

PROXIES, GATEWAYS AND MESHERS: CLOUD CONNECTIVITY PATTERNS FOR DEVELOPERS

Viktor Gamov | @gamussa
October 2021



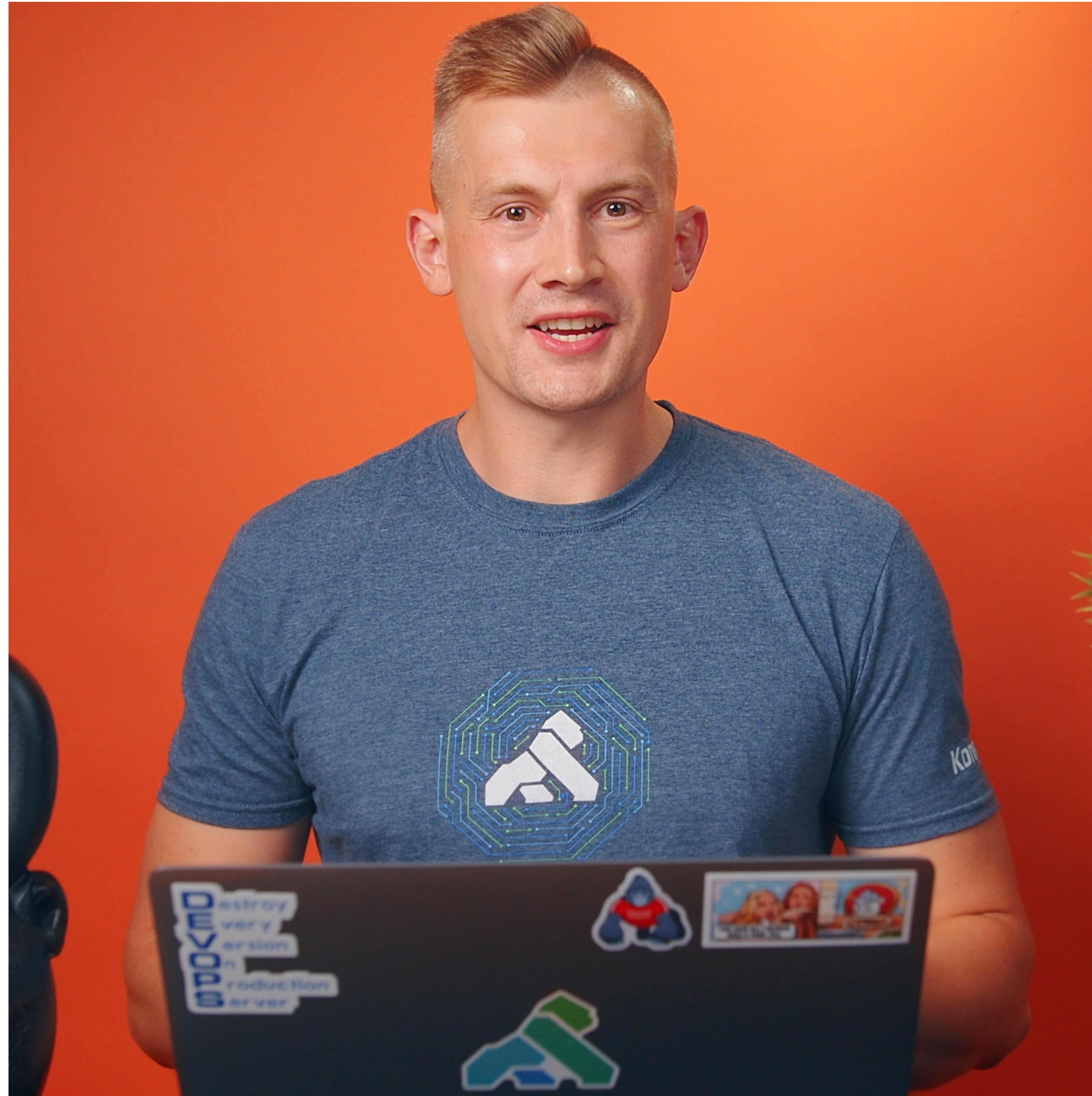




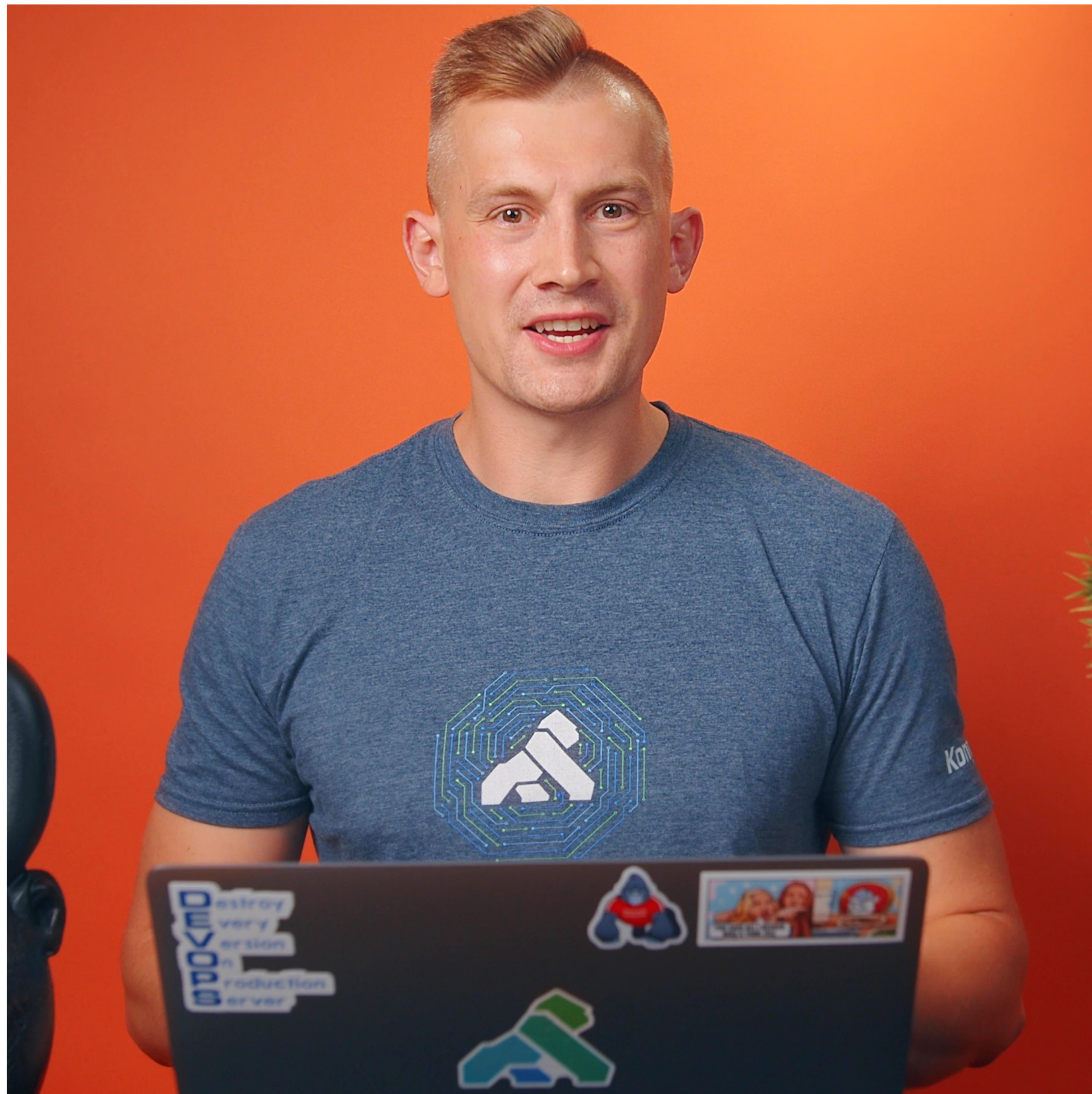








@gamussa | @thekonginc



★ gamov.dev/twitter

★ gamov.dev/telegram

★ gamov.dev/youtube



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Kafka IN ACTION

Dylan D. Scott
Viktor Gamov
Dave Klein



 MANNING



@gamussa | @thekonginc

Kafka IN ACTION

Dylan D. Scott
Viktor Gamov
Dave Klein

MEAP

 MANNING



★ kafkainaction.org

★ Use code **kafkaa35**

★ Release - Fall 2021

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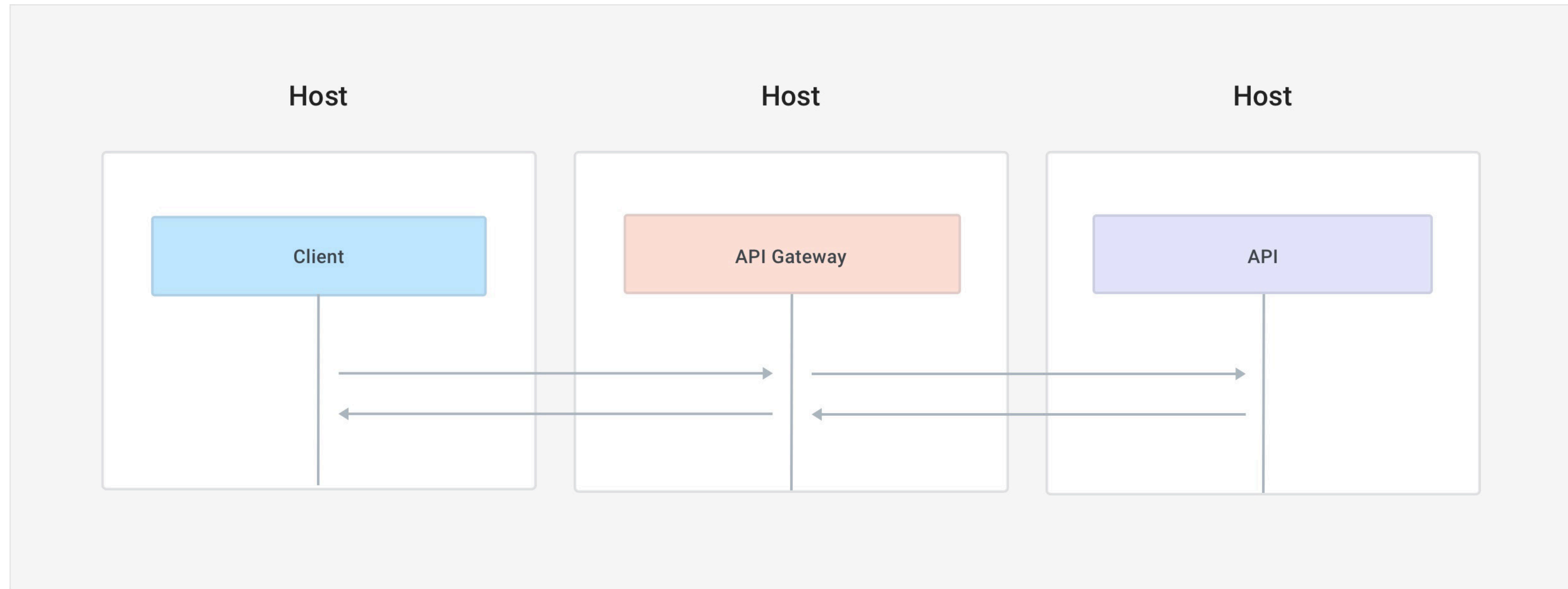
FROM PROXY TO GATEWAY

During assimilation new capabilities are provided at no cost

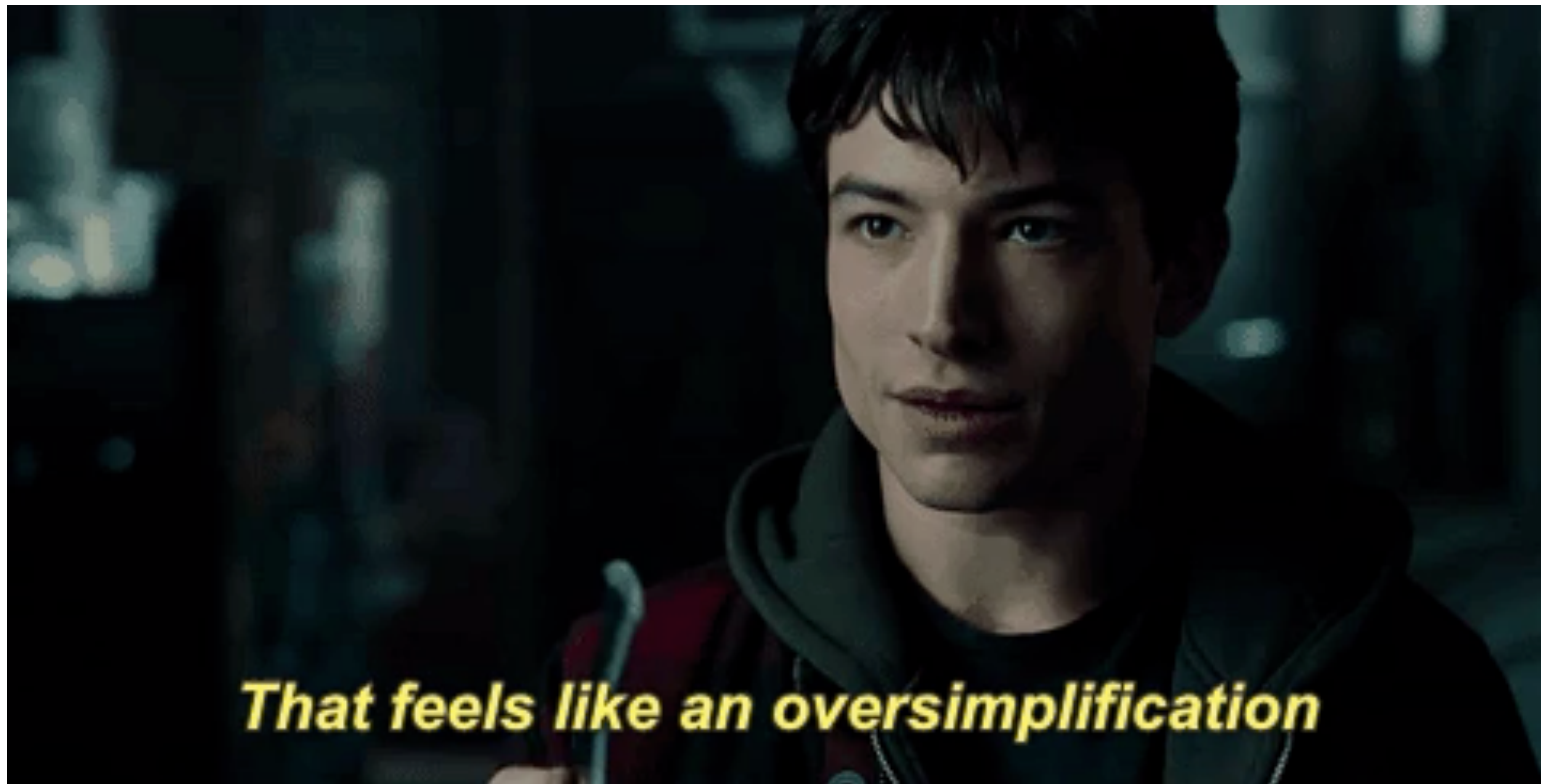
What's API Gateway anyway?

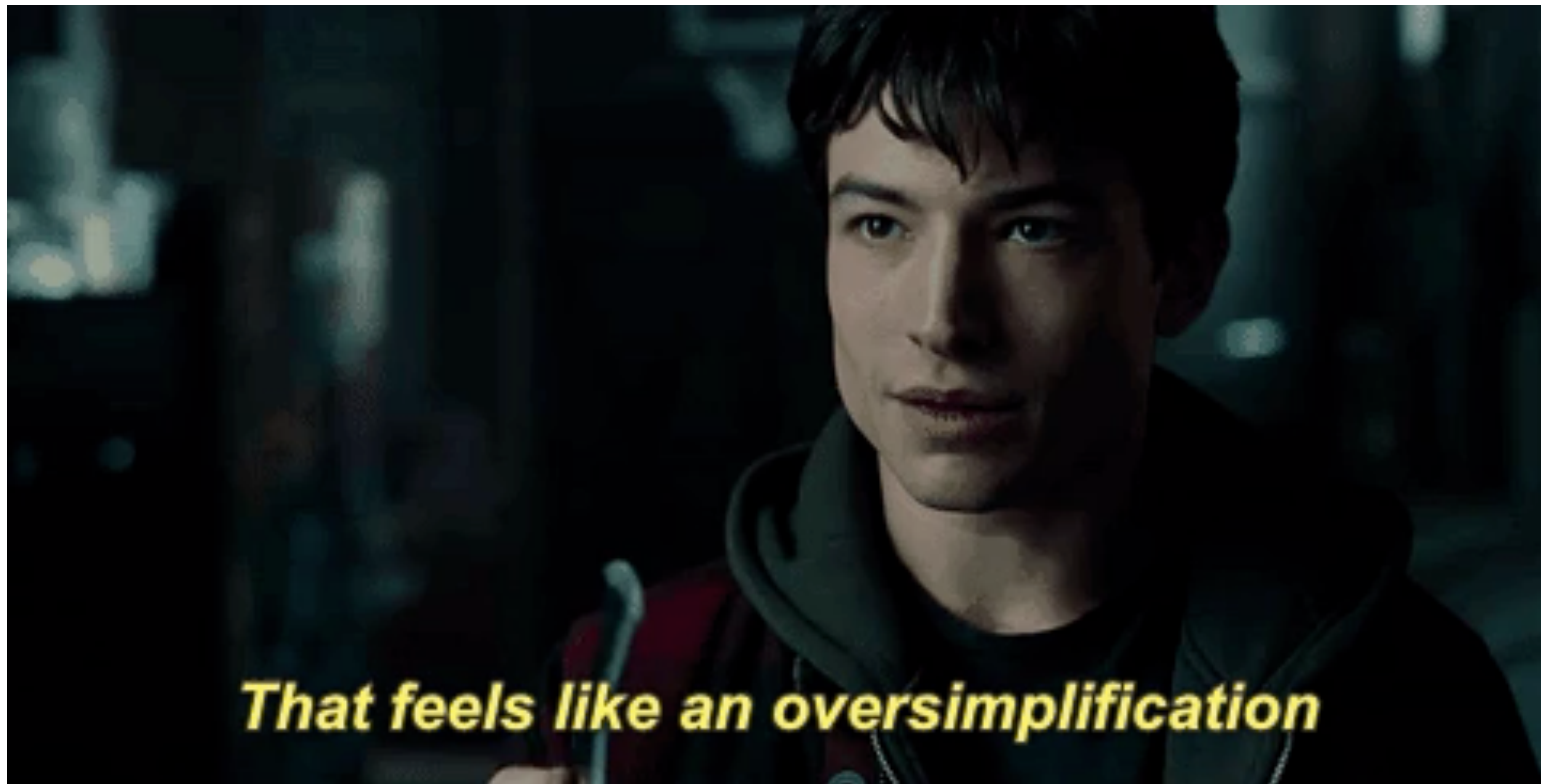
Get up to speed

API Gateway



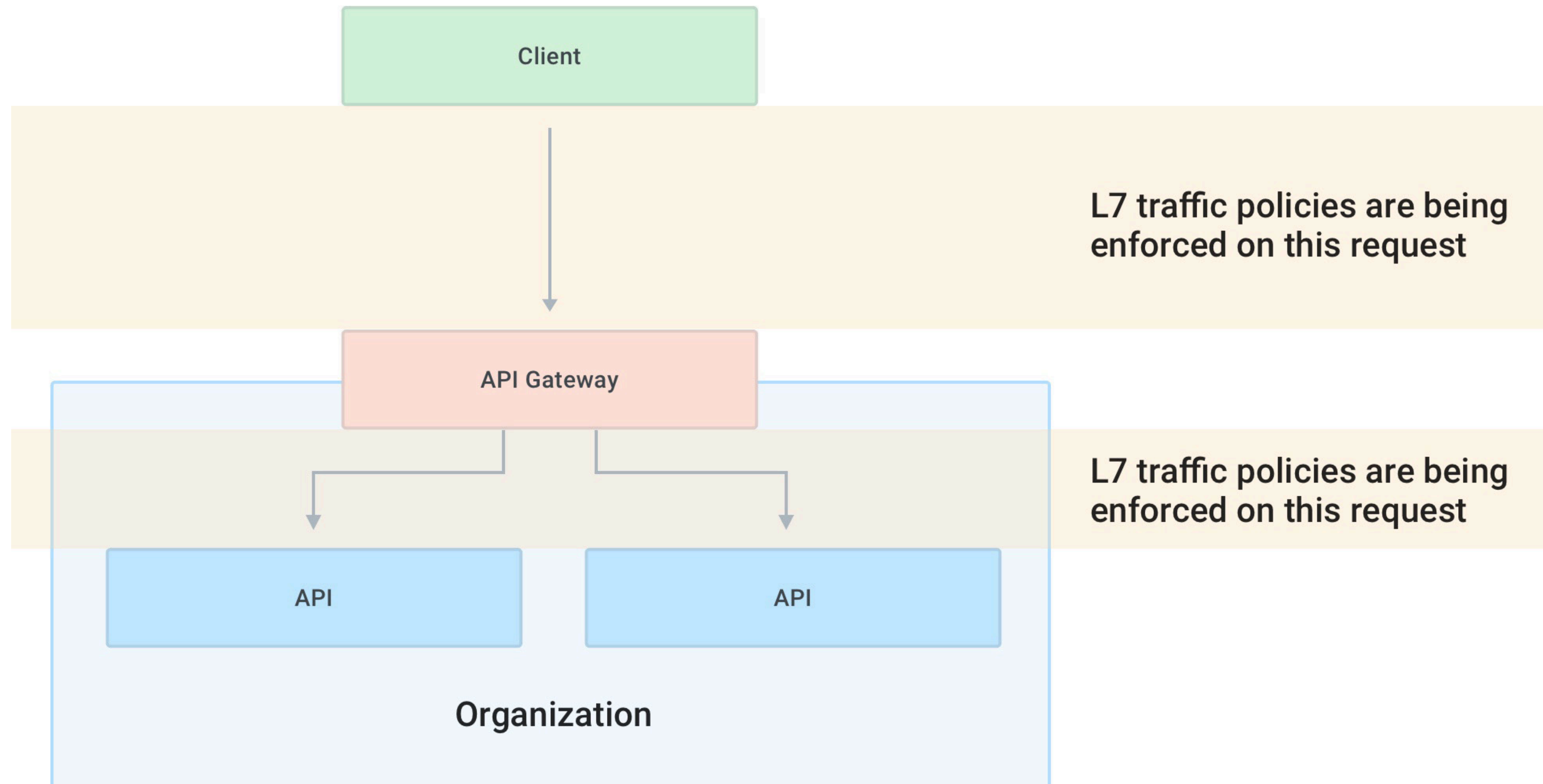
Isn't it just a
PROXY?

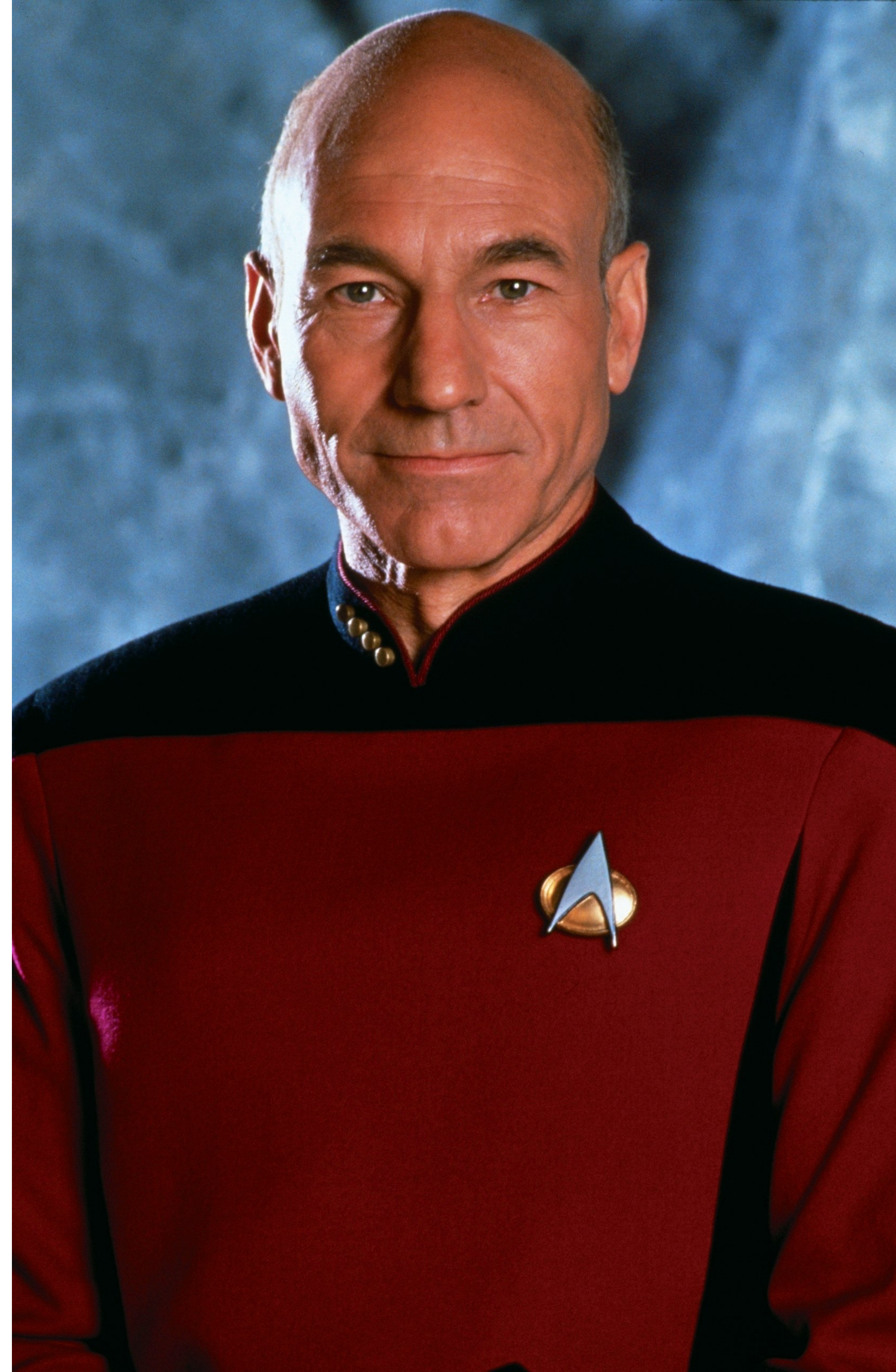




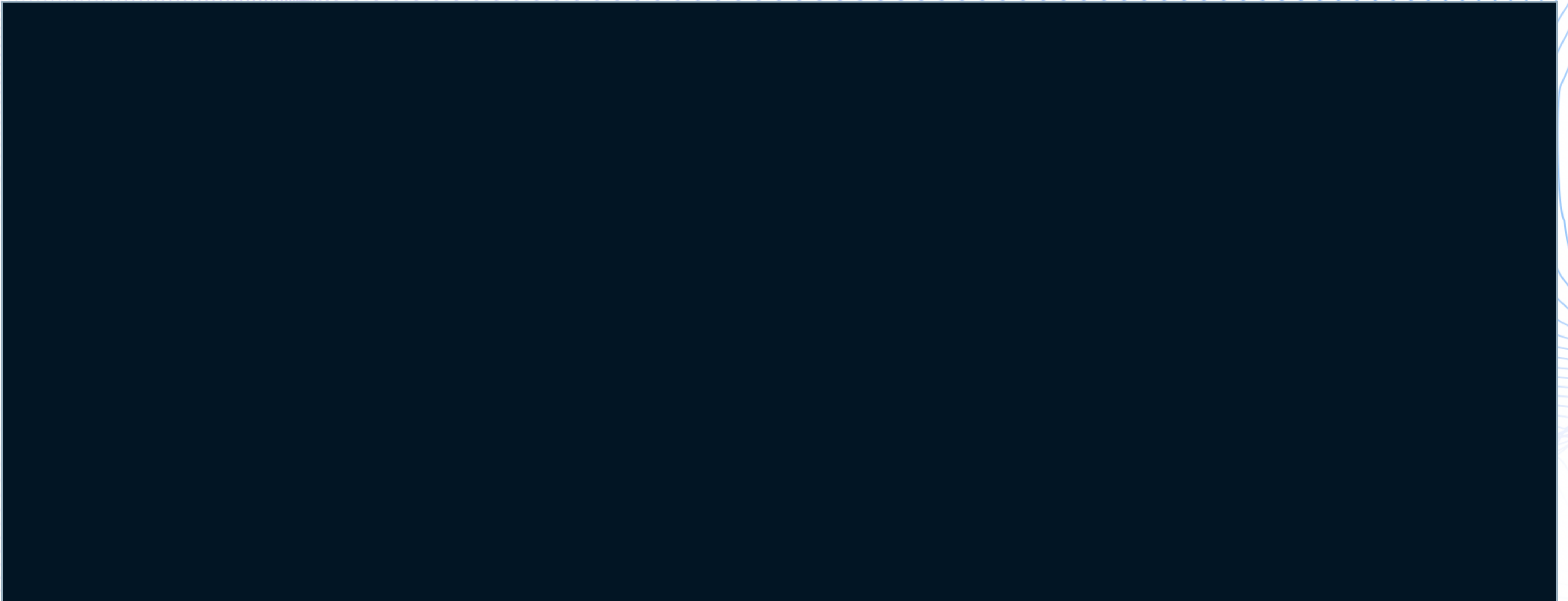
Service Connectivity

Service Connectivity

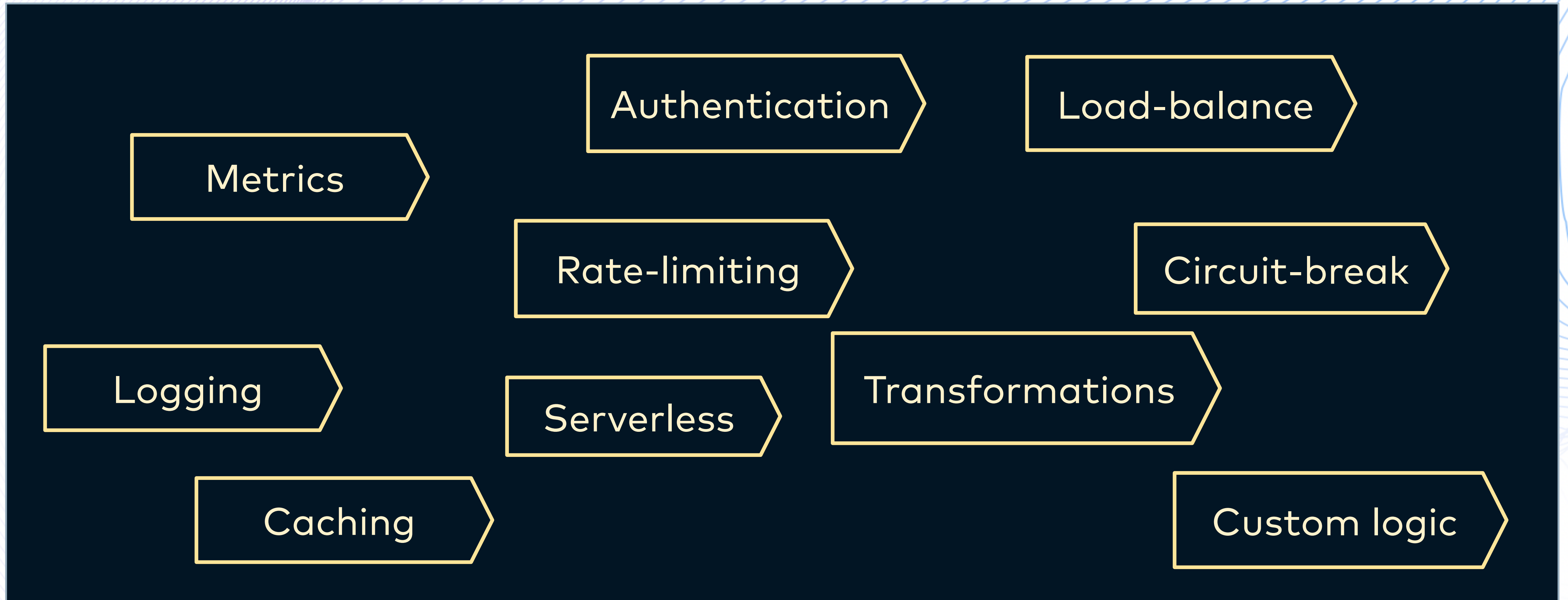




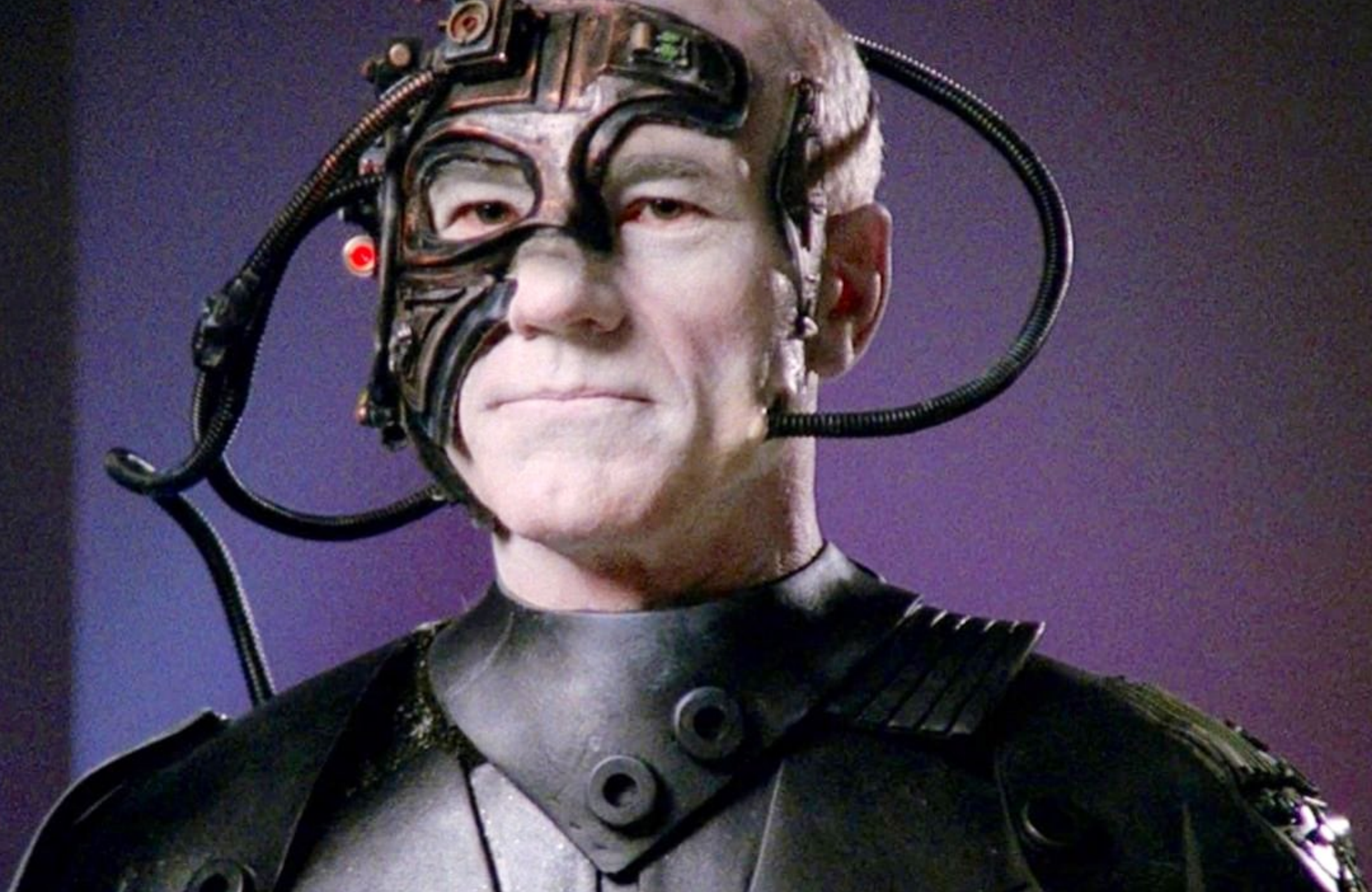
Who will implement all this?

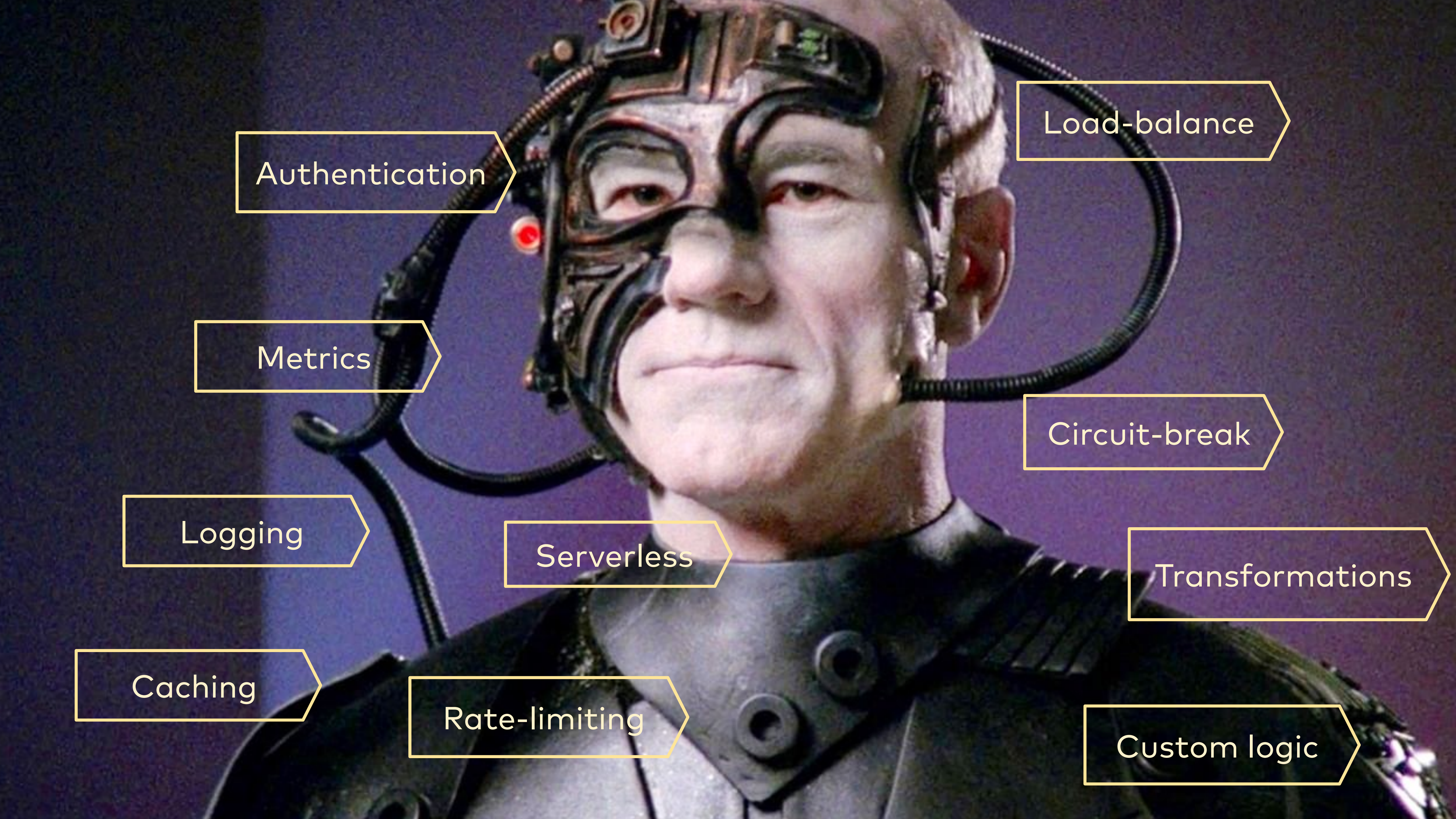


Who will implement all this?







A man with a cybernetic head, featuring various mechanical components, wires, and a red light. He is wearing a dark, high-collared jacket. The background is a dark, textured surface.

Authentication

Load-balance

Metrics

Circuit-break

Logging

Serverless

Transformations

Caching

Rate-limiting

Custom logic

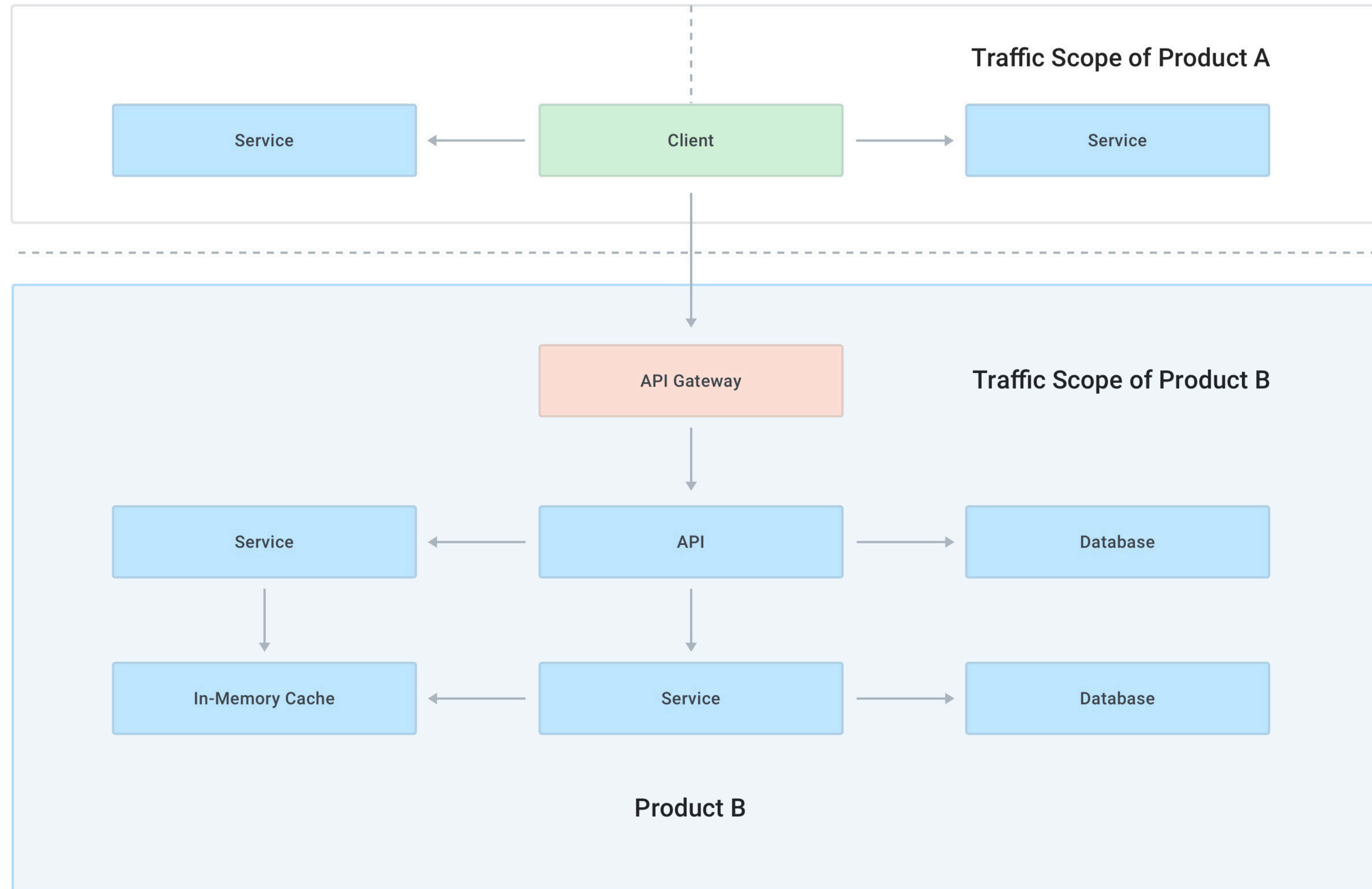
Gateway admits!



API as a Product

What's in a Box? ©

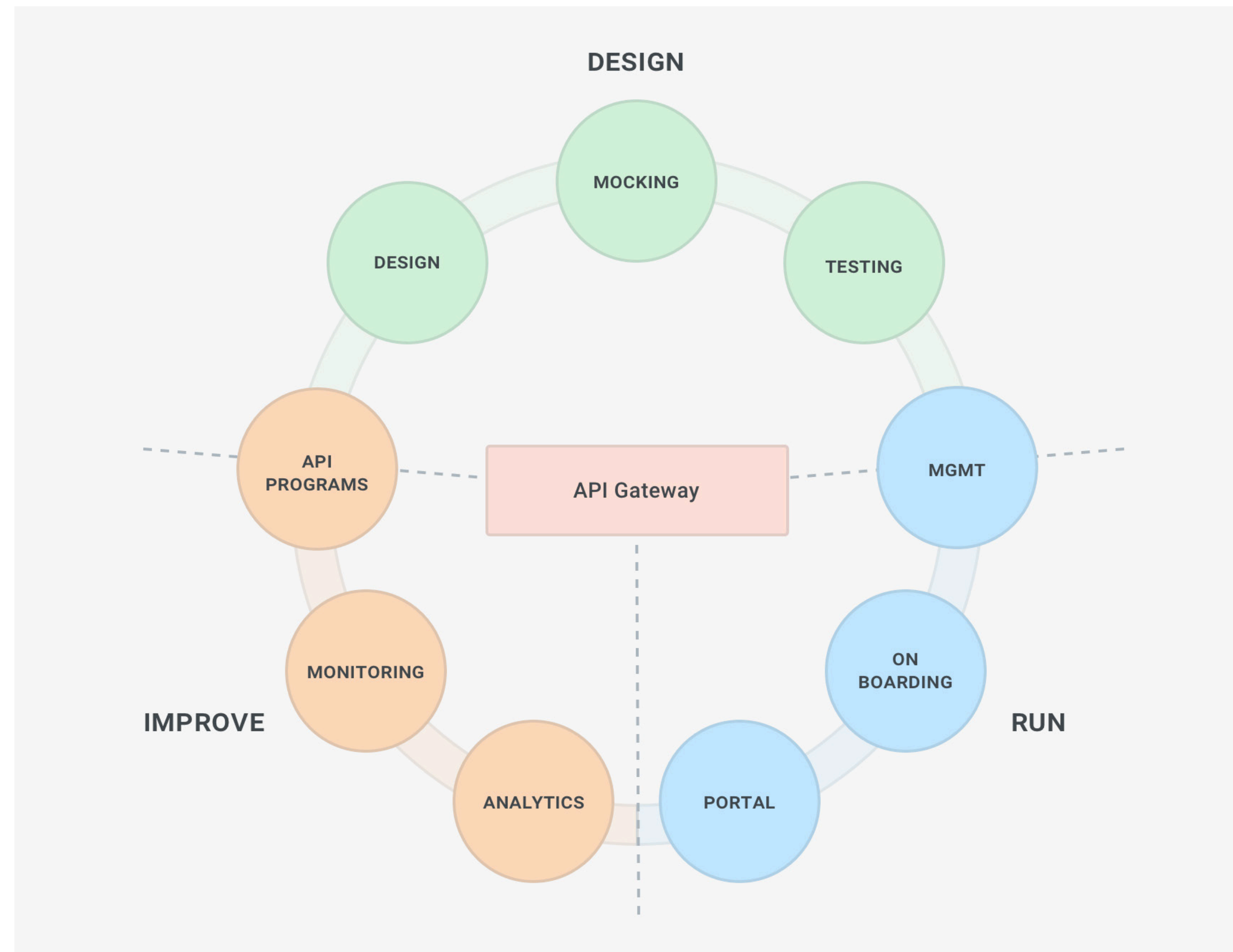
API as a Product



One thing to rule them all

From proxy server to API Management Platform

Full Lifecycle API Management



ROAD TO MESH

Resistance is futile. You will be assimilated





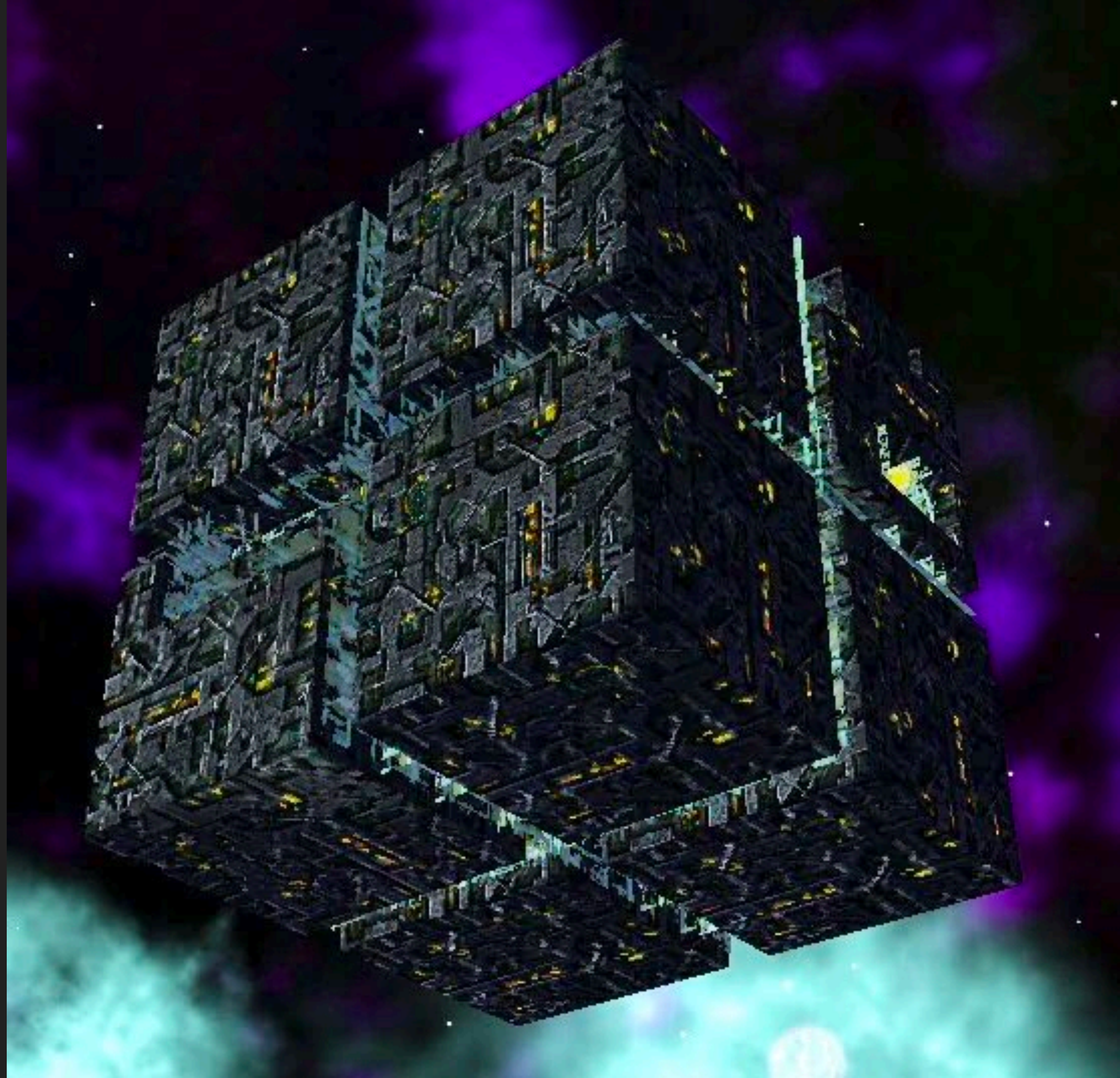
Frontend

Cart

Orders

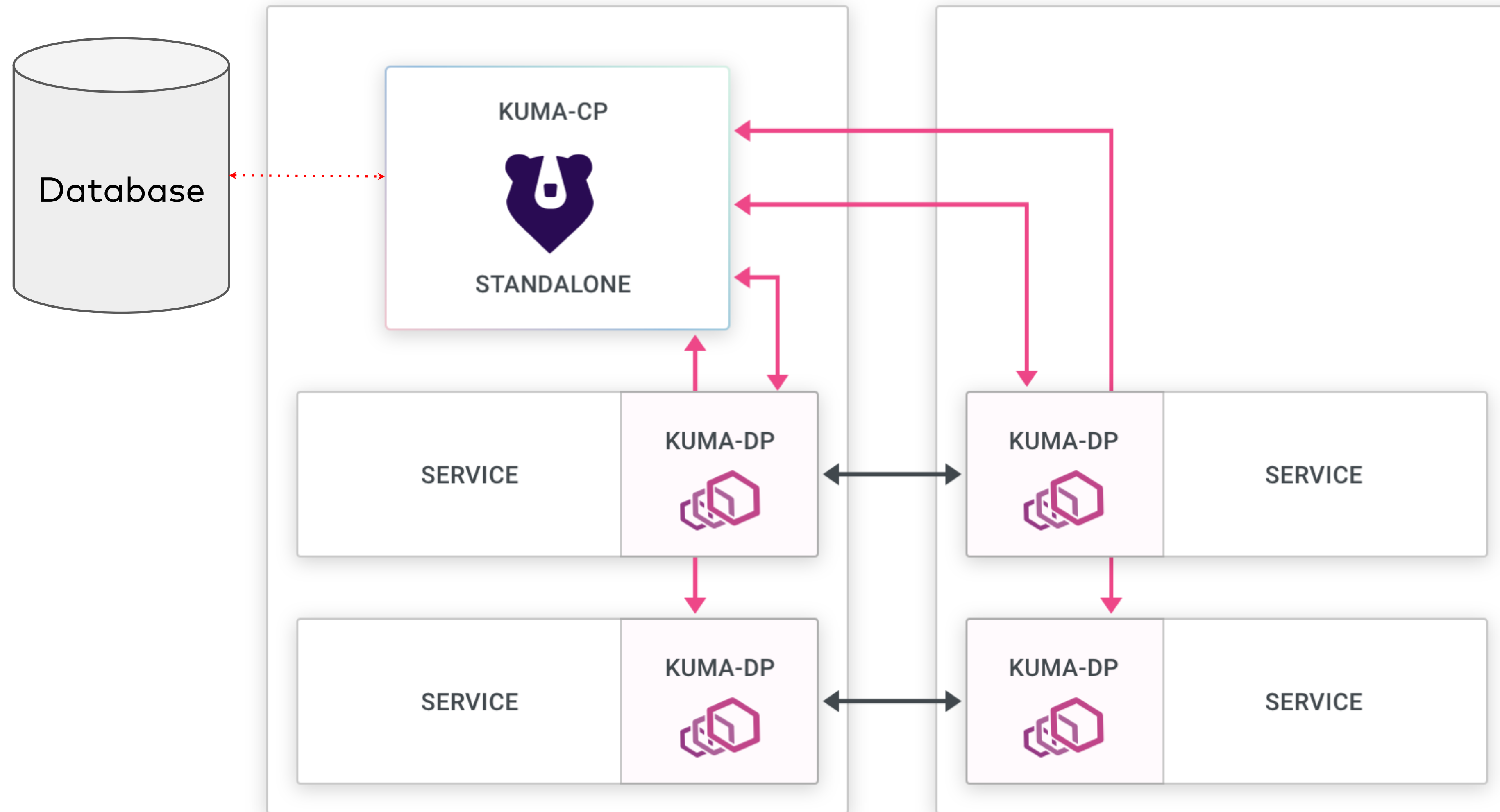
Shipping

Billing

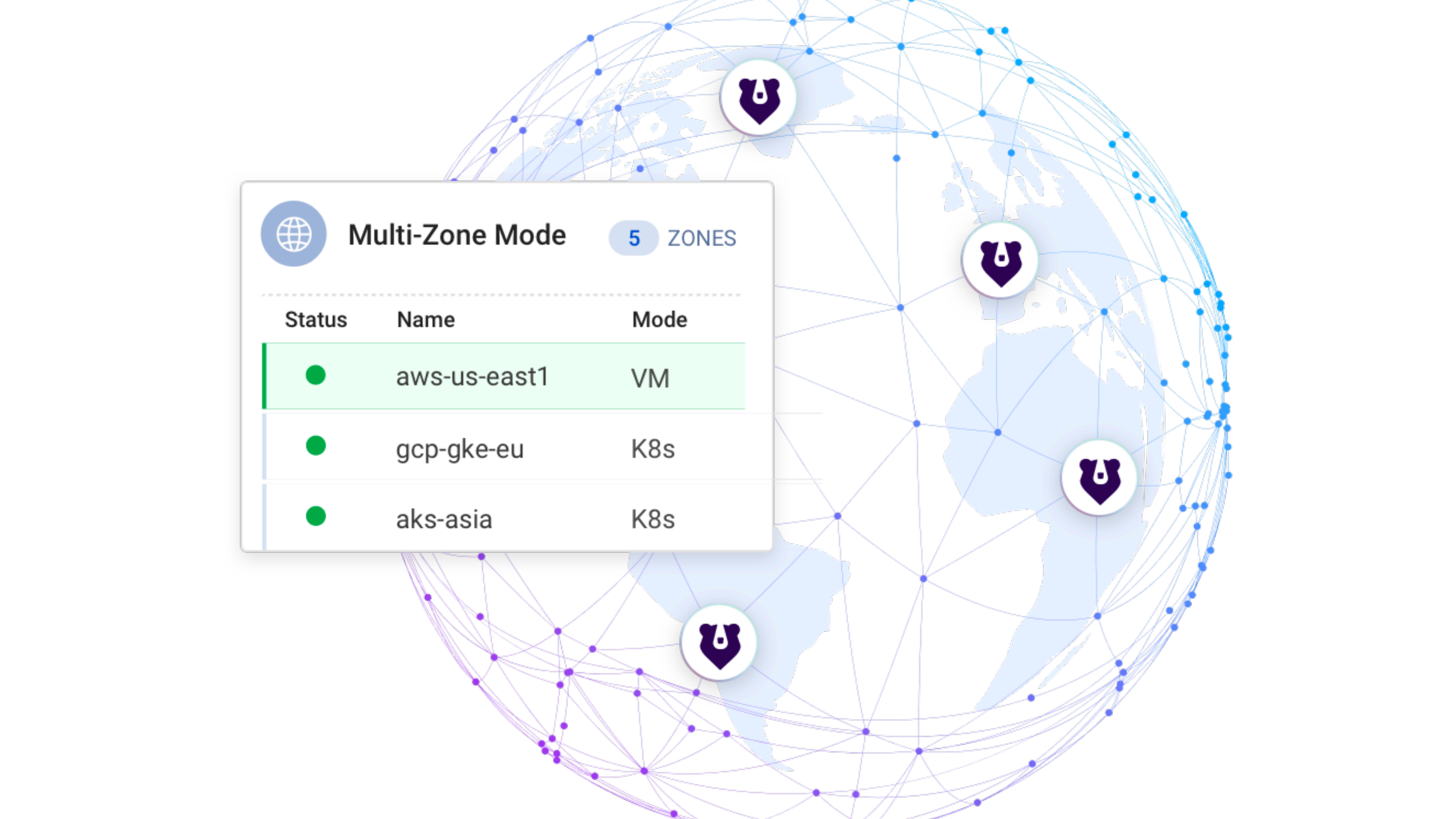




Kuma Mesh Architecture Overview



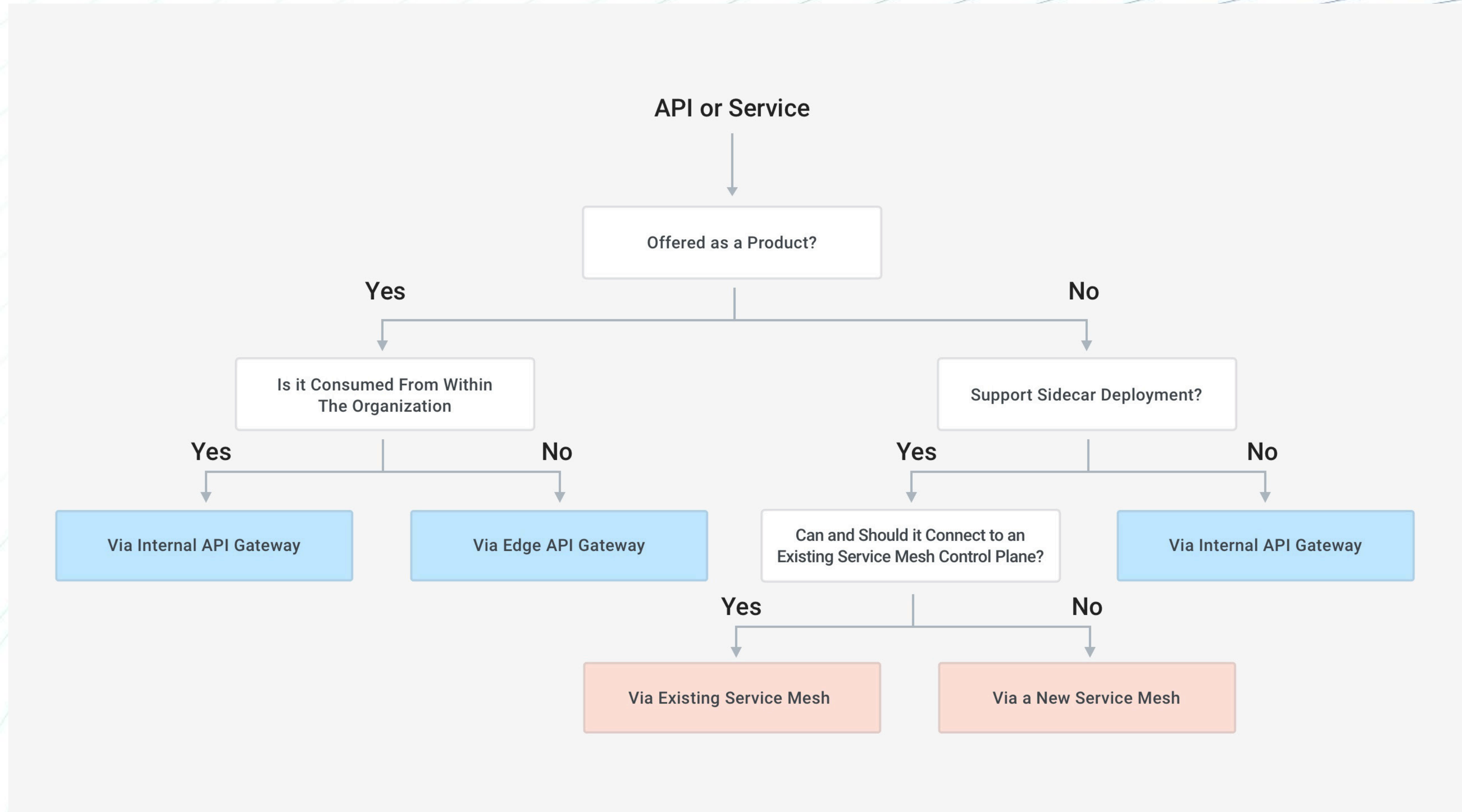




 **Multi-Zone Mode** 5 ZONES

Status	Name	Mode
●	aws-us-east1	VM
●	gcp-gke-eu	K8s
●	aks-asia	K8s

What to choose?

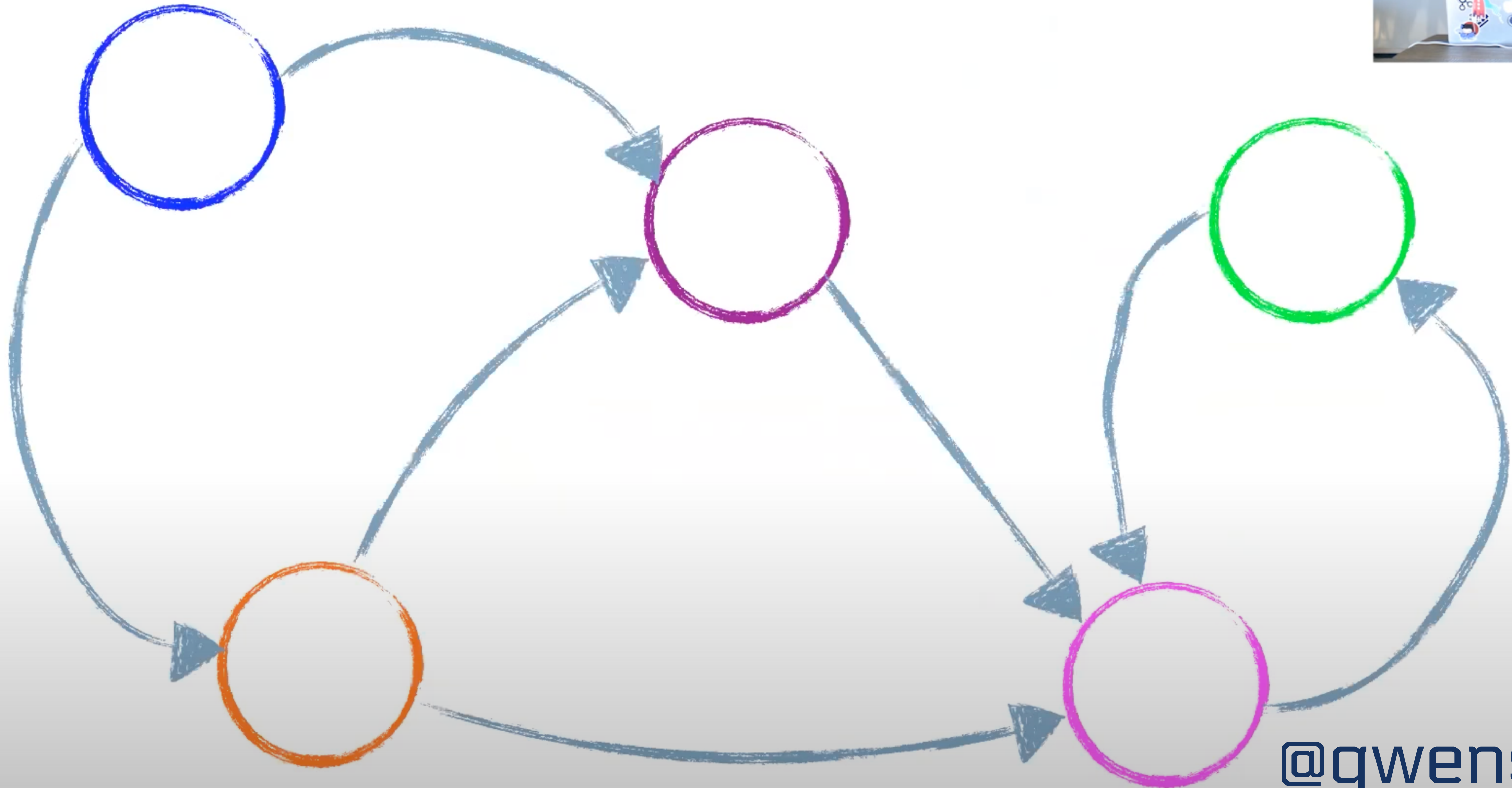
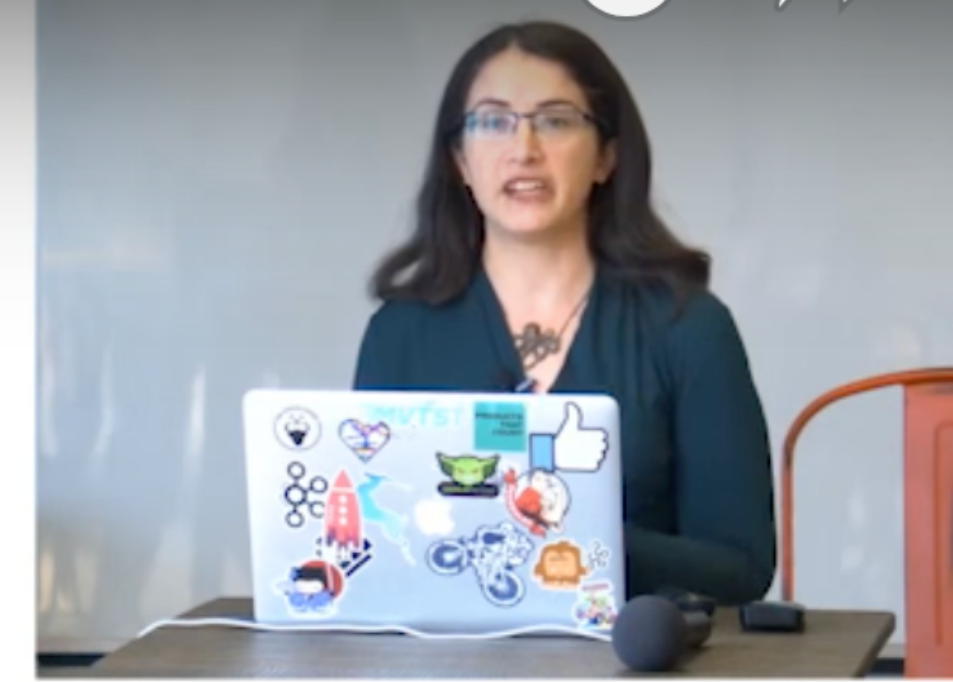


BUT WHAT ABOUT KAFKA

DATA-aware connectivity



From This:



@gwenshap

DemoApplicationTests > contextLoads() PASSED

TransactionTransformerTest > shouldHaveEnoughFunds() PASSED

TransactionTransformerTest > shouldHaveInsufficientFunds() PASSED

TransactionTransformerTest > shouldStoreTransaction() PASSED

KStreamConfigTest > balanceShouldBe300() PASSED

KStreamConfigTest > shouldCreateSuccessfulTransaction() PASSED

KStreamConfigTest > testDriverShouldNotBeNull() PASSED

KStreamConfigTest > shouldBeInsufficientFunds() PASSED

2020-09-01 23:27:30 org.apache.kafka.streams.KafkaStreams [INFO] (KafkaStreams.java:287) - stream-client [trans

2020-09-01 23:27:30 o.a.kafka.streams.processor.internals.StreamThread [INFO] (StreamThread.java:1116) - stream

2020-09-01 23:27:30 o.a.kafka.streams.processor.internals.StreamThread [INFO] (StreamThread.java:221) - stream-

2020-09-01 23:27:30 o.a.kafka.streams.processor.internals.StreamThread [INFO] (StreamThread.java:1130) - stream

2020-09-01 23:27:30 org.apache.kafka.clients.consumer.KafkaConsumer [INFO] (KafkaConsumer.java:1082) - [Consum

atterns and assigned partitions

2020-09-01 23:27:30 org.apache.kafka.clients.producer.KafkaProducer [INFO] (KafkaProducer.java:1182) - [Produce

23372036854775807 ms.

2020-09-01 23:27:30 o.a.kafka.streams.processor.internals.StreamThread [INFO] (StreamThread.java:1116) - stream-

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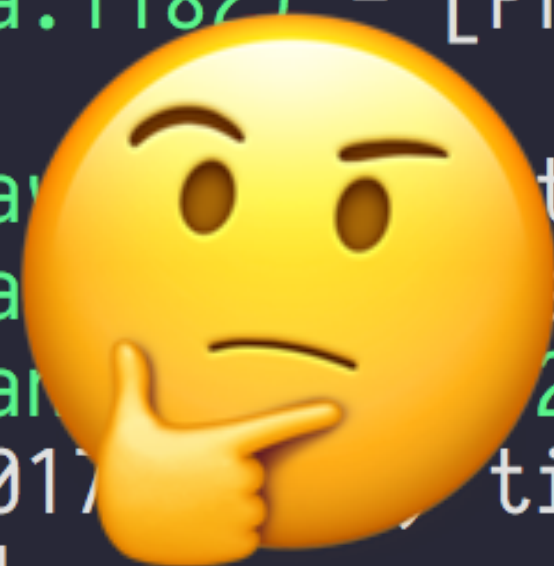
2020-09-01 23:27:30 o.a.k.clients.admin.internals.AdminMetadataManager [INFO] (AdminMetadataManager.java:235) -

org.apache.kafka.common.errors.TimeoutException: Call(callName=fetchMetadata, deadlineMs=1599017) timed o

Caused by: org.apache.kafka.common.errors.TimeoutException: Timed out waiting to send the call.

2020-09-01 23:27:30 org.apache.kafka.streams.KafkaStreams [INFO] (KafkaStreams.java:287) - stream-client [trans

2020-09-01 23:27:30 org.apache.kafka.streams.KafkaStreams [INFO] (KafkaStreams.java:989) - stream-client [trans



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KStreamConfigTest > shouldCreateSuccessfulTransaction() PASSED

KStreamConfigTest > testDriverShouldNotBeNull() PASSED

LOG4J TYPE OF LOG?

KStreamConfigTest > shouldHaveInsufficientFunds() PASSED

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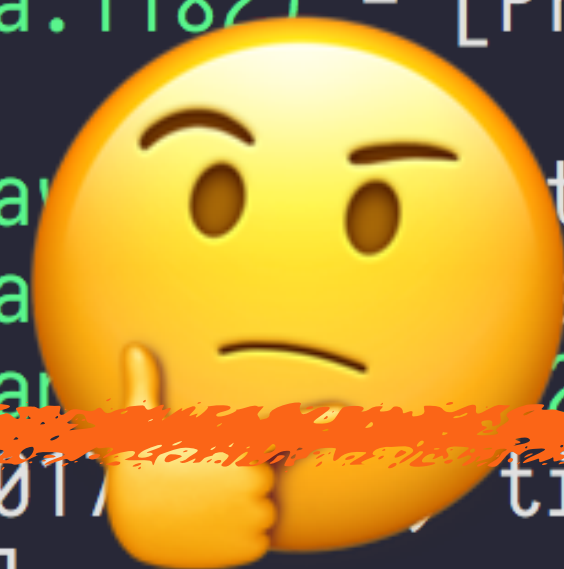
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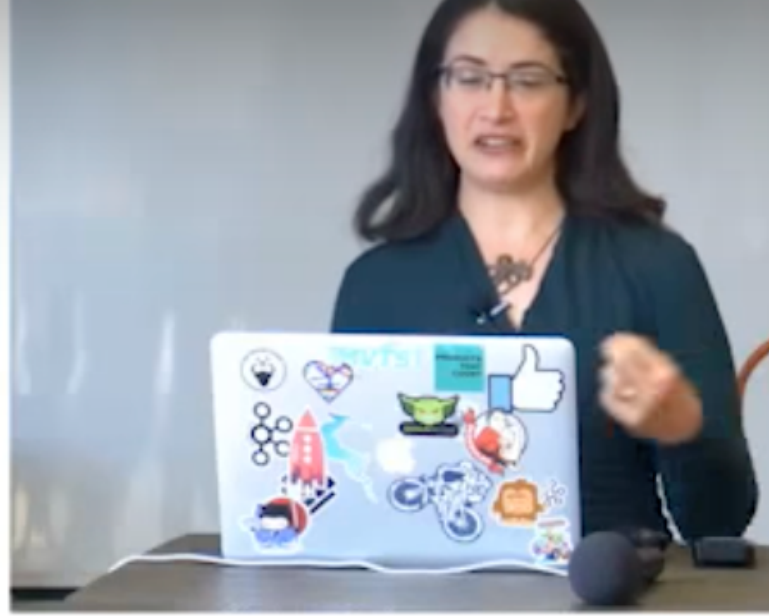
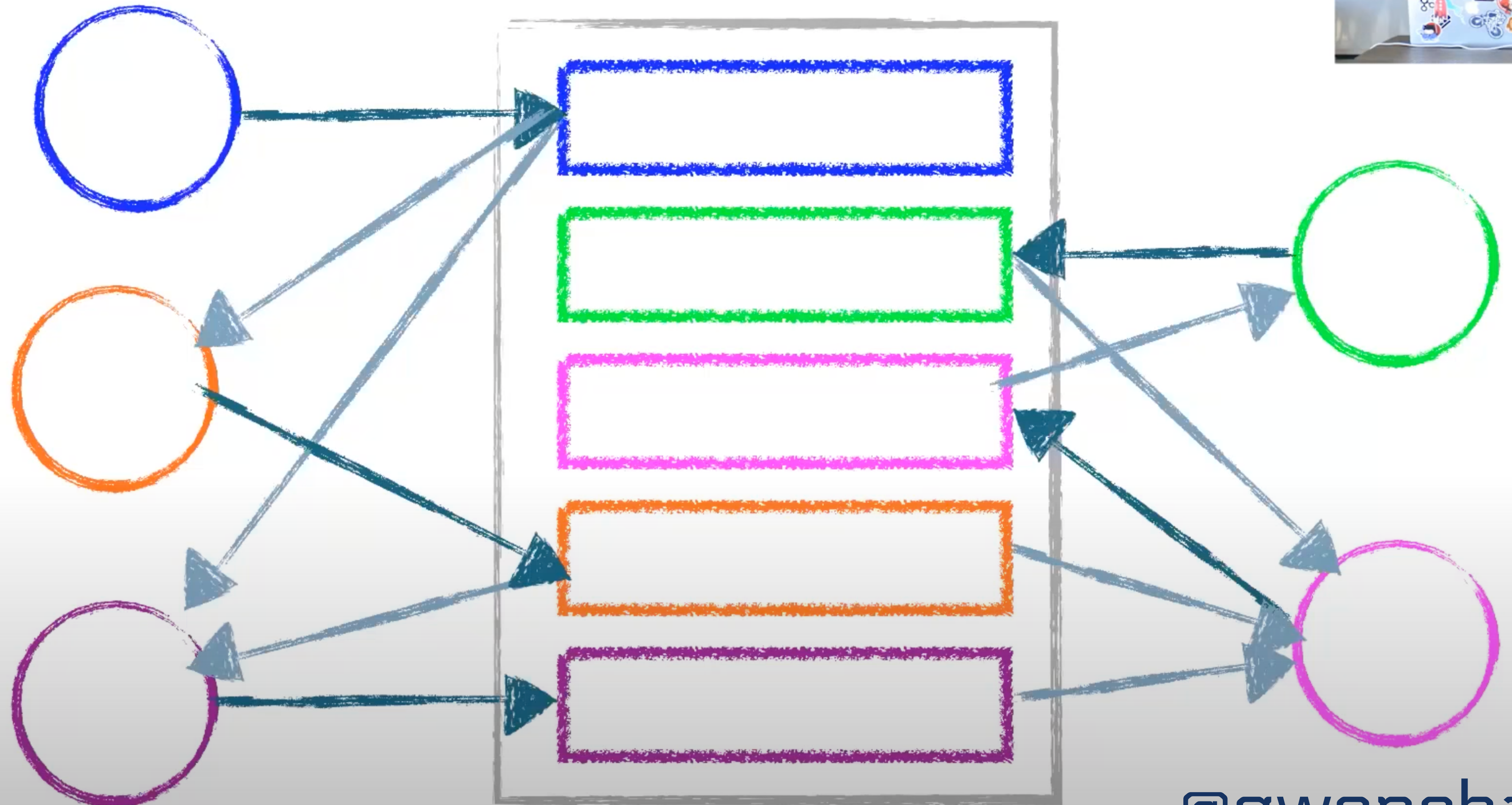
caused by: org.apache.kafka.common.errors.TimeoutException: Timed out waiting to send the call.

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2020-09-01 23:27:30 org.apache.kafka.streams.KafkaStreams [INFO] (KafkaStreams.java:989) - stream-client [trans

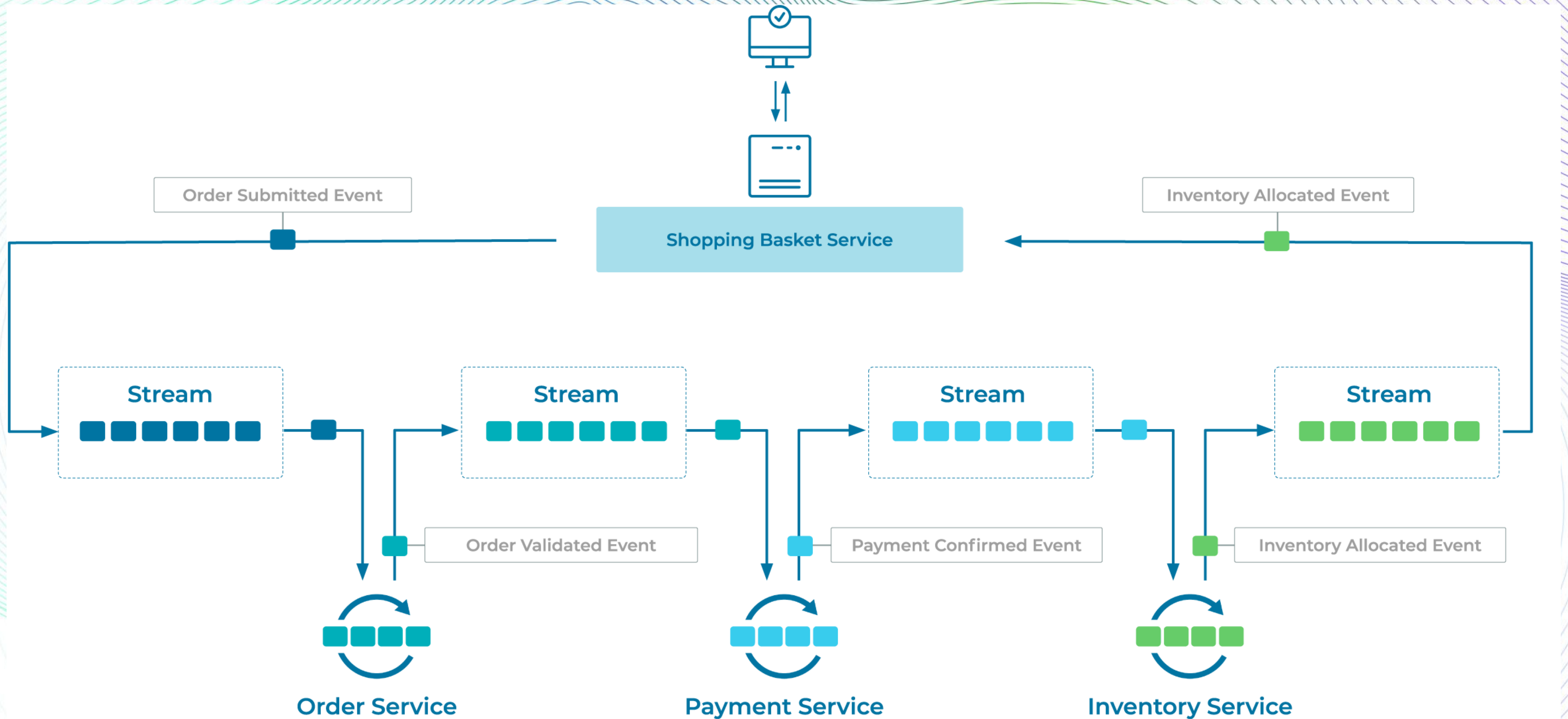


To This:



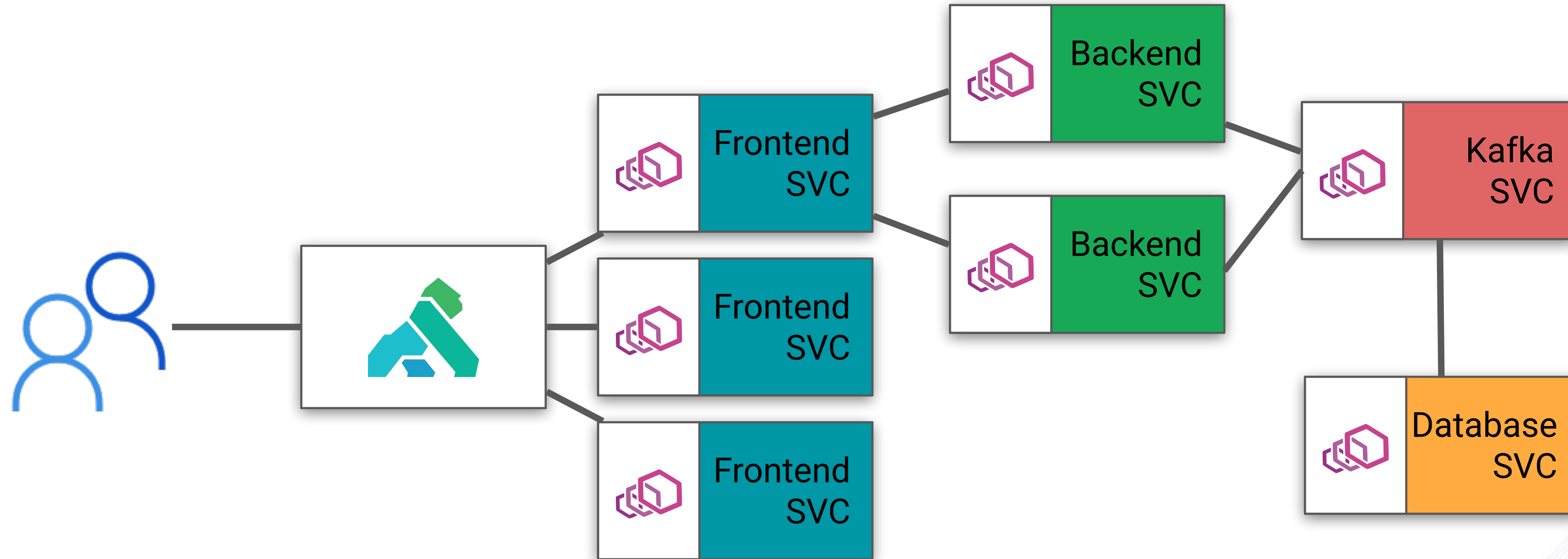
BRINGING IDEA HOME

Let's talk patterns

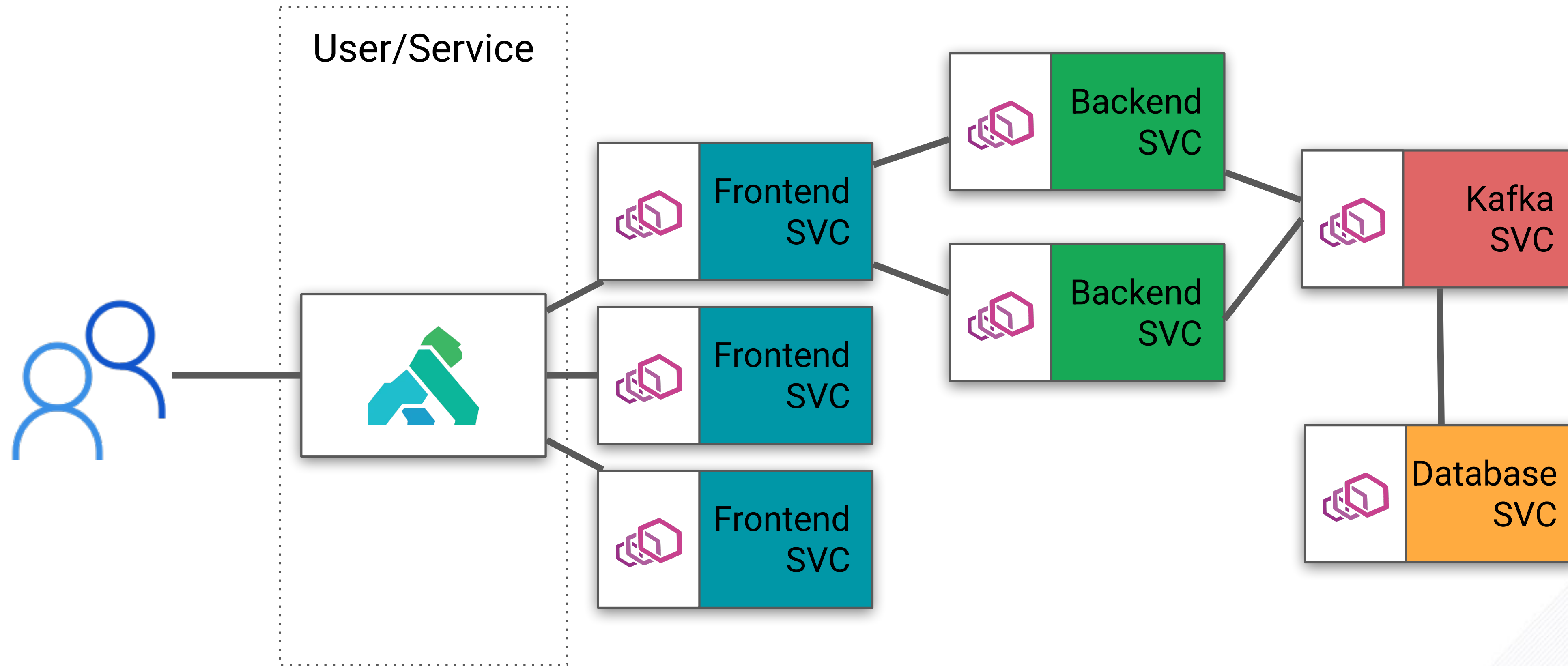


<https://developer.confluent.io/patterns/compositional-patterns/event-collaboration>

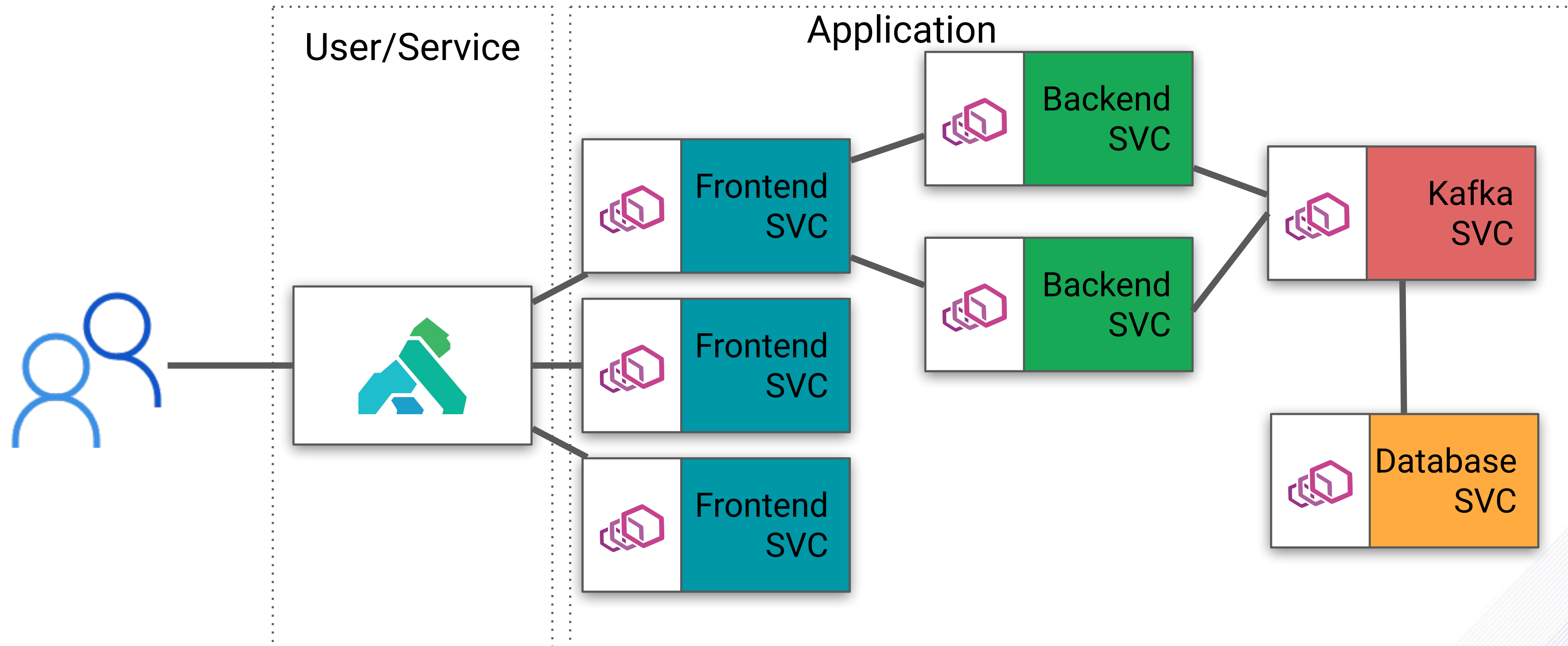
Gateway + Mesh Architecture



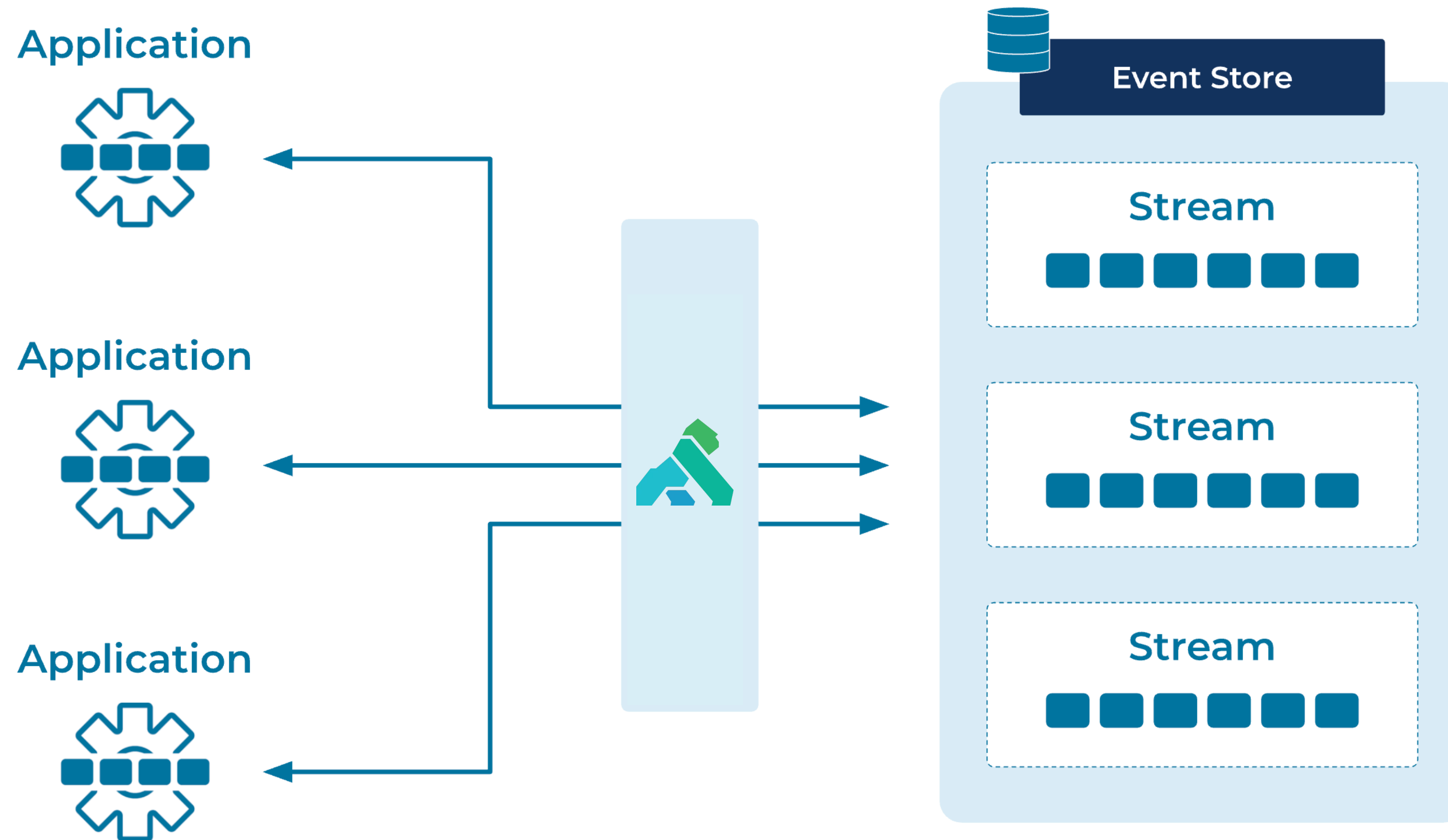
Gateway + Mesh Architecture



Gateway + Mesh Architecture



Event Gateway pattern



<https://developer.confluent.io/patterns/event-source/event-gateway>

Gateway admits!

Kong brings traffic from outside clients to the applications

Mesh connects!

Kuma provides connectivity between microservices

Kafka streams!

Data - aware communication between microservices

#DEVOOPS

That's all, folks TM

Join Kong Nation!

Links

- <https://konghq.com/kong-builders/>
- <https://youtube.com/konginc>
- <https://konghq.com/community/>

