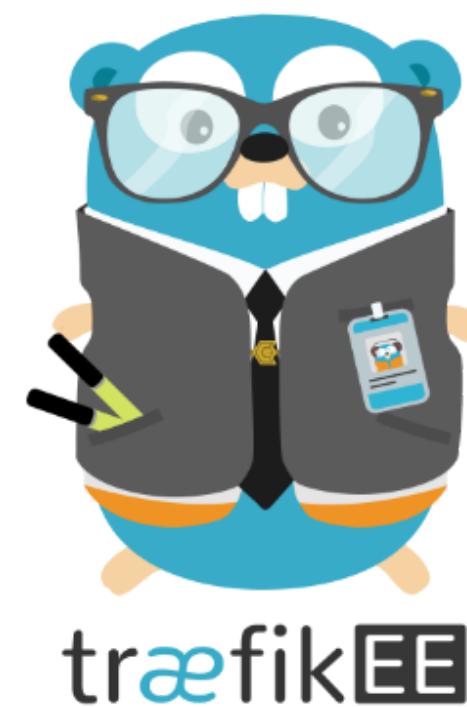
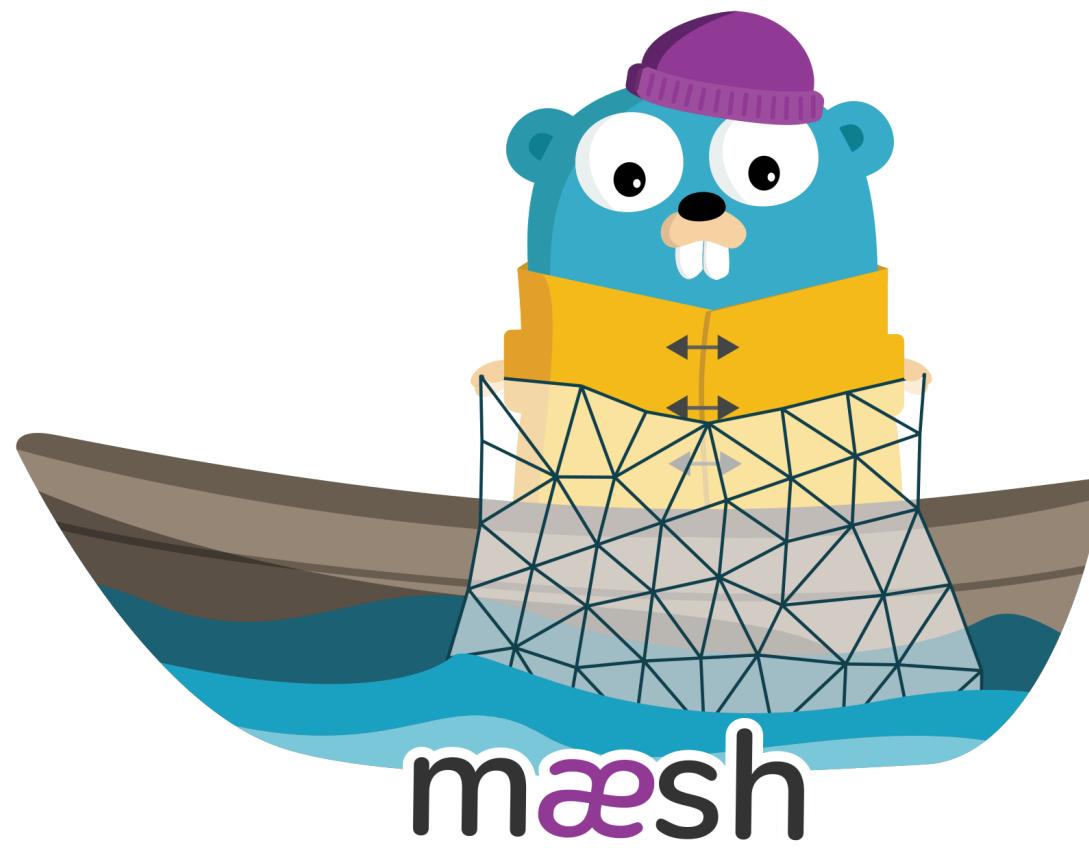


# Traefik Enterprise Edition & Maesh



traefikEE



mæsh

CloudGURUS Netherlands - Tuesday 12th of November 2011

# 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 1/2

Manuel Zapf

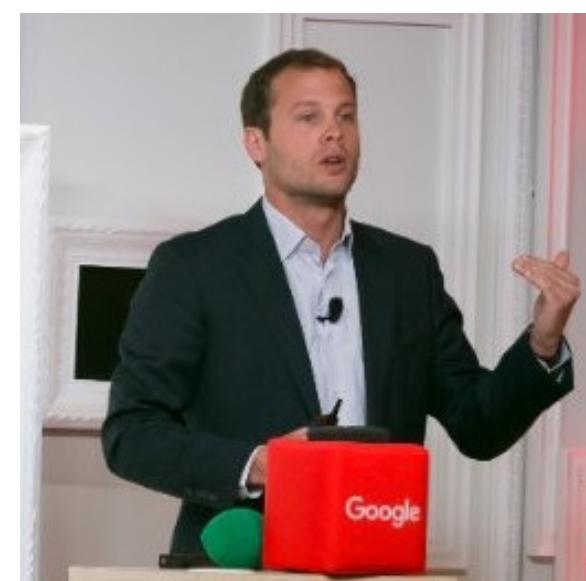
- 🏴 Træfik's Solution Architect 🔨 @ Containous
- 🐦 @mZapfDE
- 🐳 SantoDE



# Whoami 2/2

Adrien Martinet

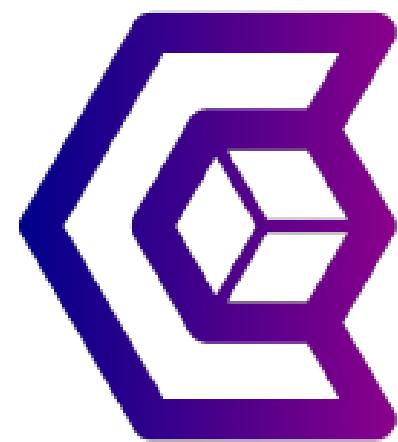
- 🎤 Sales @ Containous
- 🐦 @martinet\_adrien
- 💬 adrimartinet



# 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?

# Evolution Of Software Design

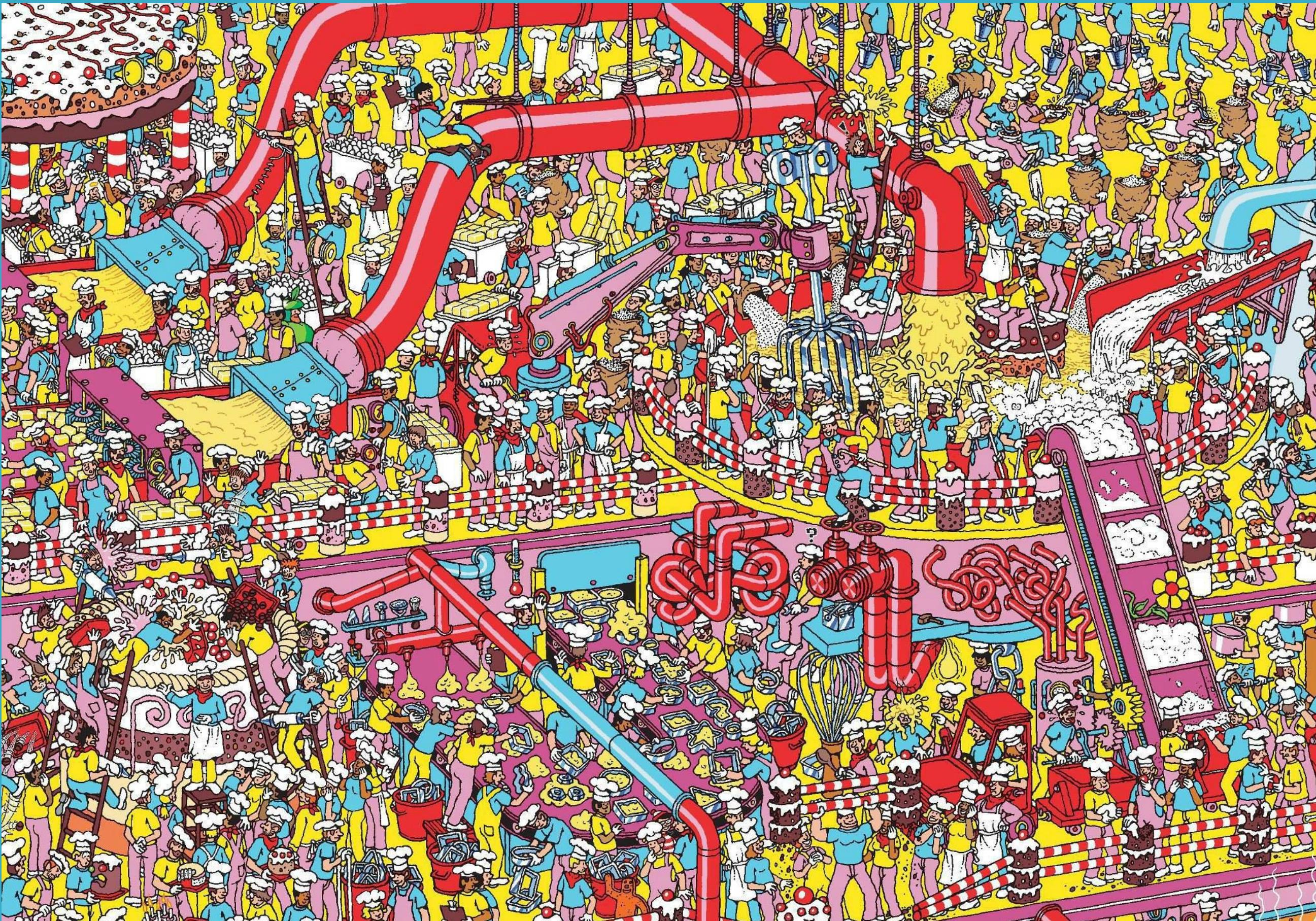
# The Premise Of Microservices...



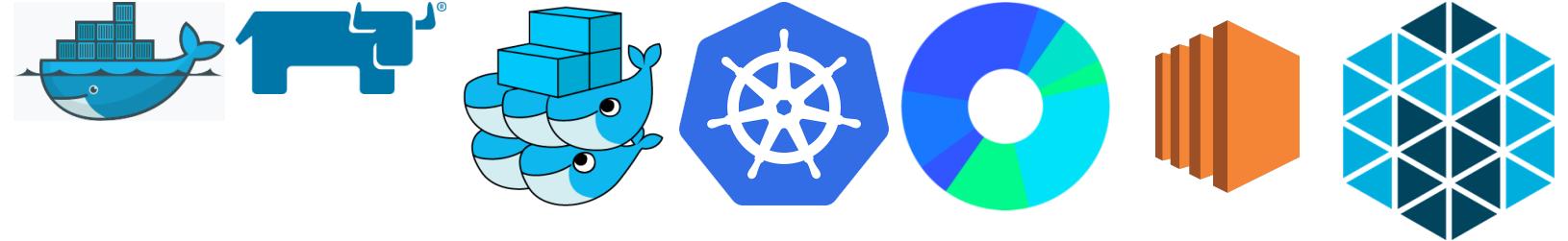
# ...And What Happens

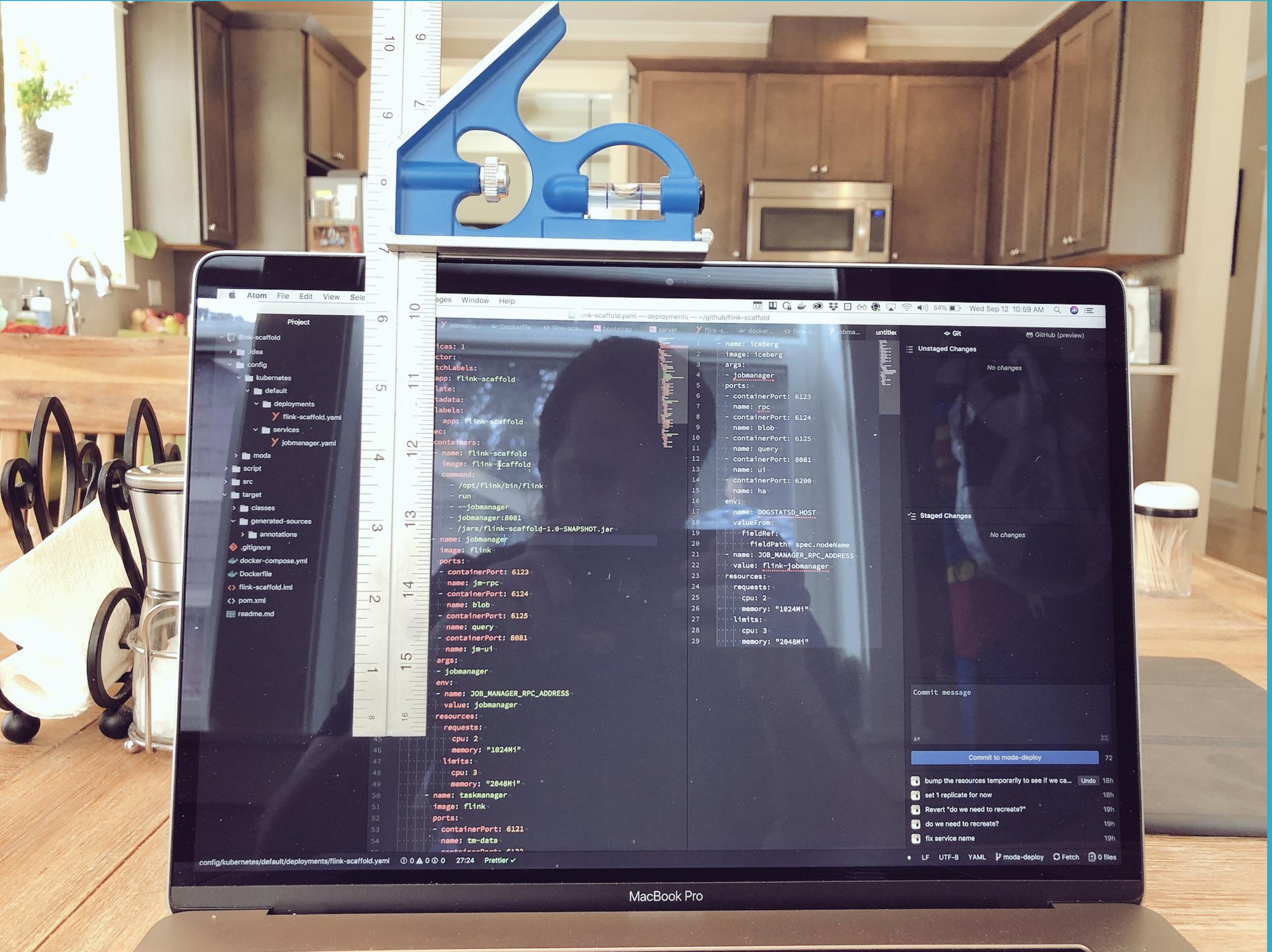


# Where's My Service?



# Tools Of The Trade





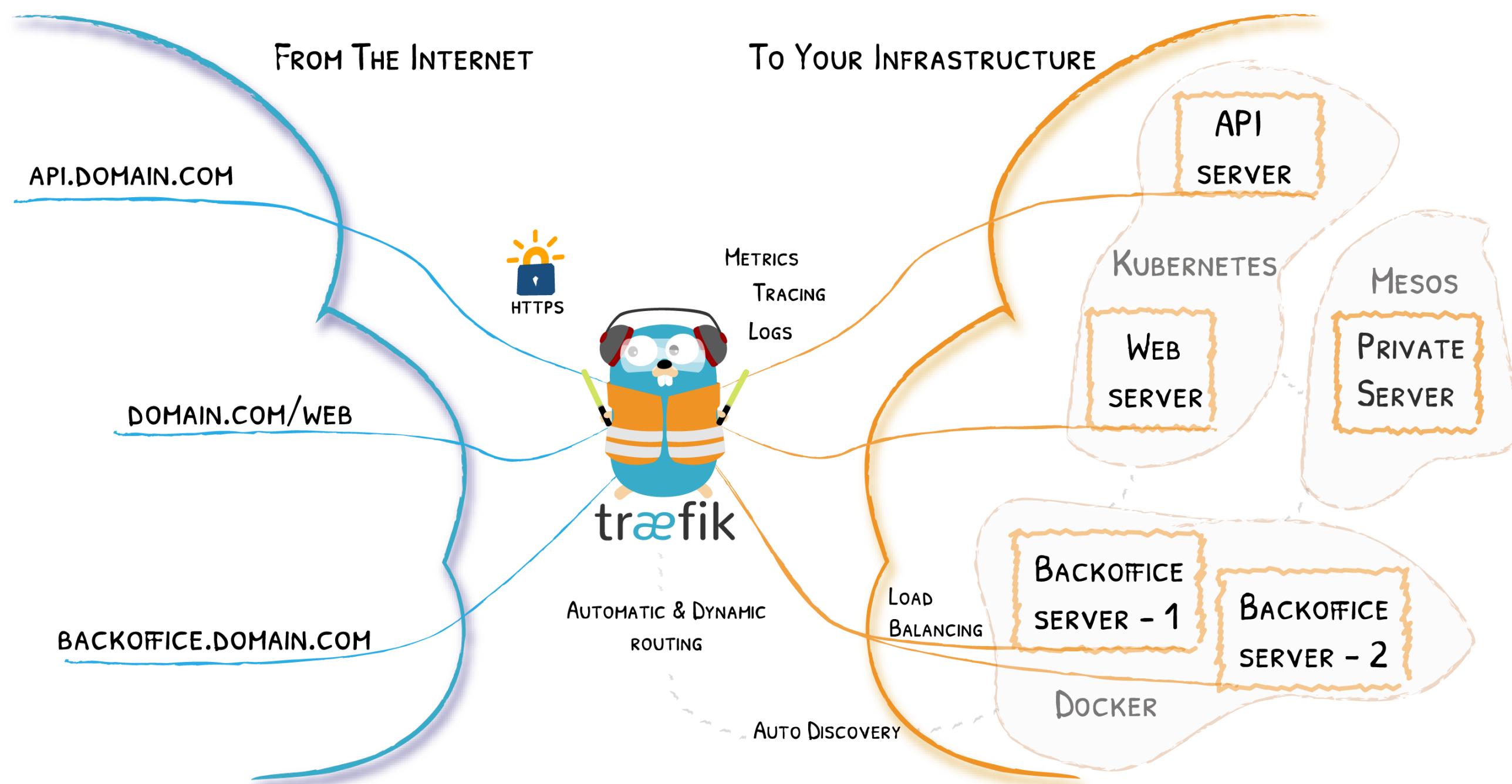
Source: <https://twitter.com/Caged/status/1039937162769096704>

# What If I Told You?



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

# Here Comes Traefik!



# Traefik Project

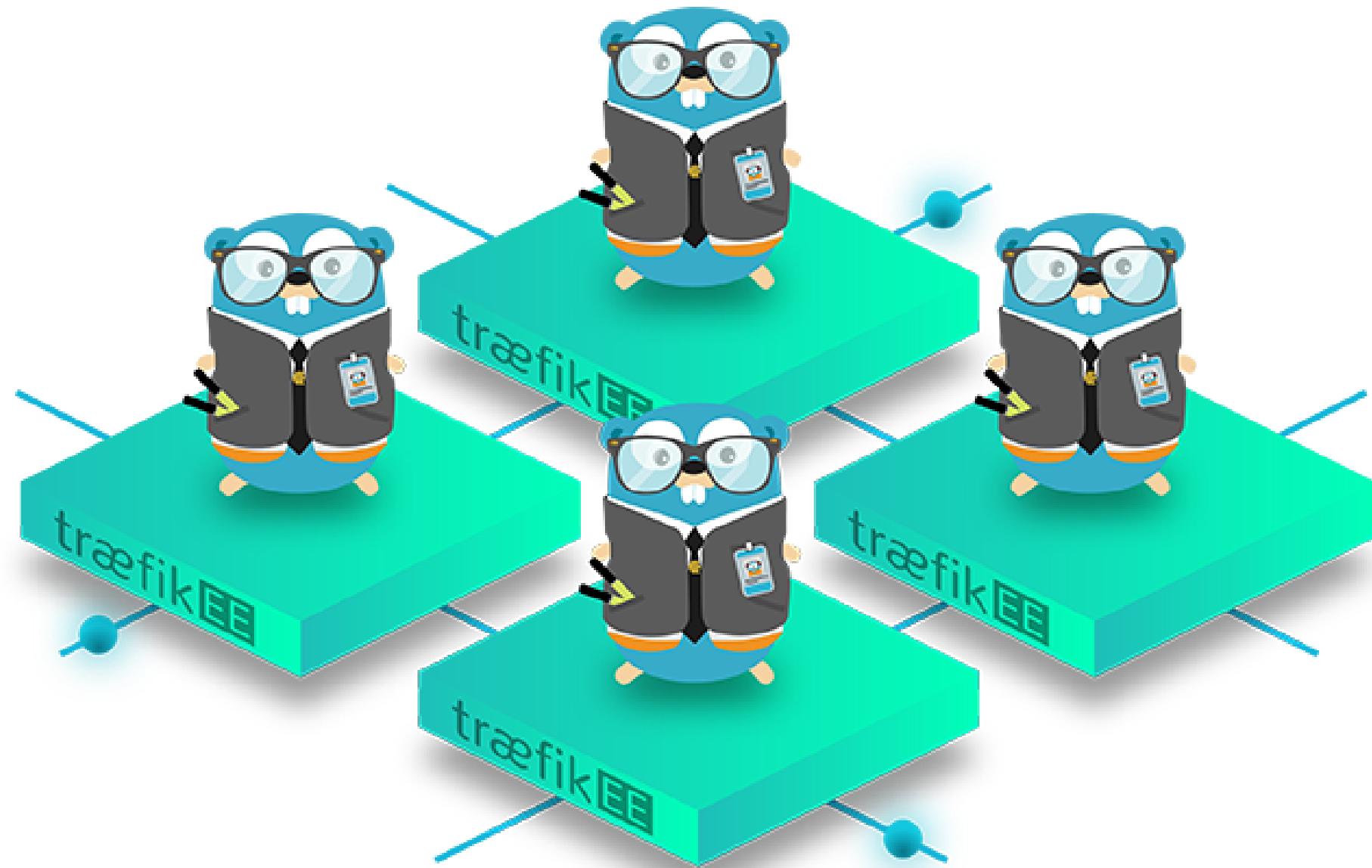
-  <https://github.com/containous/traefik>
- MIT License
- Written in Go
- 24,000+  1.3B+  400+ 
- Created in 2015, 4Y 
- Current stable branch: v2 . 0

# The Herd



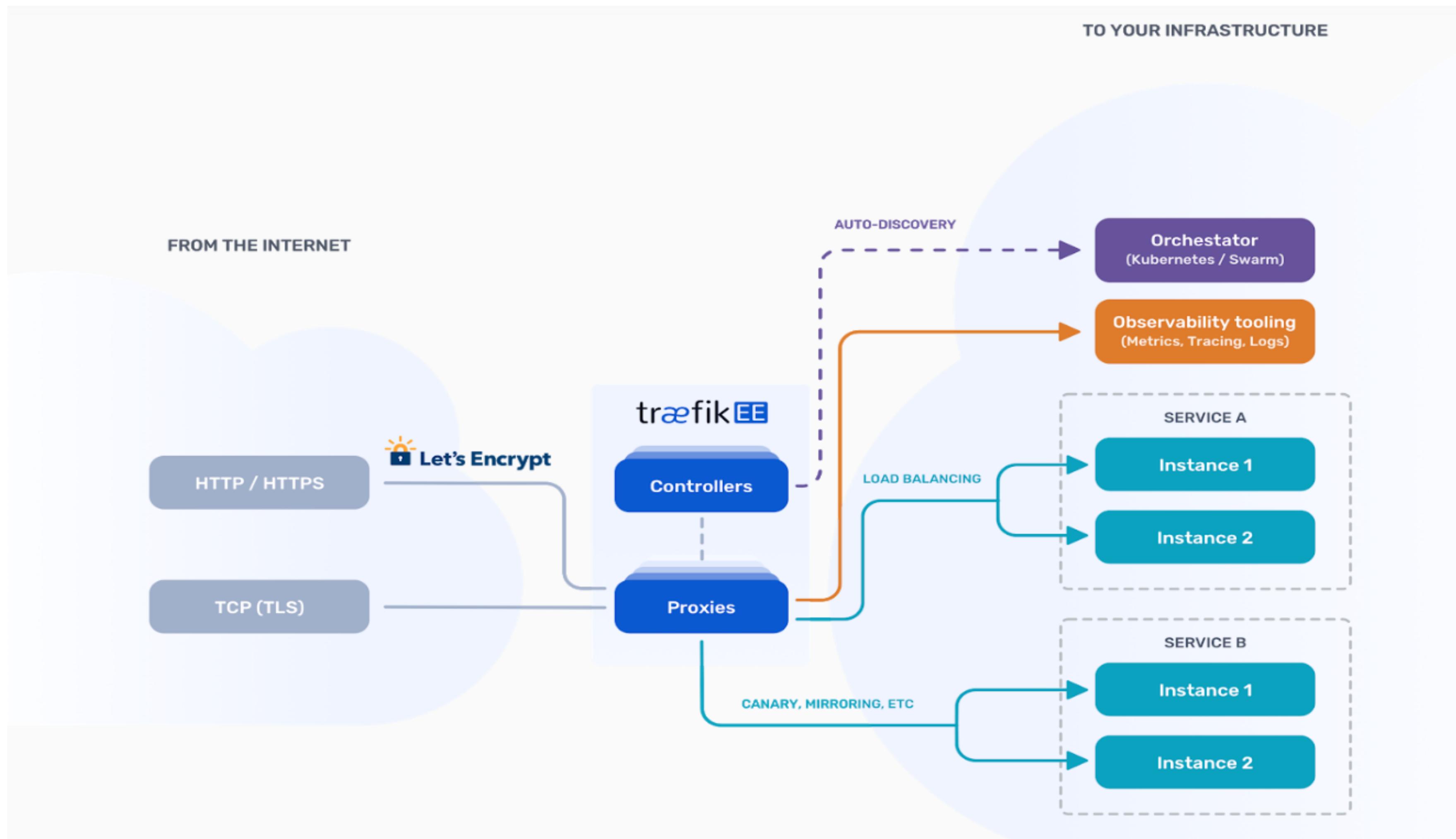
You came to the wrong neighbour

# Traefik Comes In Herd



# Value Proposition

- Community Driven Edge Router
- Cloud Native & Agnostic
- Configuration Auto-Discovery
- Native Observability & Tracing
- Deploy Easily and Operate at Scale
- Security : Encryption & Separation of Concern
- High Availability



# As Simple As Traefik

- Install it:

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

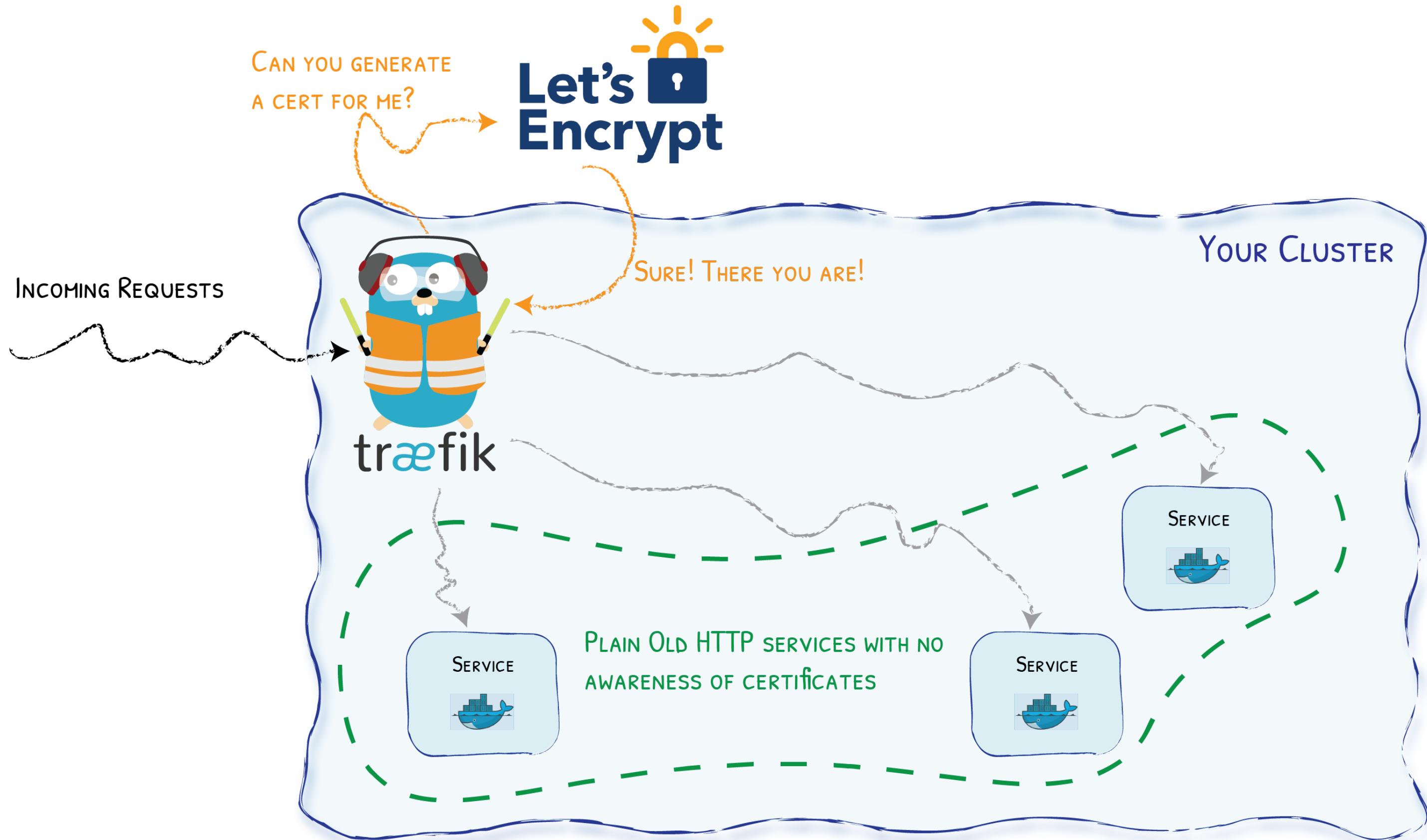
- Configure it:

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

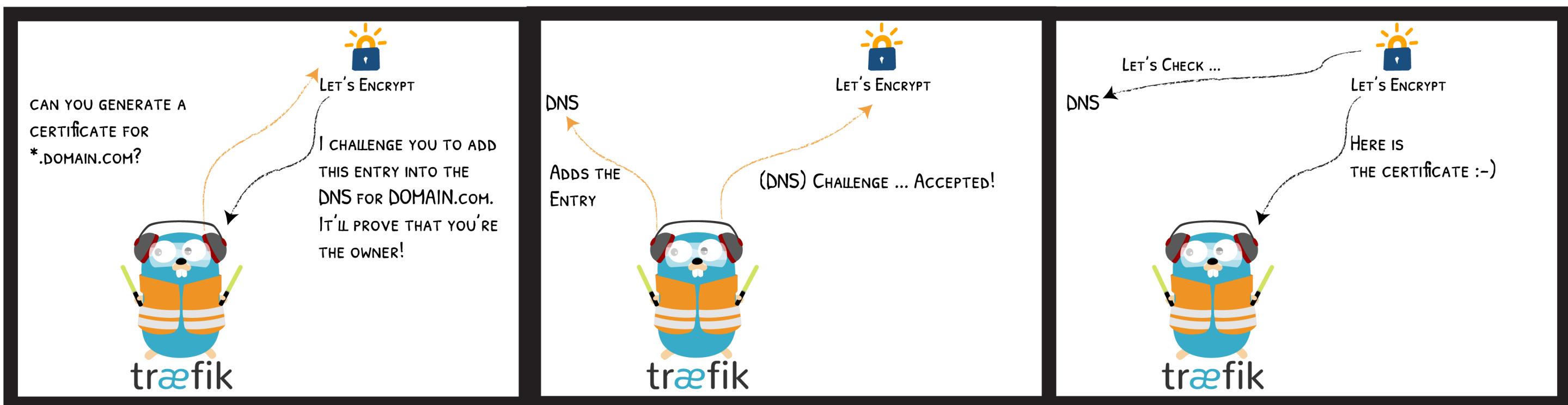
# Free Trial

<https://containo.us/traefikee>

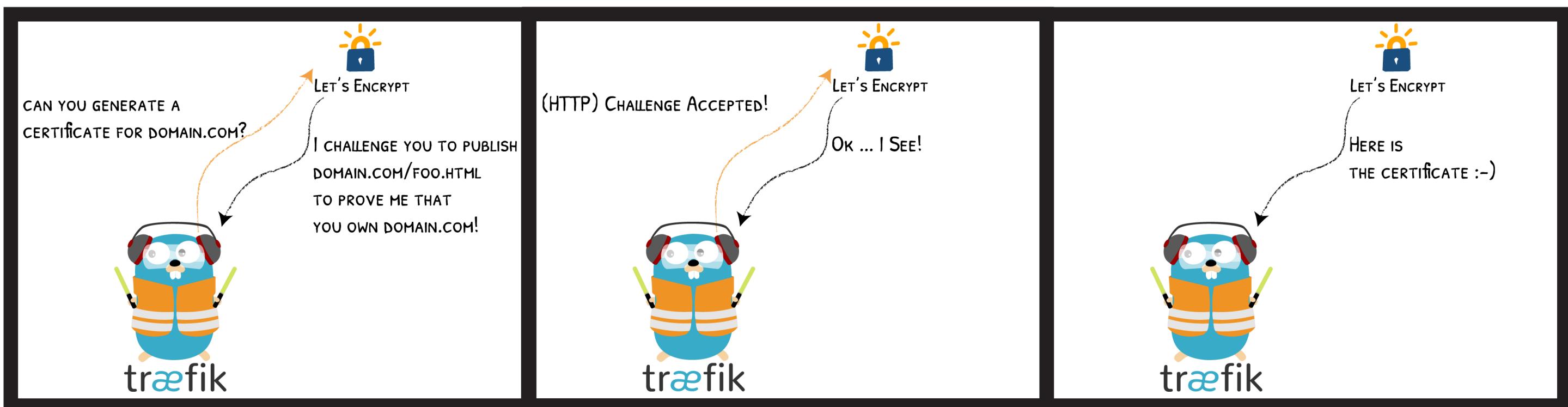
# HTTPS & Let's Encrypt



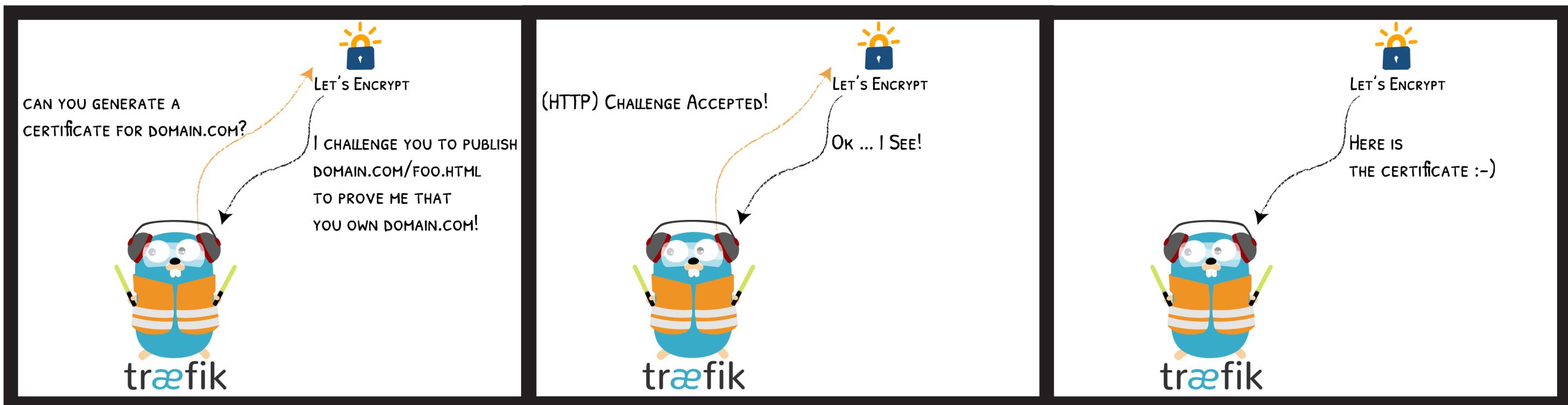
# Let's Encrypt DNS Challenge



# Let's Encrypt HTTP Challenge

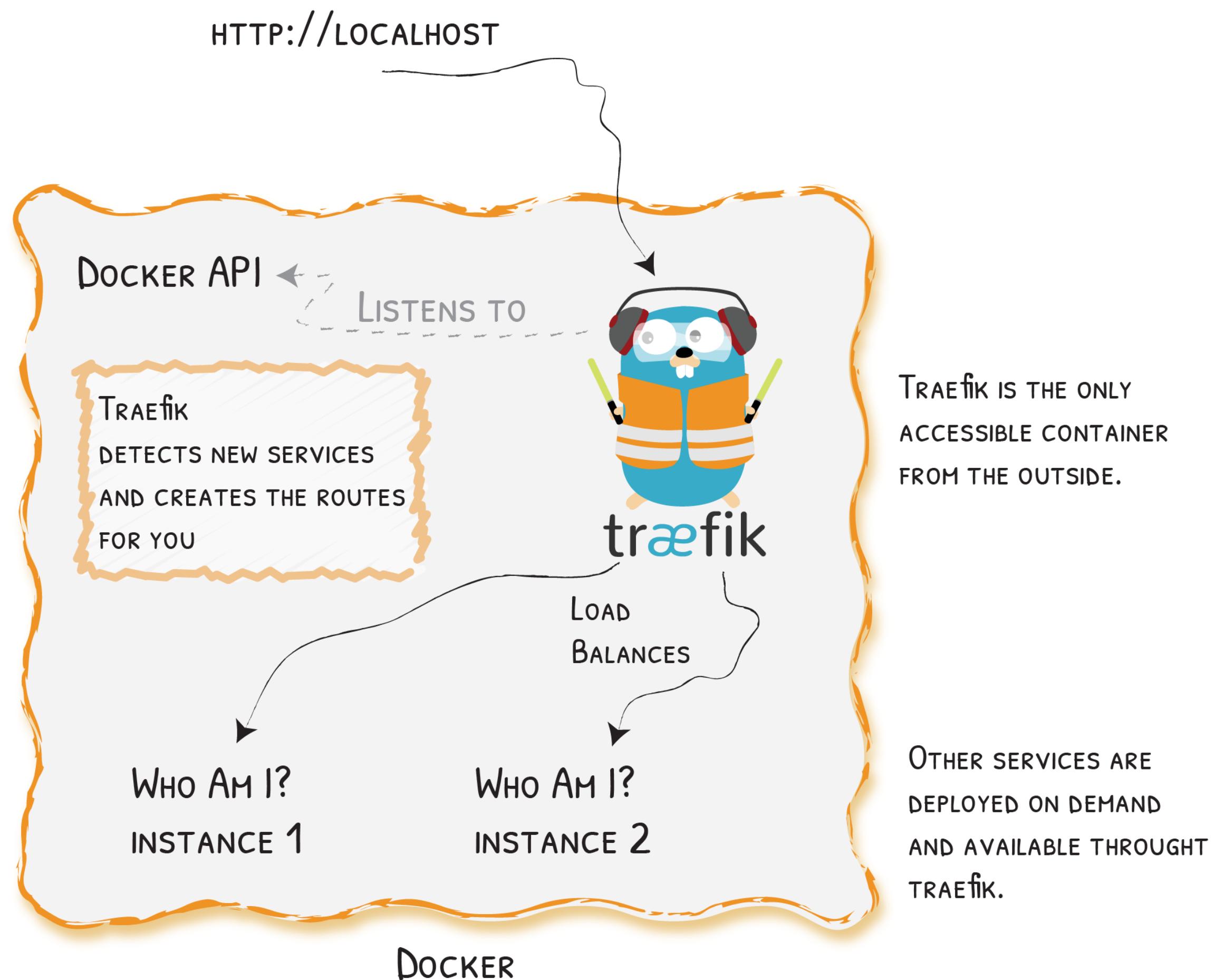


# Let's Encrypt TLS Challenge



# Show Me The Configuration!

# Traefik With



# Example With

```
version: '3'

services:
  reverse-proxy:
    image: traefik:v2.0
    command: --providers.docker.endpoint="tcp://proxy-docker.svc.local:2376"
    ports:
      - "80:80"

  corporate-webapp:
    image: company/corporate-webapp:1.2.3
    labels:
      - "traefik.http.routers.webapp.rule=Host(`company.com`)"

  admin-webapp:
    image: company/admin-webapp:15.2.2
    labels:
      - "traefik.http.routers.admin-webapp.rule=Host(`company.com`) && PathPrefix(`/admin`)"
      - "traefik.http.services.admin-svc.loadbalancer.server.port=9999"
```

# Traefik With ⚓

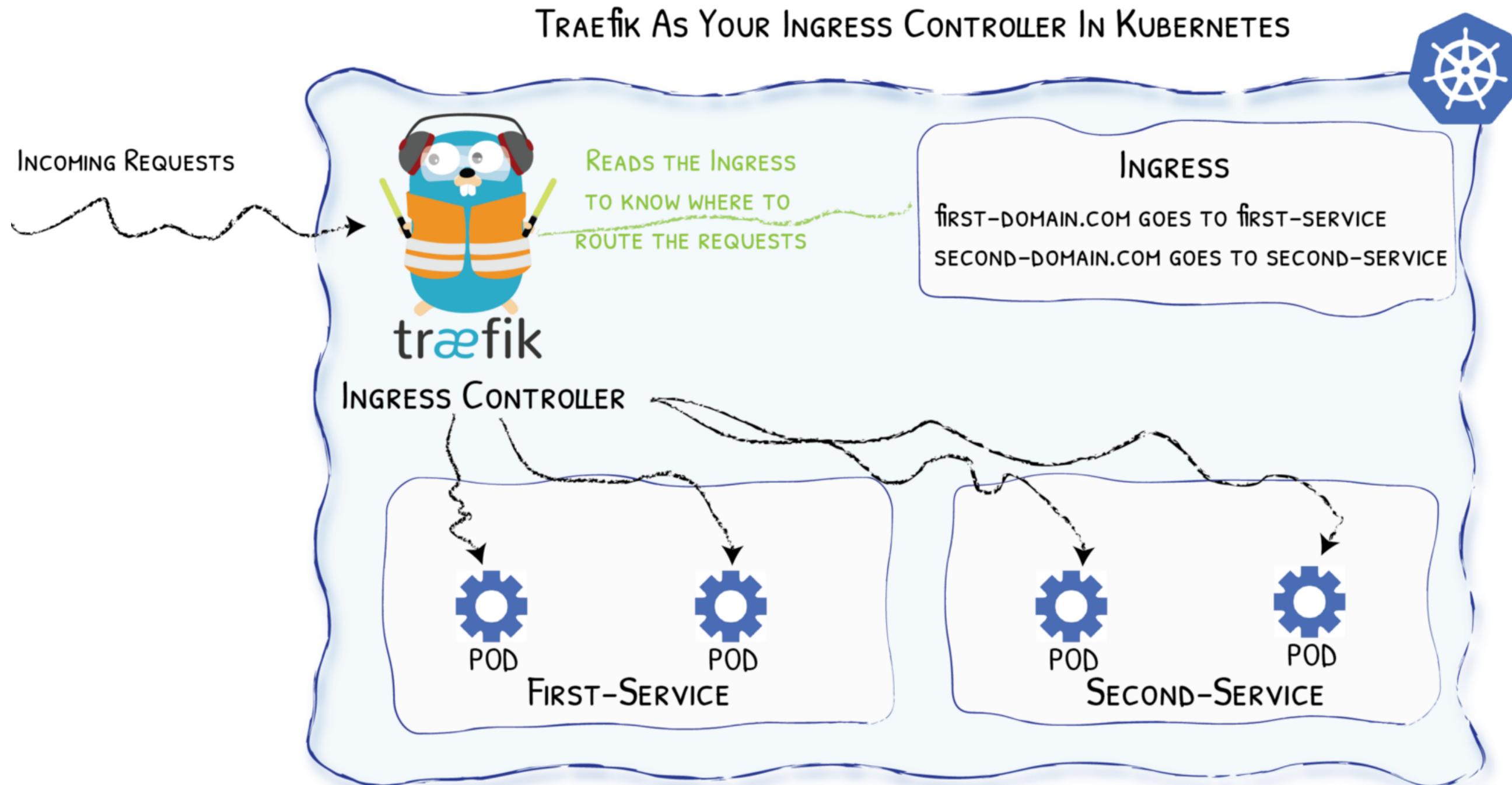


Diagram from <https://medium.com/@geraldcroes>

# Ingress Example With ⚙

```
apiVersion: networking.k8s.io/v1beta1
kind: Ingress
metadata:
  name: corporate-webapp
  annotations:
    kubernetes.io/ingress.class: 'traefik'
spec:
  rules:
  - host: localhost
    http:
      paths:
      - backend:
          serviceName: corporate-webapp
          servicePort: 80
```

# But...

## Annotations

### General annotations

The following general annotations are applicable on the Ingress object:

Annotation	Description
traefik.ingress.kubernetes.io/app-root: "/index.html"	Redirects all requests for / to the defined path. (1)
traefik.ingress.kubernetes.io/error-pages: <YML>	See <a href="#">custom error pages</a> section. (2)
traefik.ingress.kubernetes.io/frontend-entry-points: http,https	Override the default frontend endpoints.
traefik.ingress.kubernetes.io/pass-client-tls-cert: <YML>	Forward the client certificate following the configuration in YAML. (3)
traefik.ingress.kubernetes.io/pass-tls-cert: "true"	Override the default frontend PassTLSCert value. Default: false. (DEPRECATED)
traefik.ingress.kubernetes.io/preserve-host: "true"	Forward client Host header to the backend.
traefik.ingress.kubernetes.io/priority: "3"	Override the default frontend rule priority.
traefik.ingress.kubernetes.io/rate-limit: <YML>	See <a href="#">rate limiting</a> section. (4)
traefik.ingress.kubernetes.io/redirect-entry-point: https	Enables Redirect to another entryPoint for that frontend (e.g. HTTPS).
traefik.ingress.kubernetes.io/redirect-permanent: "true"	Return 301 instead of 302.
traefik.ingress.kubernetes.io/redirect-regex: "http://localhost/(.*)"	Redirect to another URL for that frontend. Must be set with traefik.ingress.kubernetes.io/redirect-replacement.
traefik.ingress.kubernetes.io/redirect-replacement: http://mydomain/\$1	Redirect to another URL for that frontend. Must be set with traefik.ingress.kubernetes.io/redirect-regex.
traefik.ingress.kubernetes.io/request-modifier: AddPrefix: /users	Adds a <a href="#">request modifier</a> to the backend request.
traefik.ingress.kubernetes.io/rewrite-target: /users	Replaces each matched Ingress path with the specified one, and adds the old path to the X-Replaced-Path header.

## Annotations

You can add these Kubernetes annotations to specific Ingress objects to customize their behavior.

Tip	
Annotation keys and values can only be strings. Other types, such as boolean or numeric values must be quoted, i.e. "true", "false", "100".	
Note	
The annotation prefix can be changed using the <a href="#">--annotations-prefix</a> command line argument, but the default is nginx.ingress.kubernetes.io, as described in the table below.	
Name	type
nginx.ingress.kubernetes.io/app-root	string
nginx.ingress.kubernetes.io/affinity	cookie
nginx.ingress.kubernetes.io/affinity-mode	"balanced" or "persistent"
nginx.ingress.kubernetes.io/auth-realm	string
nginx.ingress.kubernetes.io/auth-secret	string
nginx.ingress.kubernetes.io/auth-secret-type	string
nginx.ingress.kubernetes.io/auth-type	basic or digest
nginx.ingress.kubernetes.io/auth-tls-secret	string
nginx.ingress.kubernetes.io/auth-tls-verify-depth	number
nginx.ingress.kubernetes.io/auth-tls-verify-client	string
nginx.ingress.kubernetes.io/auth-tls-error-page	string
nginx.ingress.kubernetes.io/auth-tls-pass-certificate-to-upstream	"true" or "false"
nginx.ingress.kubernetes.io/auth-url	string
nginx.ingress.kubernetes.io/auth-cache-key	string

# ✳️ 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
```

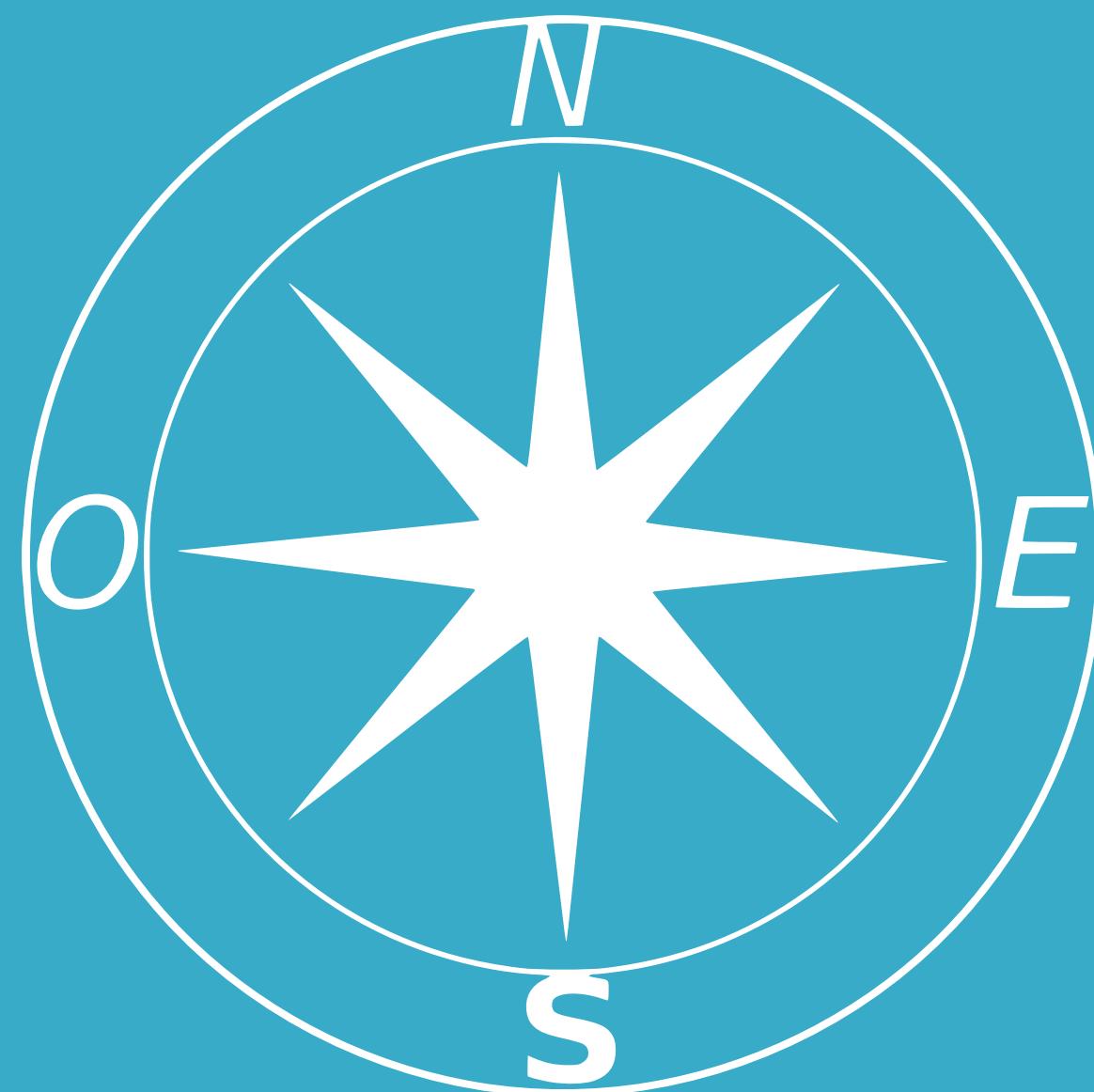
# ✳️ & TCP (With CRD)

```
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
```

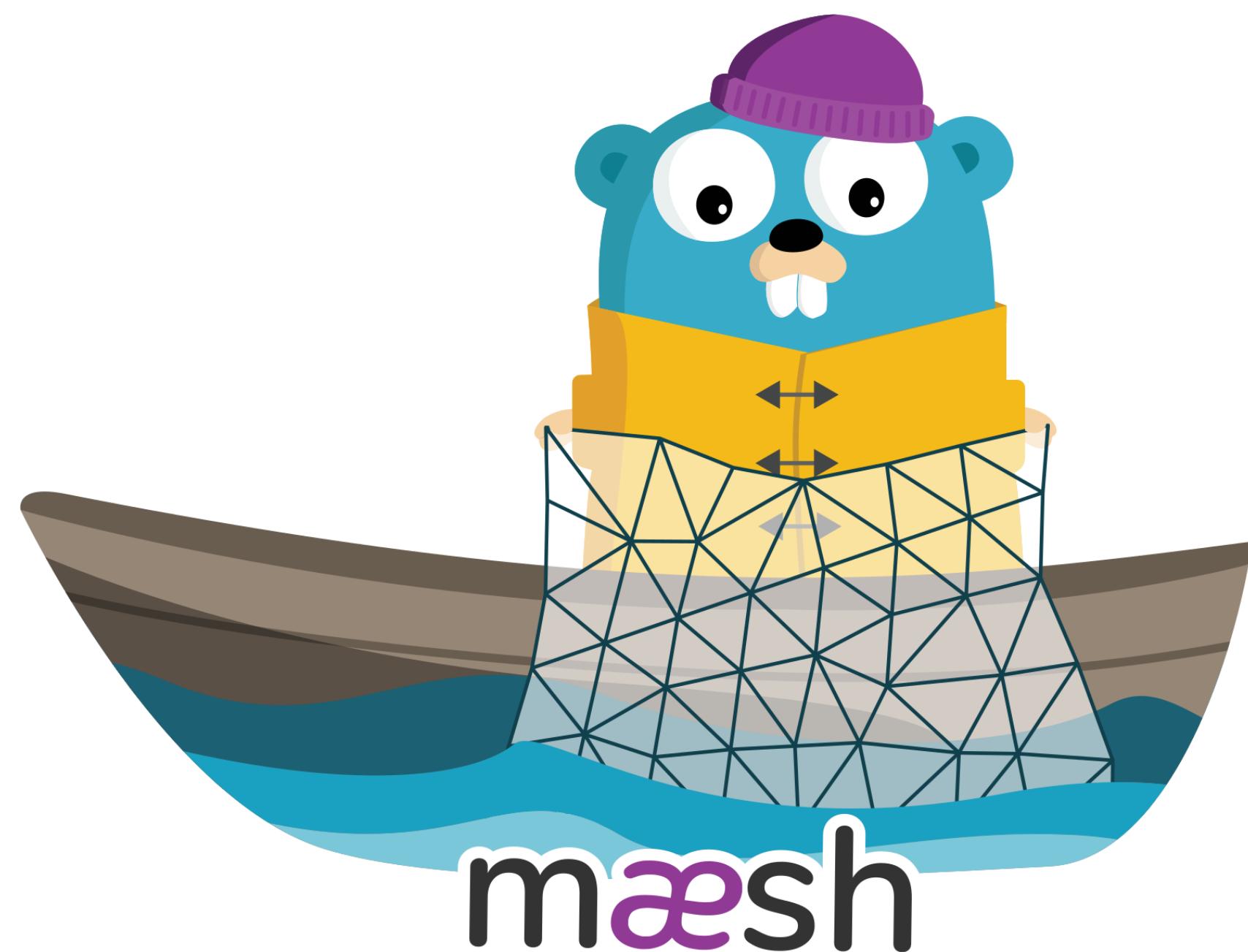
# Canary Releases

```
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/"
```

# East / West Traefik



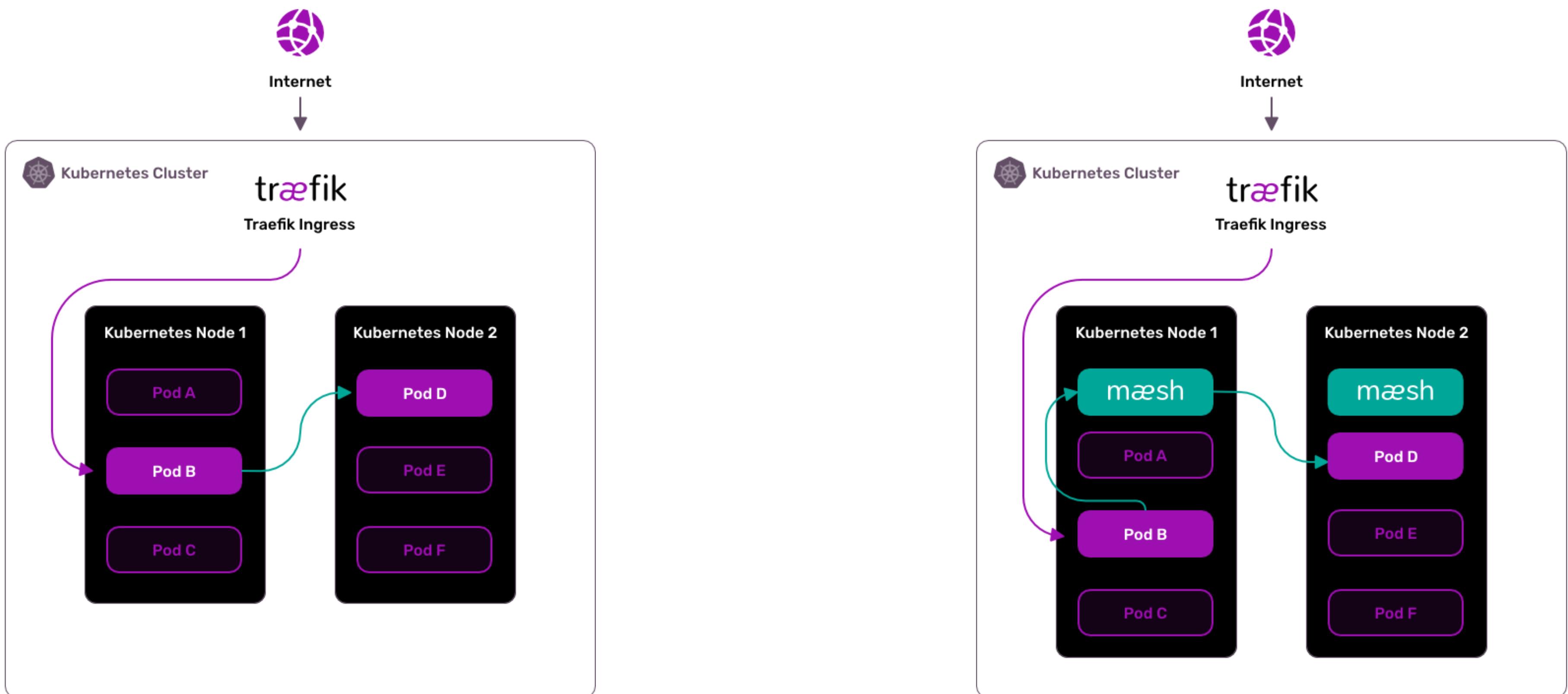
# Say Hello To Maesh



# What Is Maesh?

*Maesh is a lightweight, easy to configure, and non-invasive service mesh that allows visibility and management of the traffic flows inside any Kubernetes cluster.*

# Maesh Architecture

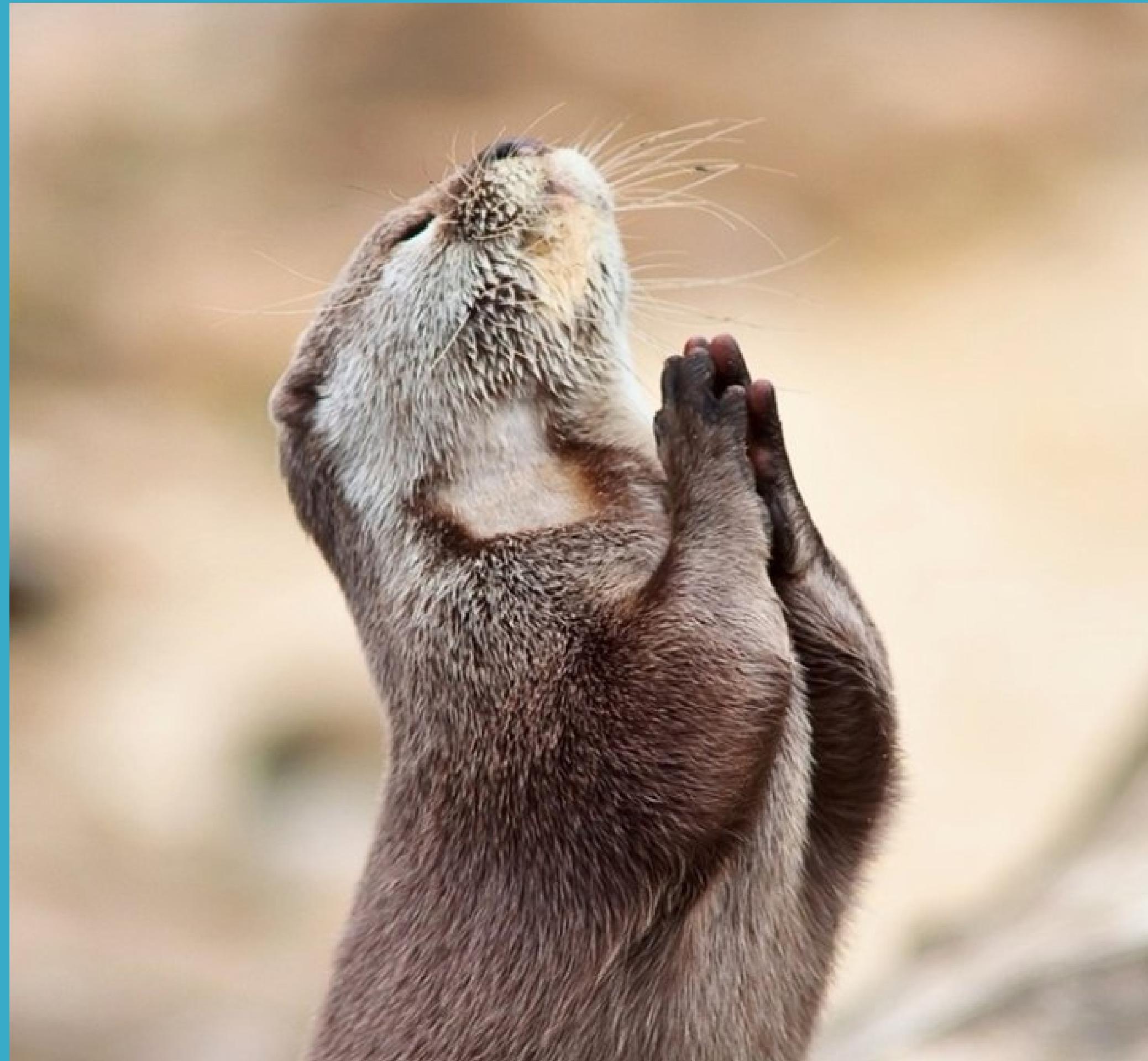


# More On Maesh

- Built on top of Traefik,
- SMI (Service Mesh Interface specification) compliant,
- Opt-in by default.

Maesh Website

# Demo



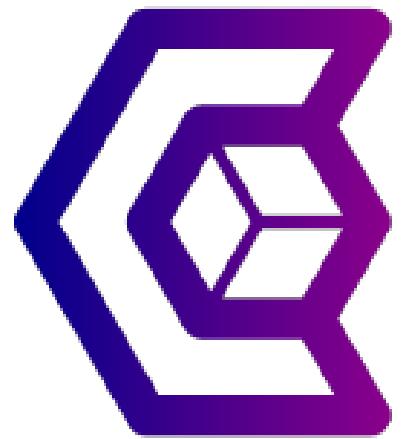
# That's All Folks!



We Have  
Stickers!

traefik

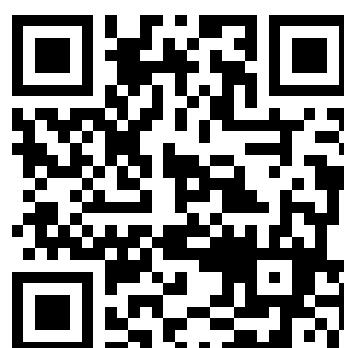
# We Are Hiring!



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

# Thank You!

-  @mZapfDE
-  @martinet\_adrien
-  SantoDE
-  adrimartinet



- Slides (HTML): <https://containous.github.io/slides/cloudgurus-netherland>
- Slides (PDF): <https://containous.github.io/slides/cloudgurus-netherland/slides.pdf>
- Source on : <https://github.com/containous/slides/tree/cloudgurus-netherland>