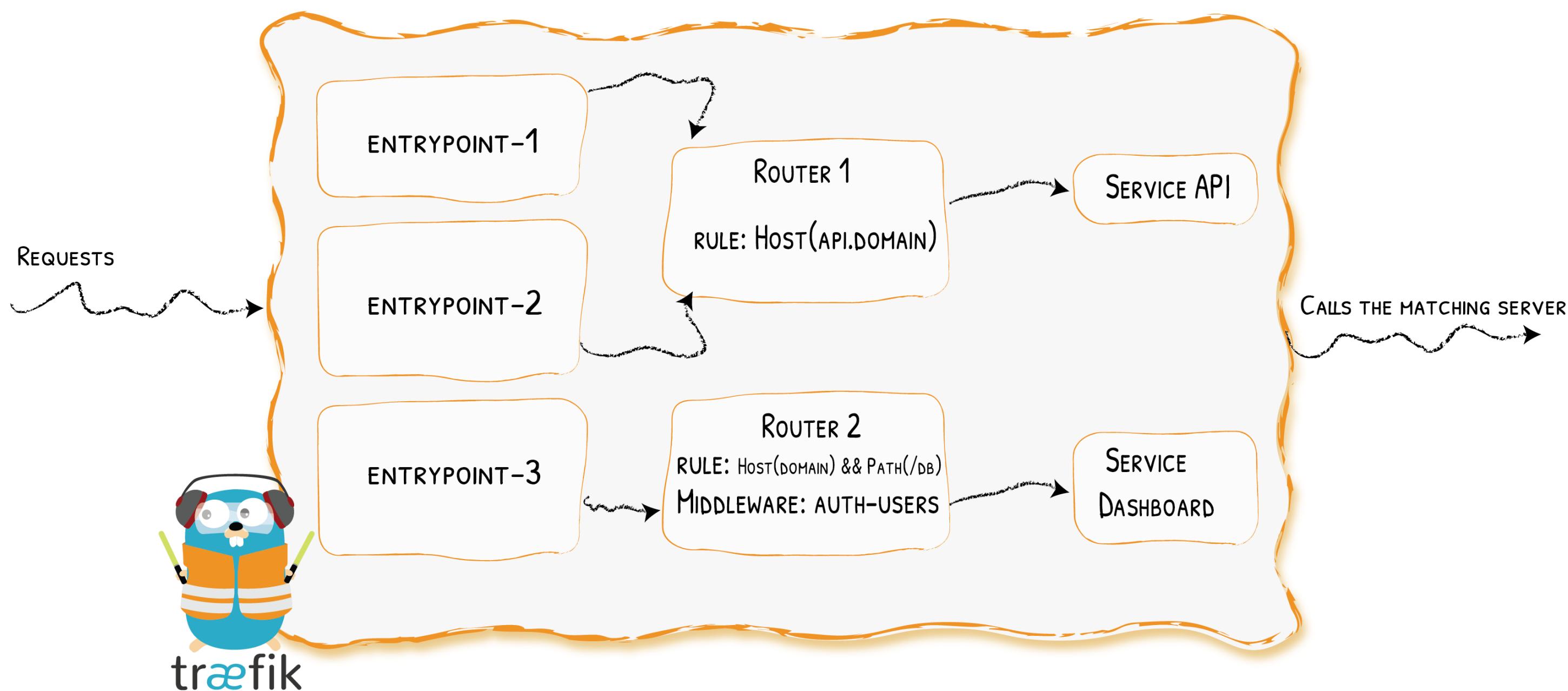
Architecture (V2.0) At A Glance



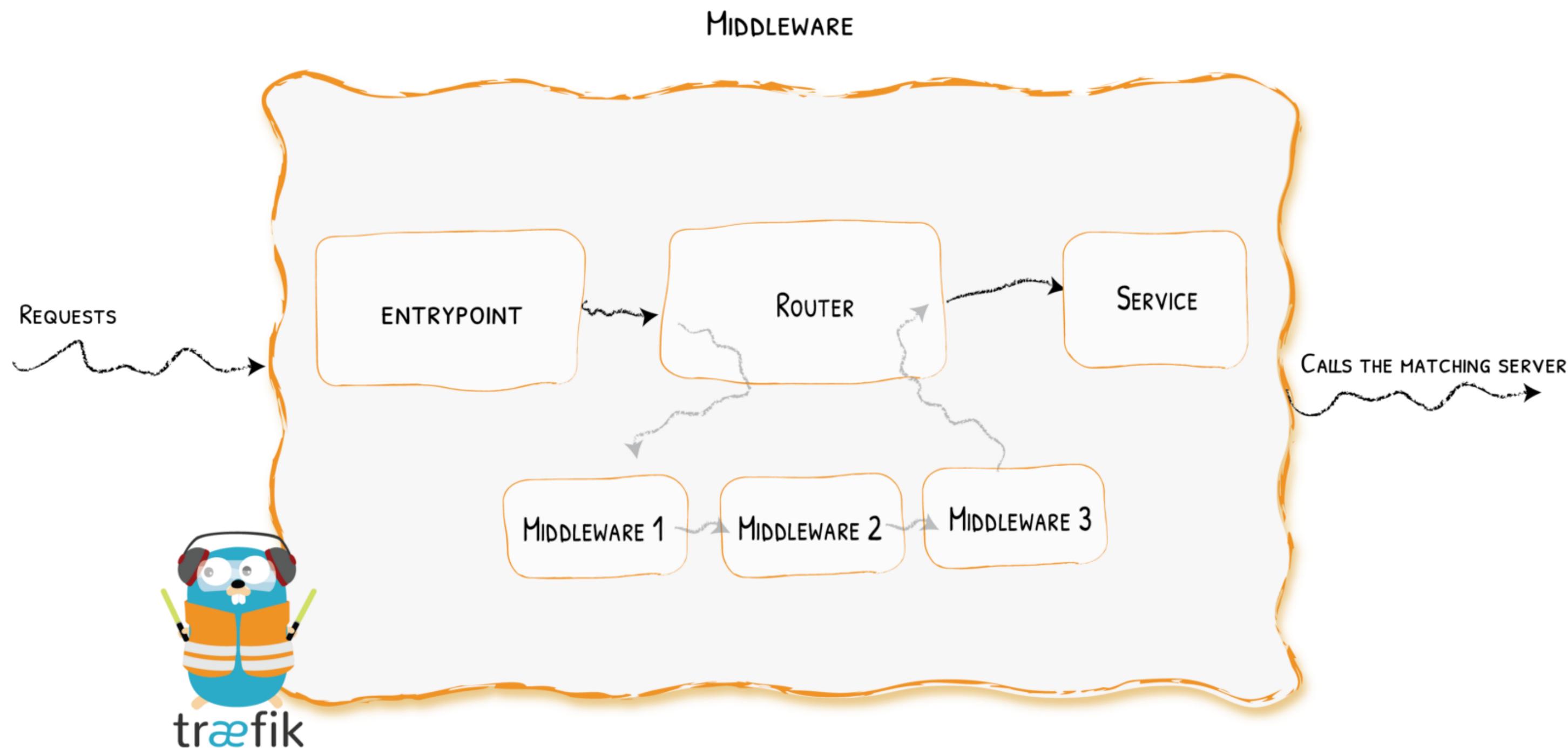
Entrypoints



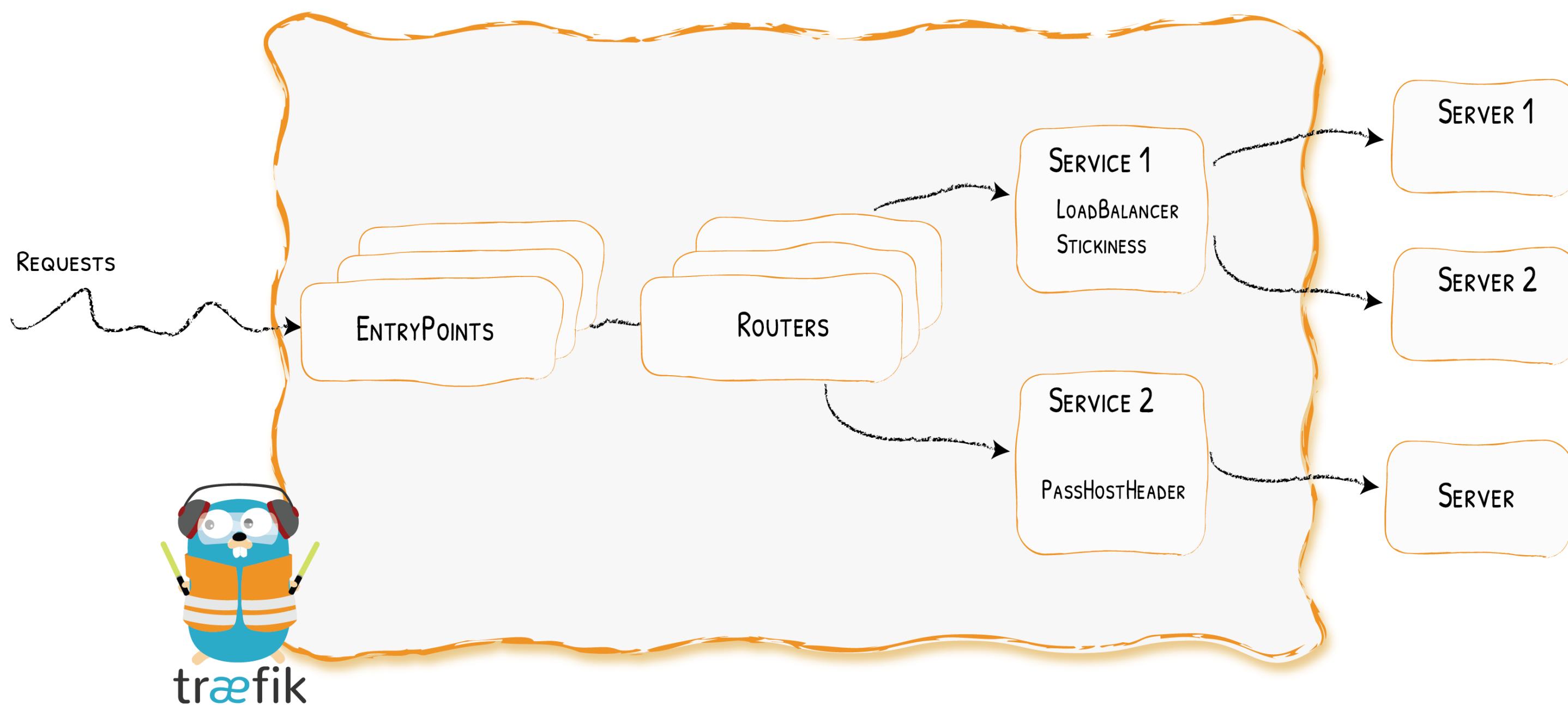
Routers



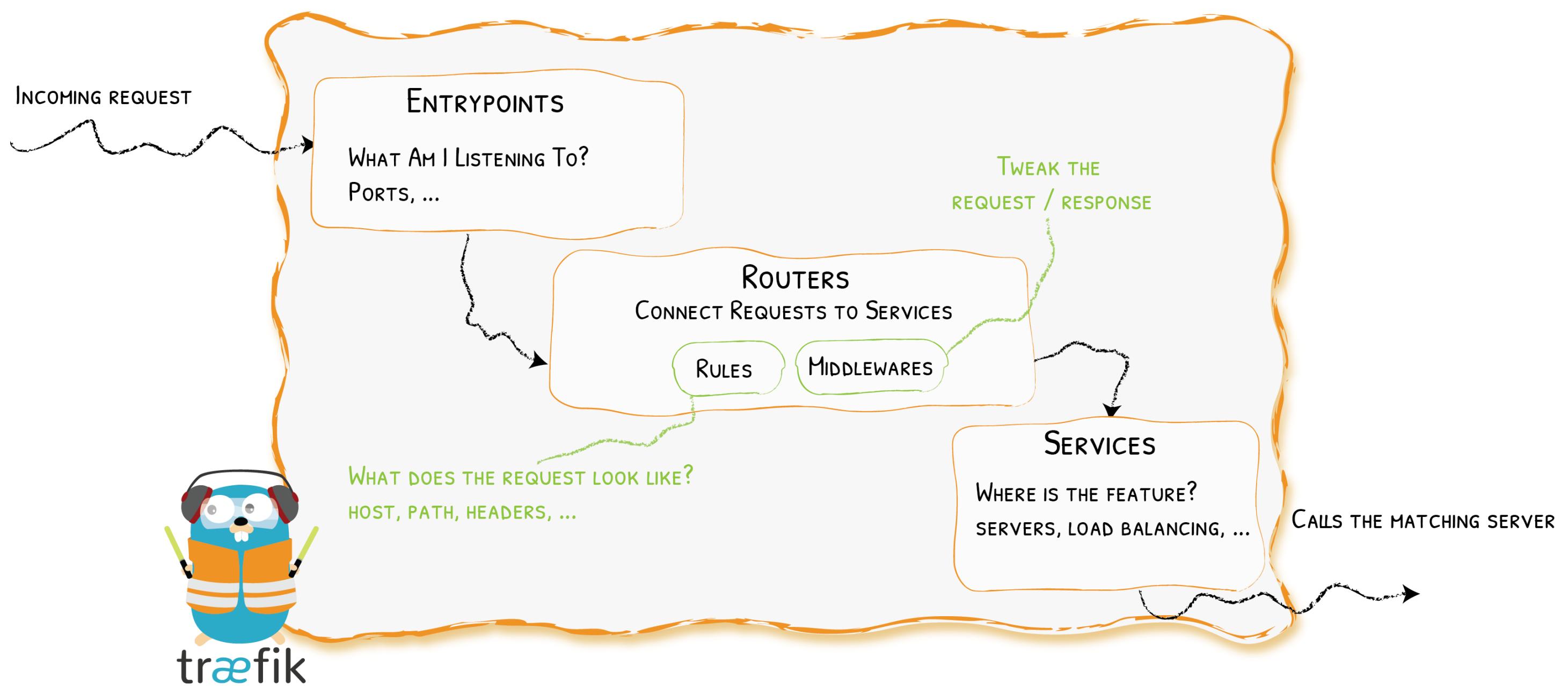
Middlewares



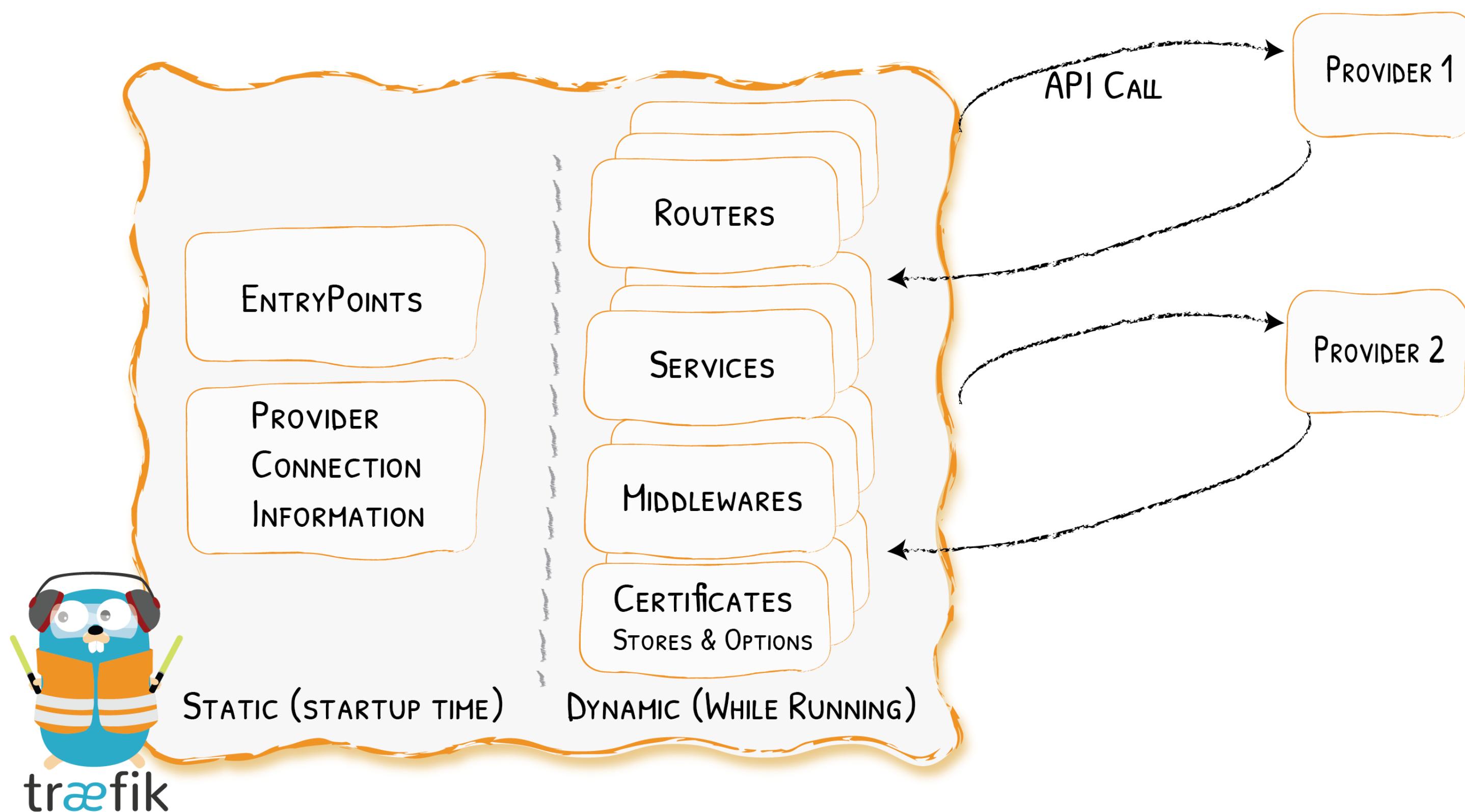
Services



Architecture (Again) At A Glance

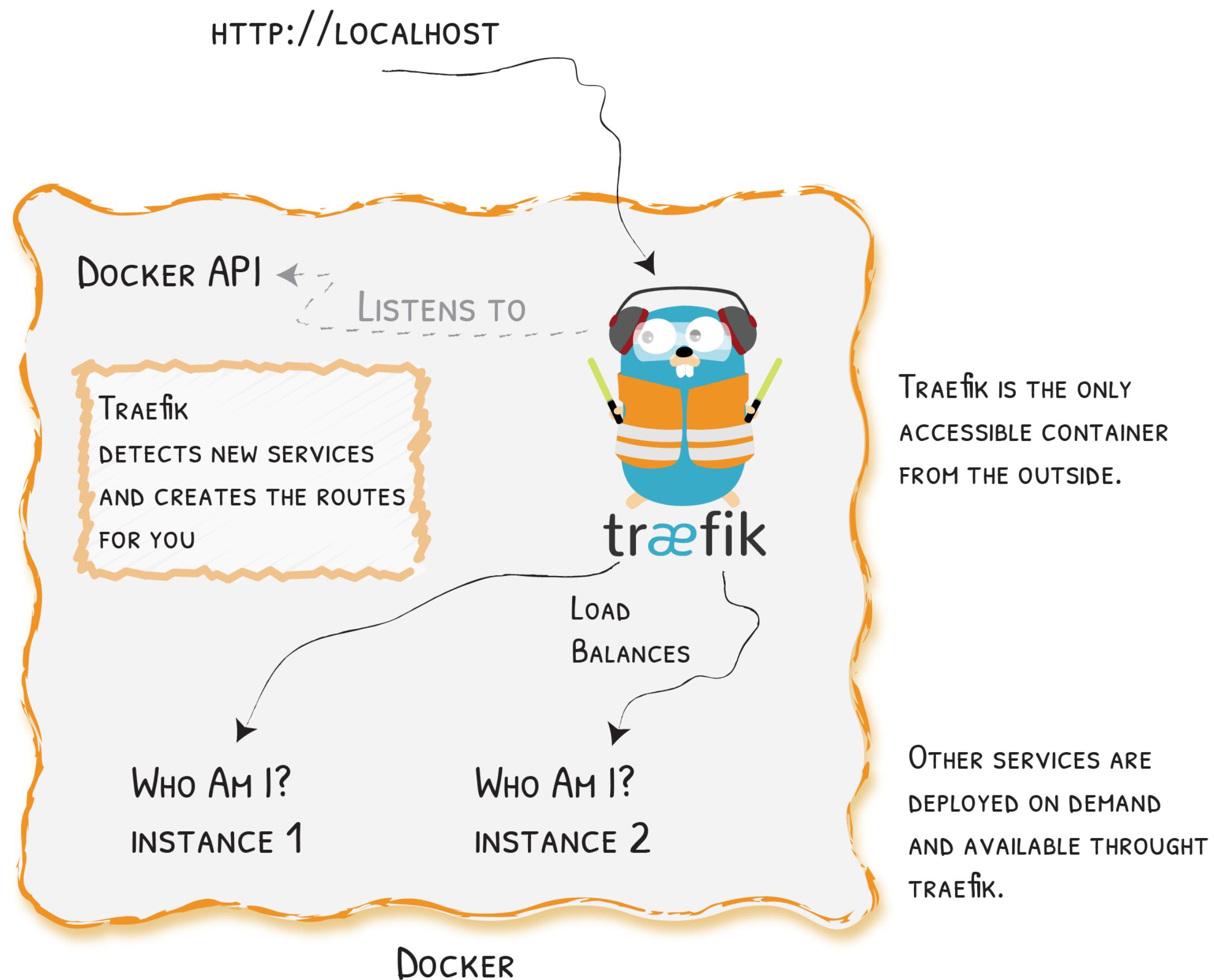


Static & Dynamic Configuration



Show Me The Configuration!

Simple Example With 🐳



With

- With Docker Compose:

```
version: '3'

services:
  reverse-proxy:
    image: traefik:v2.0
    command: --providers.docker
    ports:
      - "80:80"
    volumes:
      - /var/run/docker.sock:/var/run/docker.sock

  webapp:
    image: containous/whoami
    labels:
      - "traefik.http.routers.webapp.rule=Host(`localhost`)"
```

With 🐳: Context

```
# http://mycompany.org/jenkins -> http://jenkins:8080/jenkins
jenkins:
  image: jenkins/jenkins:lts
  environment:
    - JENKINS_OPTS=--prefix=/jenkins
  labels:
    - "traefik.http.services.jenkins.LoadBalancer.server.Port=8080" # Because 50000 is also exposed
    - "traefik.http.routers.jenkins.rule=Host(`mycompany.org`) && PathPrefix(`/jenkins`)"
    - "traefik.http.routers.jenkins.service=jenkins"
```

With 🐳: Rewrites

```
# http://mycompany.org/gitserver -> http://[container IP]:3000
gitserver:
  image: gitea/gitea
  labels:
    - "traefik.http.routers.gitserver.rule=Host(`mycompany.org`) && PathPrefix(`/gitserver`)"
    - "traefik.http.middlewares.gitserver-striprefix.striprefix.prefixes=/gitserver"
    - "traefik.http.routers.gitserver.middlewares=gitserver-striprefix"
```

With File Configuration

Canary Releases

```
http:  
  services:  
    canary:  
      weighted:  
        services:  
          - name: appv1  
            weight: 3 # 75%  
          - name: appv2  
            weight: 1 # 25%  
    appv1:  
      loadBalancer:  
        servers:  
          - url: "http://private-ip-server-1/"  
    appv2:  
      loadBalancer:  
        servers:  
          - url: "http://private-ip-server-2/"
```

Traefik With ⚓

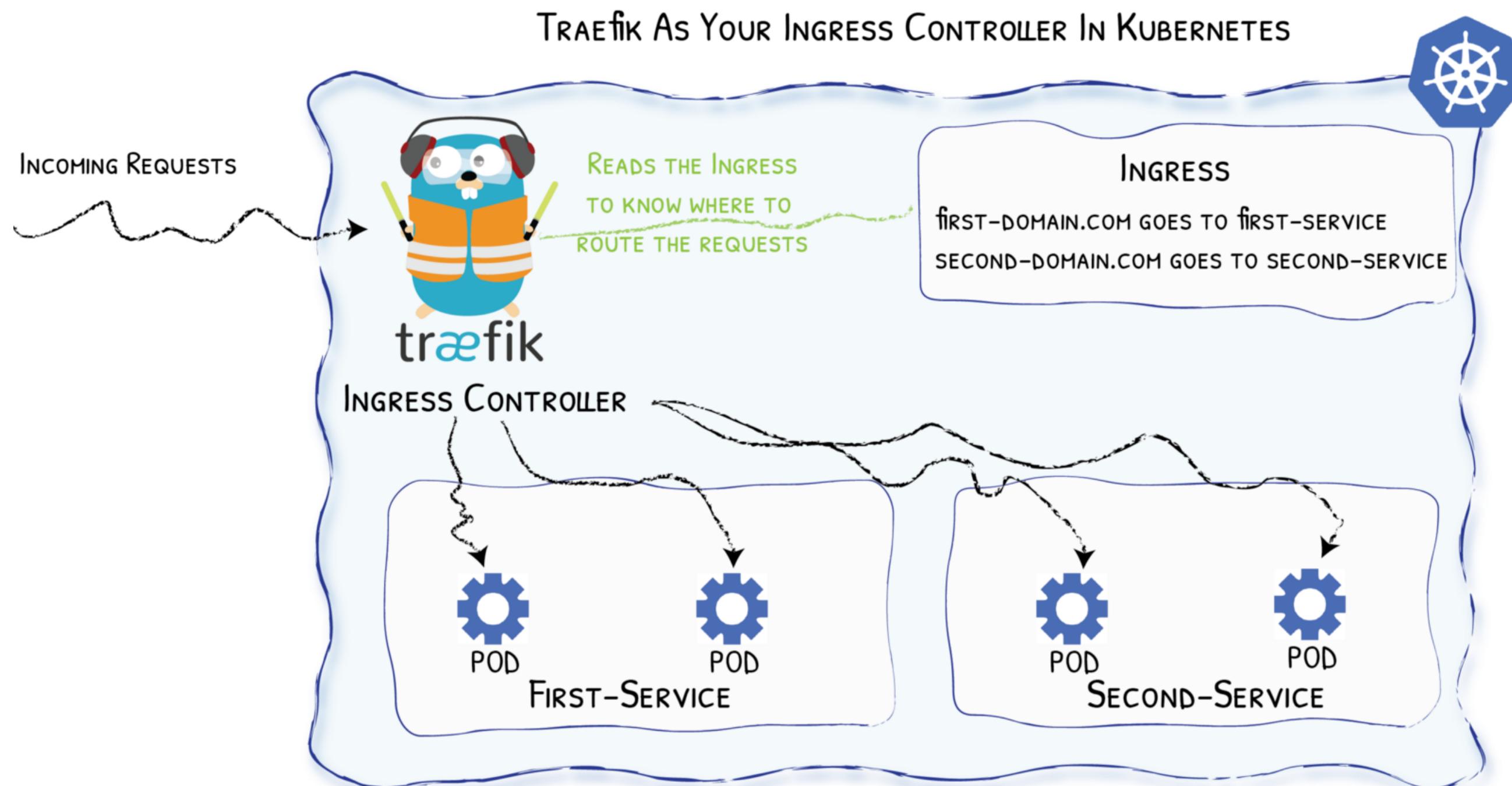


Diagram from <https://medium.com/@geraldcroes>

Example Code With ⚓

```
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  annotations:
    kubernetes.io/ingress.class: 'traefik'
spec:
  rules:
  - host: localhost
    http:
      paths:
      - path: "/whoami"
        backend:
          serviceName: webapp
          servicePort: 80
```

✳️ CRD - Custom Resources Definition

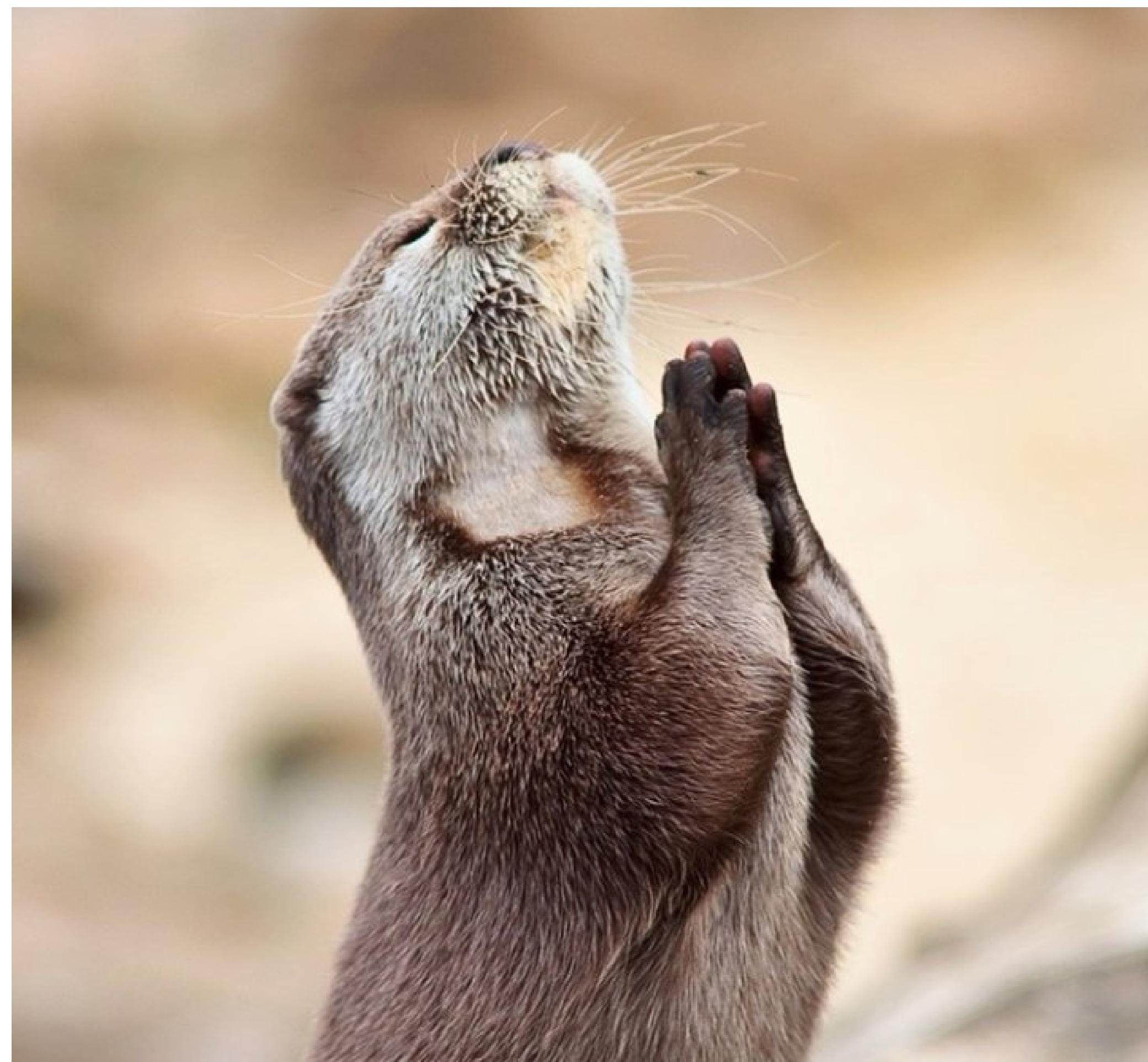
```
# File "webapp.yaml"
apiVersion: traefik.containo.us/v1alpha1
kind: IngressRoute
metadata:
  name: simpleingressroute
spec:
  entryPoints:
    - web
  routes:
    - match: Host(`localhost`) && PathPrefix(`/whoami`)
      kind: Rule
      services:
        - name: webapp
          port: 80
```

```
$ kubectl apply -f webapp.yaml
$ kubectl get ingressroute
```

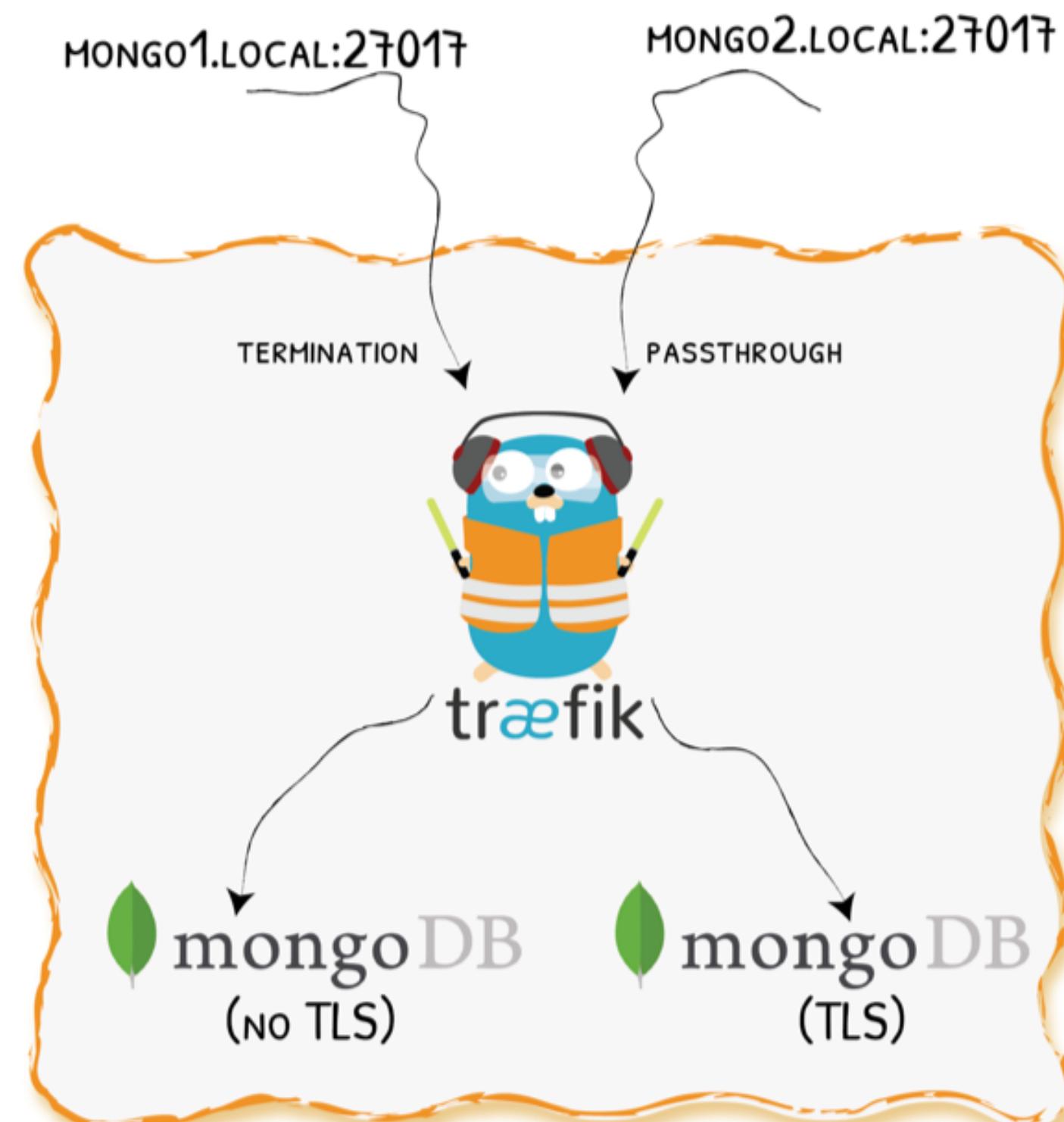
✳️ & TCP (With CRD)

```
apiVersion: traefik.containo.us/v1alpha1
kind: IngressRouteTCP
metadata:
  name: ingressroutetcpmongo.crd
spec:
  entryPoints:
    - mongotcp
  routes:
    - match: HostSNI(`mongo-prod`)
      services:
        - name: mongo-prod
          port: 27017
```

Demo

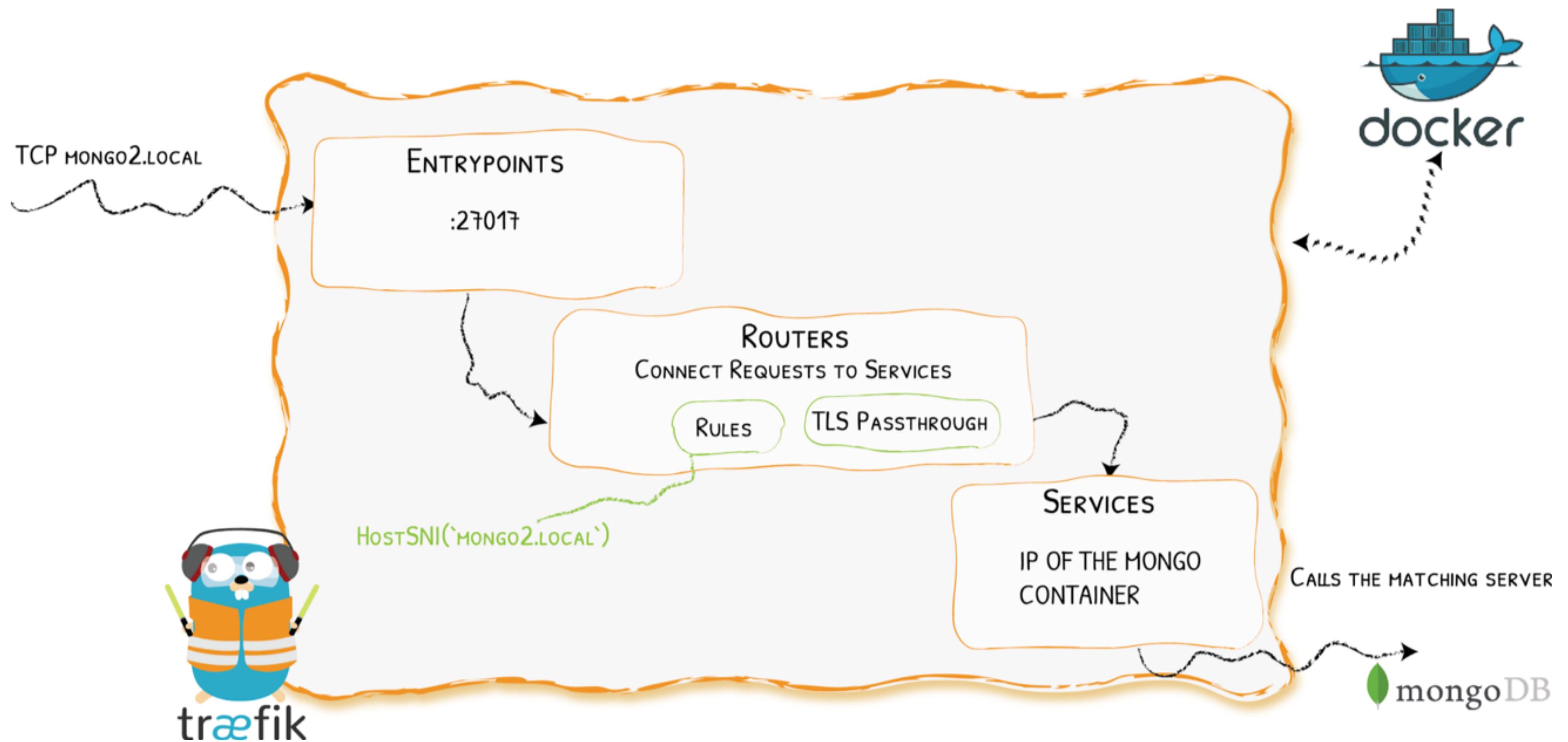


Demo 1 - SNI Routing + TLS Passthrough For TCP

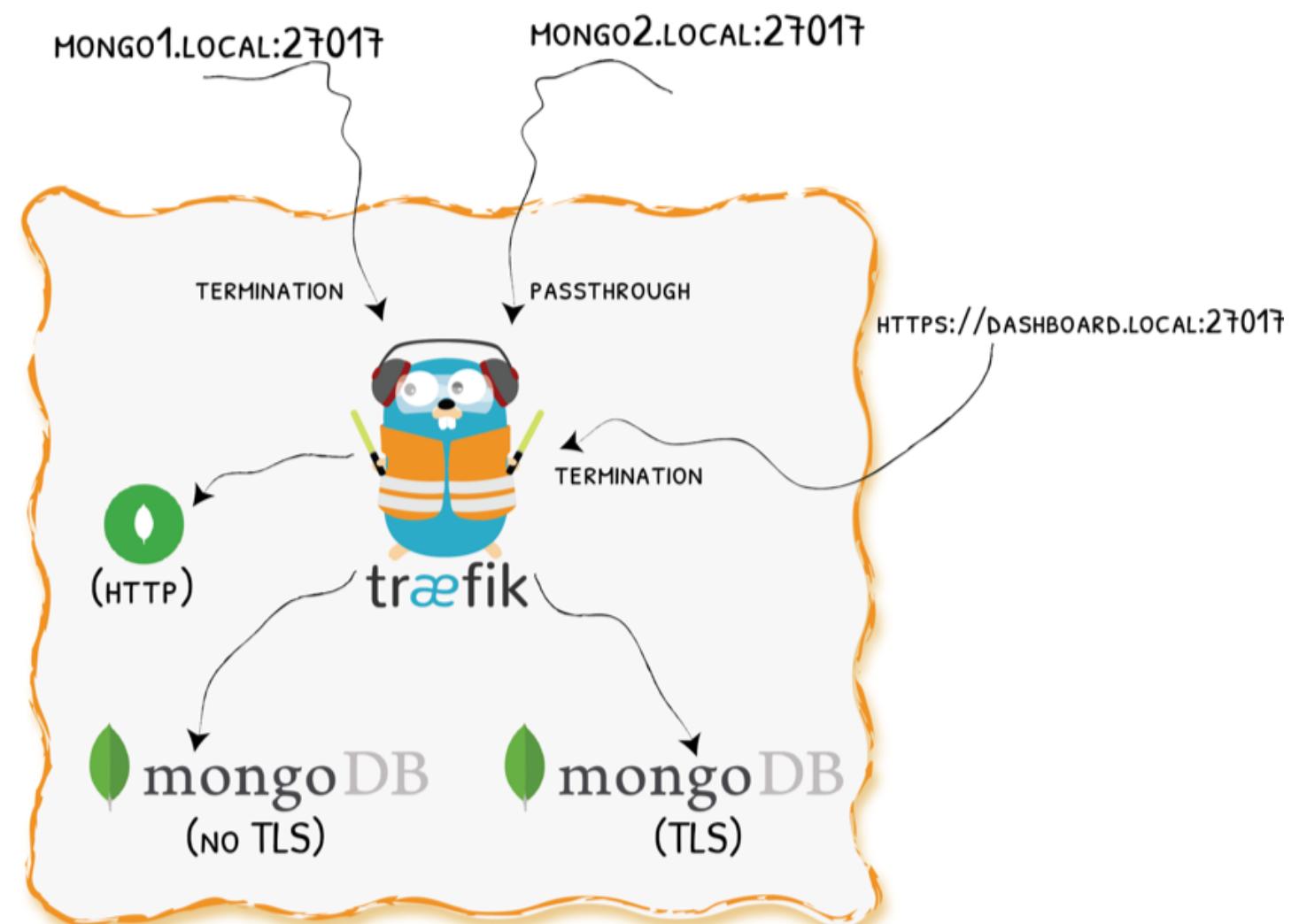


Demo Code on [GitHub](#)

Demo 1 - Configuration



Demo 2 - Muxing HTTPS And TCP On The Same Port



Demo Code on [GitHub](#)

Demo 3 - Canary Release Of A WebApp

More With V2.0

- New Helm Chart for v2.0
- Advanced Load-Balancing with CRDs: Canary, Mirroring, StickySession, etc.
 - Available today with File and Docker providers
- Example and Guides
- UDP (WIP)

We Also Missed Talking About ...

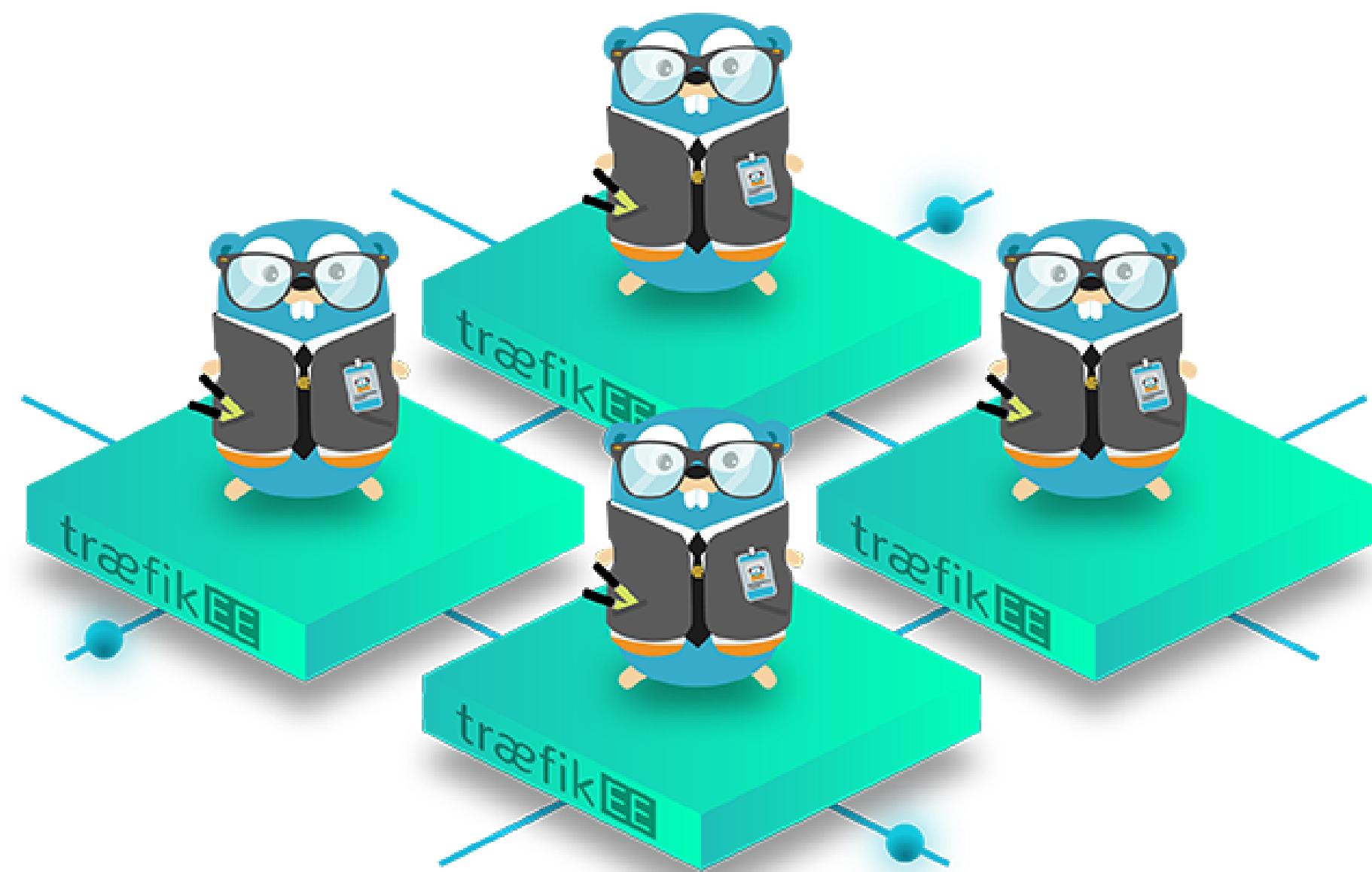
A circular word cloud centered around the term "CIRCUIT BREAKERS". The words are arranged in a circle, with some terms appearing multiple times in different colors. The words include:

- MESOS
- ZIPKIN
- LIMITING
- KUBERNETES
- HTTP
- CERTIFICATE
- ERROR
- Metrics
- Dynamic
- TLS
- Reverse-Proxy
- HEADERS
- GRPC
- DYNAMIC/WILDCARD
- Security
- Configurations
- Tracing
- PROXY
- SECRETS
- PROMETHEUS
- JAEGER
- WEBSOCKETS
- SSL
- FORWARD
- REDIRECTS
- DOCKER
- PROTOCOL
- HEALTH
- CHECKS
- CLUSTER
- AUTH
- HSTS
- CONSUL
- RATE
- SWARM
- MODE

More Info

- bit.ly/traefik-v2
- community.containo.us

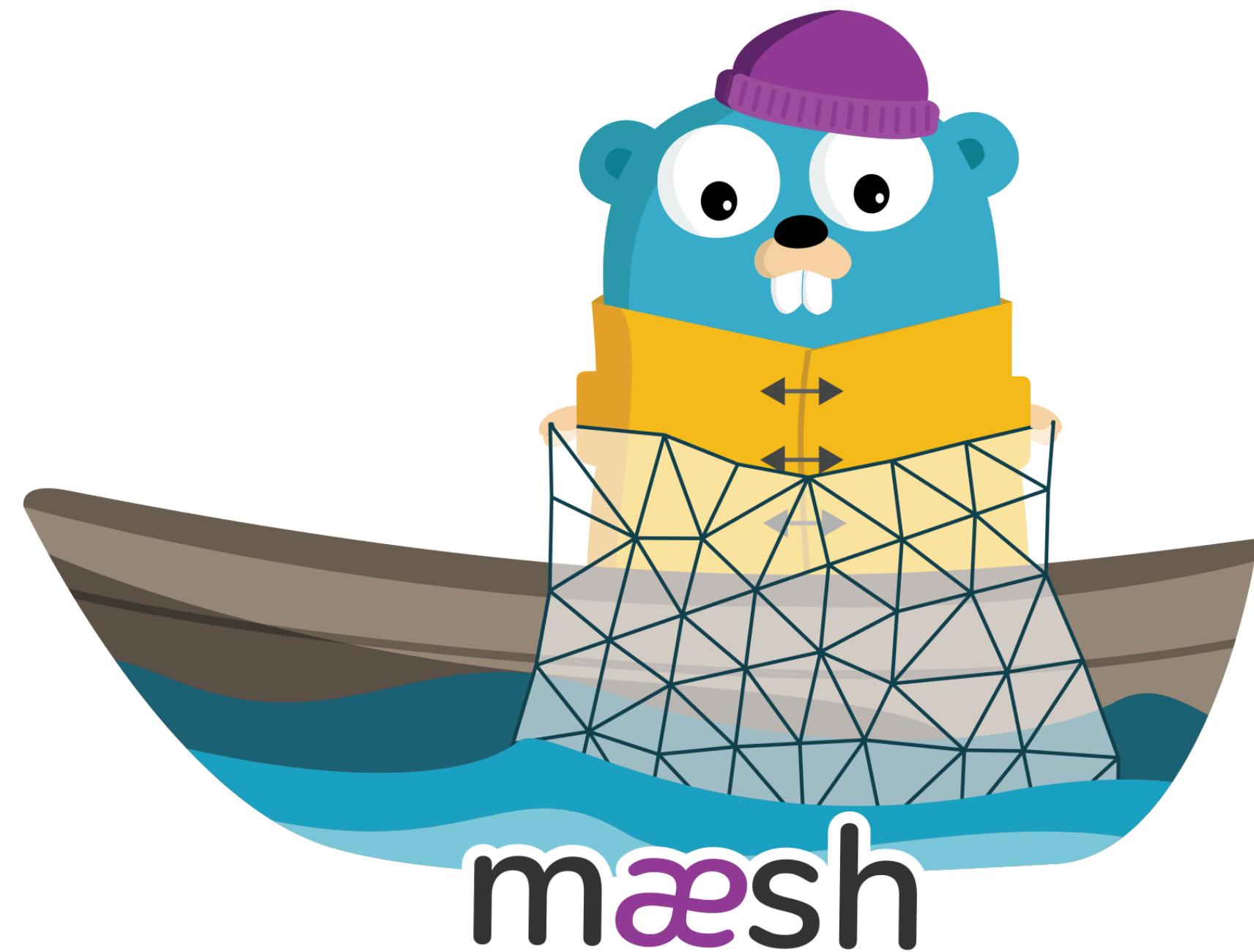
Traefik Comes In Herd



Free Trial

<https://containo.us/traefikee>

Say Hello To Maesh



More On Maesh

<https://mae.sh>

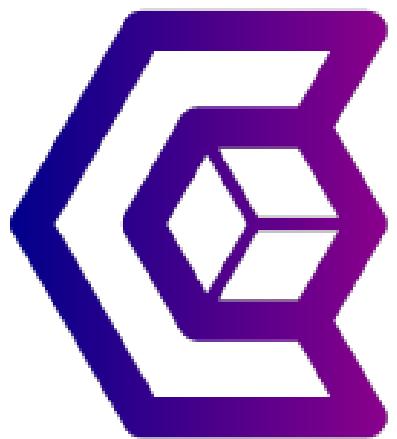
That's All Folks!



We Have
Stickers!

traefik

We Are Hiring!



```
docker run -it containous/jobs
```

Thank You!

-  @jboumenjou
-  jboumenjou



- Slides (HTML): <https://containous.github.io/slides/meetup-toulouse-devops-2019>
- Slides (PDF): <https://containous.github.io/slides/meetup-toulouse-devops-2019/slides.pdf>
- Source on : <https://github.com/containous/slides/tree/meetup-toulouse-devops-2019>