



# Service Mesh AND API Management

## Teamwork at its Best

Sven Walther  
API Conference Berlin 2022

# Sven Walther

Principal Solutions Engineer EMEA, Kong

@svenwal

- ~10 years in API Management
- ~20 years being an API consumer
- “XML-over-http” years old
- Located in Berlin
- Amiga > Mac >= Linux > Windows

sven@konghq.com  
<https://svenwal.de>

# Some questions



Background:

Olya Kobruseva <https://www.pexels.com/de-de/foto/fragezeichen-auf-papierhandwerk-5428836/>

# Who is using an API Gateway?

# Who is using Kubernetes\*?

\* includes OpenShift

# Who is using Kubernetes\* ... in production?

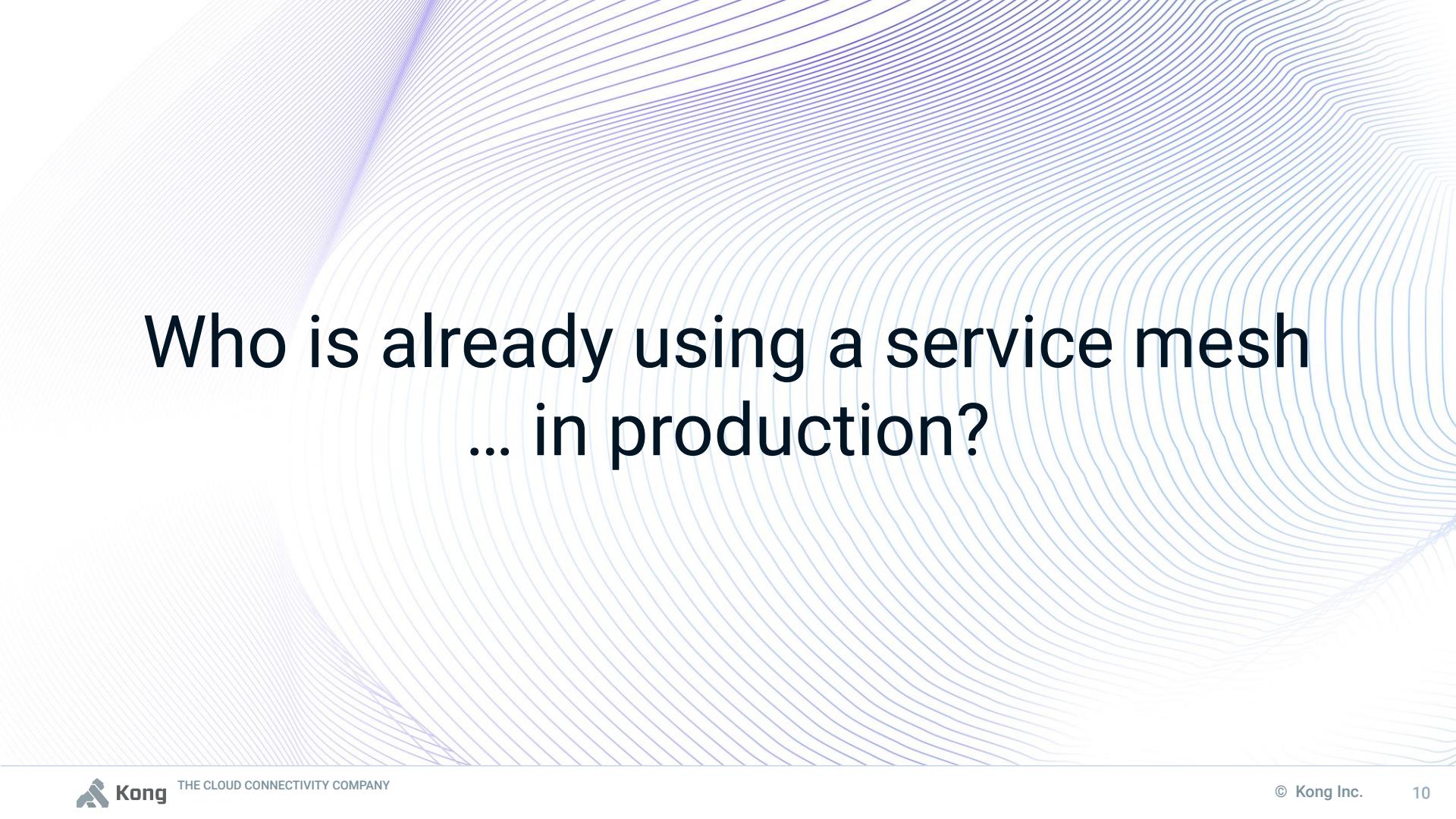
\* includes OpenShift

# Who is using **only** Kubernetes\* in production?

\* includes OpenShift

# Who knows what a service mesh is?

# Who is already using a service mesh?



# Who is already using a service mesh ... in production?

# Who is multi-cloud?

# API Gateways

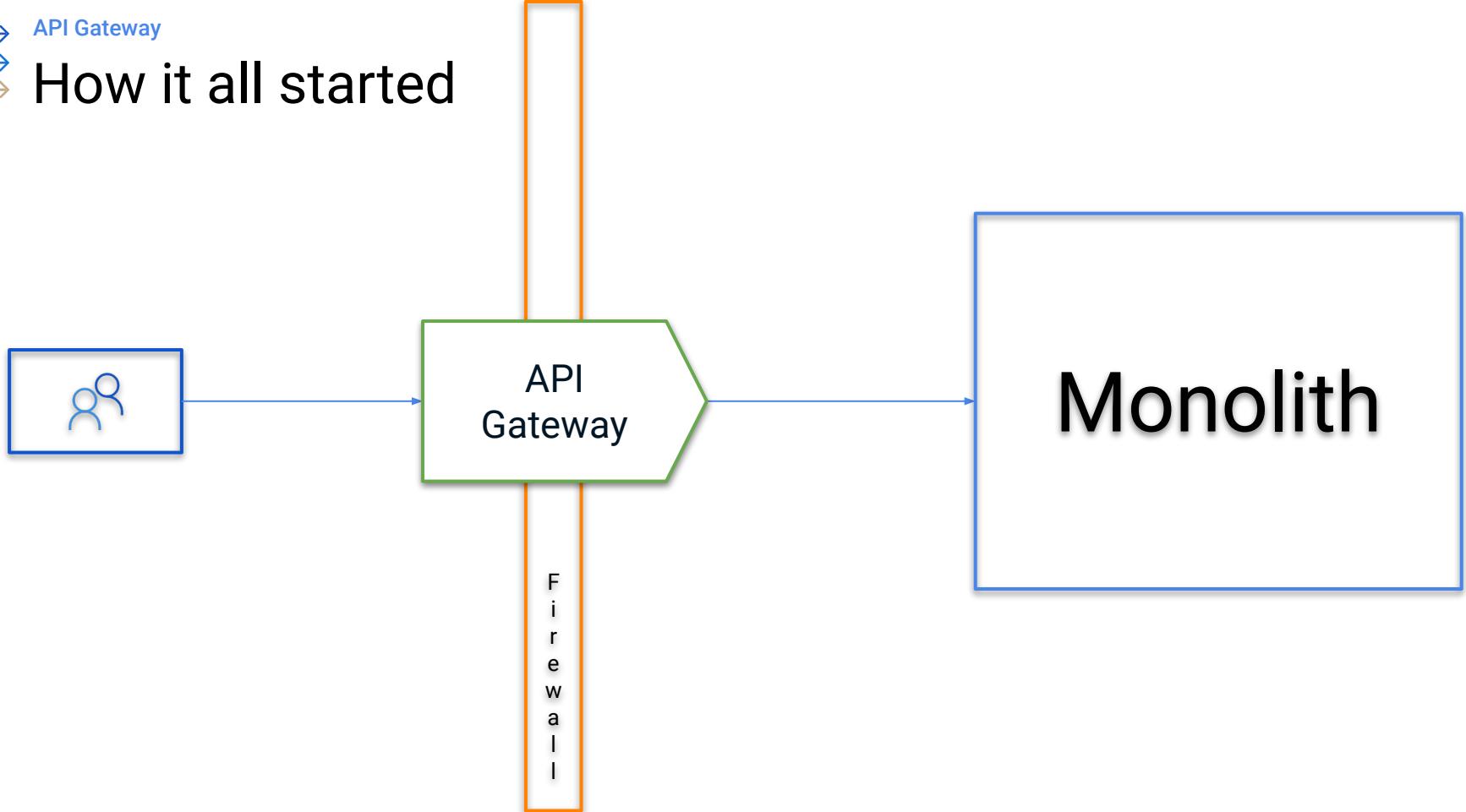
Serving the world since more than 20 years

Background: Frans van Heerden <https://www.pexels.com/de-de/foto/foto-von-schloss-unter-wolken-1022698/>



API Gateway

# How it all started





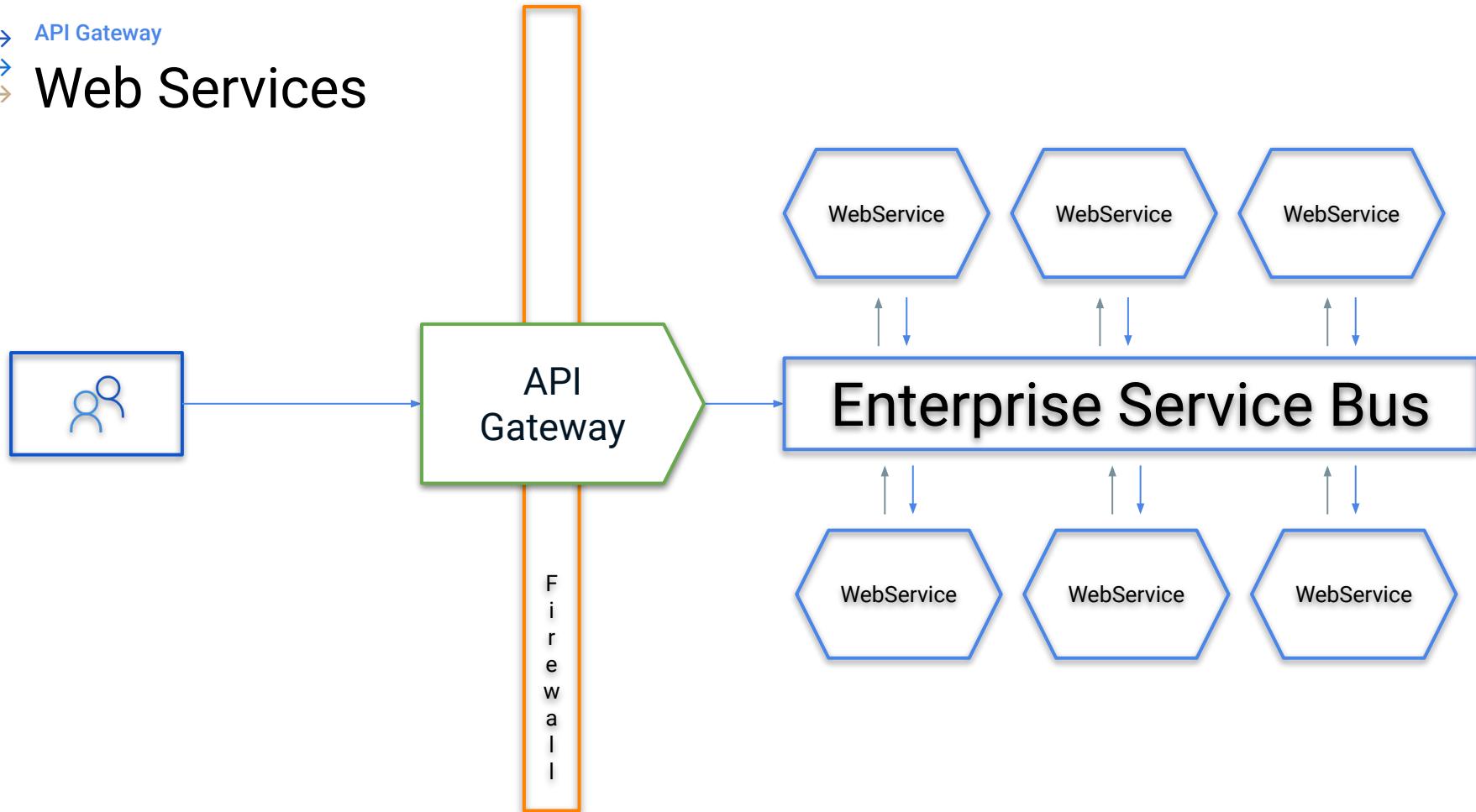
# Functionality

API  
Gateway

- Routing
- Authentication
- Authorization
- Monitoring
- Logging
- Rate Limiting
- Caching
- ...

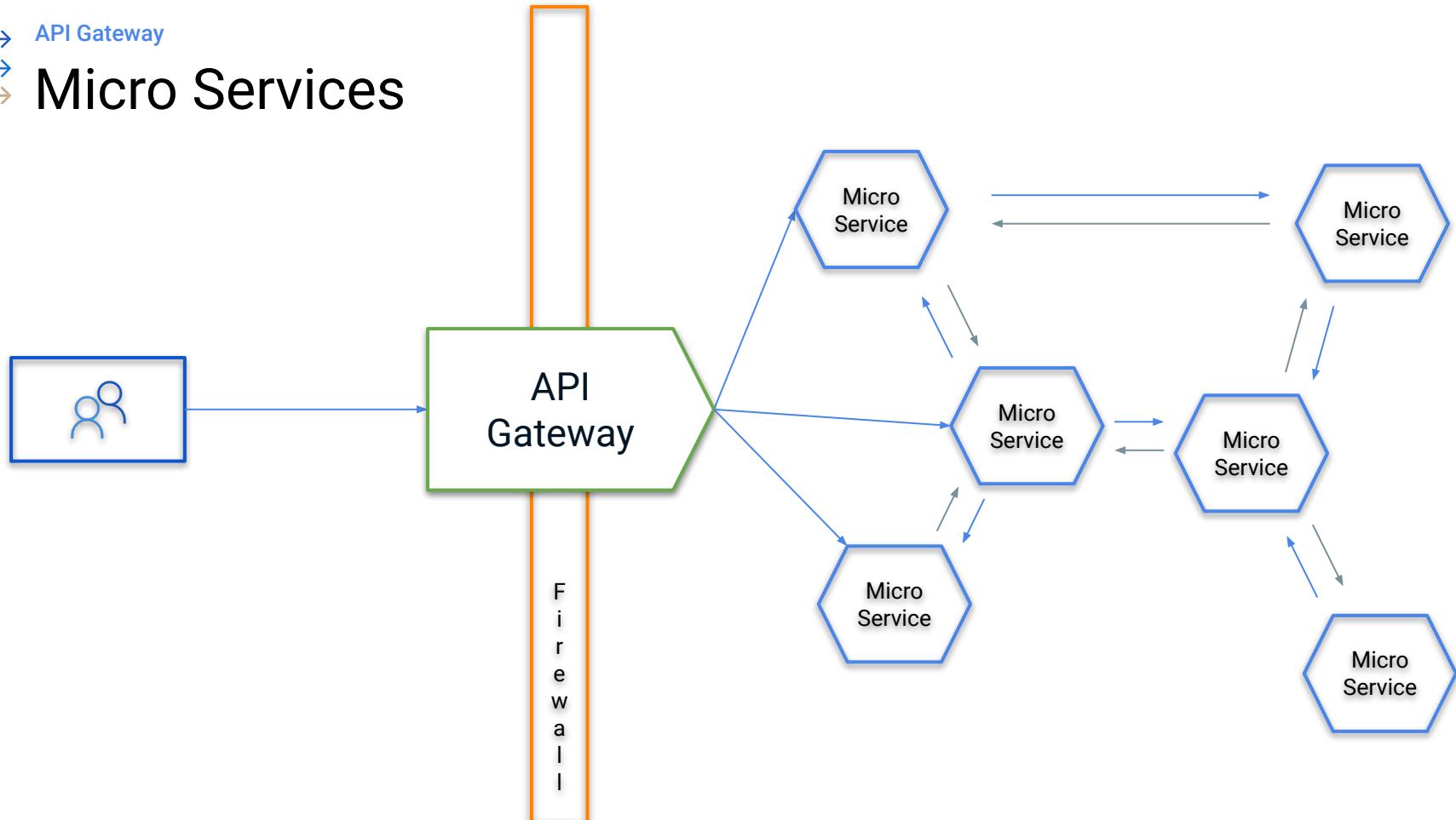
 API Gateway

# Web Services



API Gateway

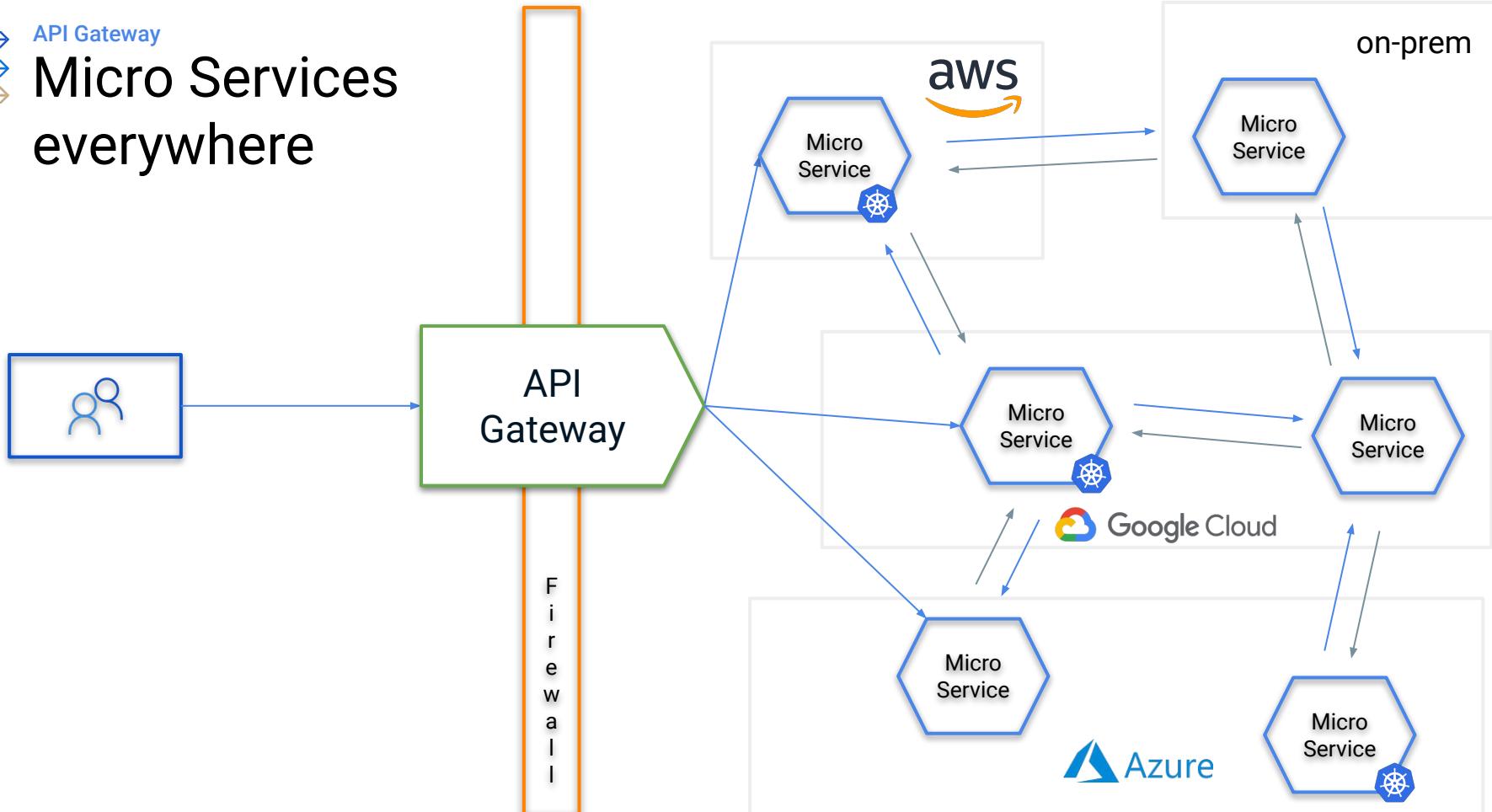
# Micro Services





API Gateway

# Micro Services everywhere



# Micro Services

Background: <https://www.pexels.com/de-de/foto/abstrakt-farbe-fix-reparieren-4480541/>



THE CLOUD CONNECTIVITY COMPANY

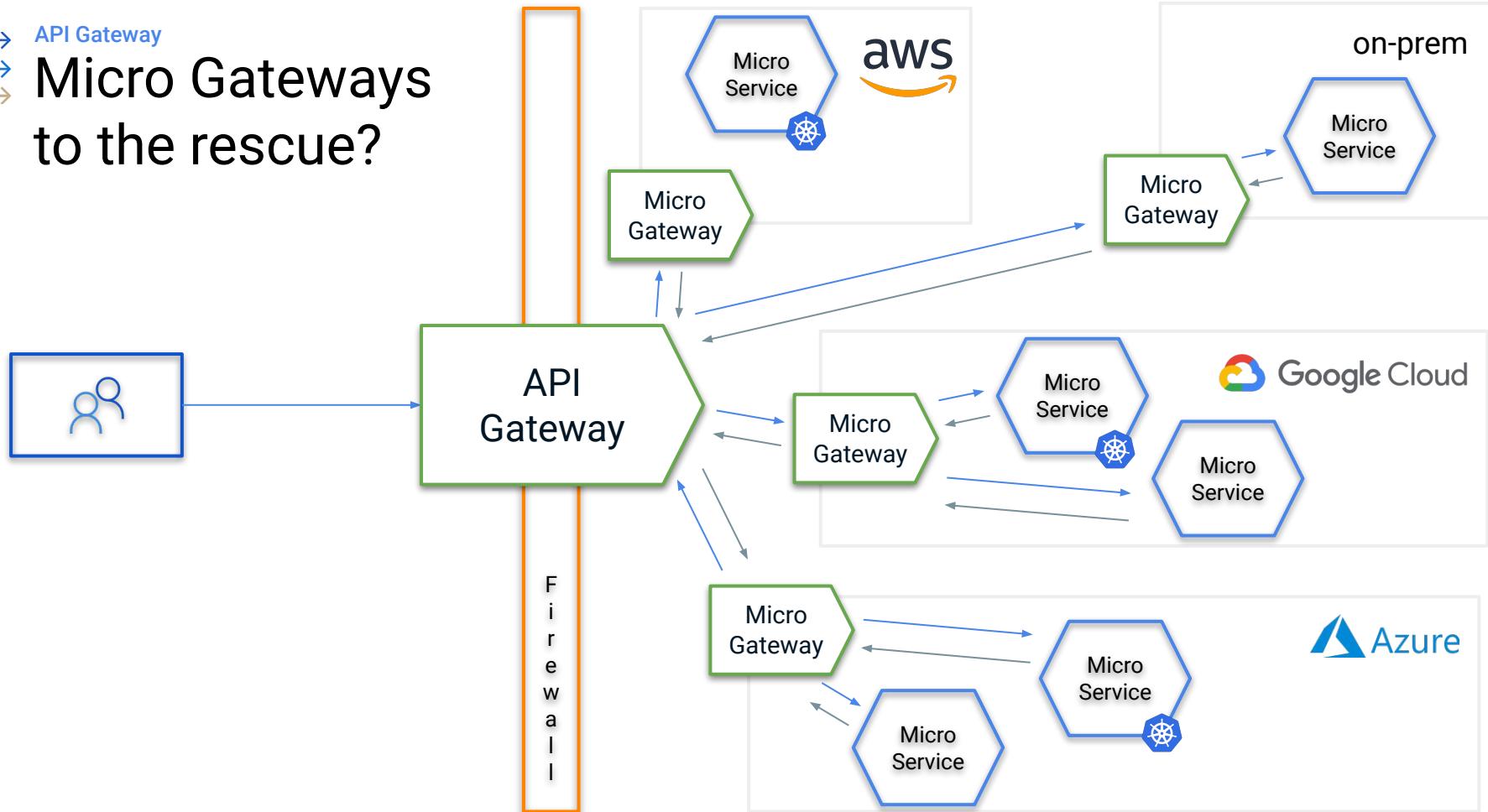
© Kong Inc.

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API Gateway

# Micro Gateways to the rescue?

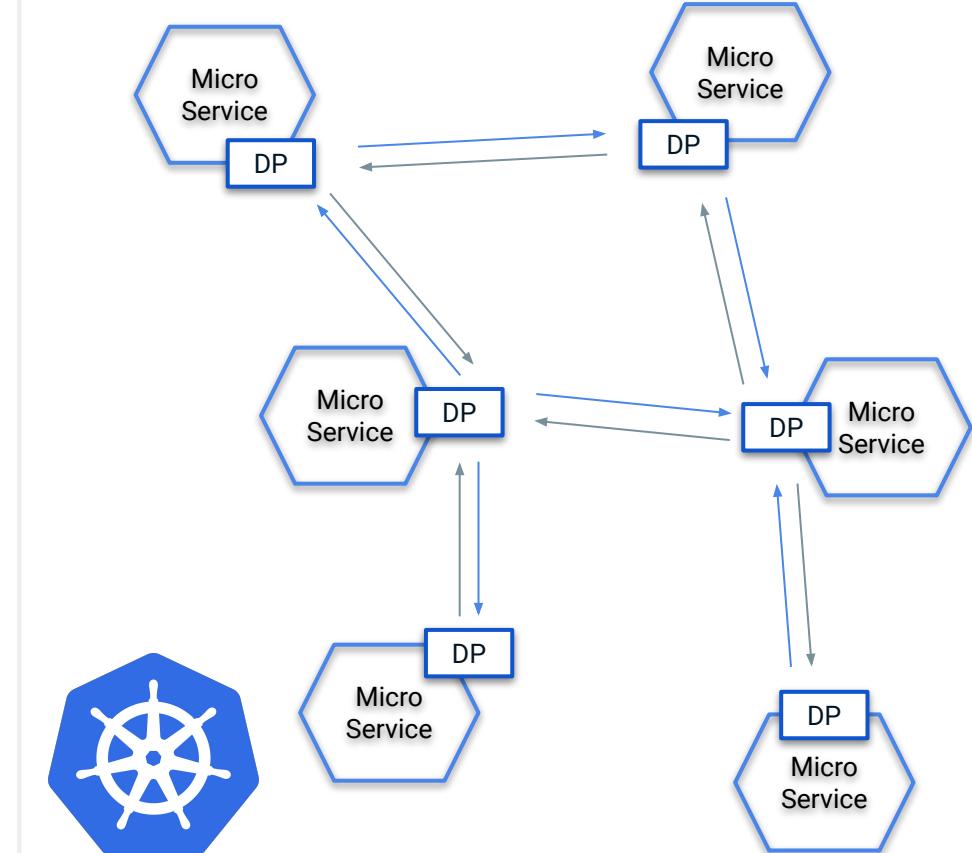


# Service Mesh

# Within the cluster

- Everything encrypted (TLS)
- Everything authenticated and authorized (mTLS)
- Everything monitored
- ...

Everything means:  
=> within the cluster



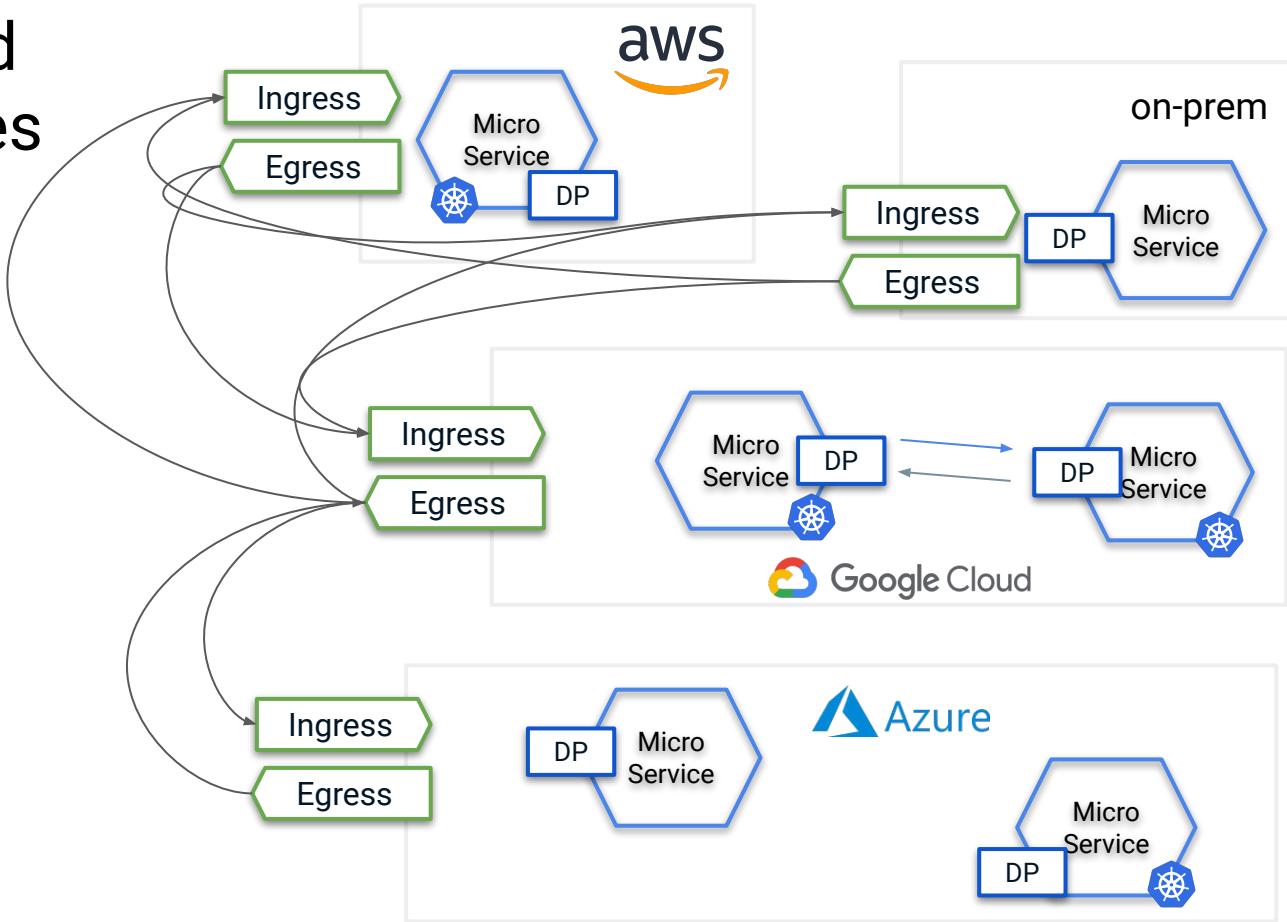


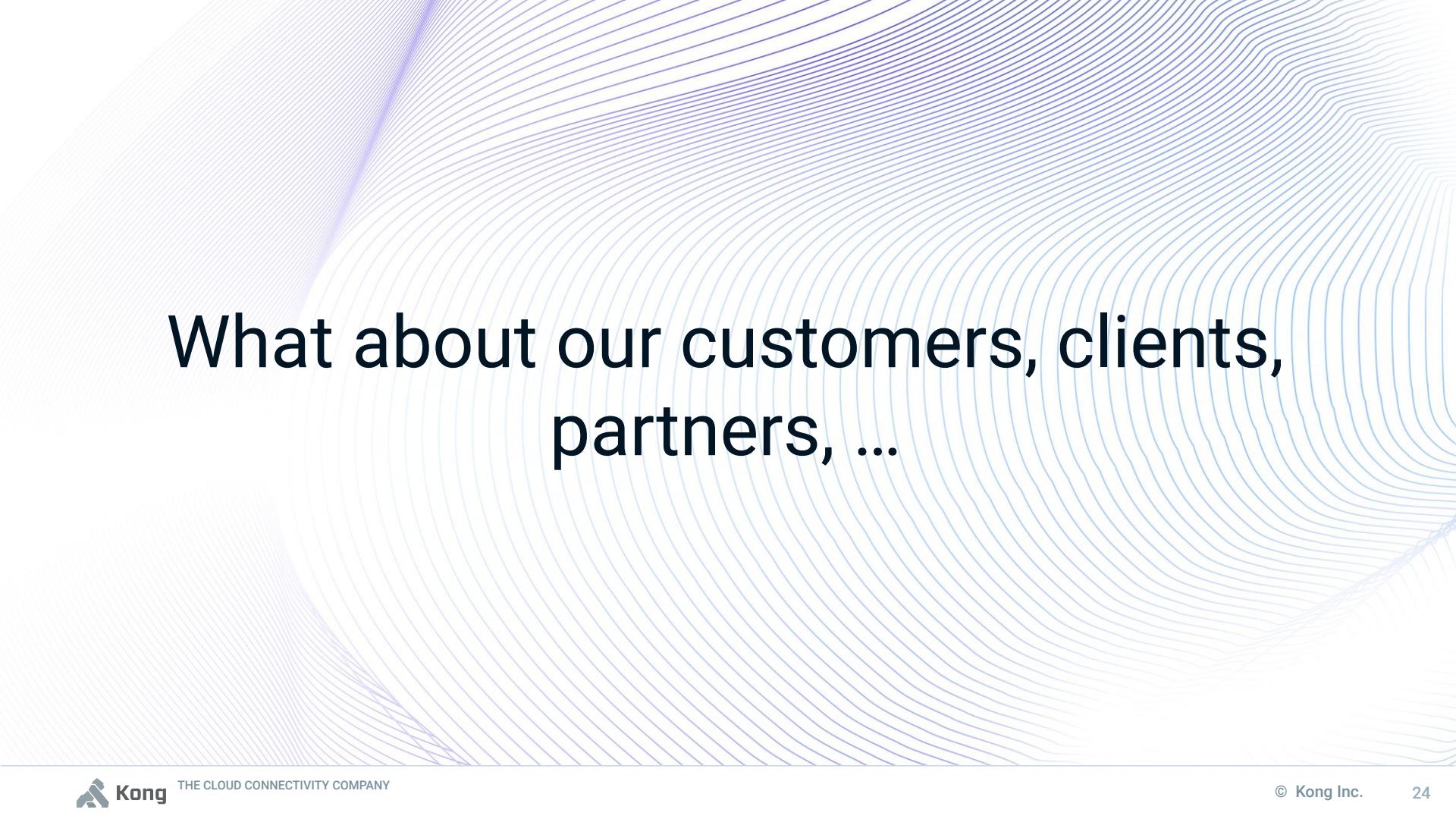
# Functionality

Service  
Mesh

- Routing
- Encryption
- AuthN & AuthZ (mTLS)
- Load Balancing
- Monitoring
- Logging
- Tracing

# Multi Cloud and more challenges



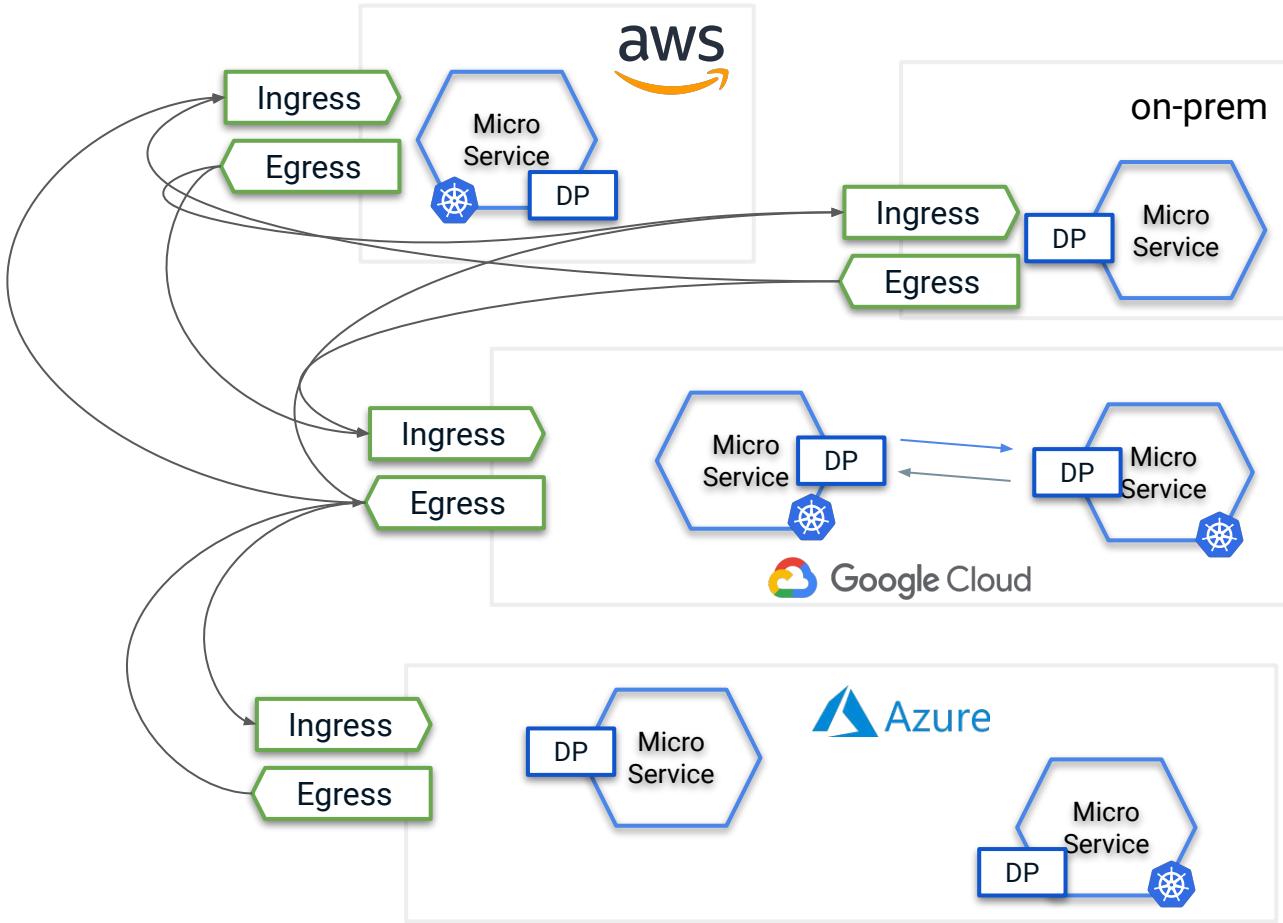


# What about our customers, clients, partners, ...



Service Mesh

# What about clients?

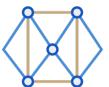


# Give a boy a hammer and everything he meets has to be pounded



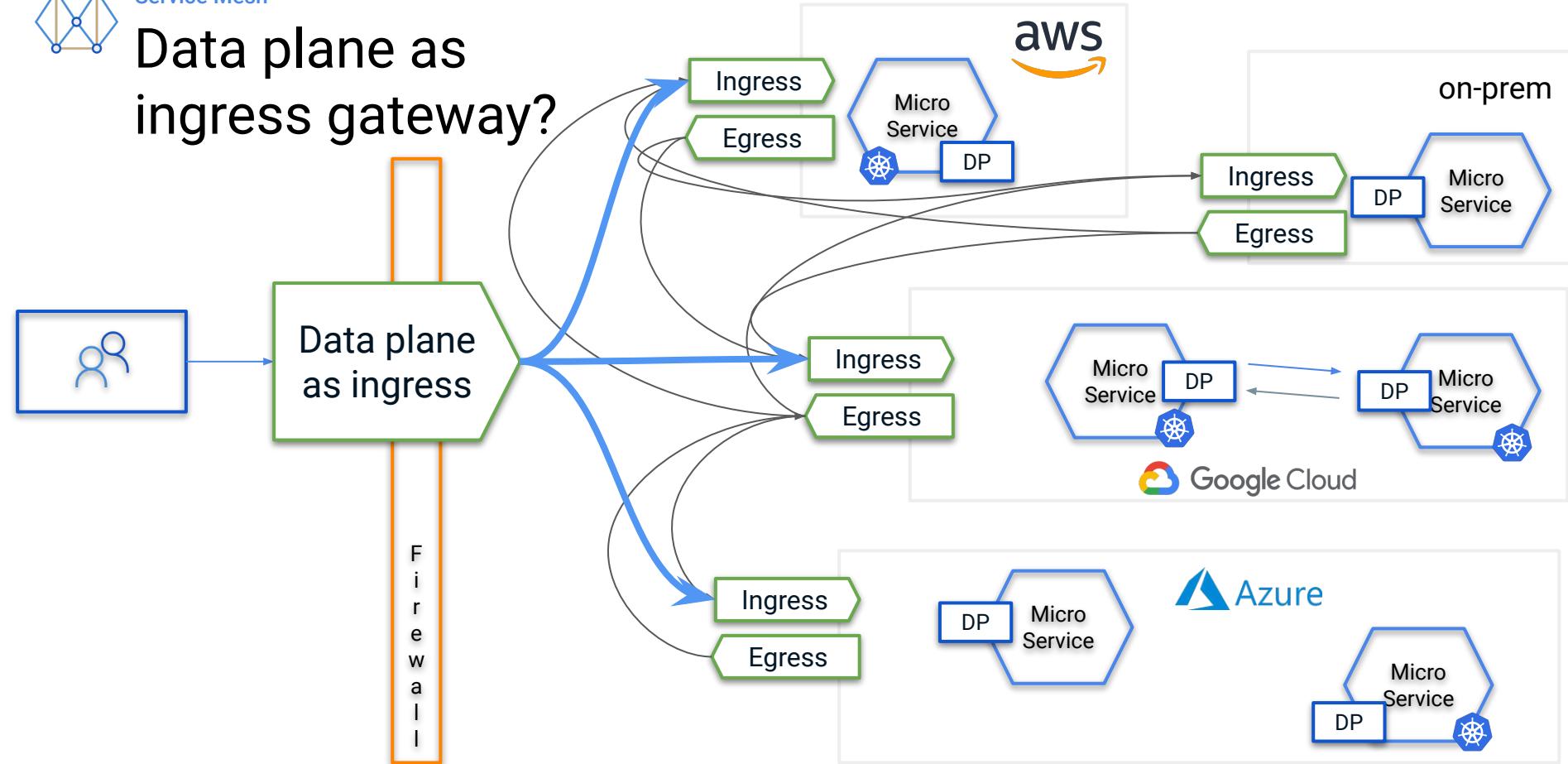
Kaplan's Law of the Instrument:  
[https://en.wikipedia.org/wiki/Law\\_of\\_the\\_instrument](https://en.wikipedia.org/wiki/Law_of_the_instrument)

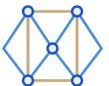
Background: Los Muertos Crew <https://www.pexels.com/de-de/foto/holz-hande-hammer-nagel-8447781/>



Service Mesh

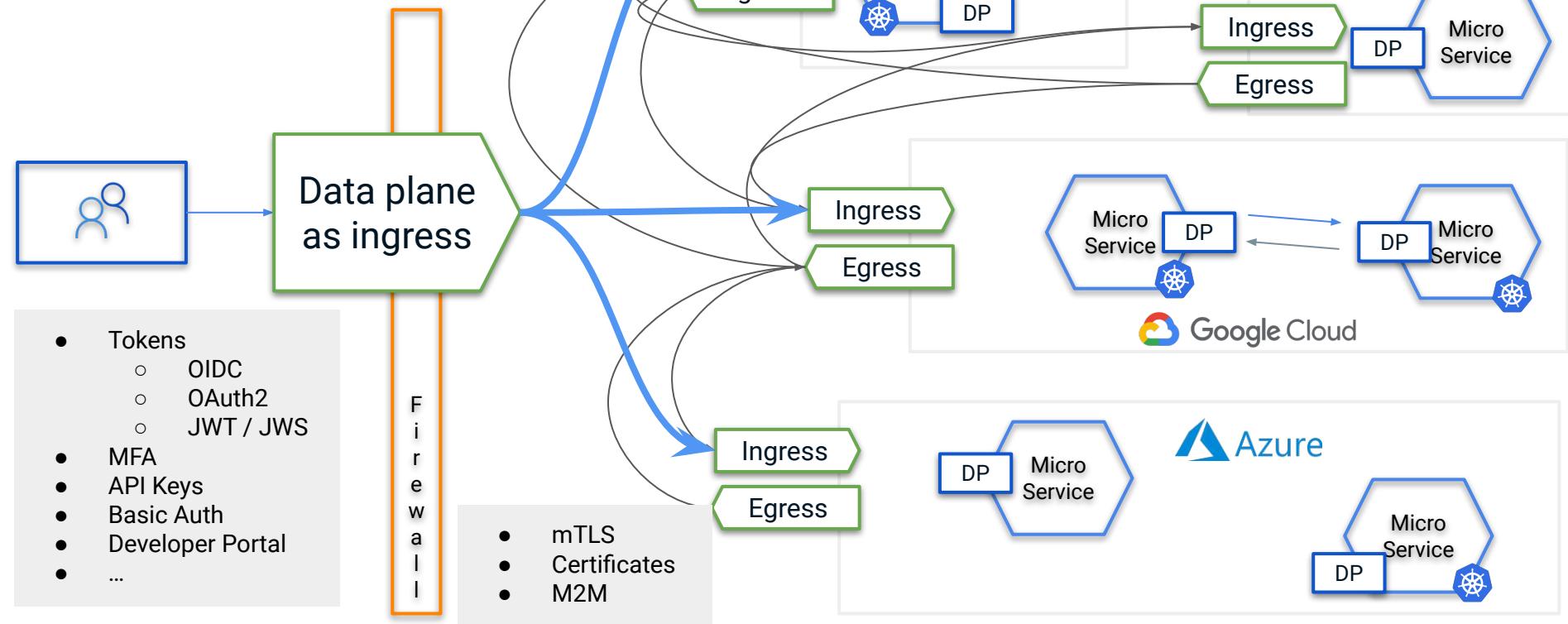
# Data plane as ingress gateway?

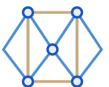




Service Mesh

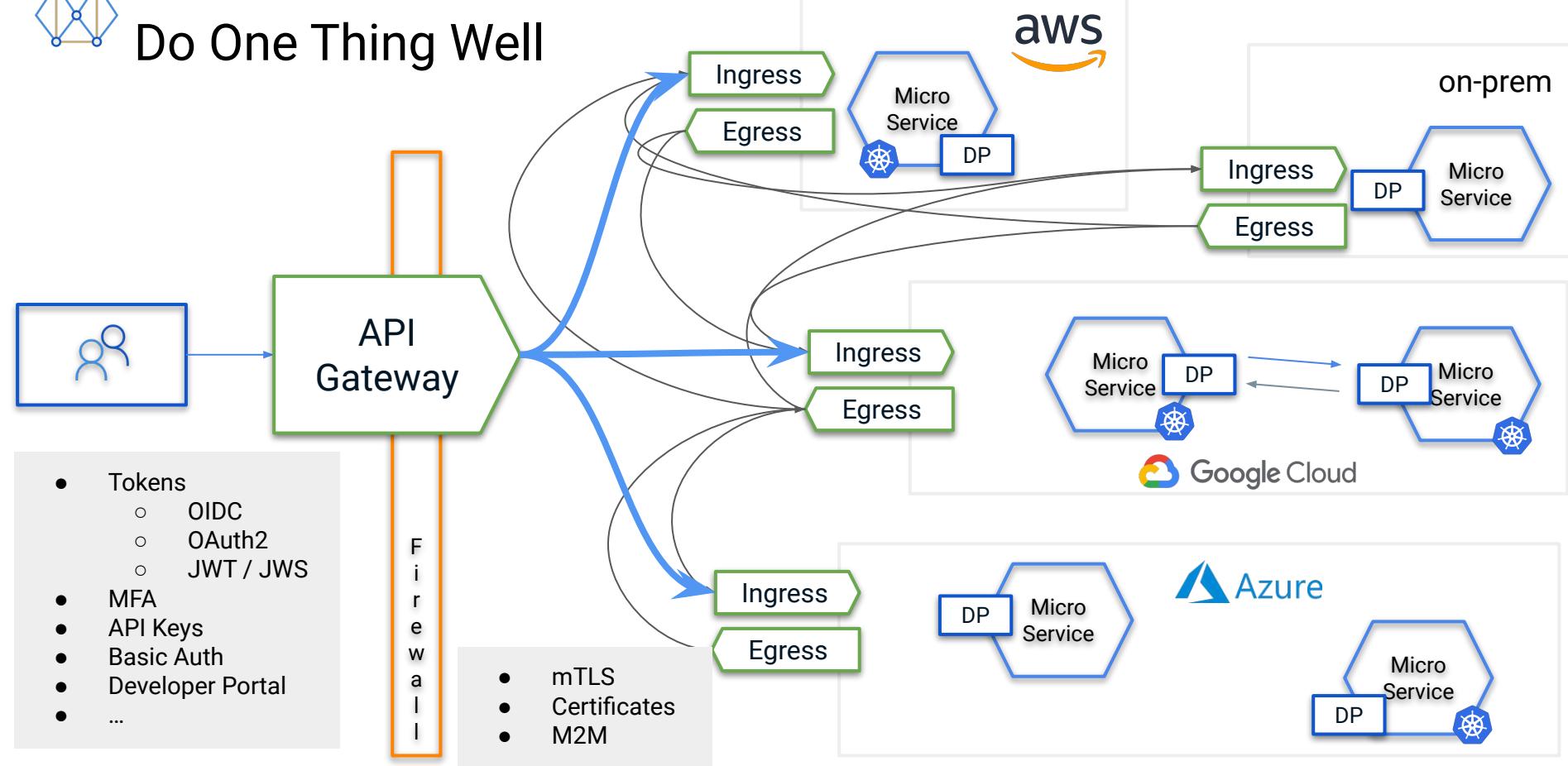
# Different use cases - different tools!





Service Mesh

# Do One Thing Well



# The right tool for the right audience

## API Gateway

- (Mainly) external focused
- Human being and machine to machine
- Hard to provision certificates to external machines
- Token focused (but also api keys and similar)
- Documentation for developers
- Routing and load balancing from external to internal
- Automation is a strong should be

## Service Mesh

- Internal focused
- Everything machine to machine
- Certificates can be issued and updated automatically
- Untrusted wire
- Routing and load balancing
- Automation is a must be
- Sidecar and eBPF pattern enforce minimal data plane size (hardware needs)

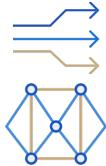
# Collaboration

Where is the teamwork?

Gateway and mesh share central solutions

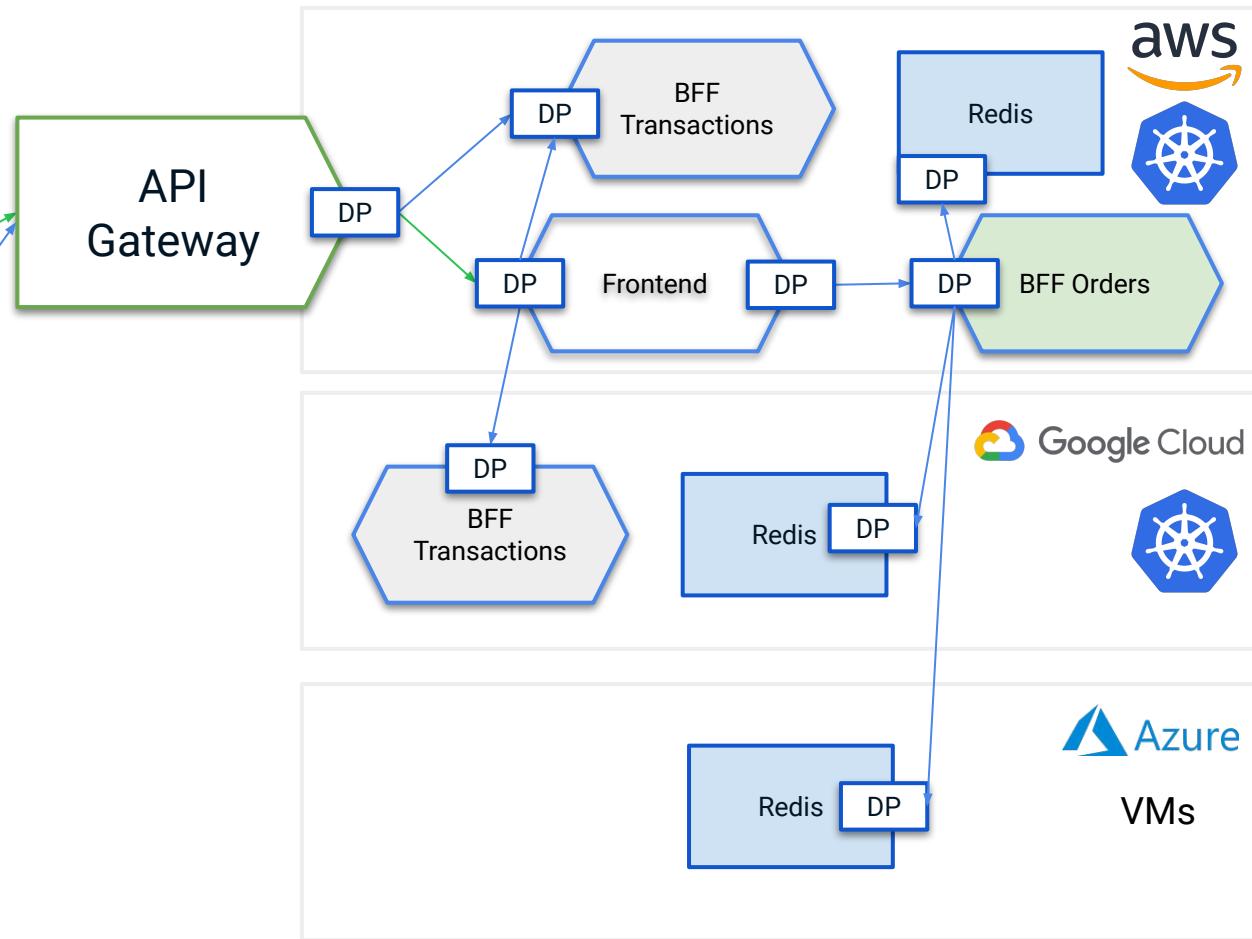
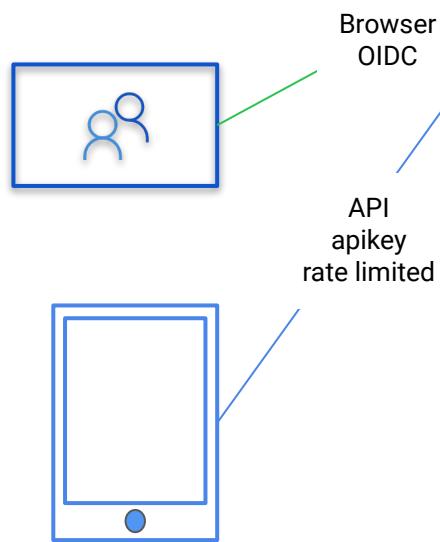
- Logging
- Monitoring
- Tracing
- Service to service security patterns
- IdP / tokens (OpenPolicyAgent)
- Gateway routes to mesh, mesh routes to active and healthy endpoints

# Live Demo



API Gateway AND Service Mesh

Live



# Q&A

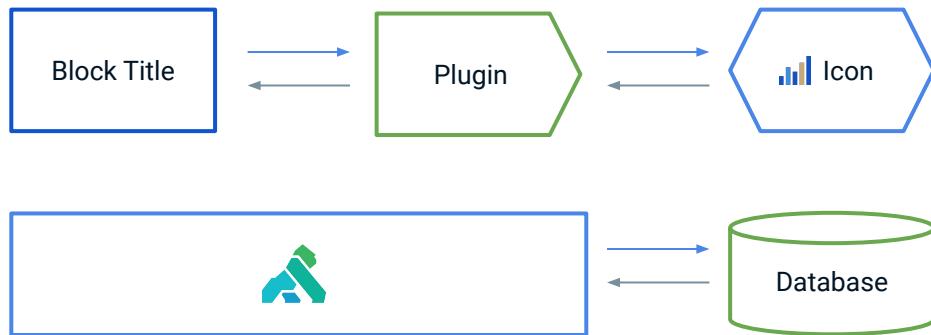
# Thank you

Slides will be available at <https://bio.walther.world/>



DIAGRAMS

# Template



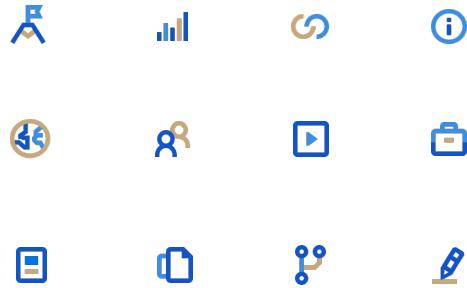
Access all existing Kong diagrams here:

<https://drive.google.com/drive/folders/1TJkhy3TVIkj0Mw-XvAmGo38RF5q8zKgb?usp=sharing>

# Iconography



## TINY ICONS



Access all Kong iconography here:

<https://drive.google.com/drive/folders/1DZE4TpyEEFtTYvI0u9f8BJZmnrhqih?usp=sharing>

## Branding Assets

**Official logo, font, artwork, etc:**

[https://drive.google.com/drive/u/0/folders/0BxmhCXr\\_QQfHbFVTS1BuNWplbFk](https://drive.google.com/drive/u/0/folders/0BxmhCXr_QQfHbFVTS1BuNWplbFk)

## Other Design Resources

**Brand Guidelines:**

<https://konghq.com/brand/>