

Traefik Enterprise Edition & Maesh



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

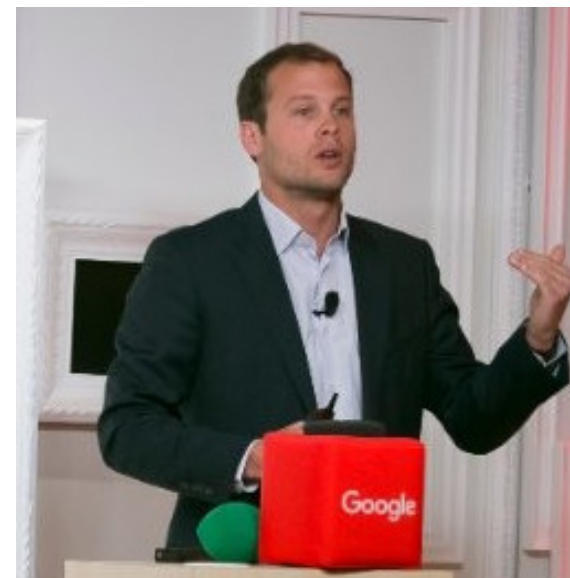
- 🏠 Træfik's Solution Architect 🔨 @ Containous
- 🐦 @mZapfDE
- 🐙 SantoDE



Whoami 2/2

Adrien Martinet

- 📖 Sales @ **Containous**
- 🐦 **@martinet_adrien**
- **in** **adrimartinet**



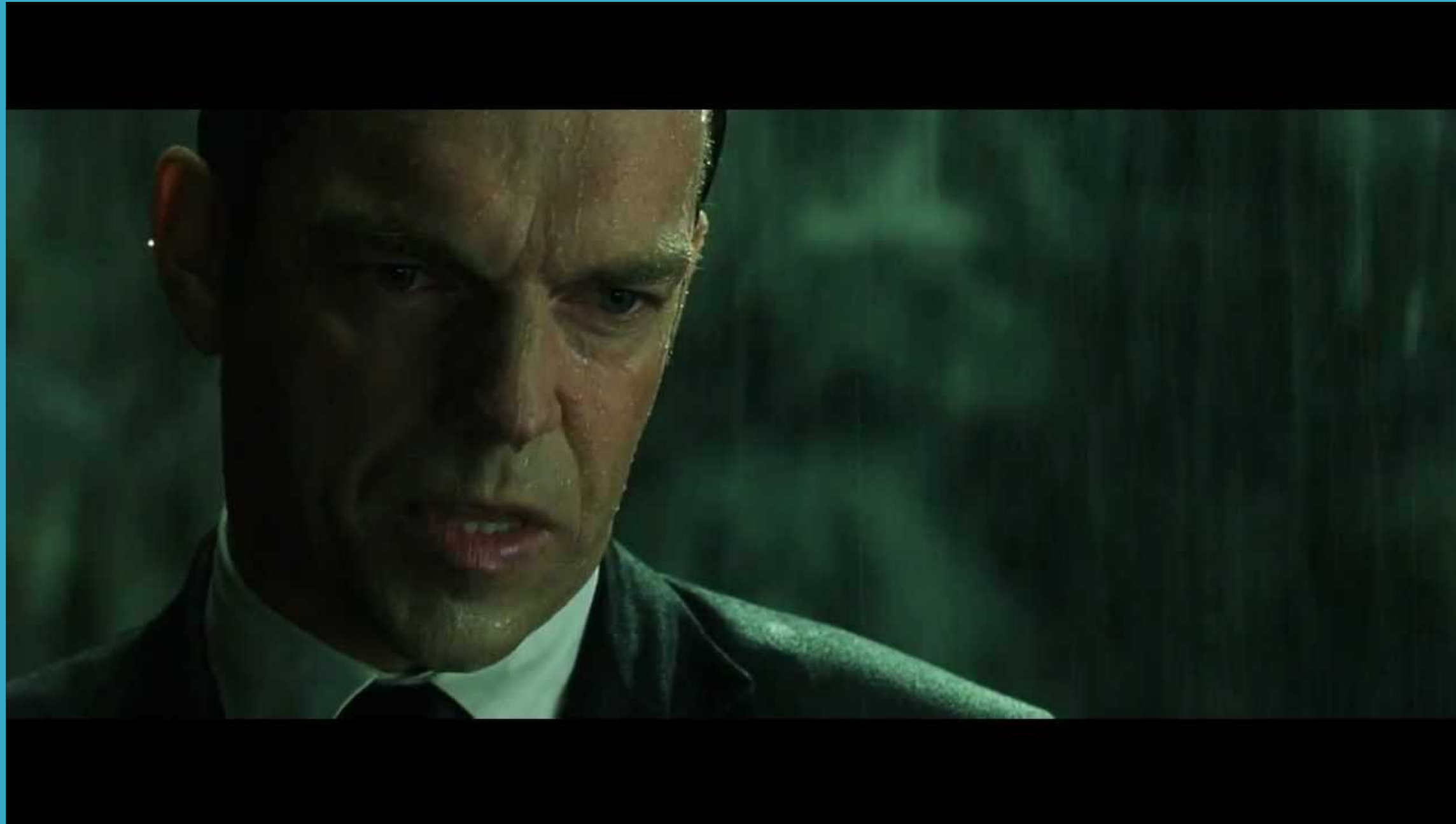
Containous

<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

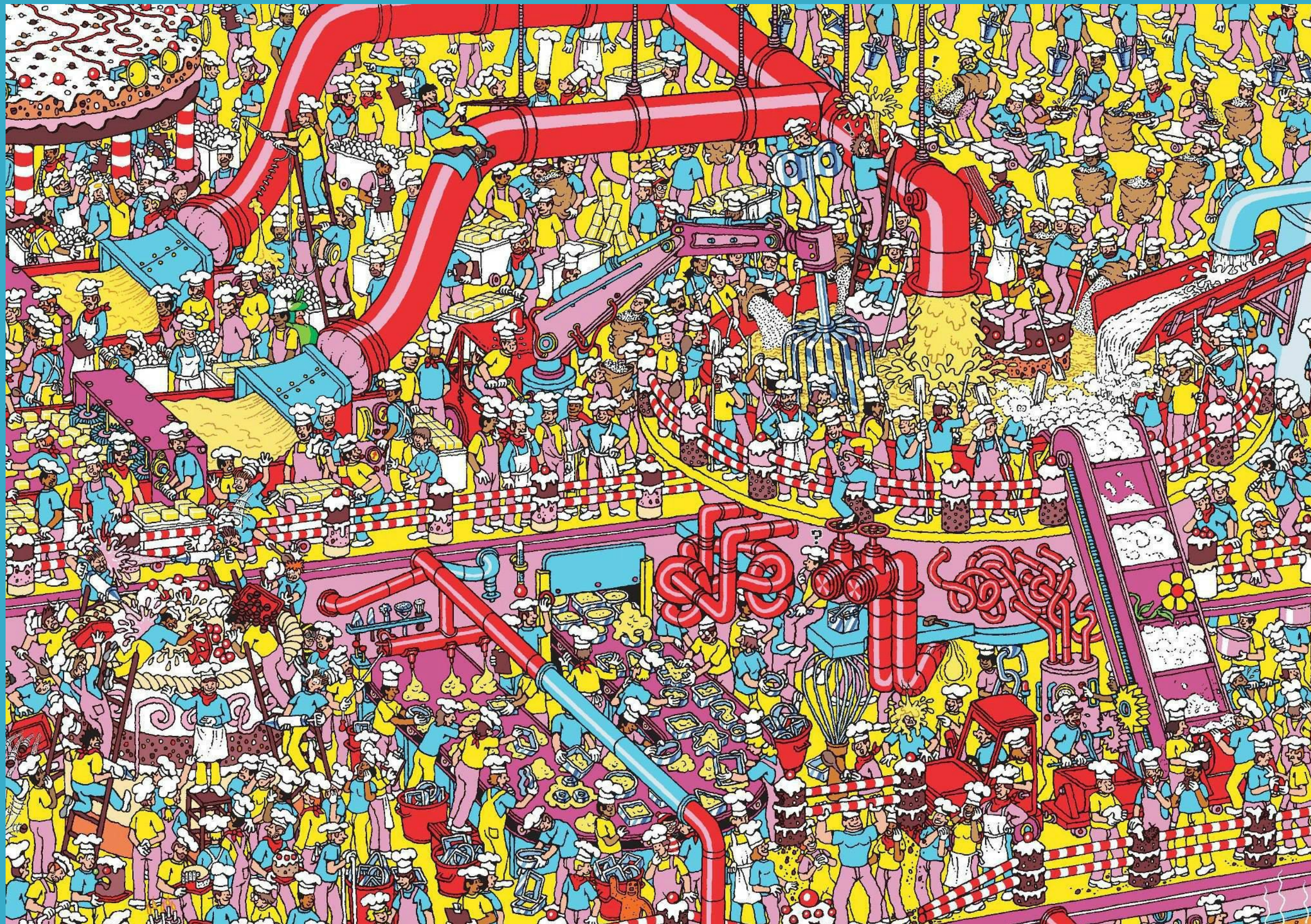
The Premise Of Microservices...



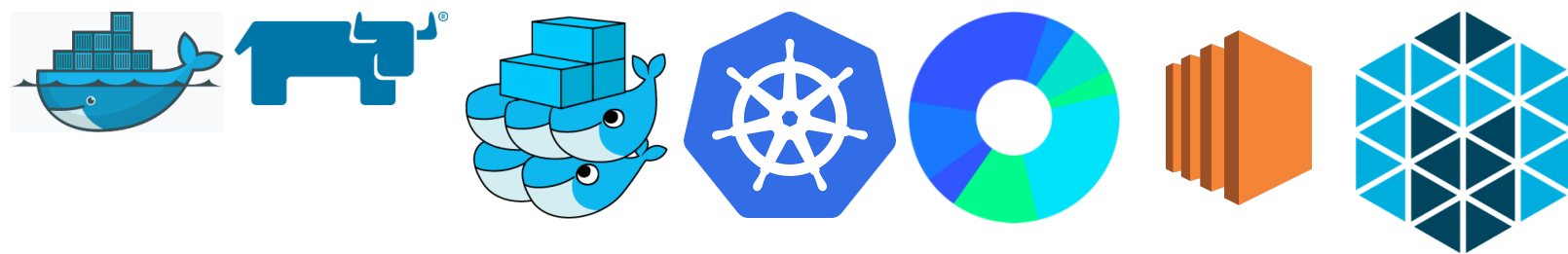
...And What Happens

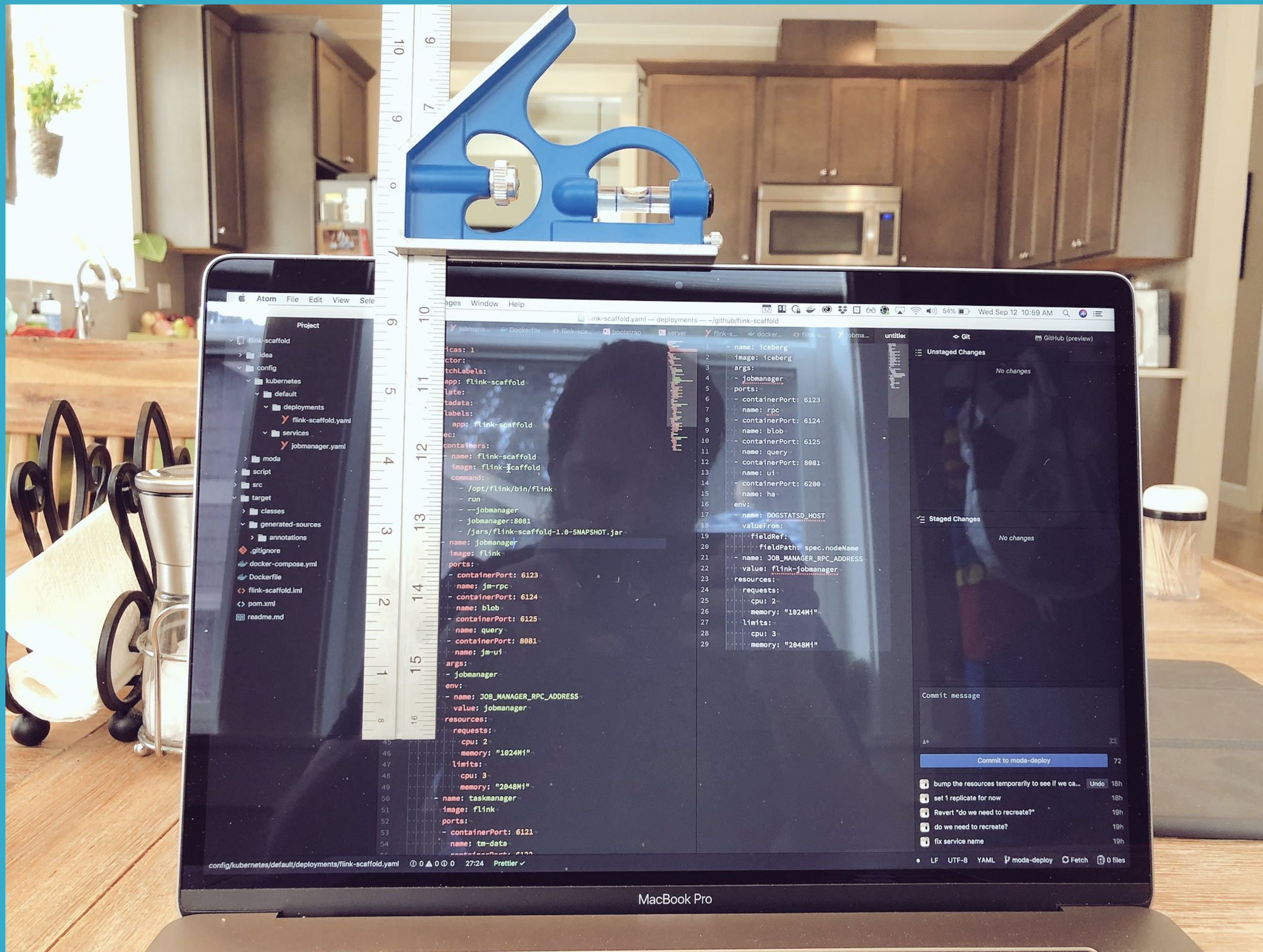


Where's My Service?



Tools Of The Trade





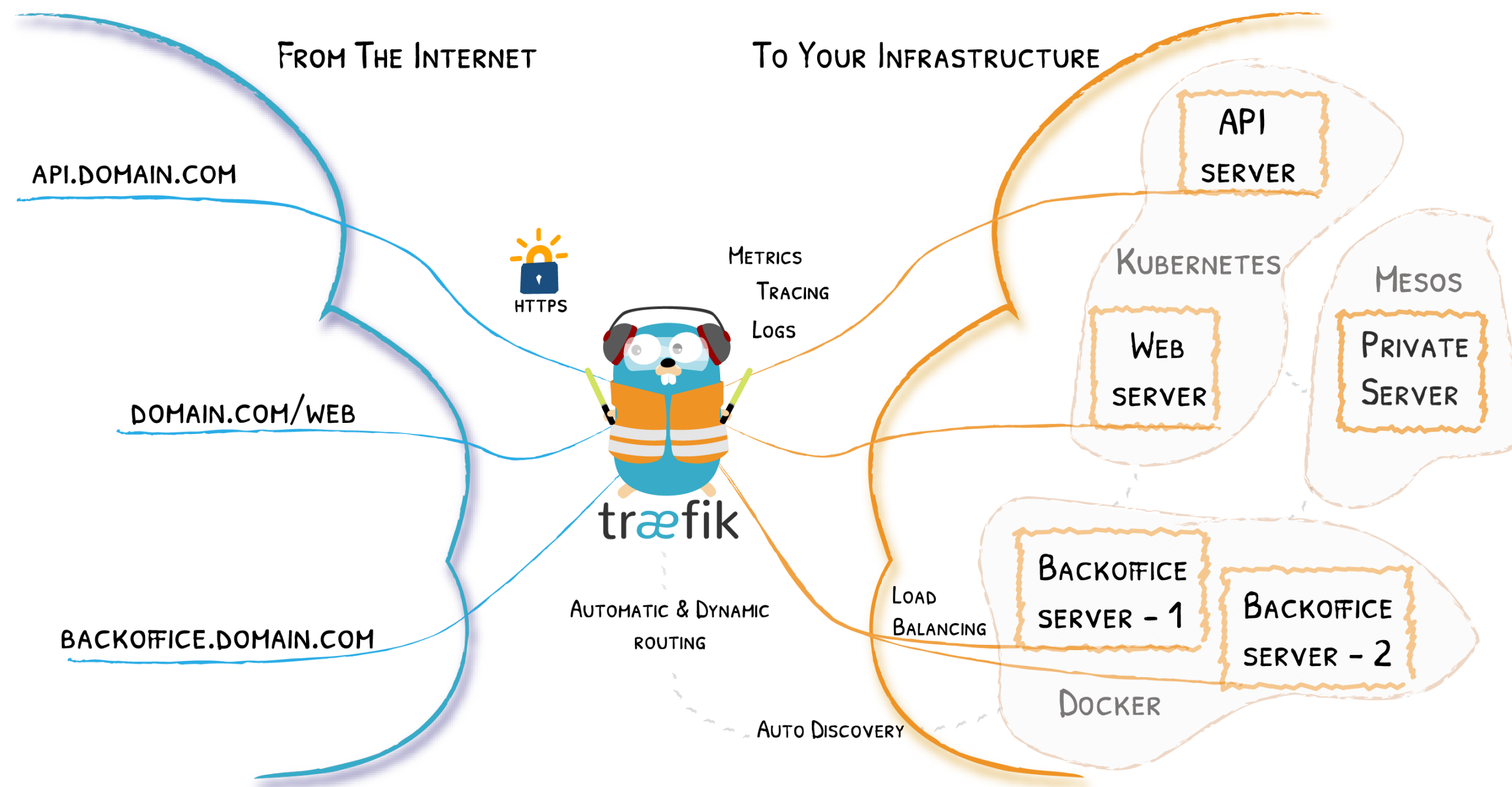
Source: <https://twitter.com/Caged/status/1039937162769096704>

What If I Told You?



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

Here Comes Traefik!



Traefik Project

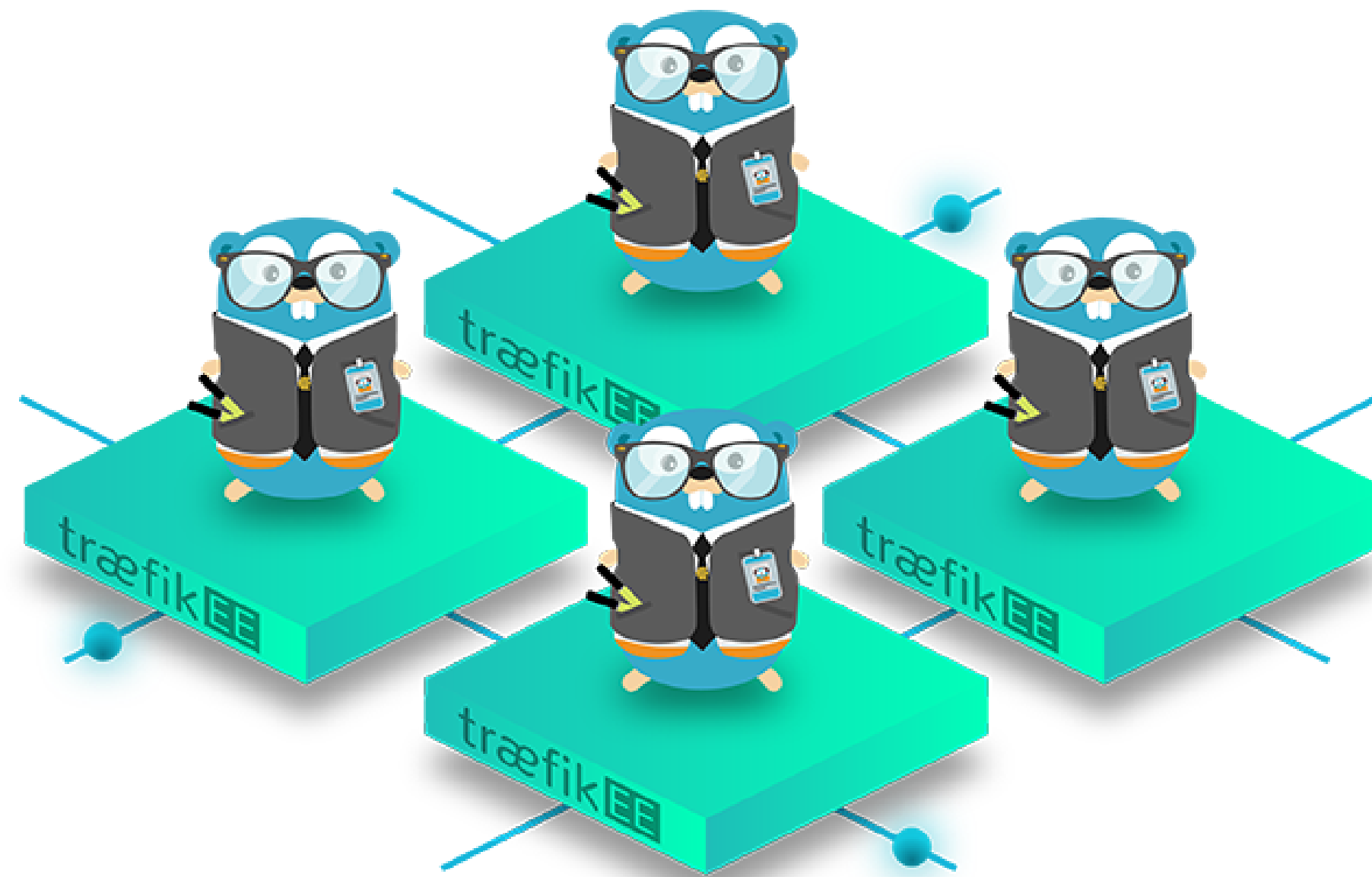
-  <https://github.com/containous/traefik>
- MIT License
- Written in Go
- 24,000+  1.3B+  400+ 
- Created in 2015, 4Y 
- Current stable branch: v2.0

The Herd



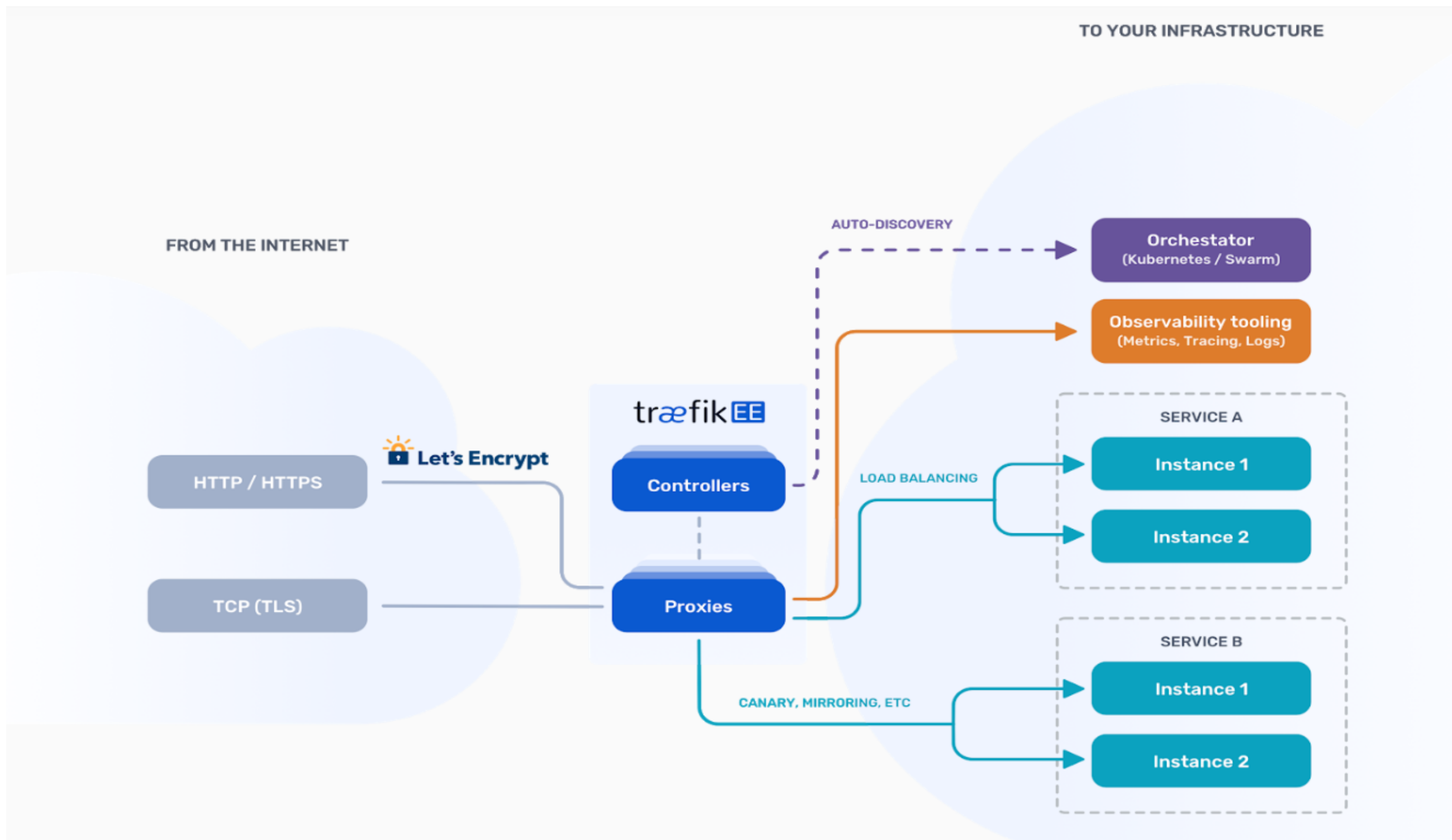
You came to the wrong neighbour

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
```

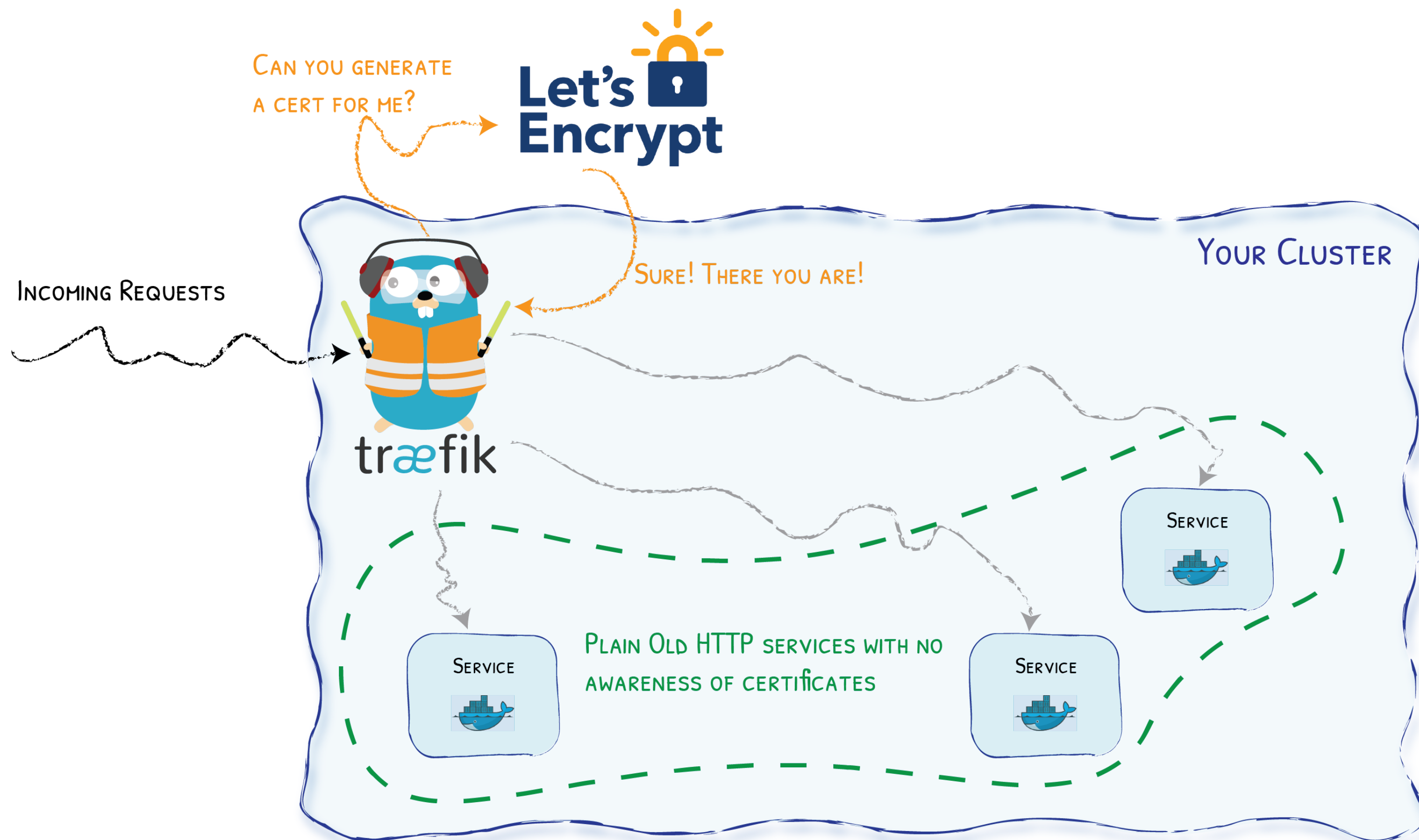
- Configure it:

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

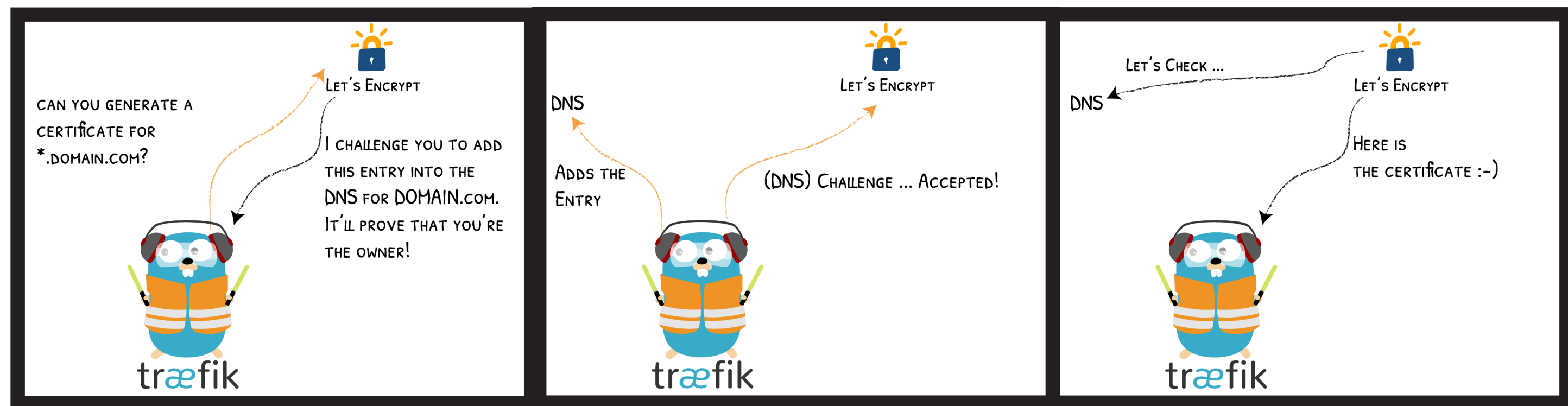

Free Trial

<https://containo.us/traefikee>

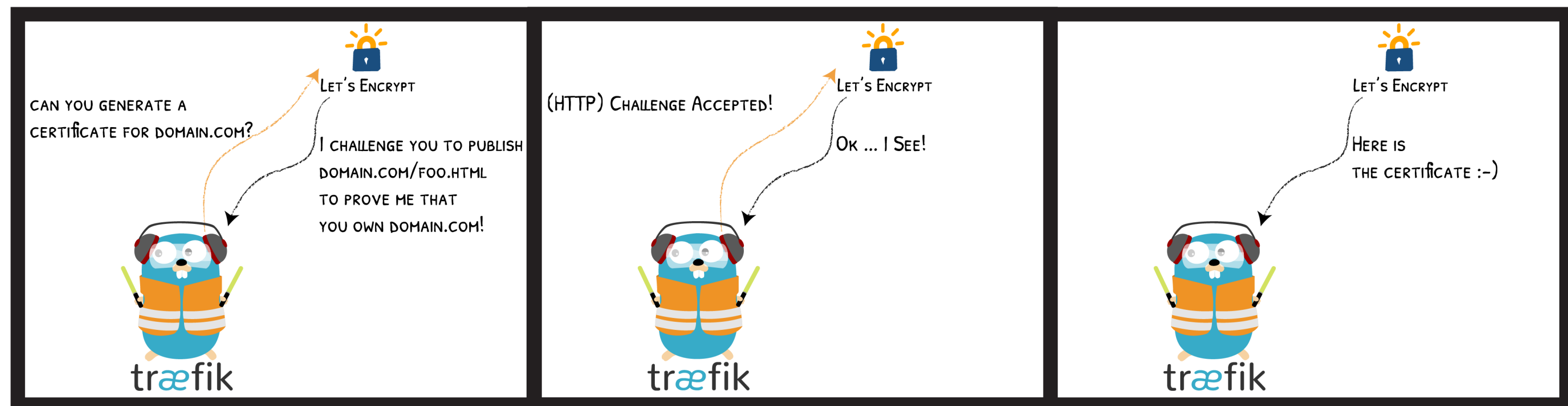
HTTPS & Let's Encrypt



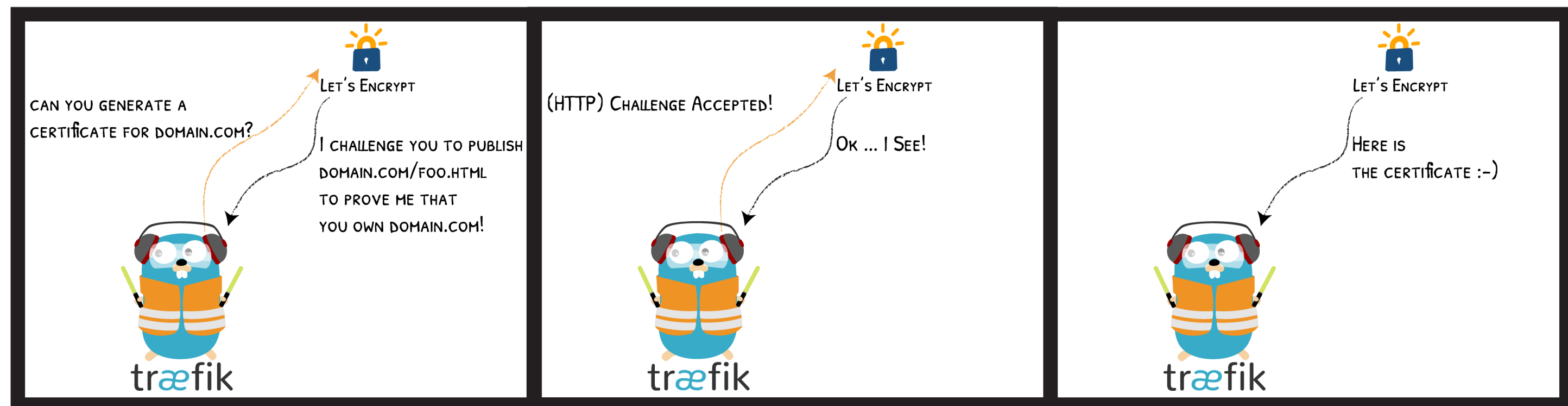
Let's Encrypt DNS Challenge



Let's Encrypt HTTP Challenge

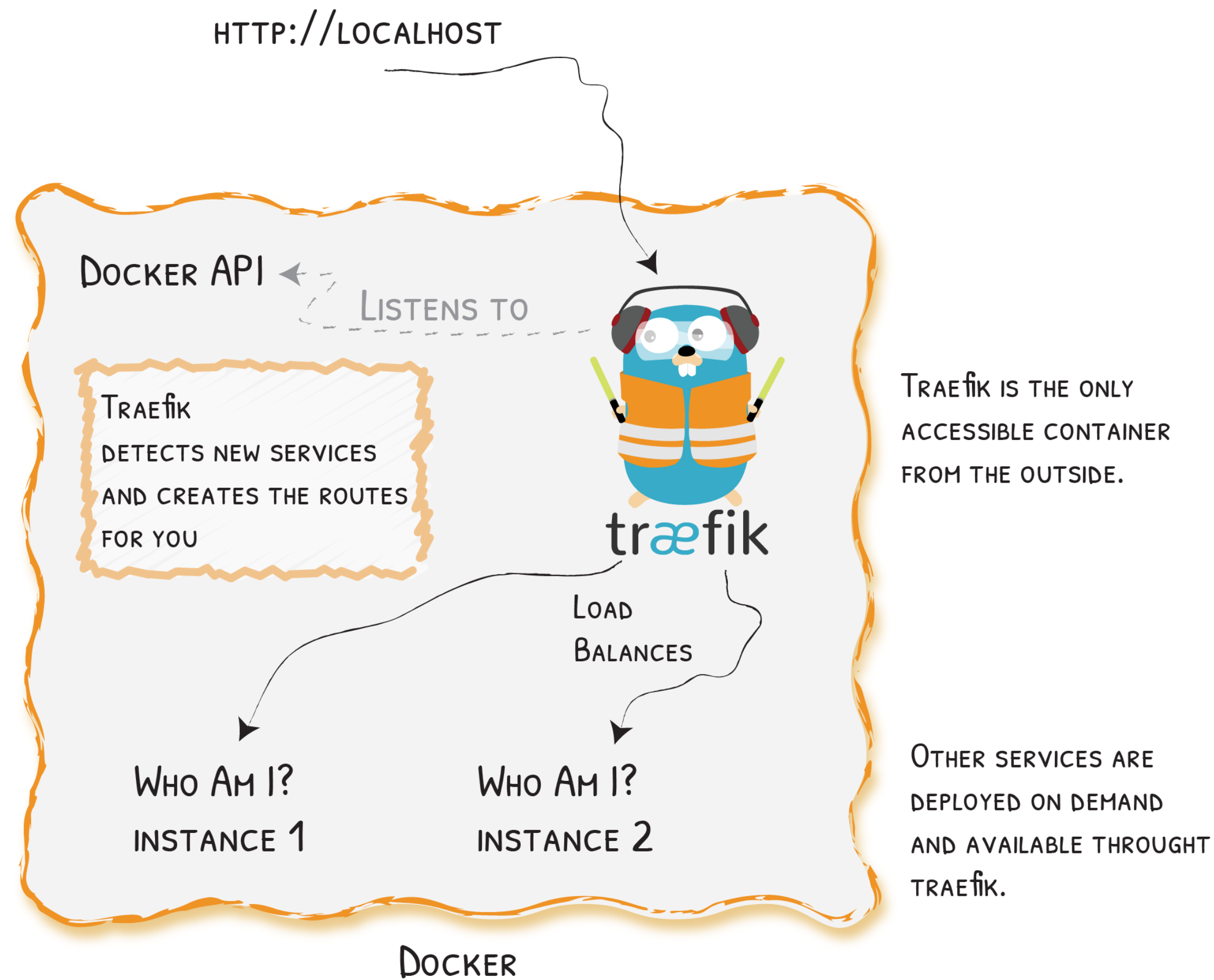


Let's Encrypt TLS Challenge



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

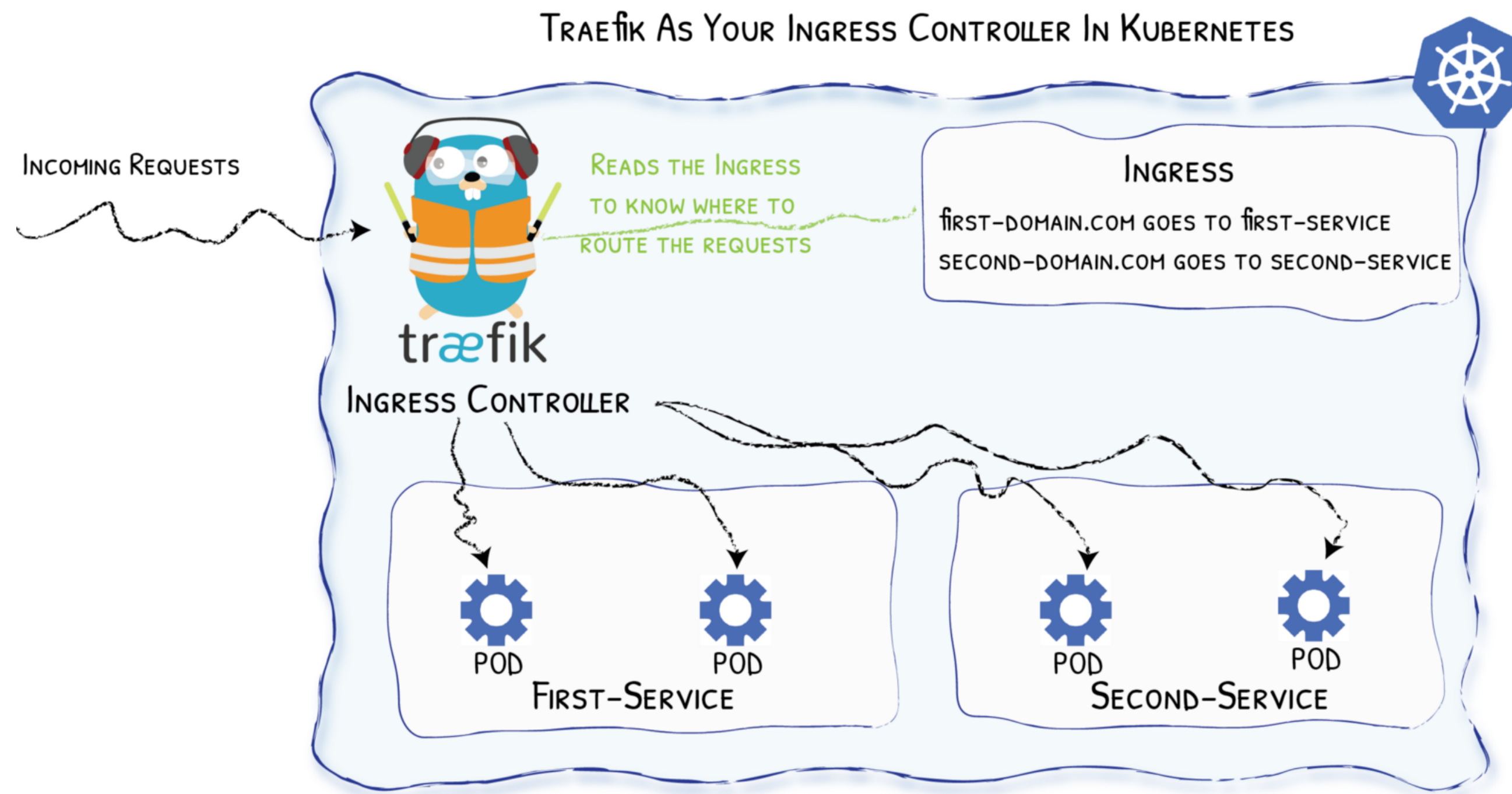


Diagram from <https://medium.com/@geraldcroes>

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

Name	type
<code>nginx.ingress.kubernetes.io/app-root</code>	string
<code>nginx.ingress.kubernetes.io/affinity</code>	cookie
<code>nginx.ingress.kubernetes.io/affinity-mode</code>	"balanced" or "persistent"
<code>nginx.ingress.kubernetes.io/auth-realm</code>	string
<code>nginx.ingress.kubernetes.io/auth-secret</code>	string
<code>nginx.ingress.kubernetes.io/auth-secret-type</code>	string
<code>nginx.ingress.kubernetes.io/auth-type</code>	basic or digest
<code>nginx.ingress.kubernetes.io/auth-tls-secret</code>	string
<code>nginx.ingress.kubernetes.io/auth-tls-verify-depth</code>	number
<code>nginx.ingress.kubernetes.io/auth-tls-verify-client</code>	string
<code>nginx.ingress.kubernetes.io/auth-tls-error-page</code>	string
<code>nginx.ingress.kubernetes.io/auth-tls-pass-certificate-to-upstream</code>	"true" or "false"
<code>nginx.ingress.kubernetes.io/auth-url</code>	string
<code>nginx.ingress.kubernetes.io/auth-cache-key</code>	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
```

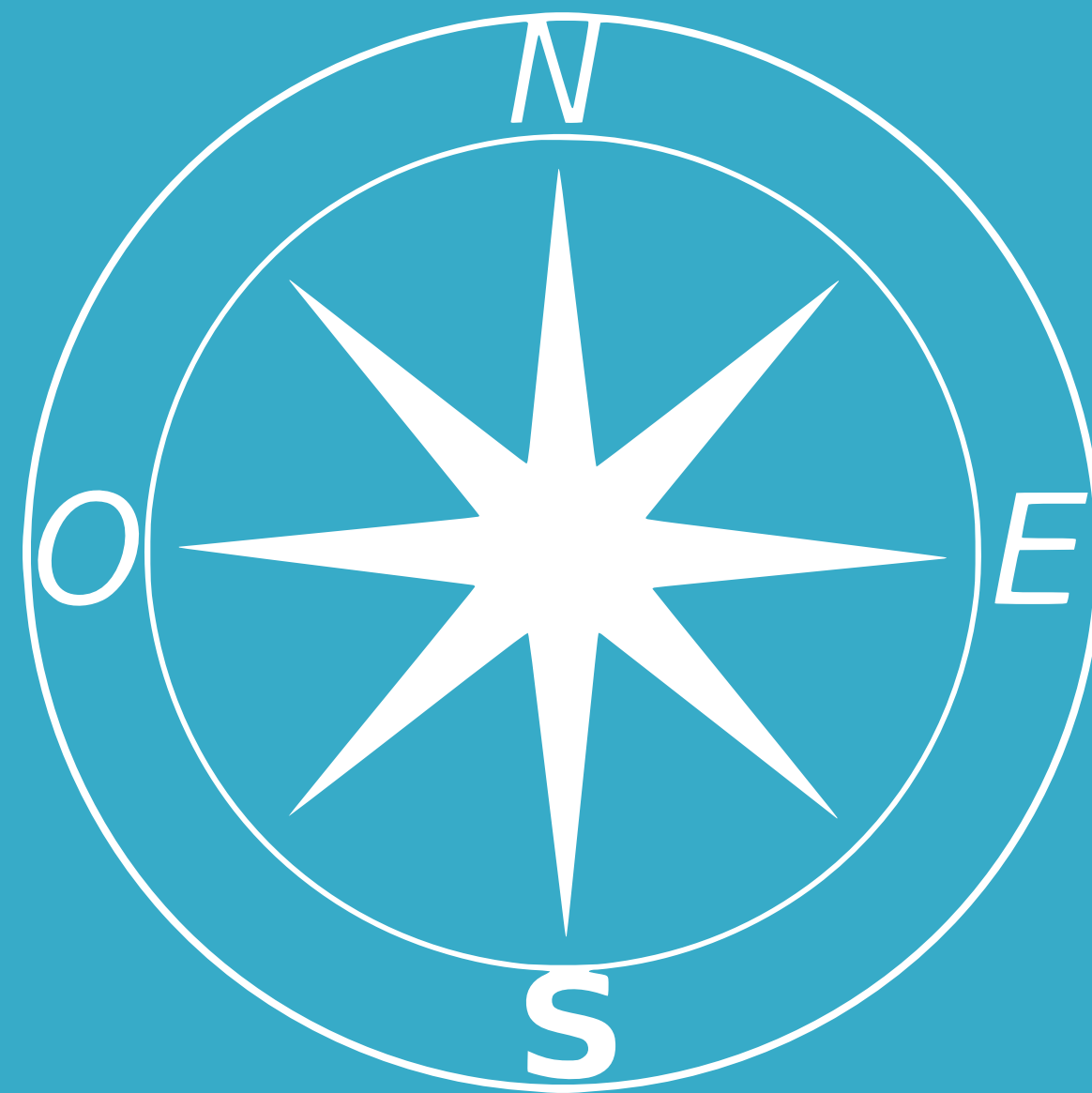
& TCP (With CRD)

```
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
```

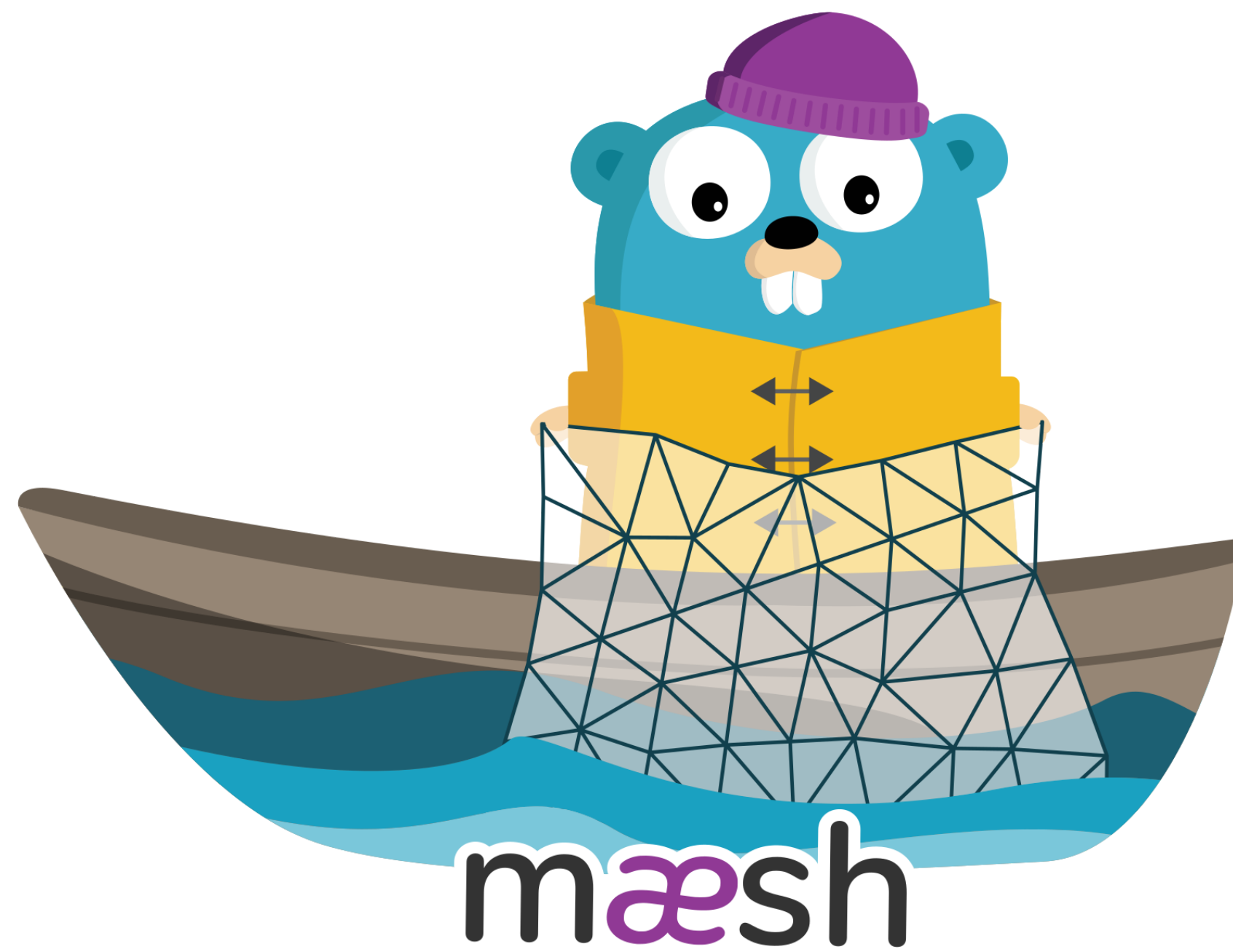
Canary Releases

```
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



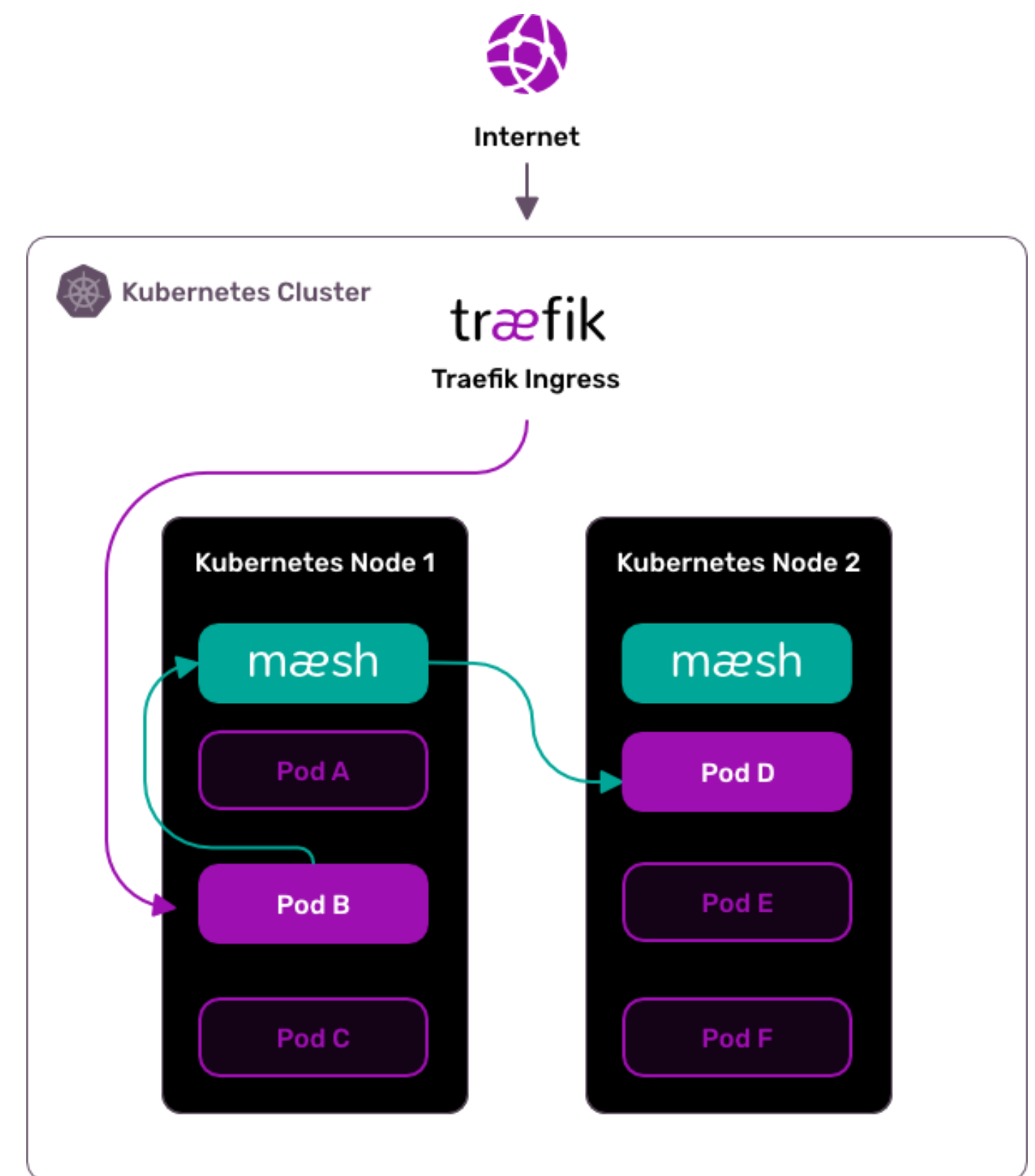
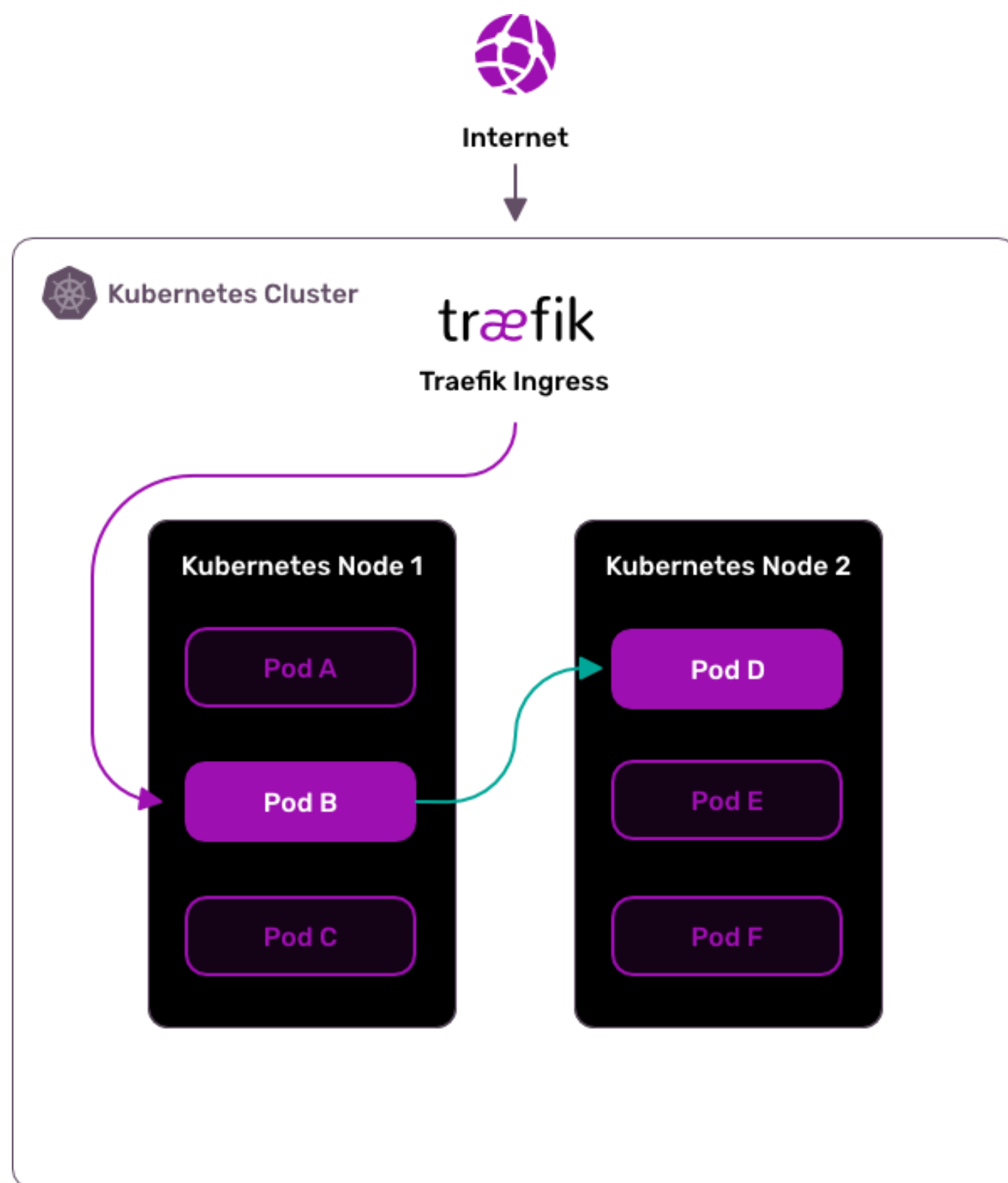
Say Hello To Maesh



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

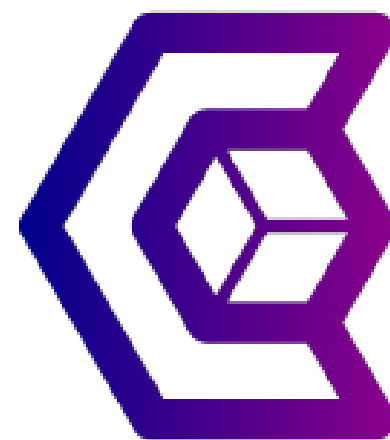


That's All Folks!



We Have
Stickers!

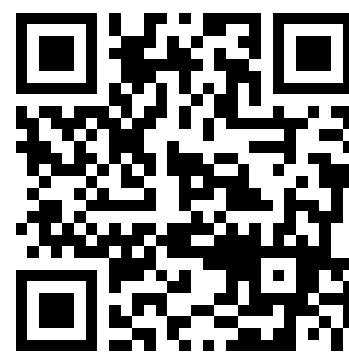
We Are Hiring!



```
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>