



Service Mesh AND API Management

Teamwork at its Best

Sven Walther
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Sven Walther

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@svenwal

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

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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?

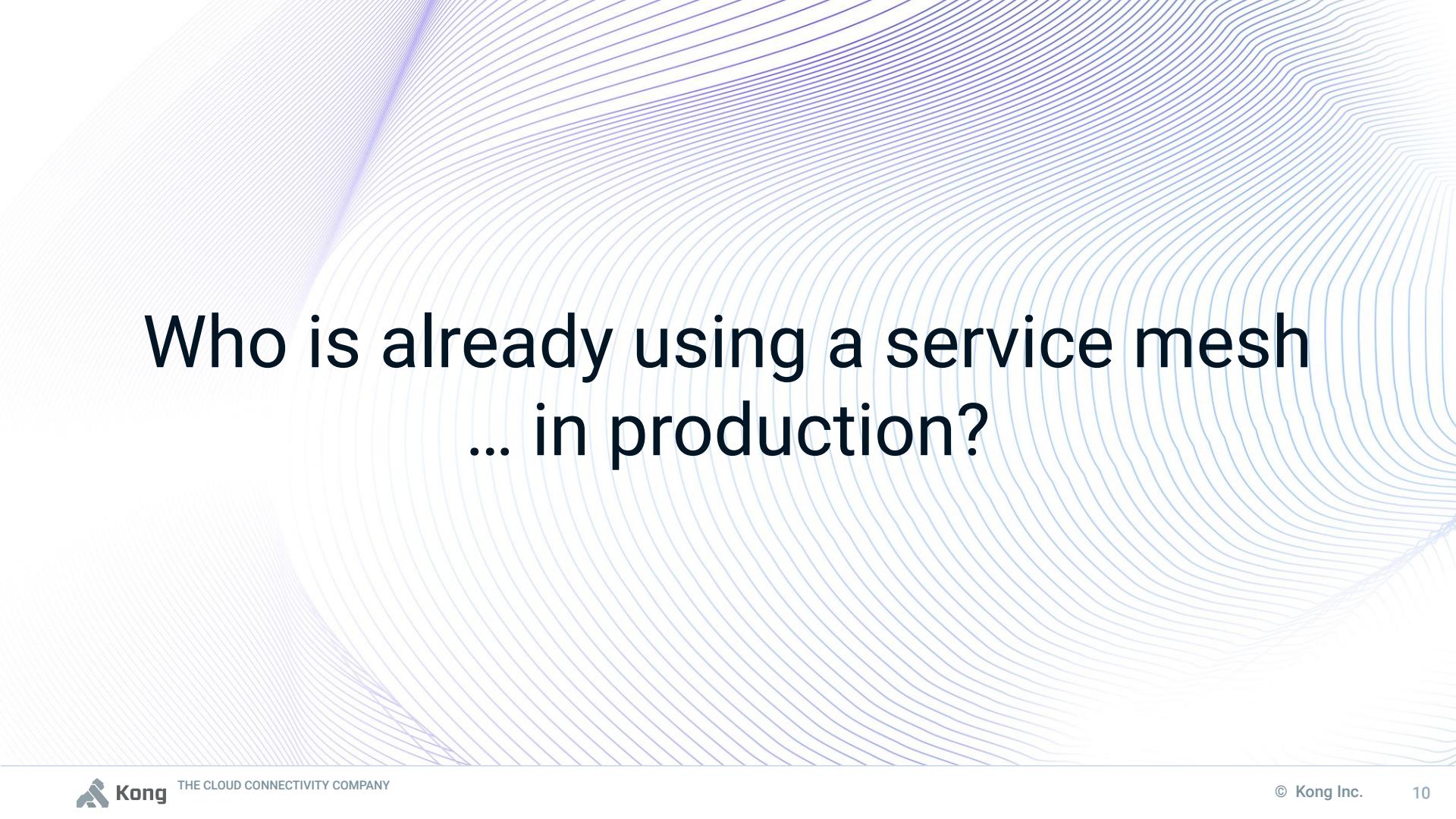
* includes OpenShift

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

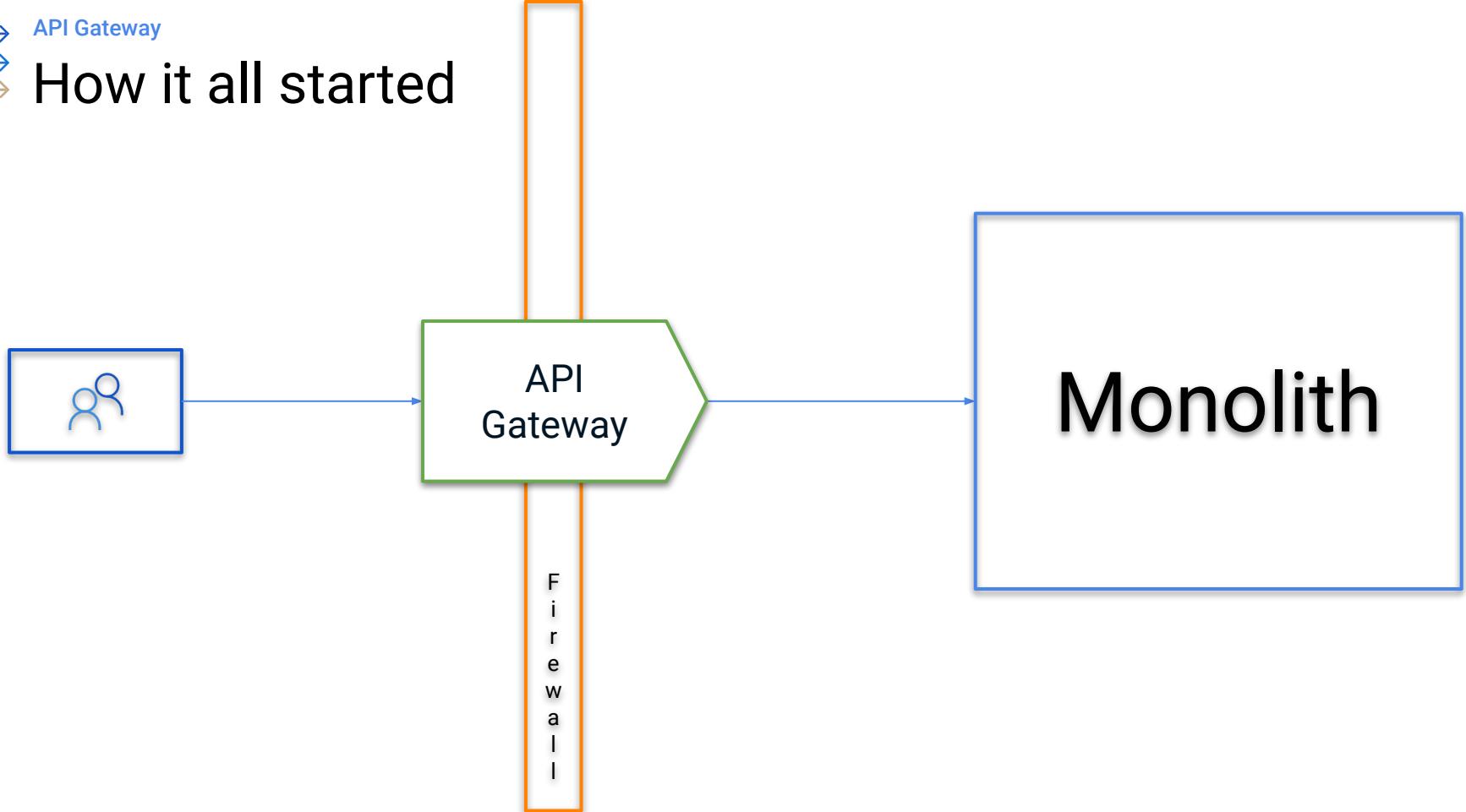
Serving the world since more than 20 years

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



API Gateway

How it all started





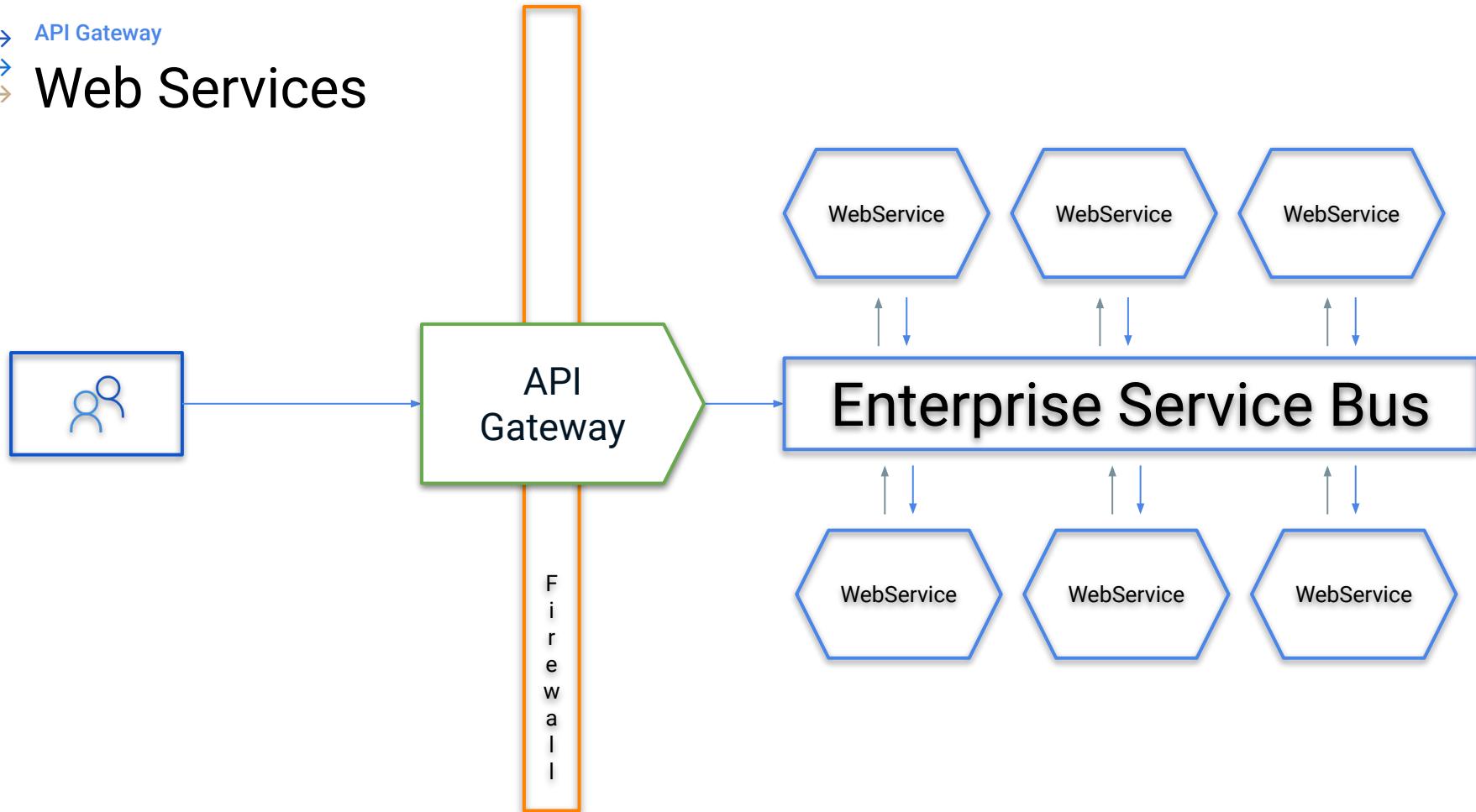
Functionality

API
Gateway

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

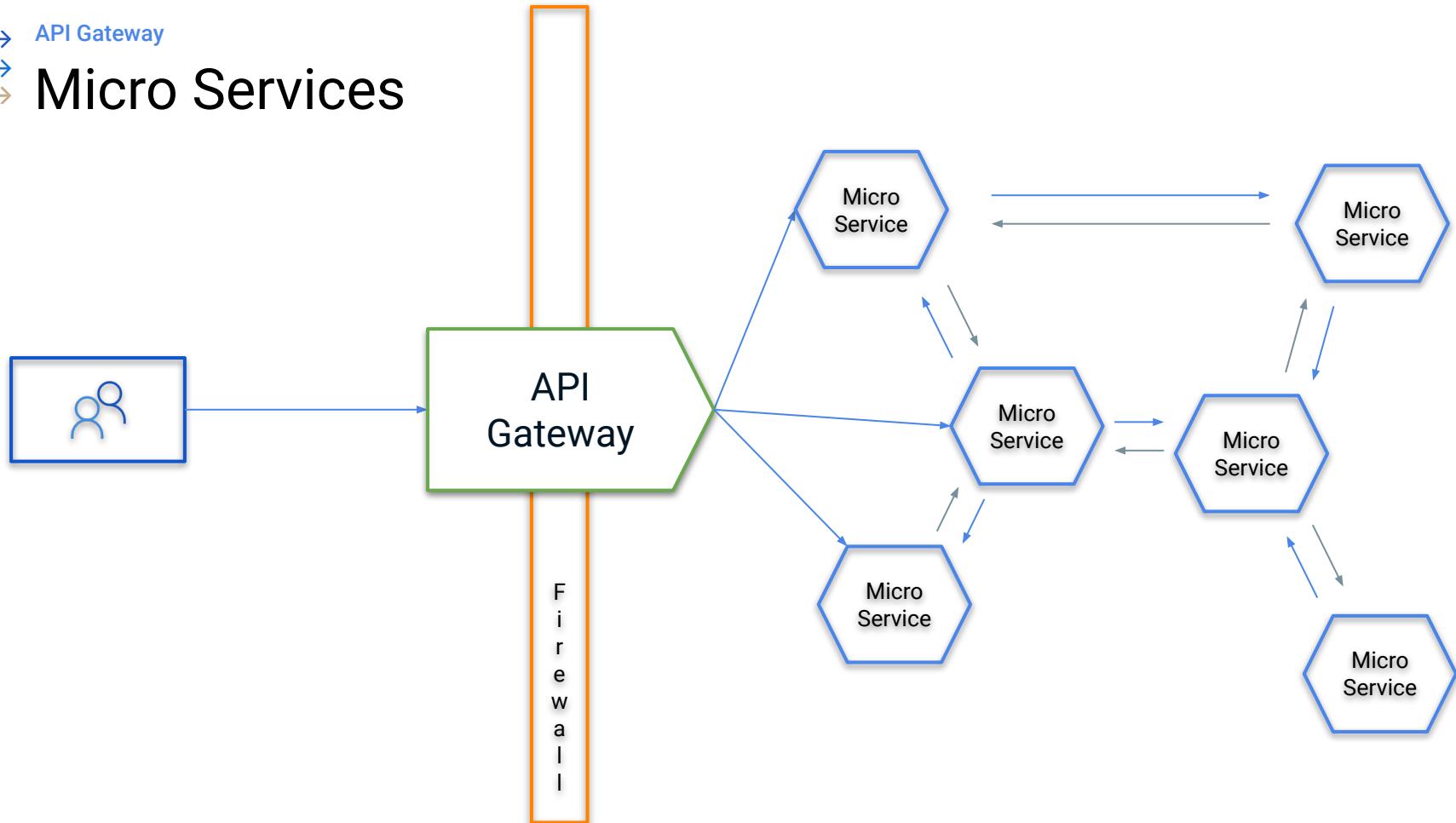
 API Gateway

Web Services



API Gateway

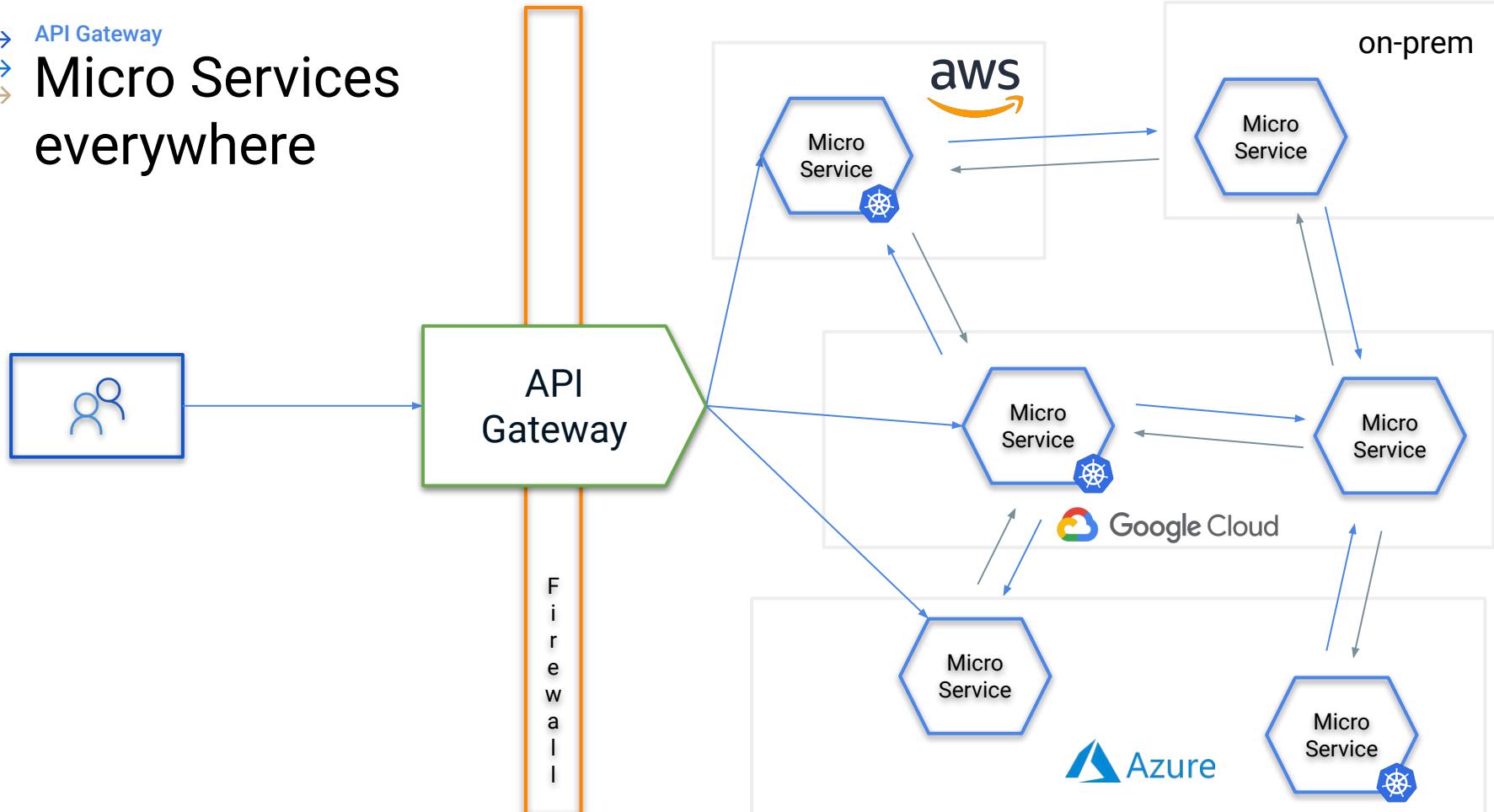
Micro Services





API Gateway

Micro Services everywhere



Micro Services

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



THE CLOUD CONNECTIVITY COMPANY

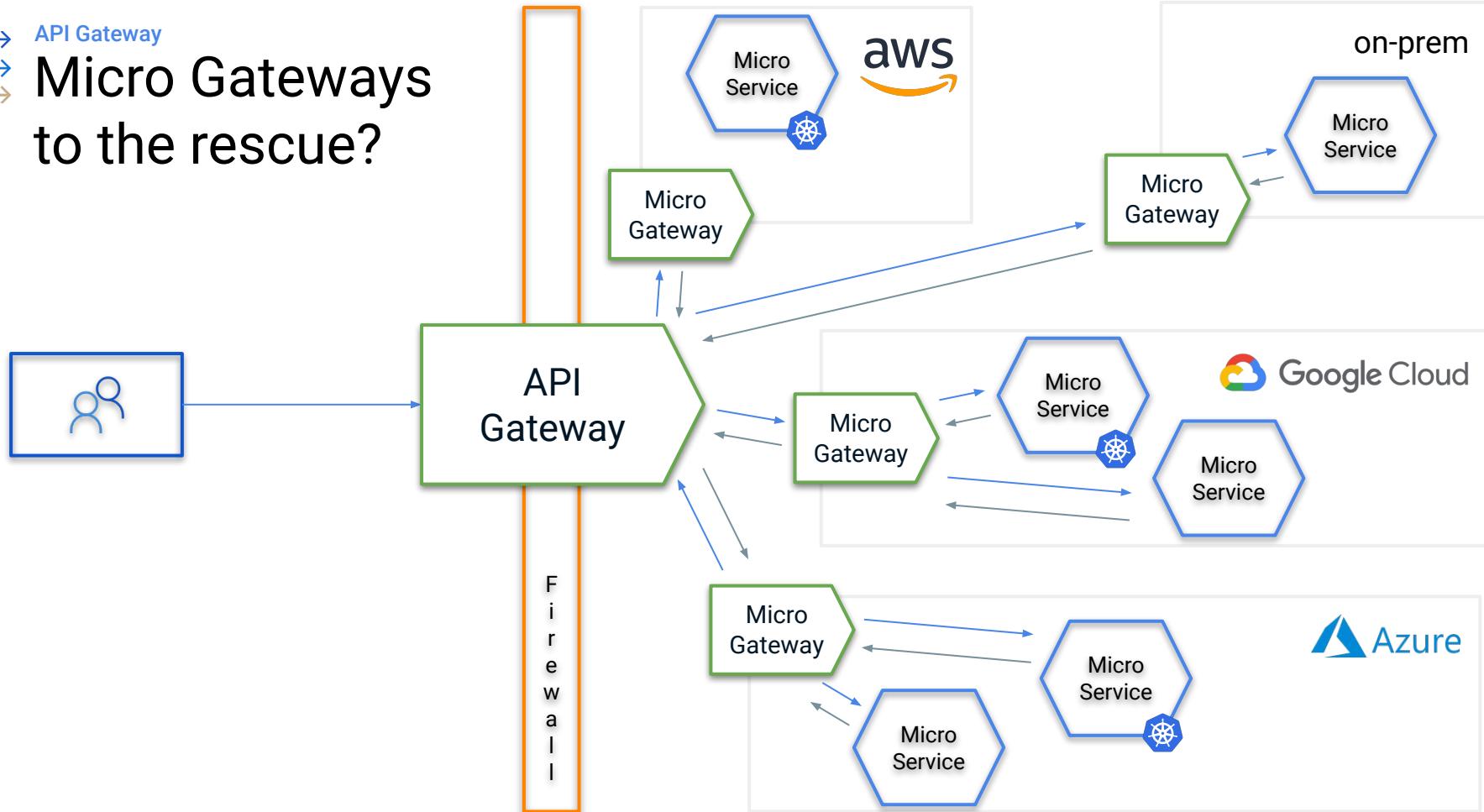
© Kong Inc.

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API Gateway

Micro Gateways to the rescue?

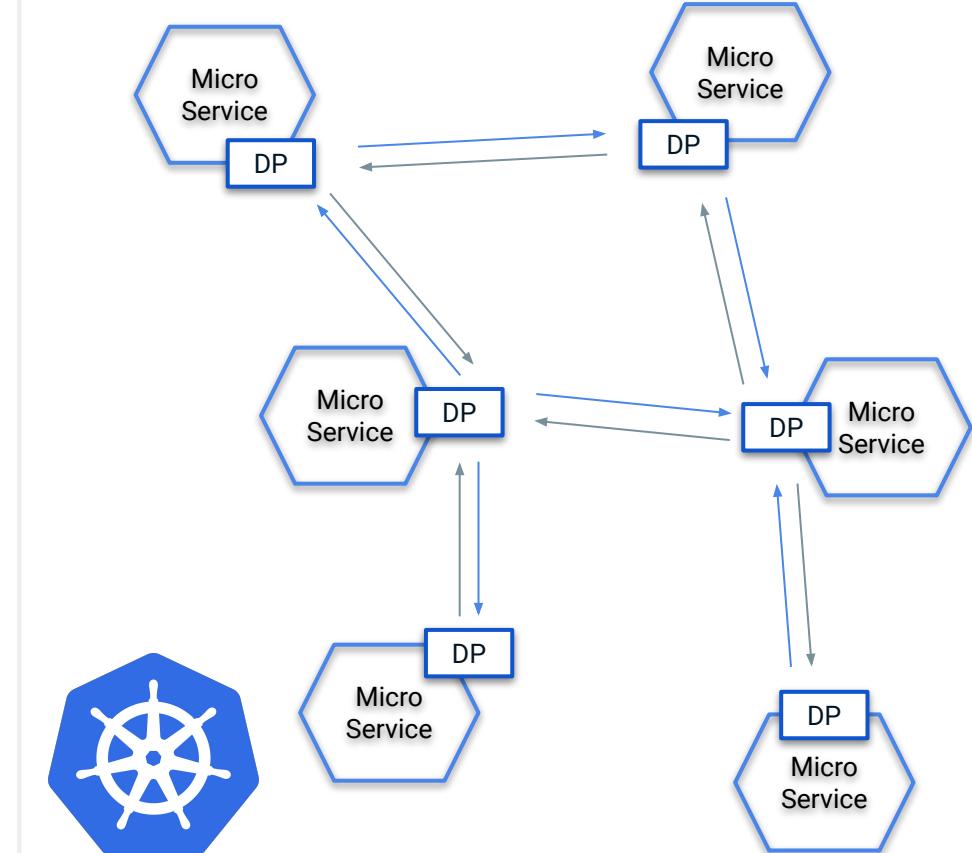


Service Mesh

Within the cluster

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

Everything means:
=> within the cluster



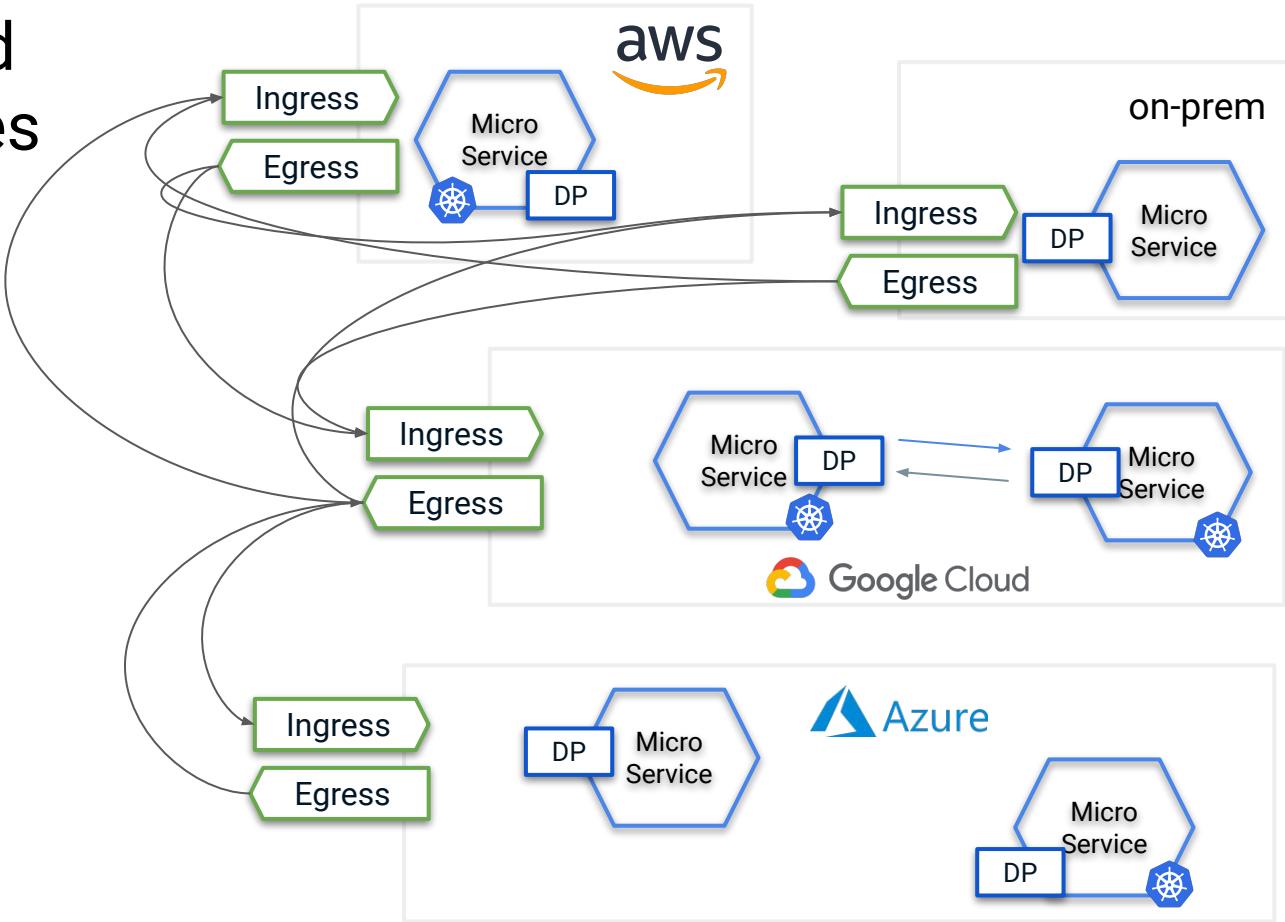


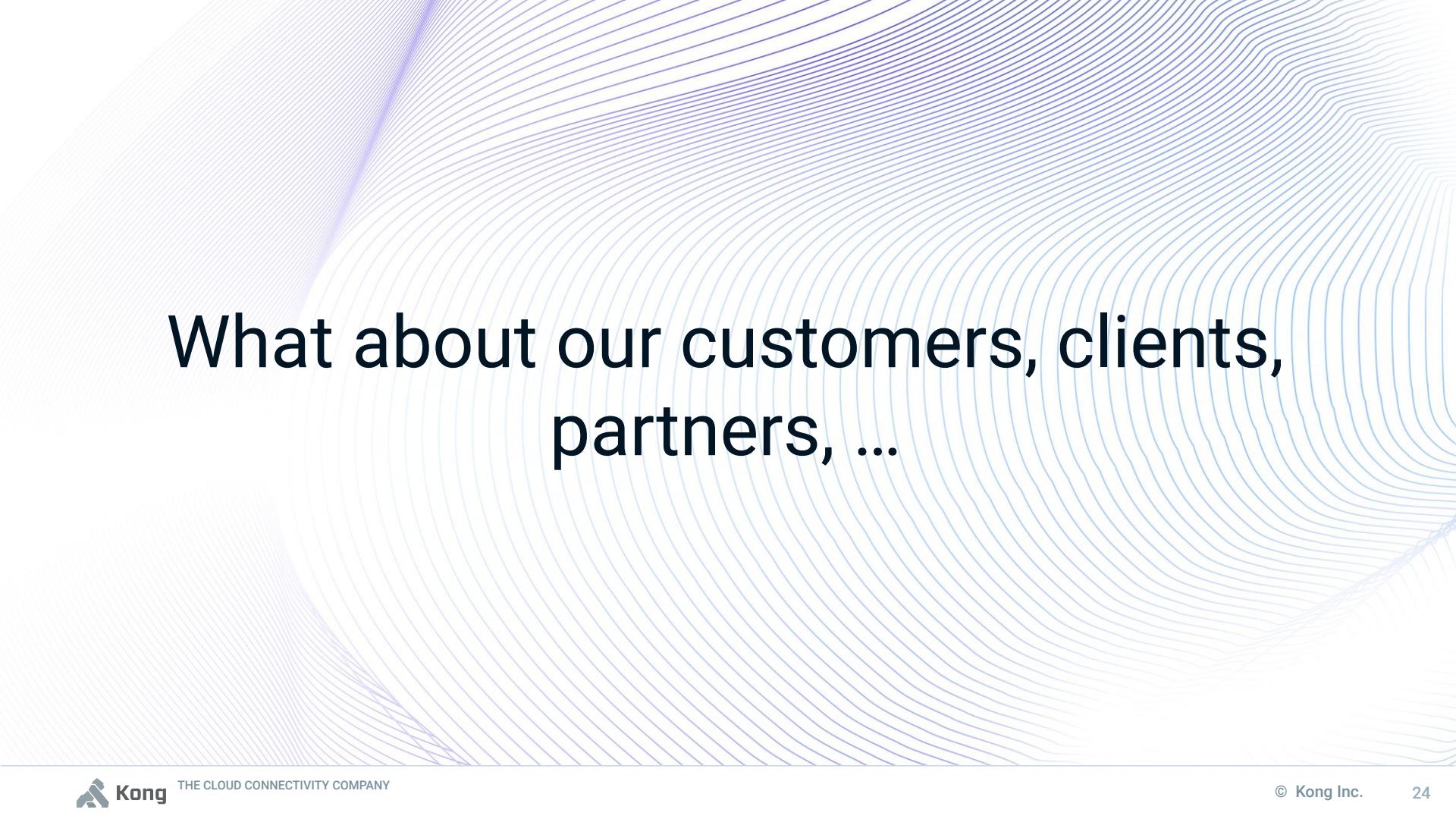
Functionality

Service
Mesh

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

Multi Cloud and more challenges



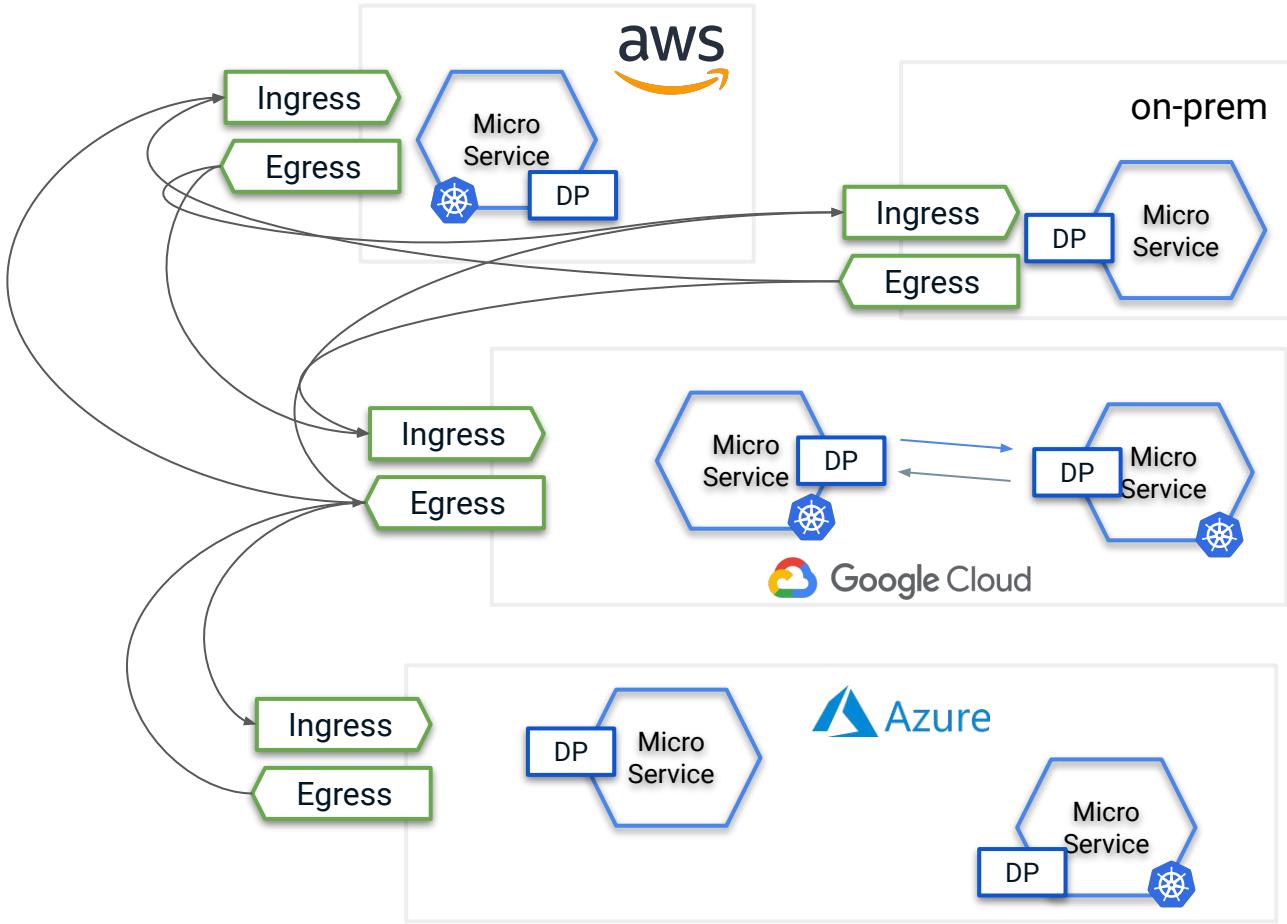


What about our customers, clients, partners, ...



Service Mesh

What about clients?

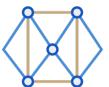


“Give a boy a hammer and everything he meets has to be pounded”



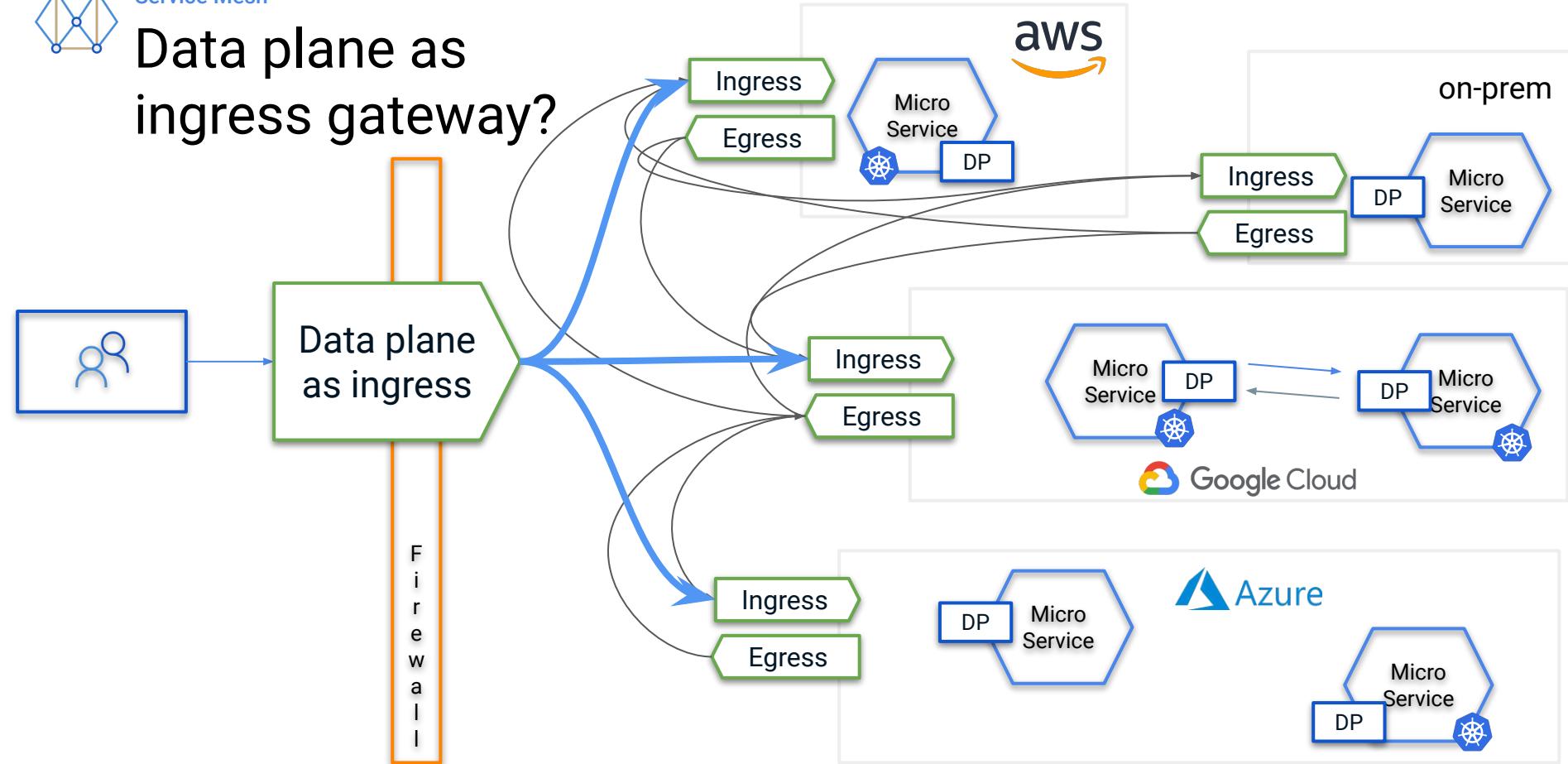
Kaplan's Law of the Instrument:
https://en.wikipedia.org/wiki/Law_of_the_instrument

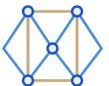
Background: Los Muertos Crew <https://www.pexels.com/de-de/foto/holz-hande-hammer-nagel-8447781/>



Service Mesh

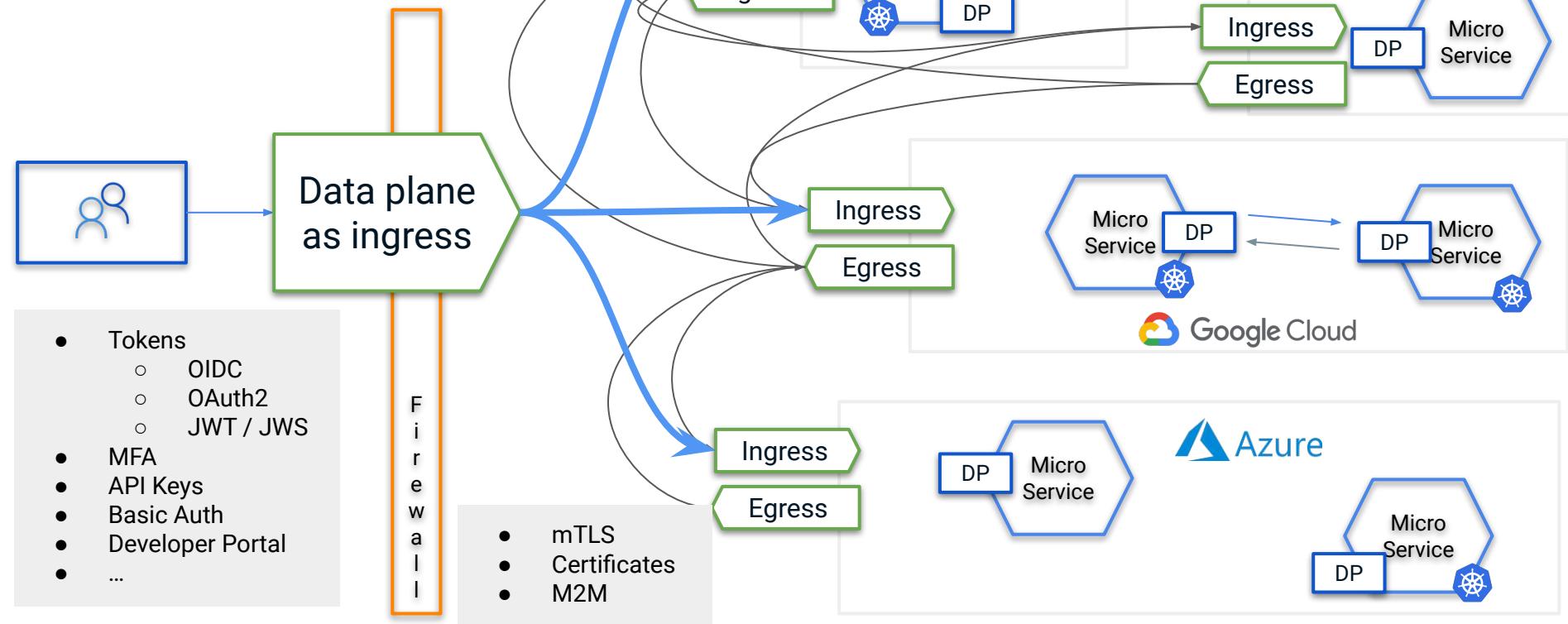
Data plane as ingress gateway?

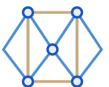




Service Mesh

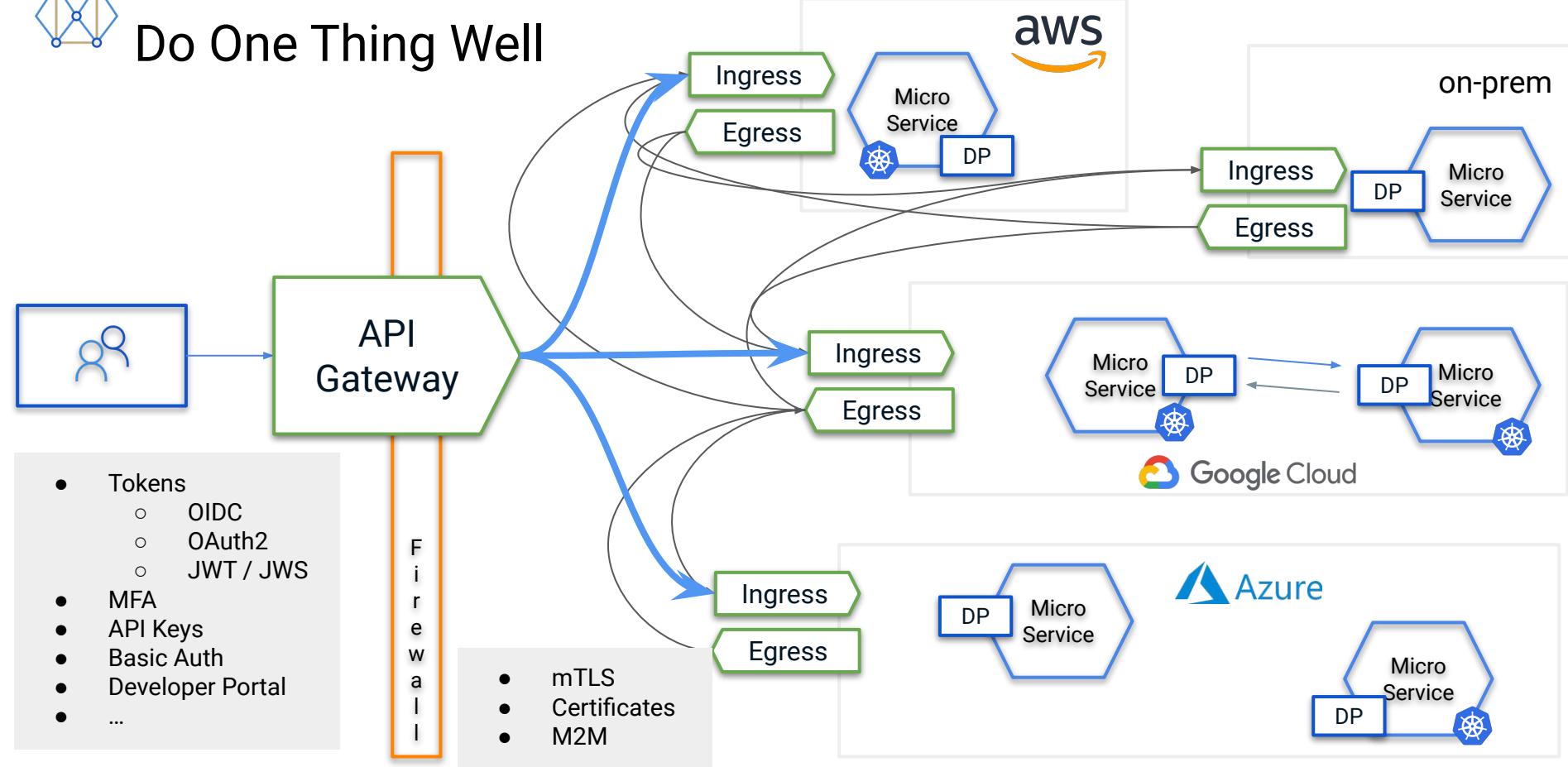
Different use cases - different tools!





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)

Teamwork



Background: fauxels <https://www.pexels.com/de-de/foto/foto-von-menschen-in-der-nahe-von-holztisch-3184418/>

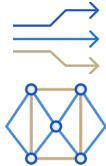
Collaboration

Where is the teamwork?

Gateway and mesh share central solutions

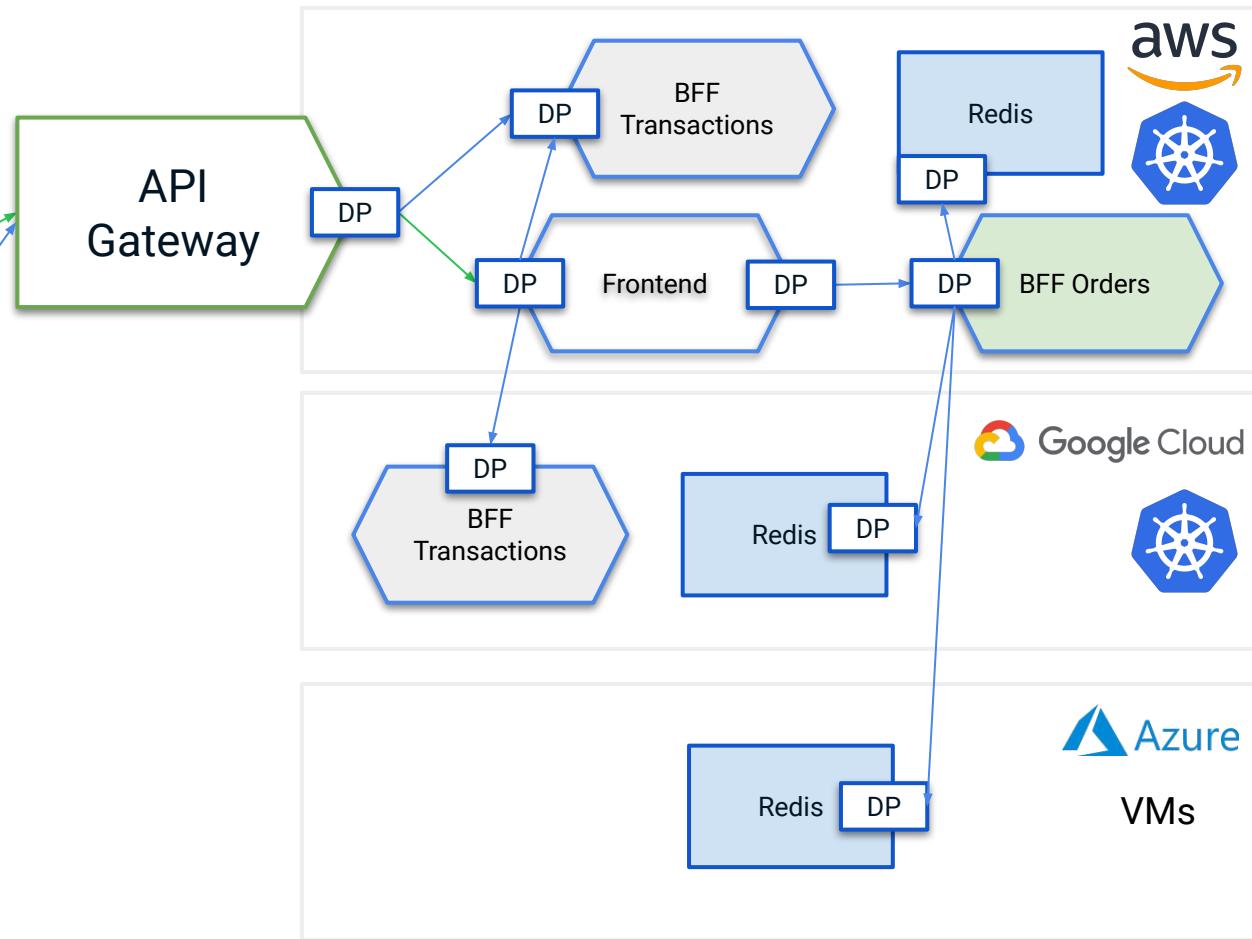
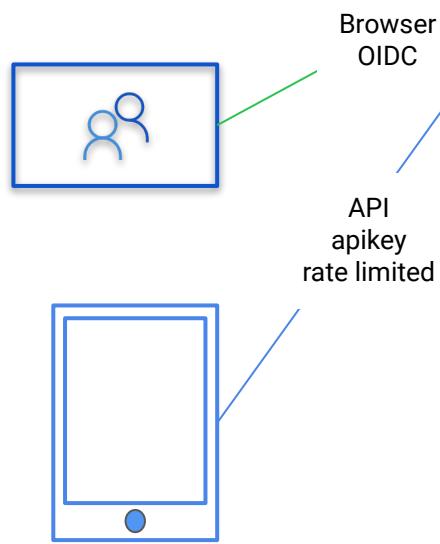
- Logging
- Monitoring
- Tracing
- Service to service security patterns
- IdP / tokens (OpenPolicyAgent)
- Gateway routes to mesh, mesh routes to active and healthy endpoints

Live Demo



API Gateway AND Service Mesh

Live



Q&A

Thank you

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