สยามชำนาญกิจ
SIAM CHAMNAN KIT

API Gateway workshop with Kong

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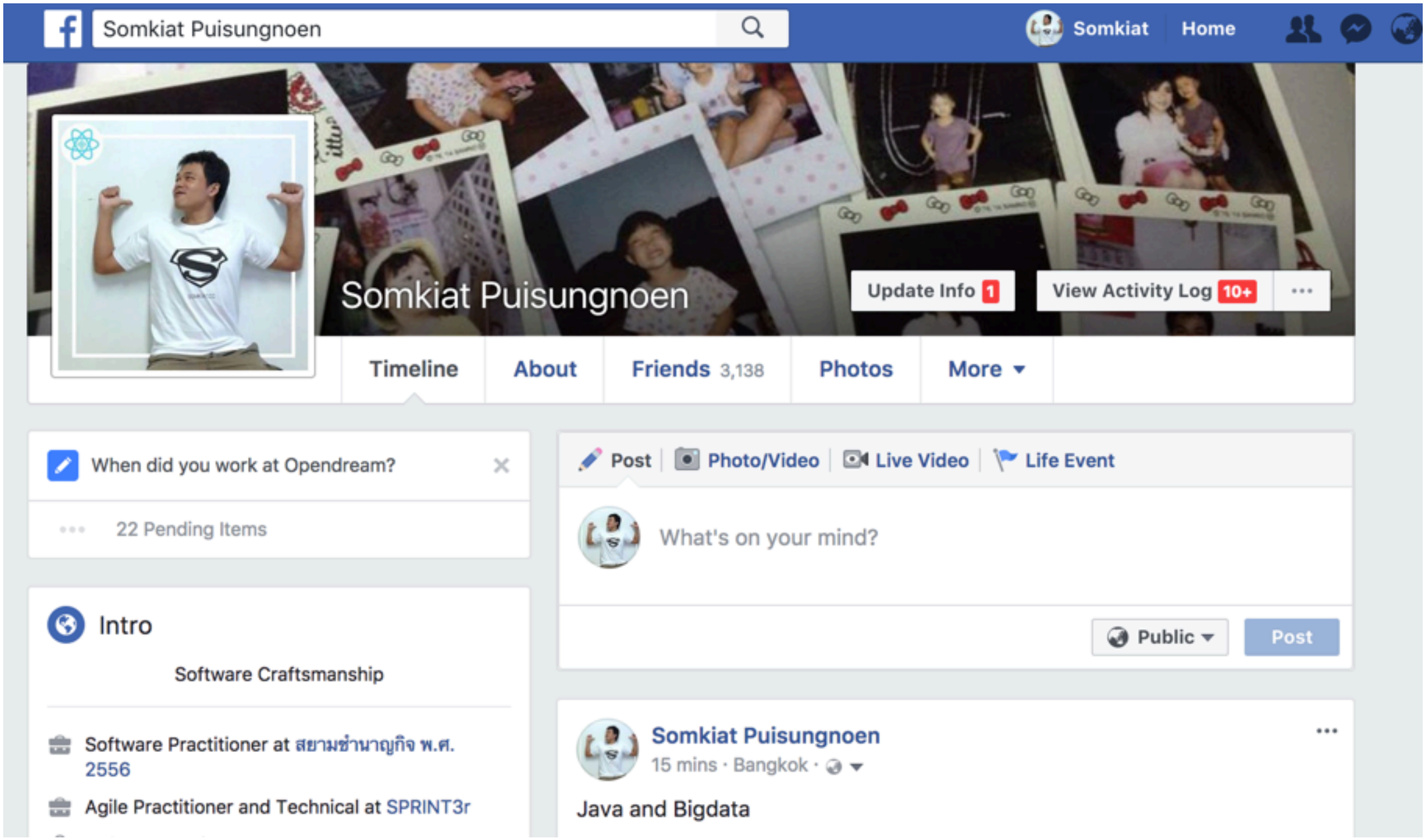

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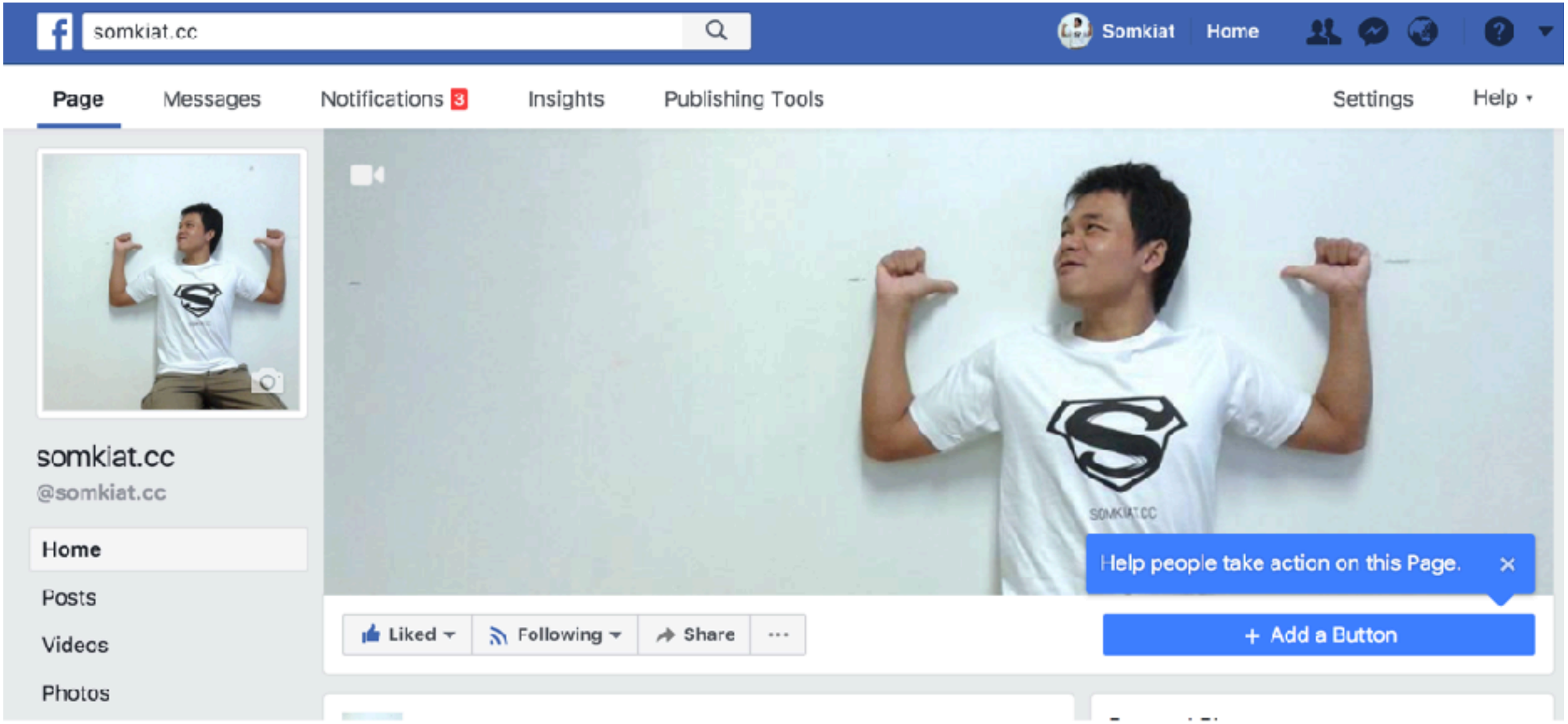

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https://github.com/up1/course-api-gateway

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Let’s

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API Gateway

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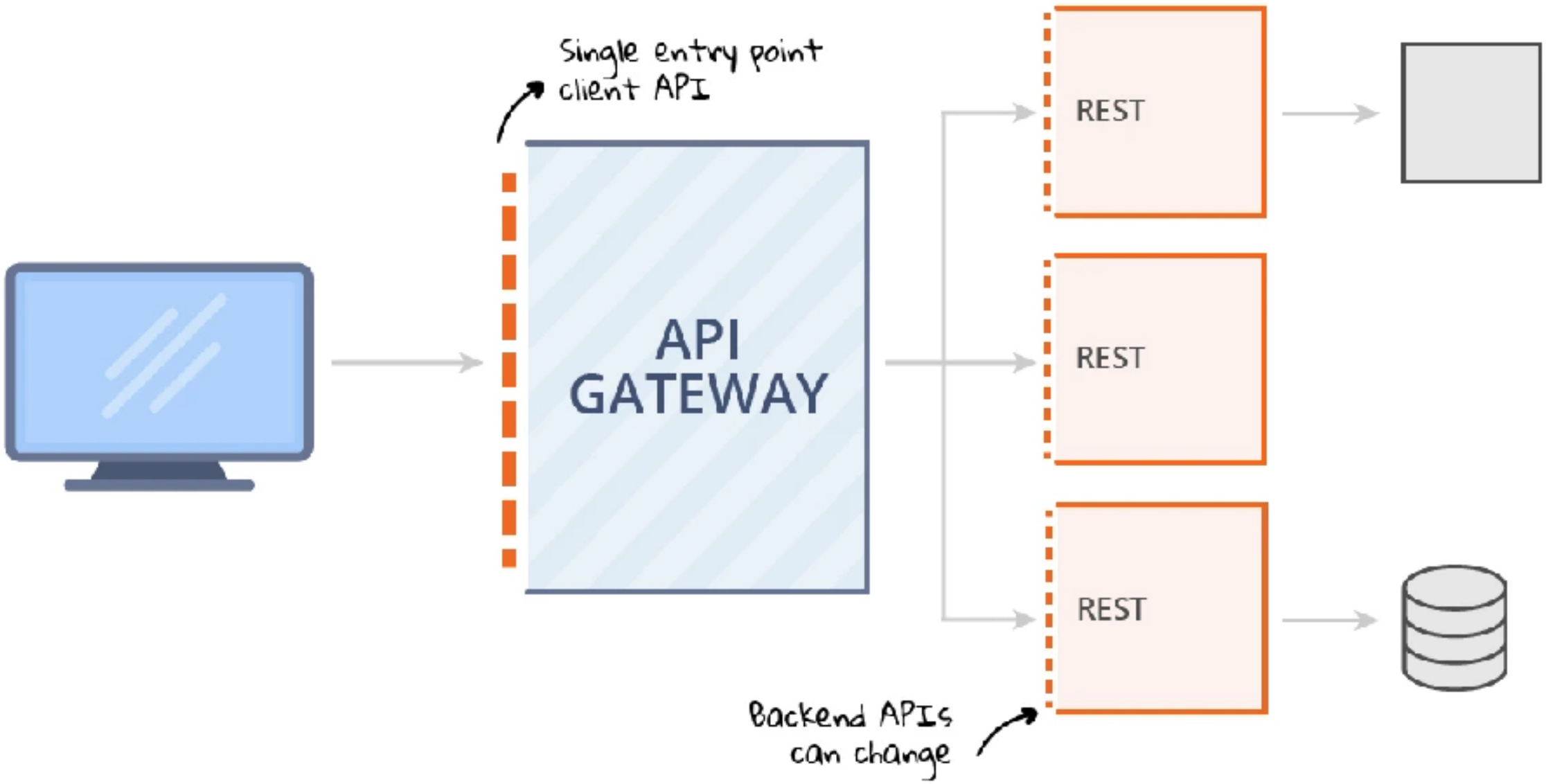
API Gateway



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API Gateway

Authentication and Authorization
Rate limit
Circuit breaker
Load balancer
Metric, Tracing, Logging

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API Gateway

https://landscape.cncf.io/guide#orchestration-management--api-gateway

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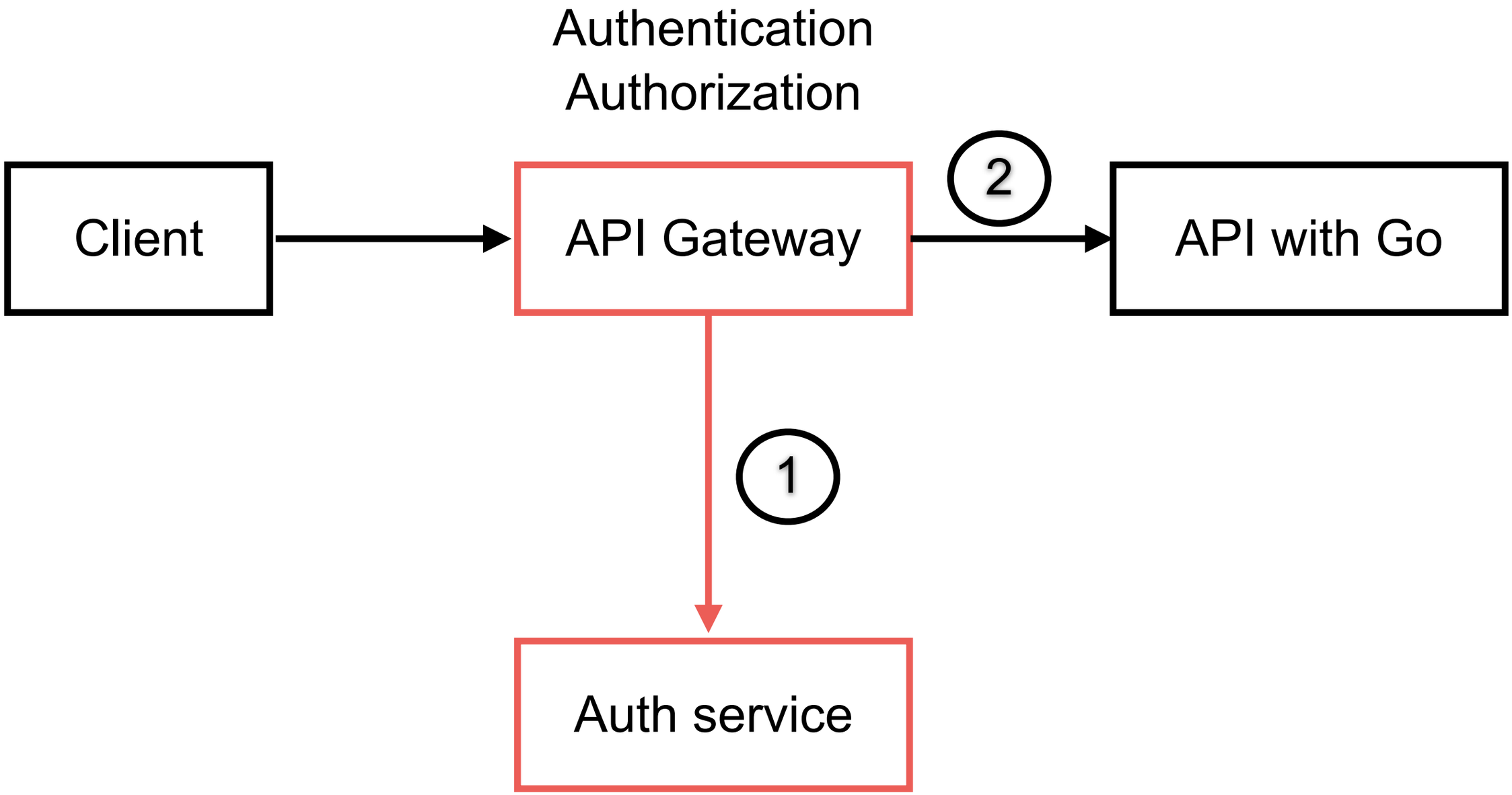
Project Structure



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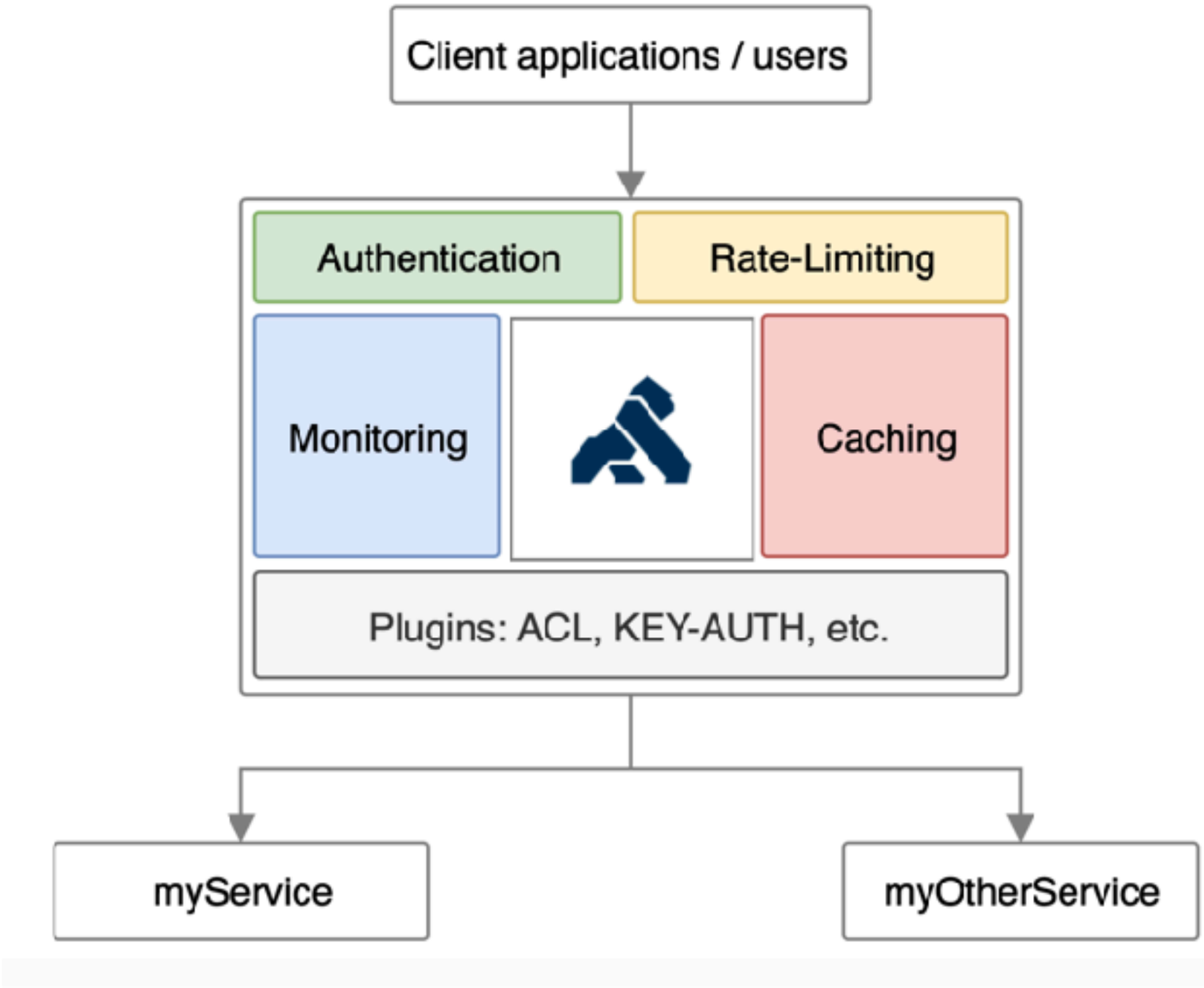
Kong API Gateway



https://konghq.com/

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Install Kong

Kong server

Database

Kong manager

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Kong Topologies

Traditional database mode

DB-less and declarative mode

Konnect

Hybrid mode

https://docs.konghq.com/gateway/3.7.x/production/deployment-topologies/

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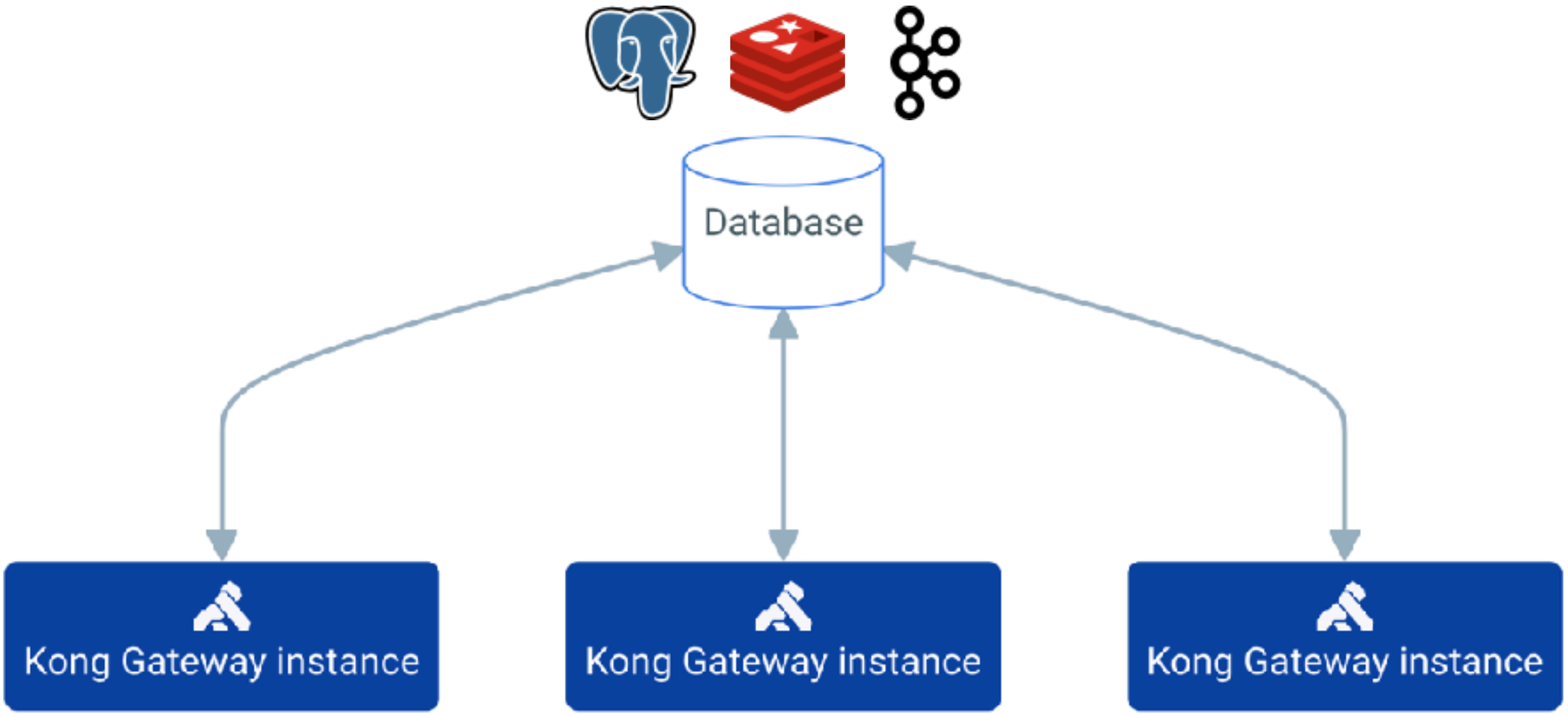
Traditional database mode



https://docs.konghq.com/gateway/3.7.x/production/deployment-topologies/

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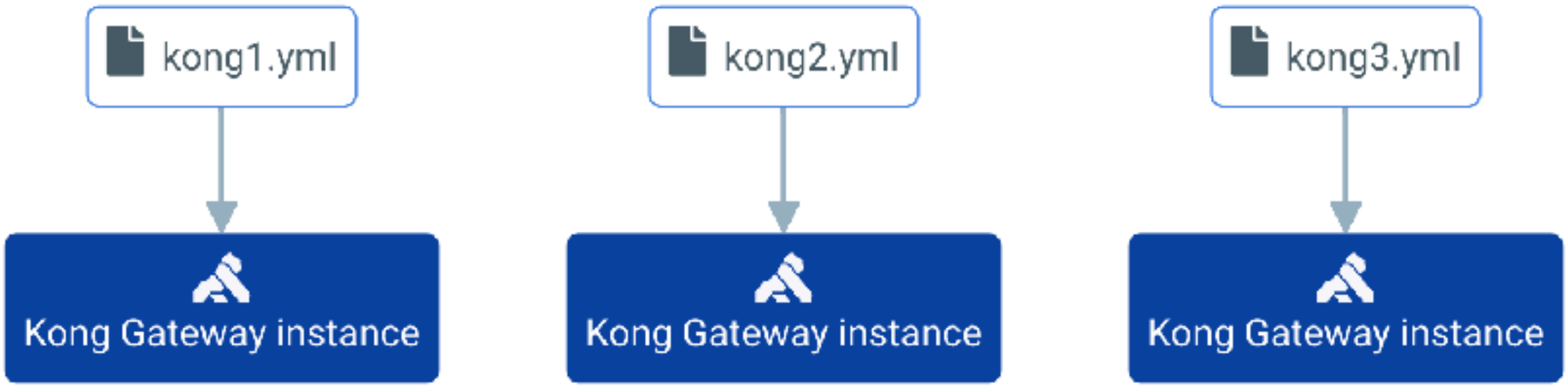
DB-less



https://docs.konghq.com/gateway/3.7.x/production/deployment-topologies/

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Verify Kong Server

curl --head localhost:8001

```
HTTP/1.1 200 OK
Date: Wed, 03 Jul 2024 15:27:27 GMT
Content-Type: application/json; charset=utf-8
Connection: keep-alive
Access-Control-Allow-Origin: *
Access-Control-Allow-Credentials: true
Content-Length: 14319
X-Kong-Admin-Latency: 7
Server: kong/3.7.1
```

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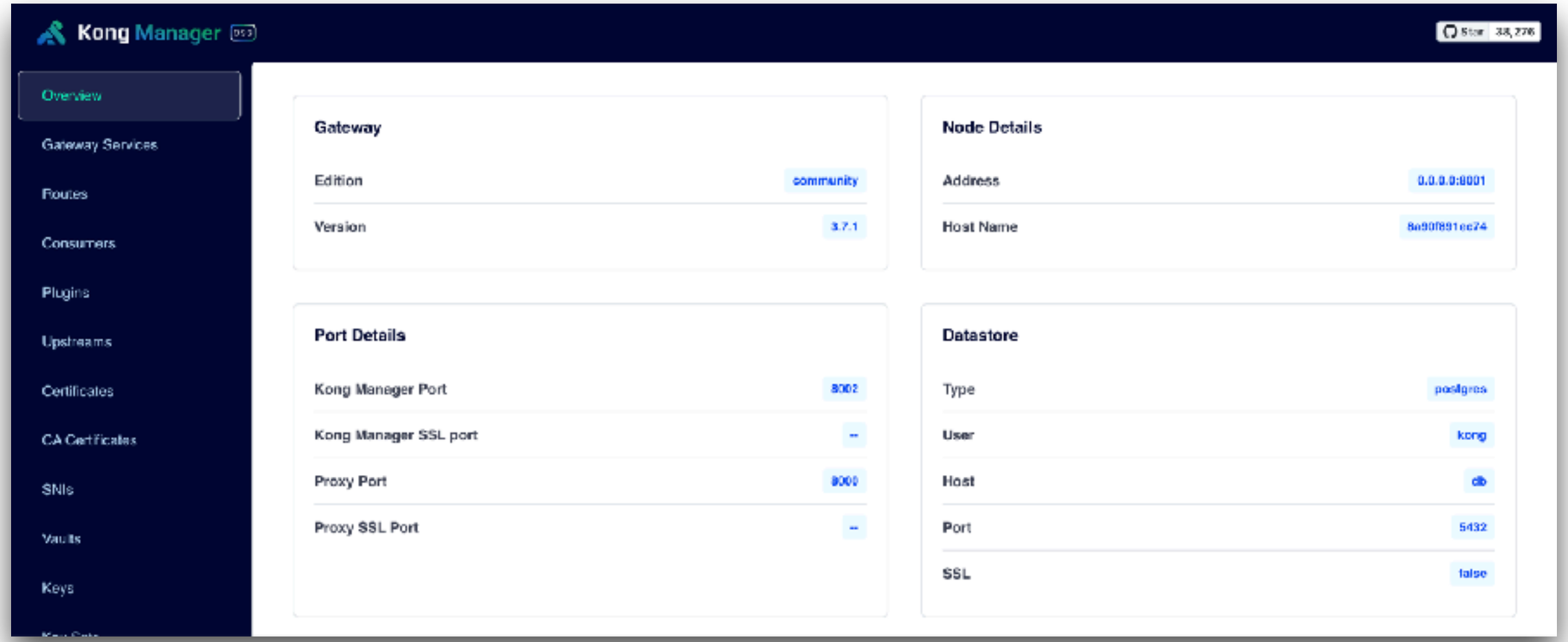
Kong manager

localhost:8002



https://docs.konghq.com/gateway/3.7.x/kong-manager/

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Services and Routes

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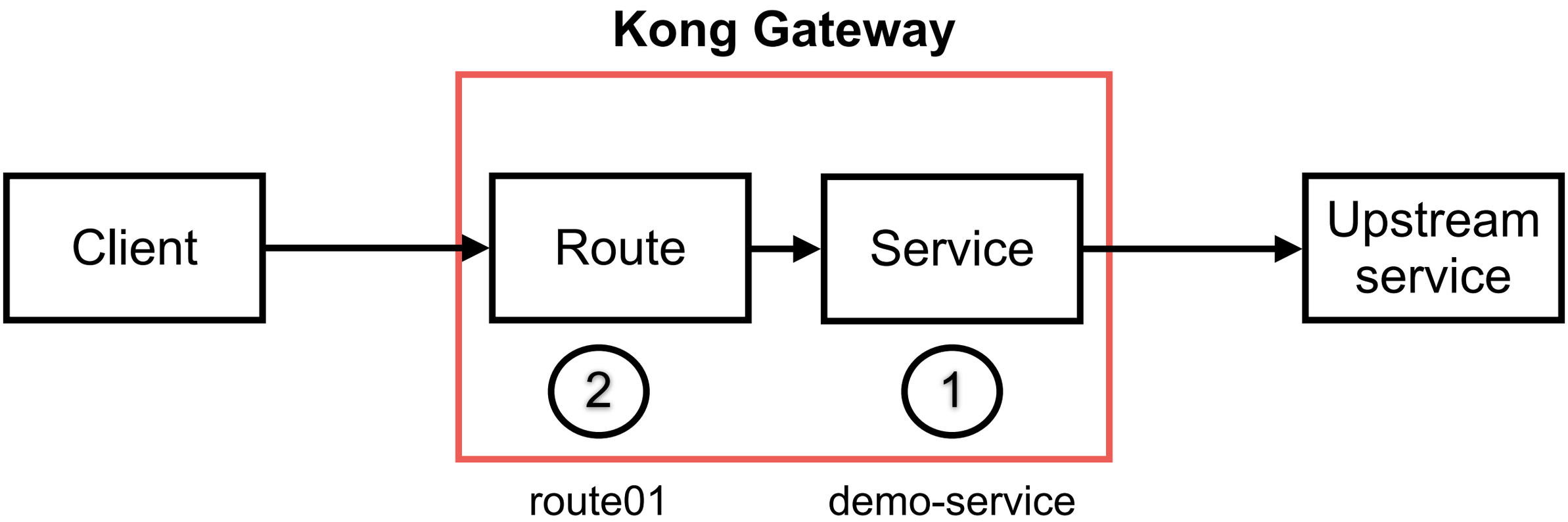
Services and Routes



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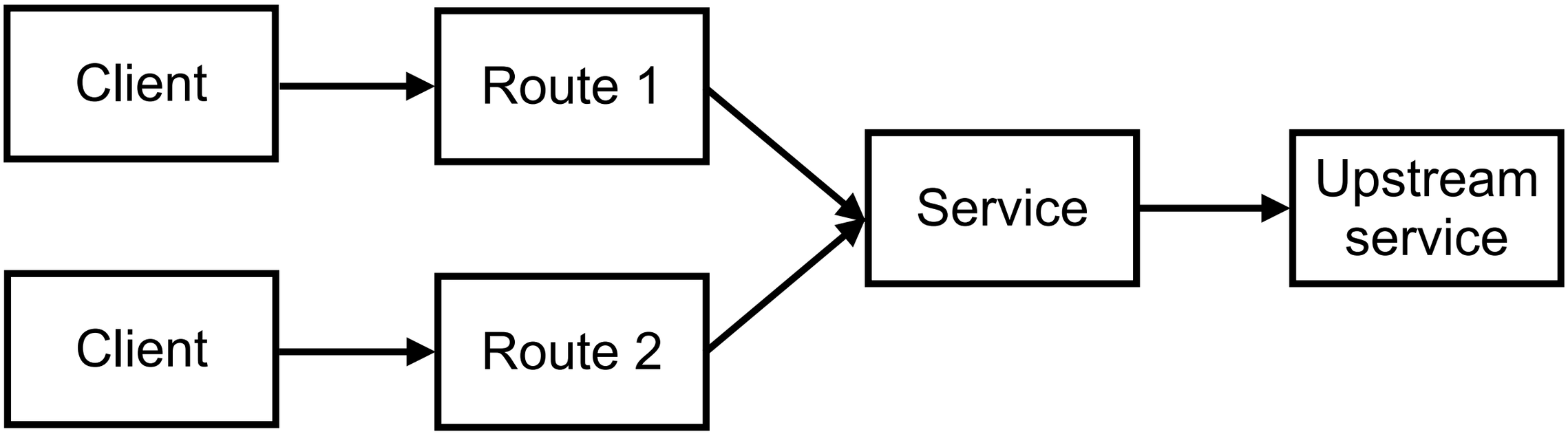
Service can have many routes



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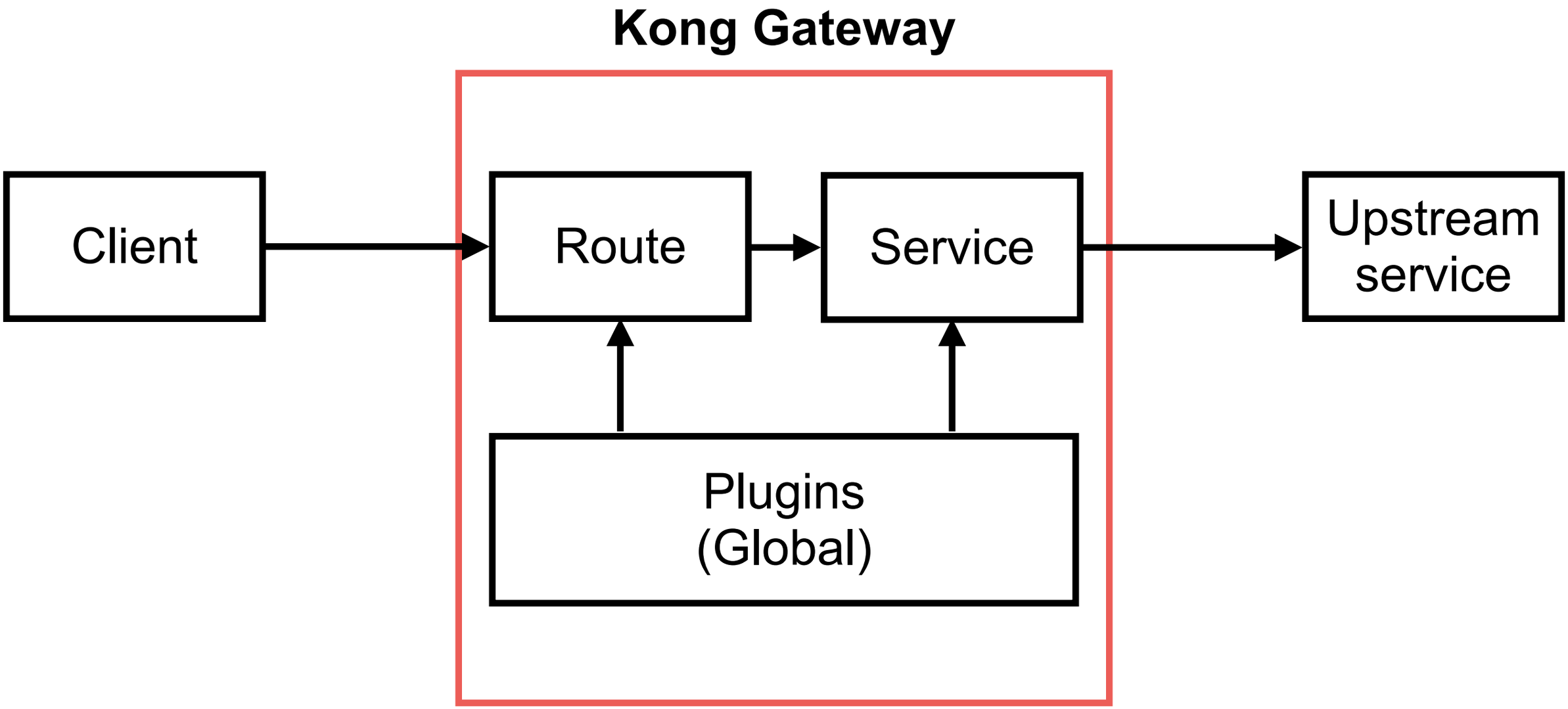
Add plugins



https://docs.konghq.com/hub/kong-inc/file-log/

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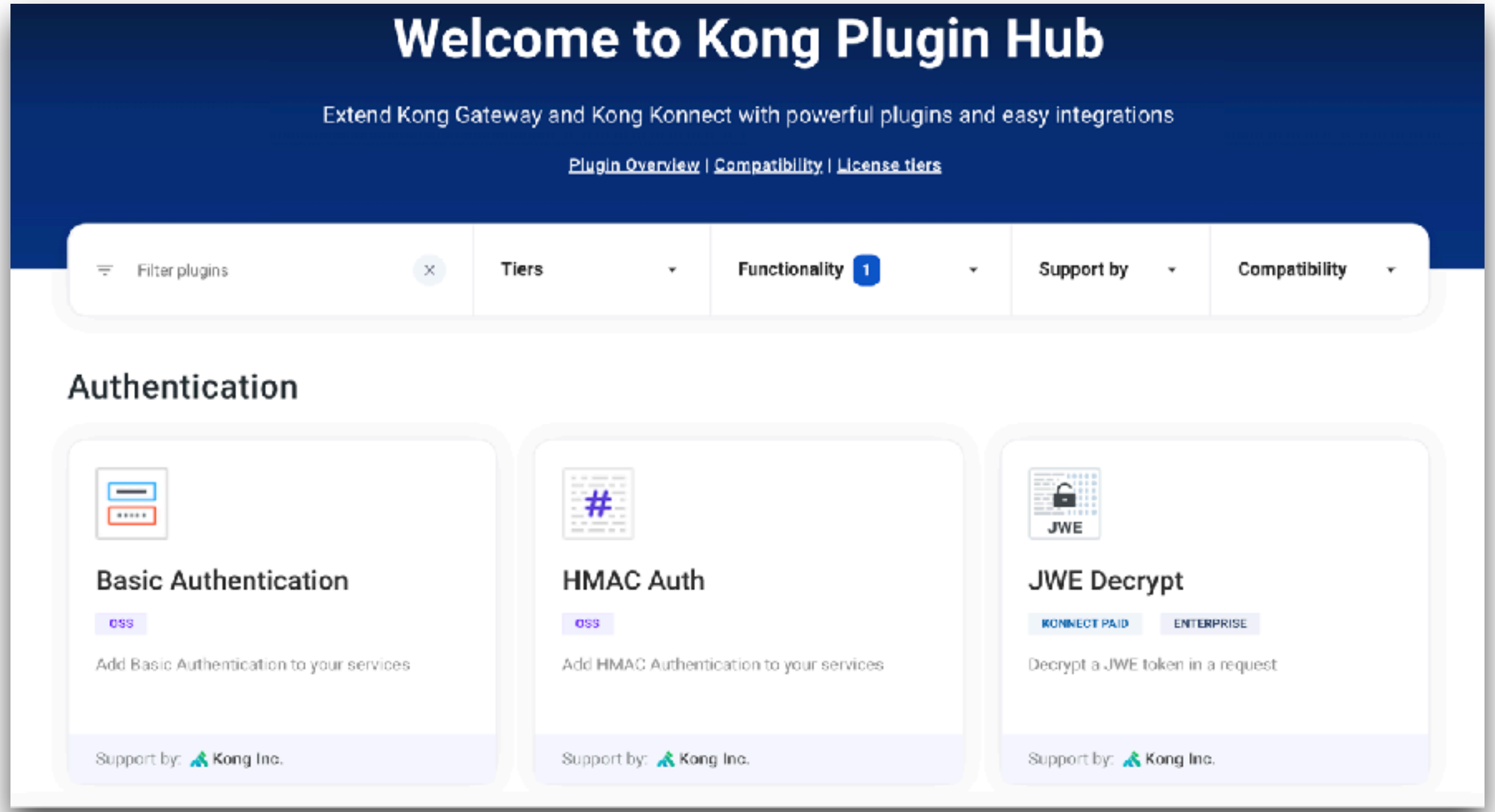
Kong plugins



https://docs.konghq.com/hub/

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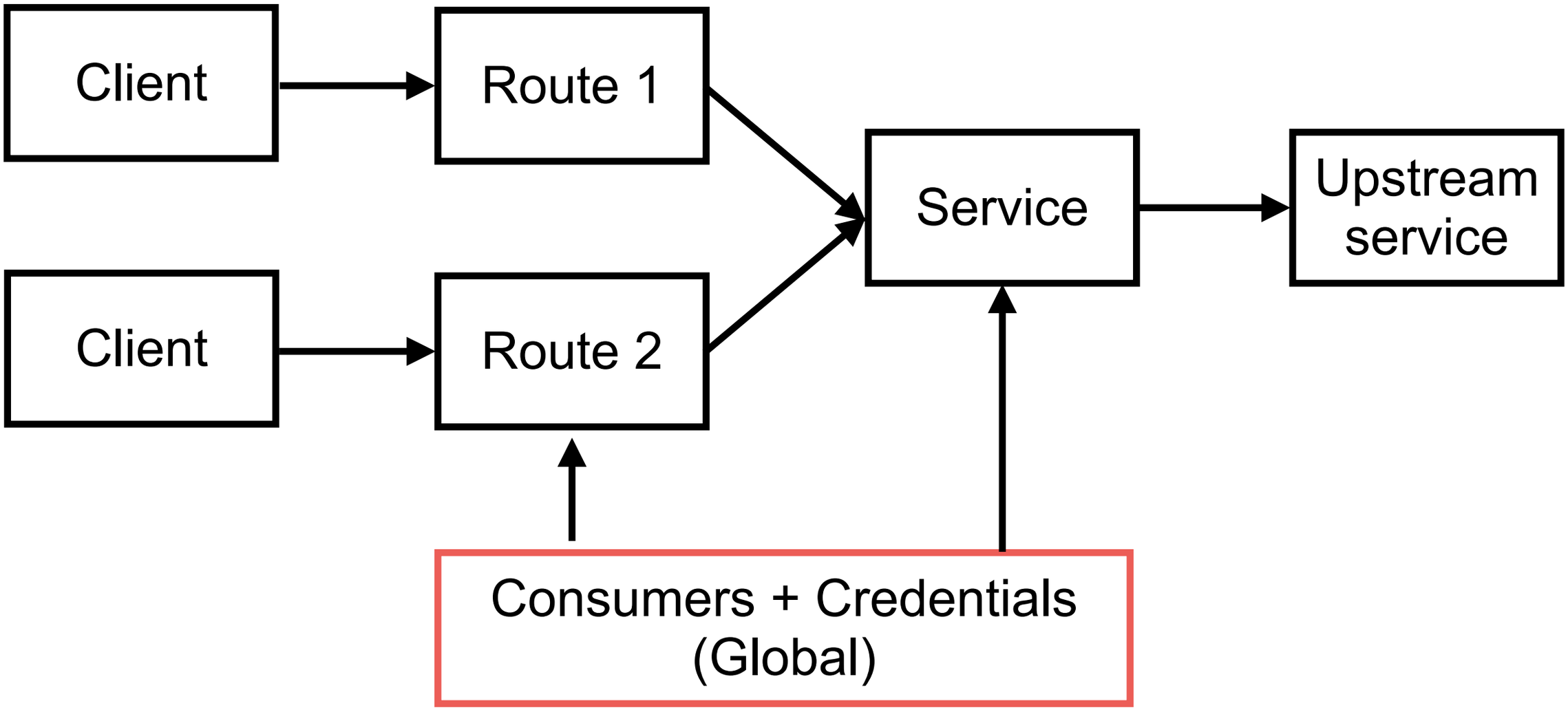
Add authentication !!



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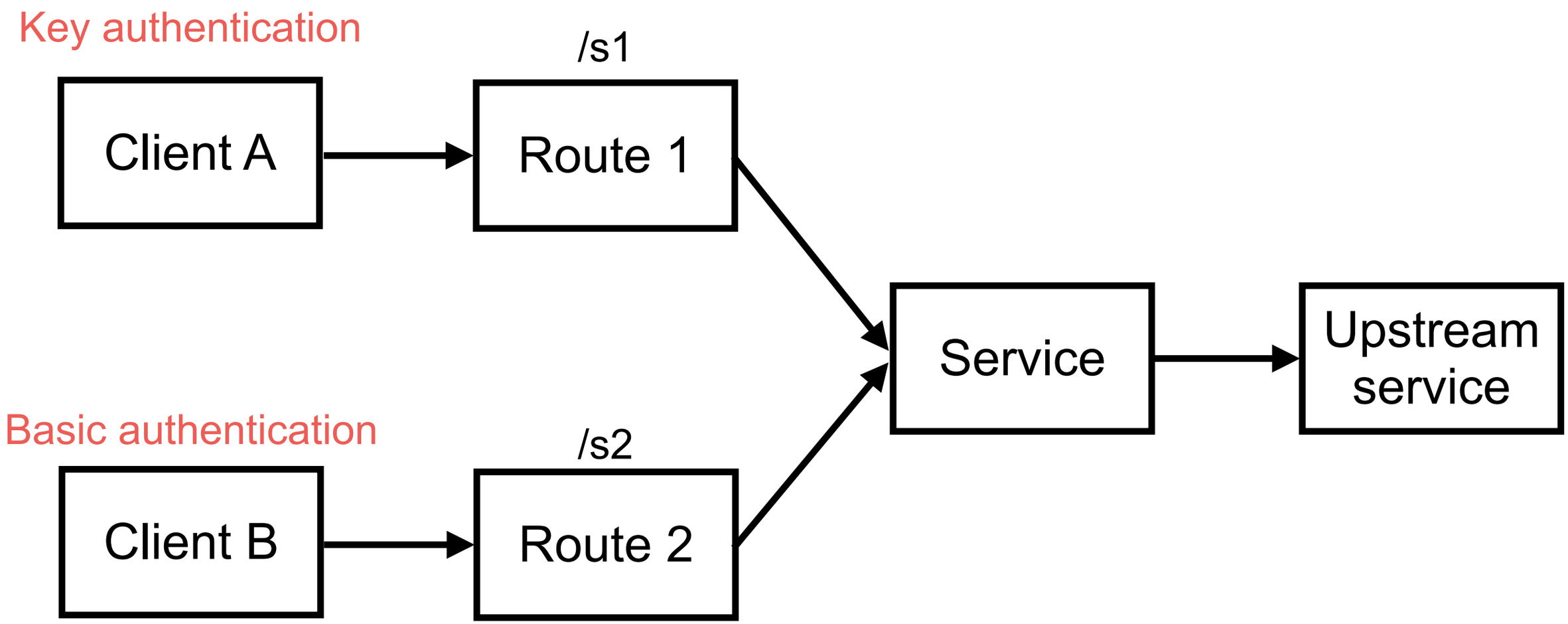
Use case



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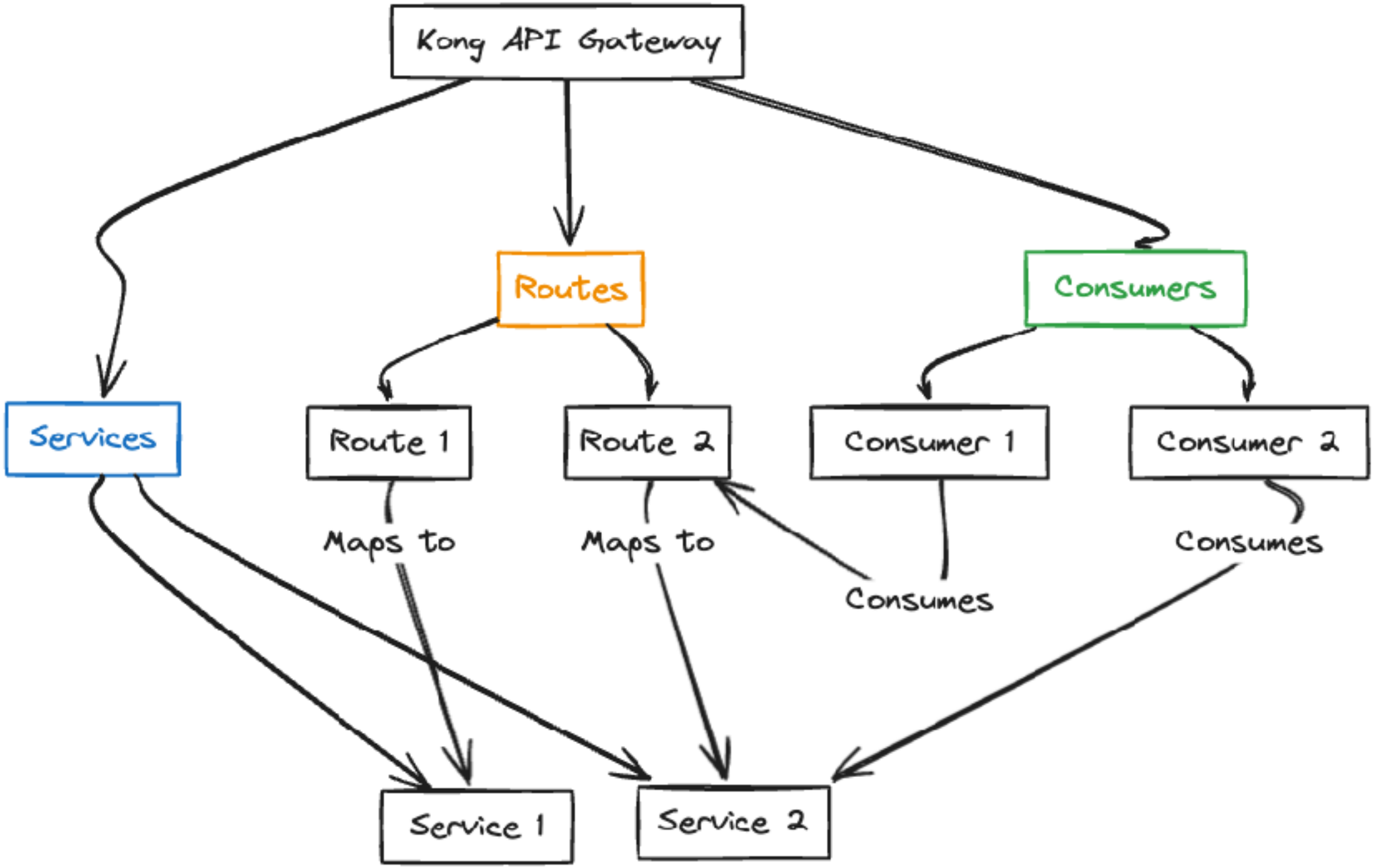
Summary



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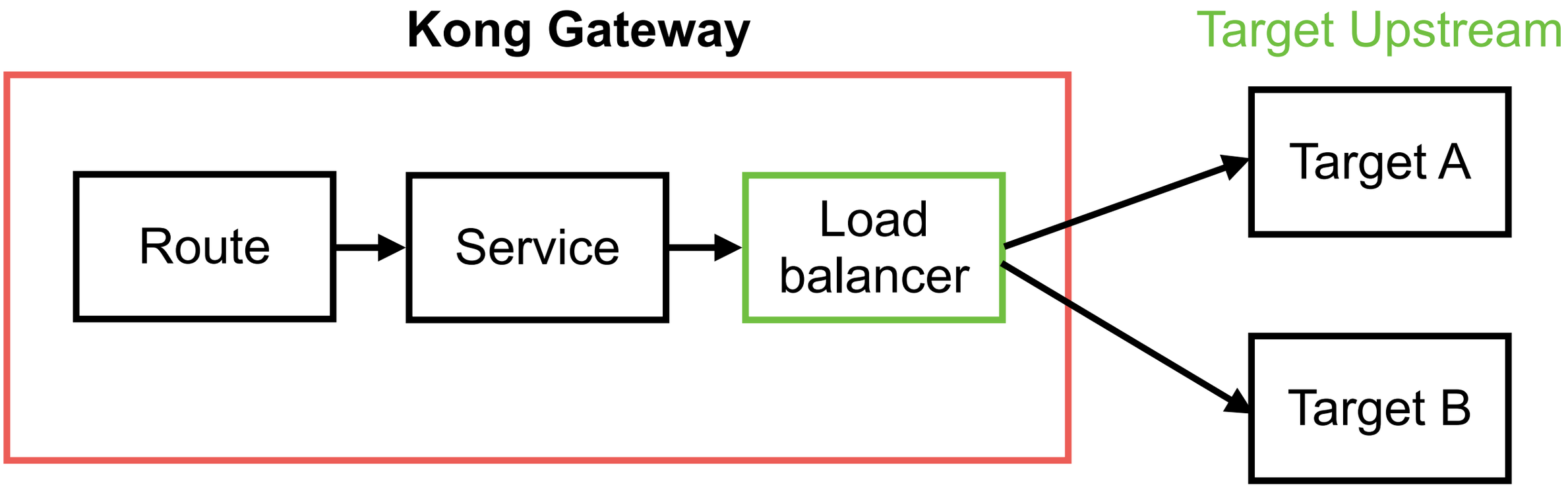
Load balancing



https://docs.konghq.com/gateway/latest/get-started/load-balancing/

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Load balance algorithms

Round robin
Least connections
Consistent hashing
Latency

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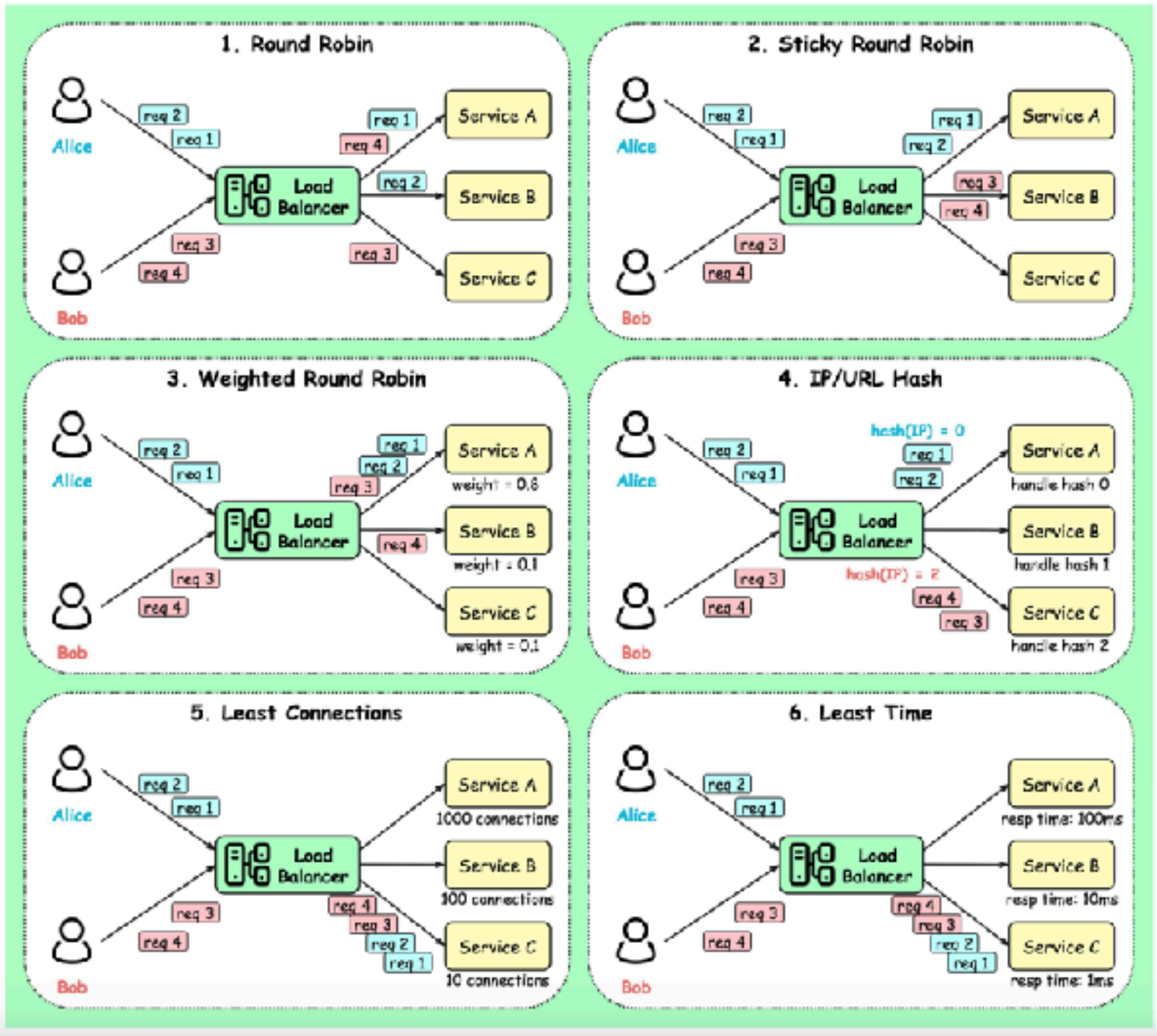
Load balance algorithms



https://blog.bytebytego.com/p/ep47-common-load-balancing-algorithms

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Observable Service

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Observable Service

Application metric	Distributed tracing
Log aggregation	Exception tracking

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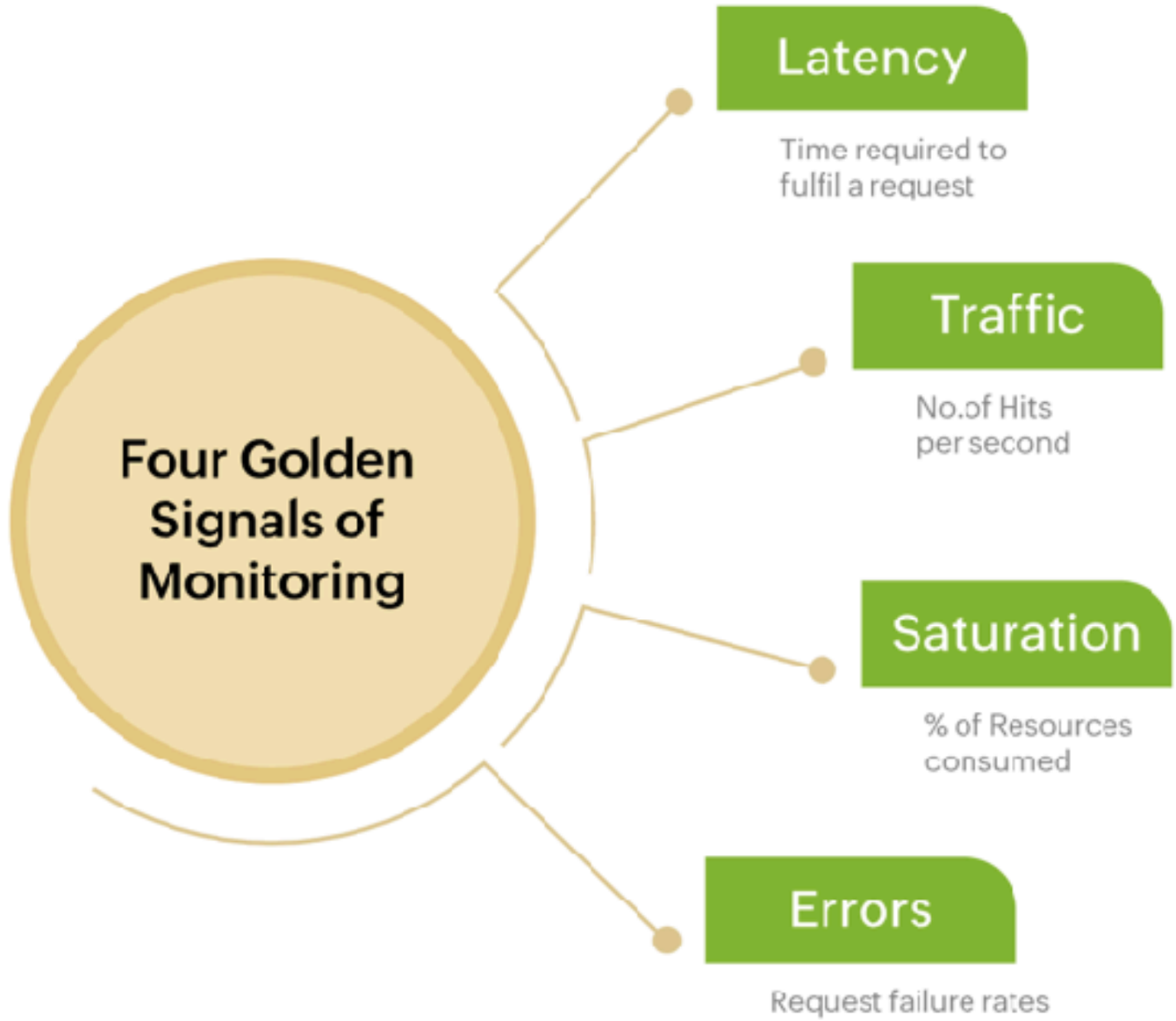
The 4 Golden Signals



https://sre.google/sre-book/monitoring-distributed-systems/

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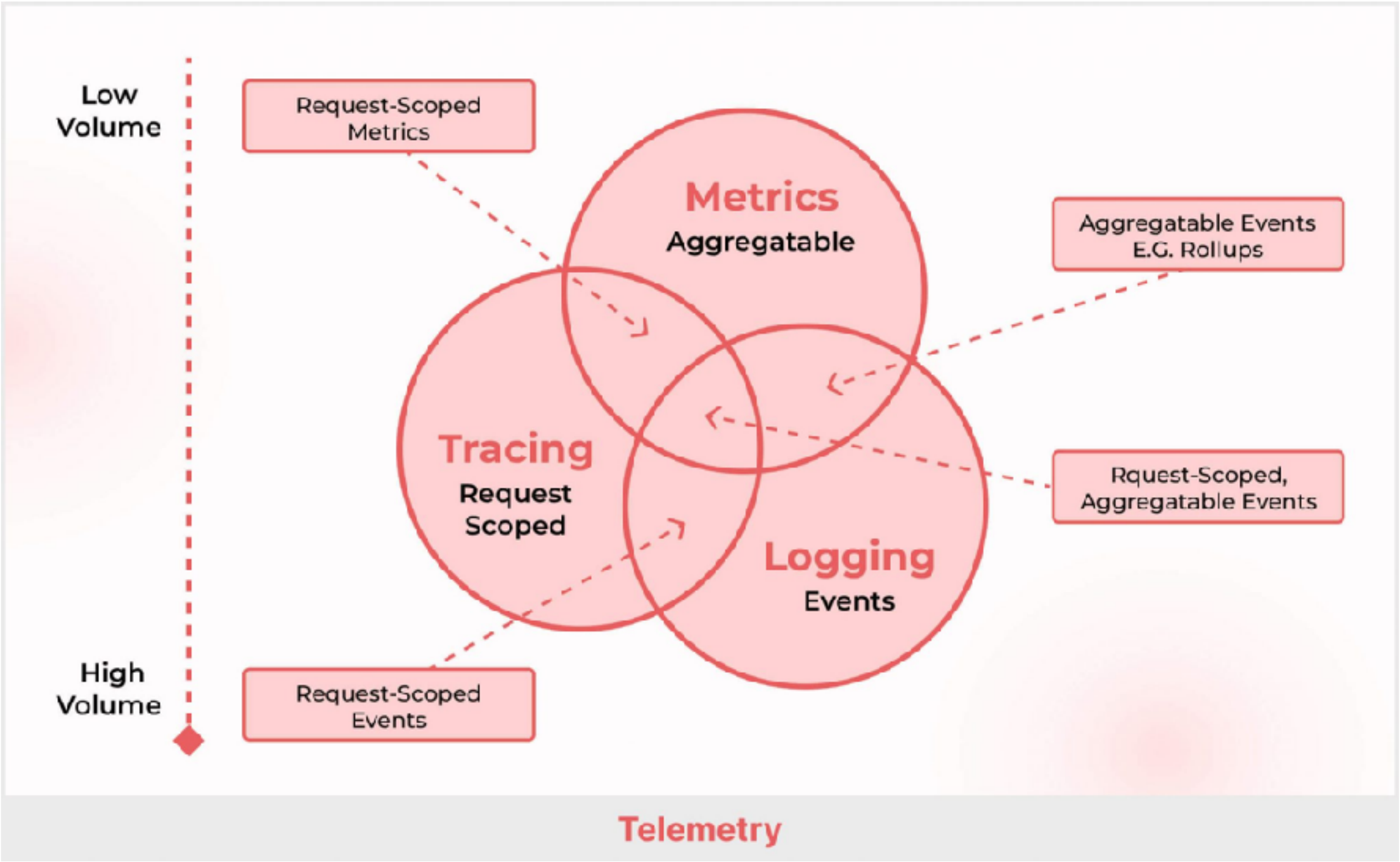
3 Pillars of Observability



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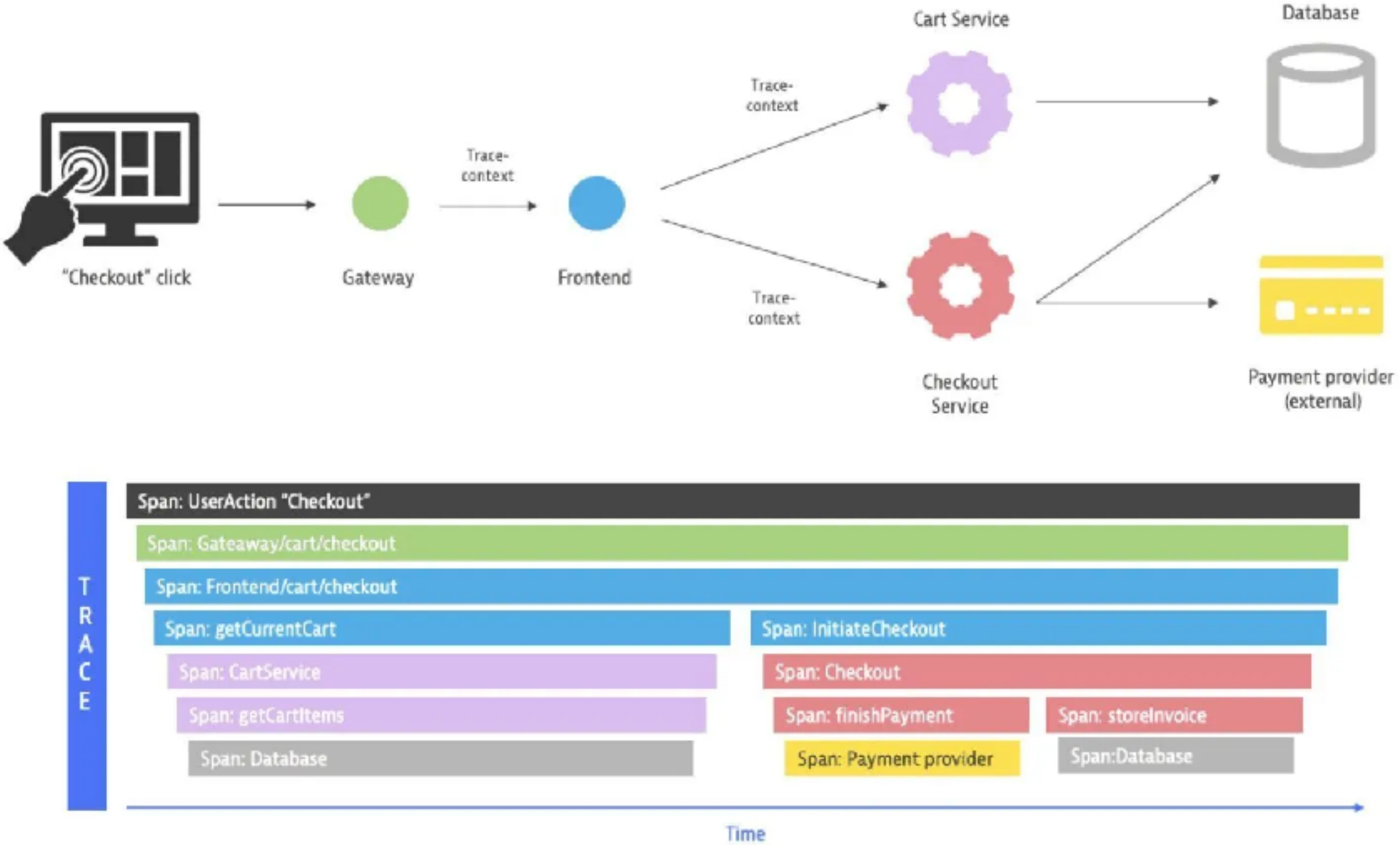
Tracing



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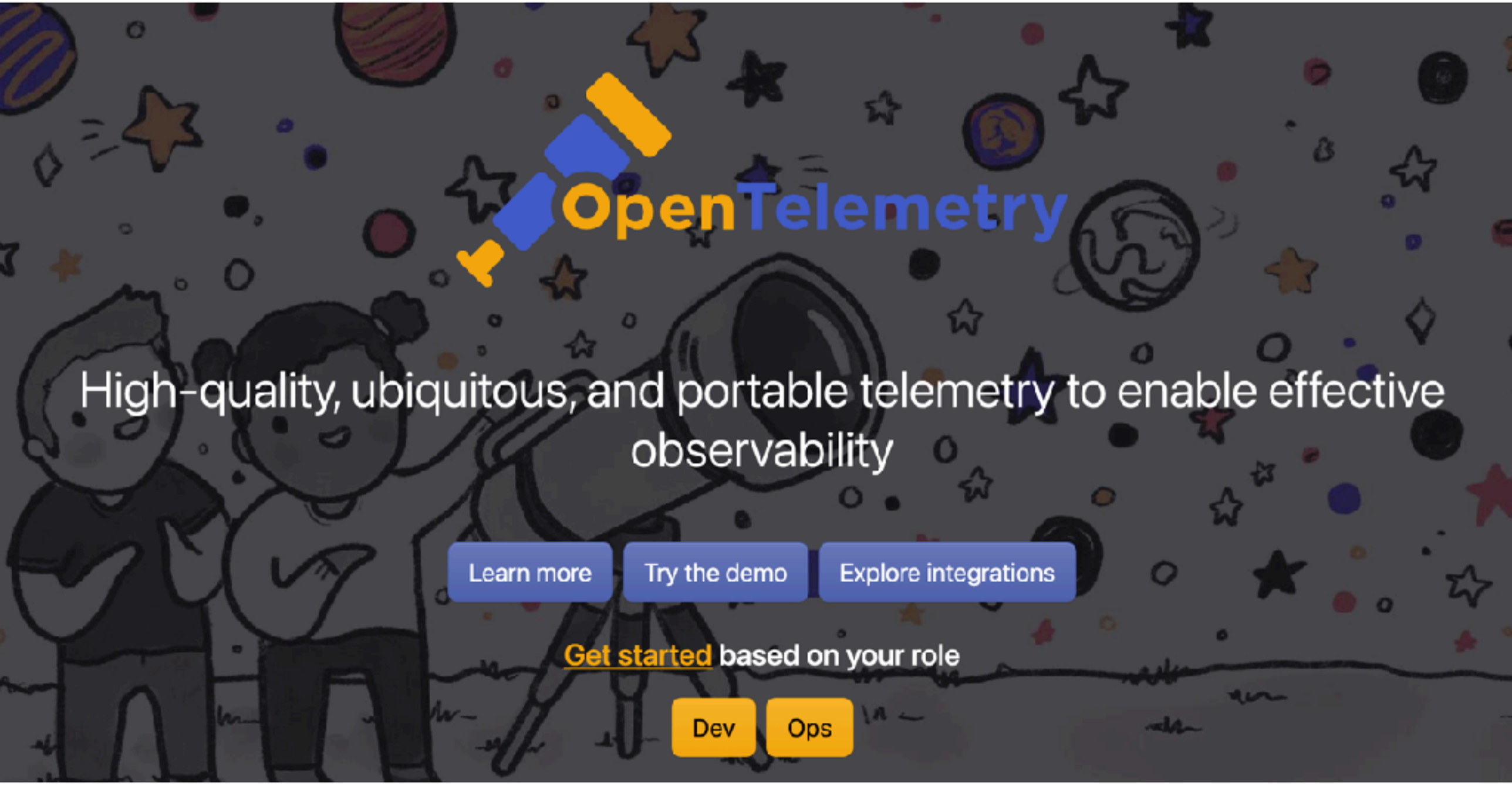
OpenTelemetry



https://opentelemetry.io/

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OpenTelemetry Structure

https://dzone.com/refcardz/getting-started-with-opentelemetry

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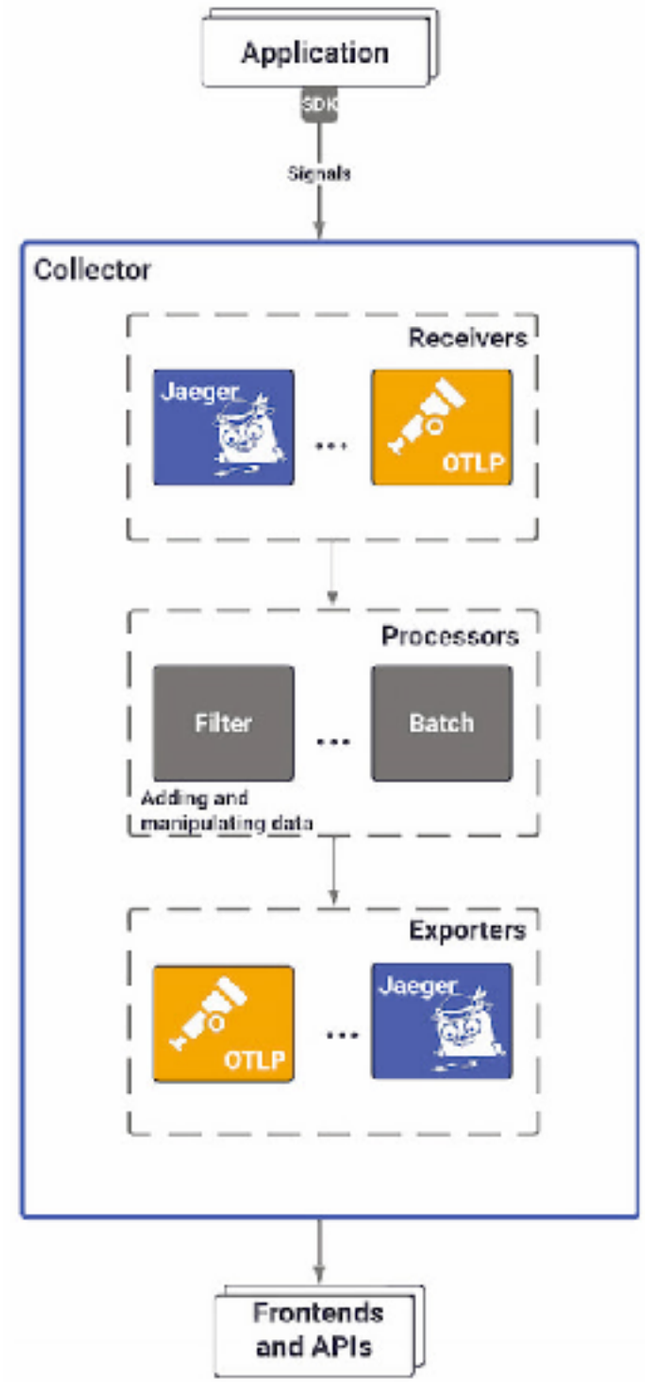
OpenTelemetry Structure



https://dzone.com/refcardz/getting-started-with-opentelemetry

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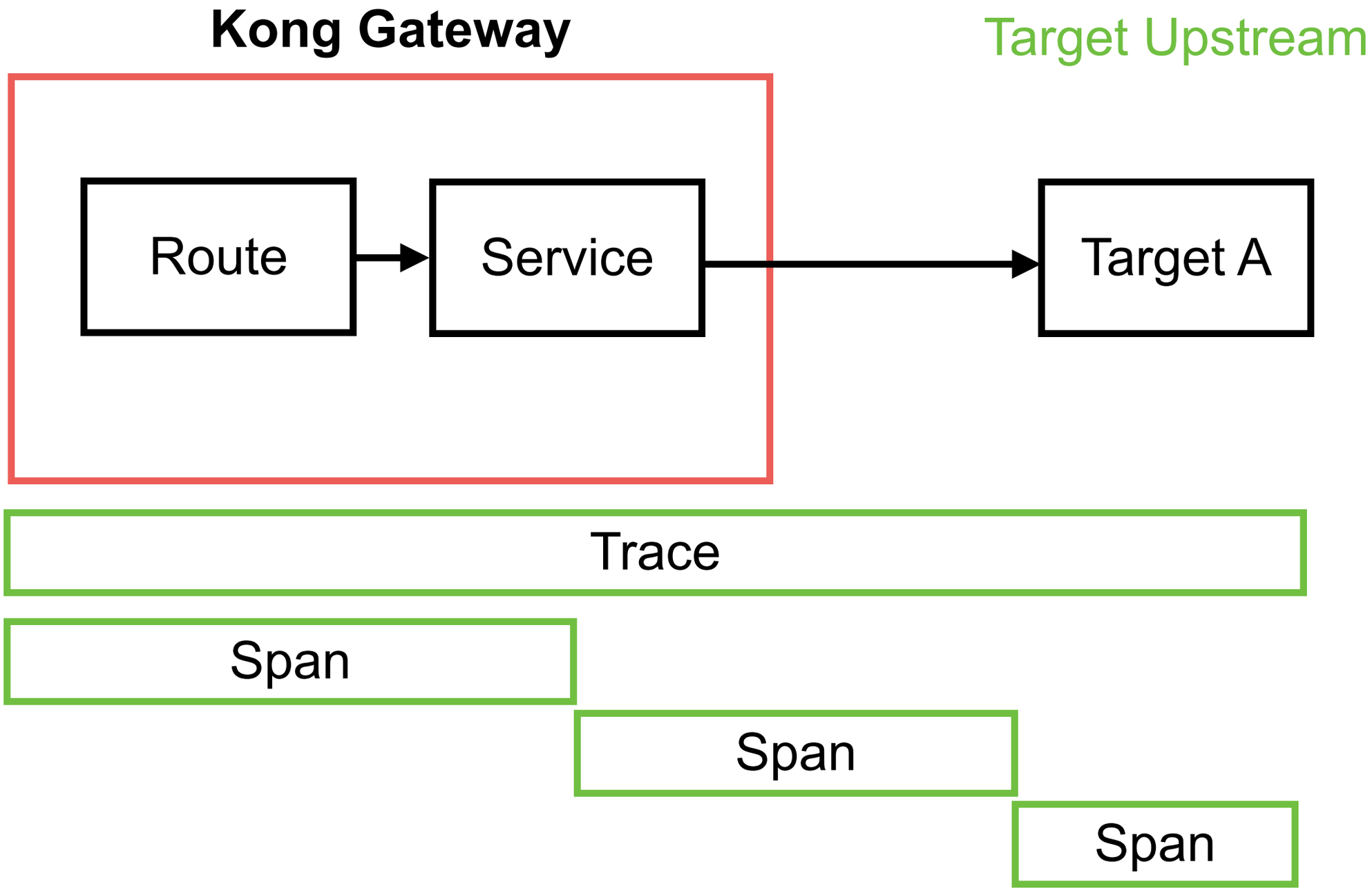
Distributed Tracing



https://docs.konghq.com/hub/kong-inc/opentelemetry/

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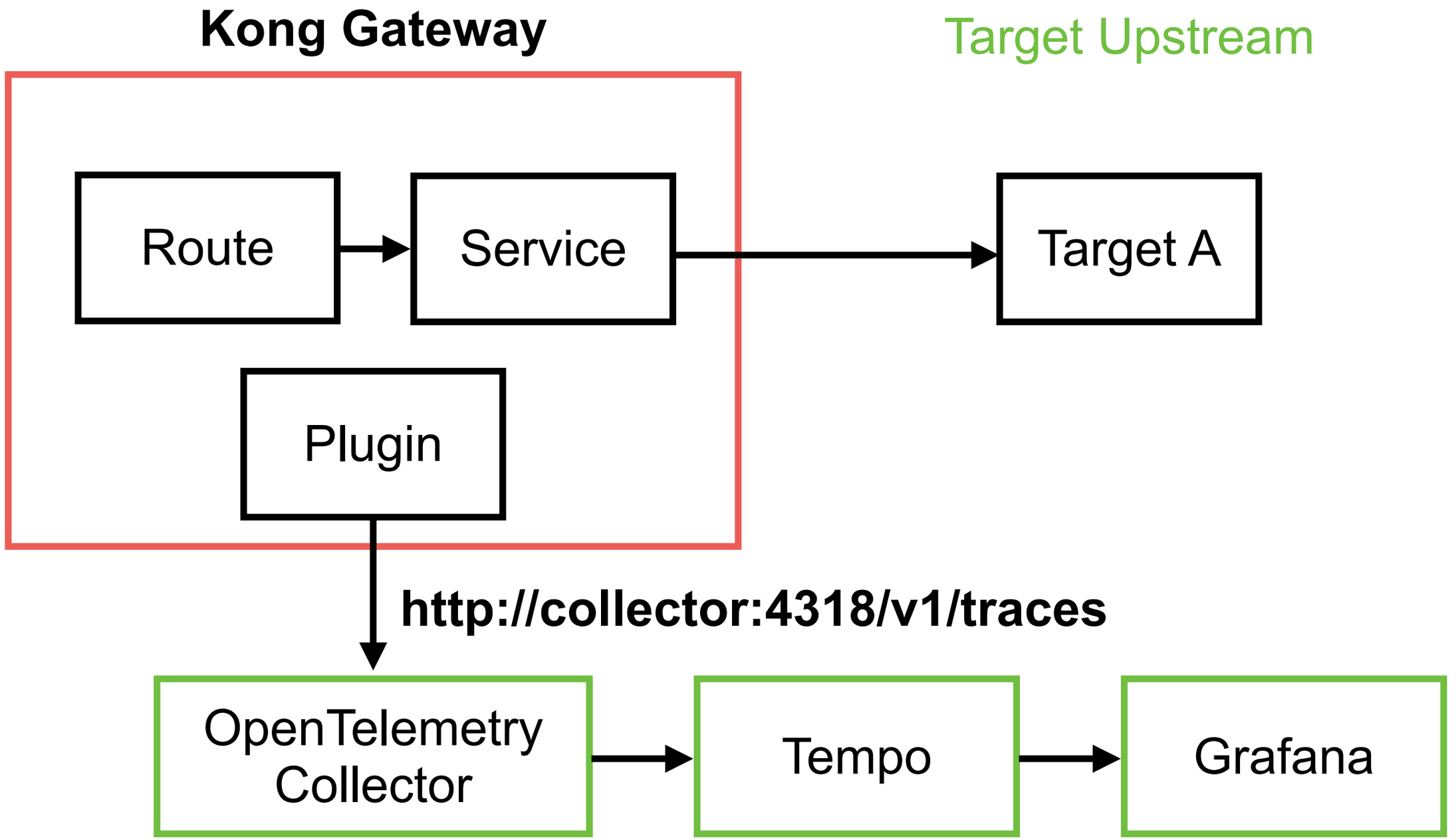
Distributed Tracing



https://github.com/grafana/docker-otel-lgtm

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Observable Workshop

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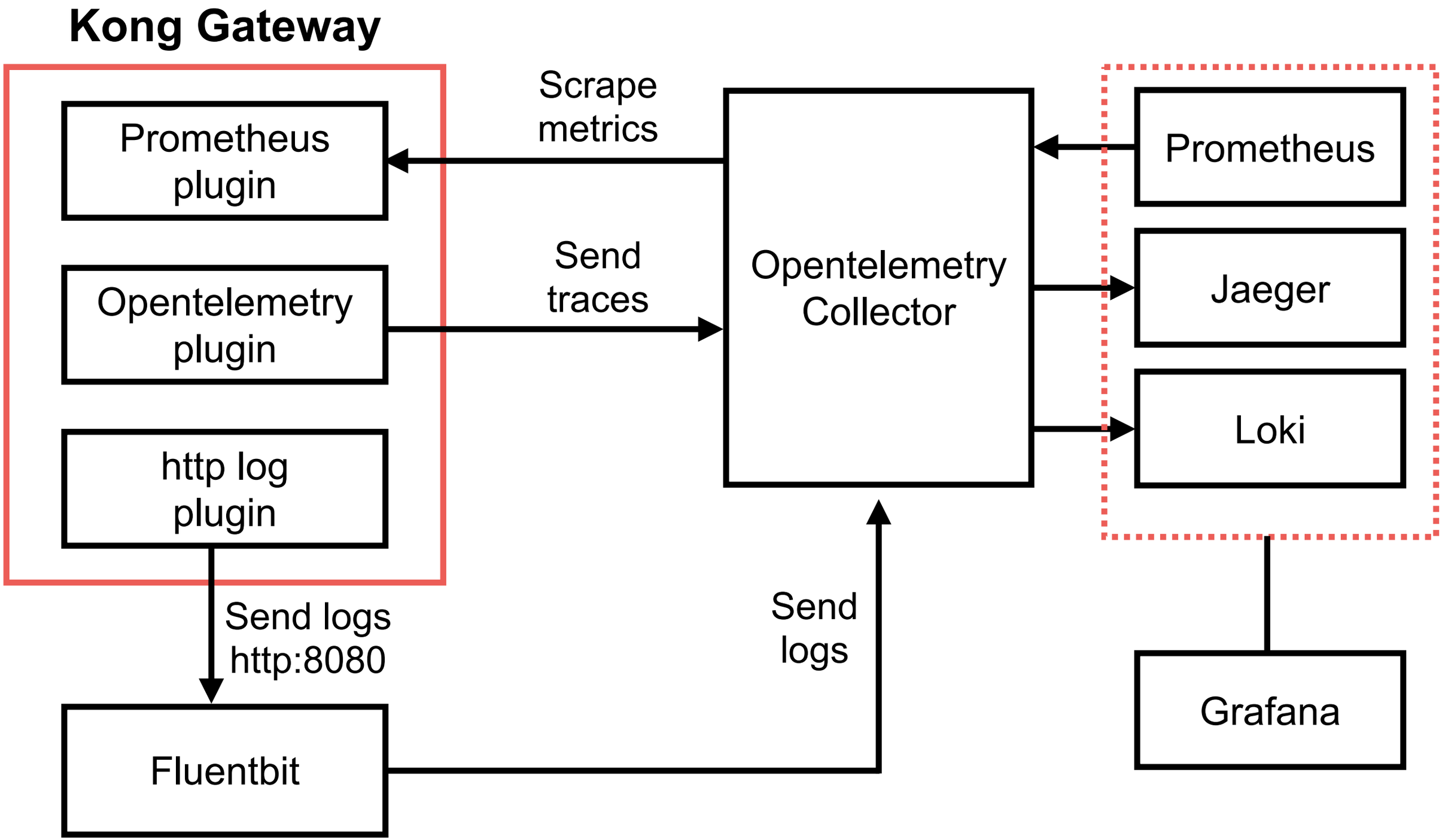
Architecture



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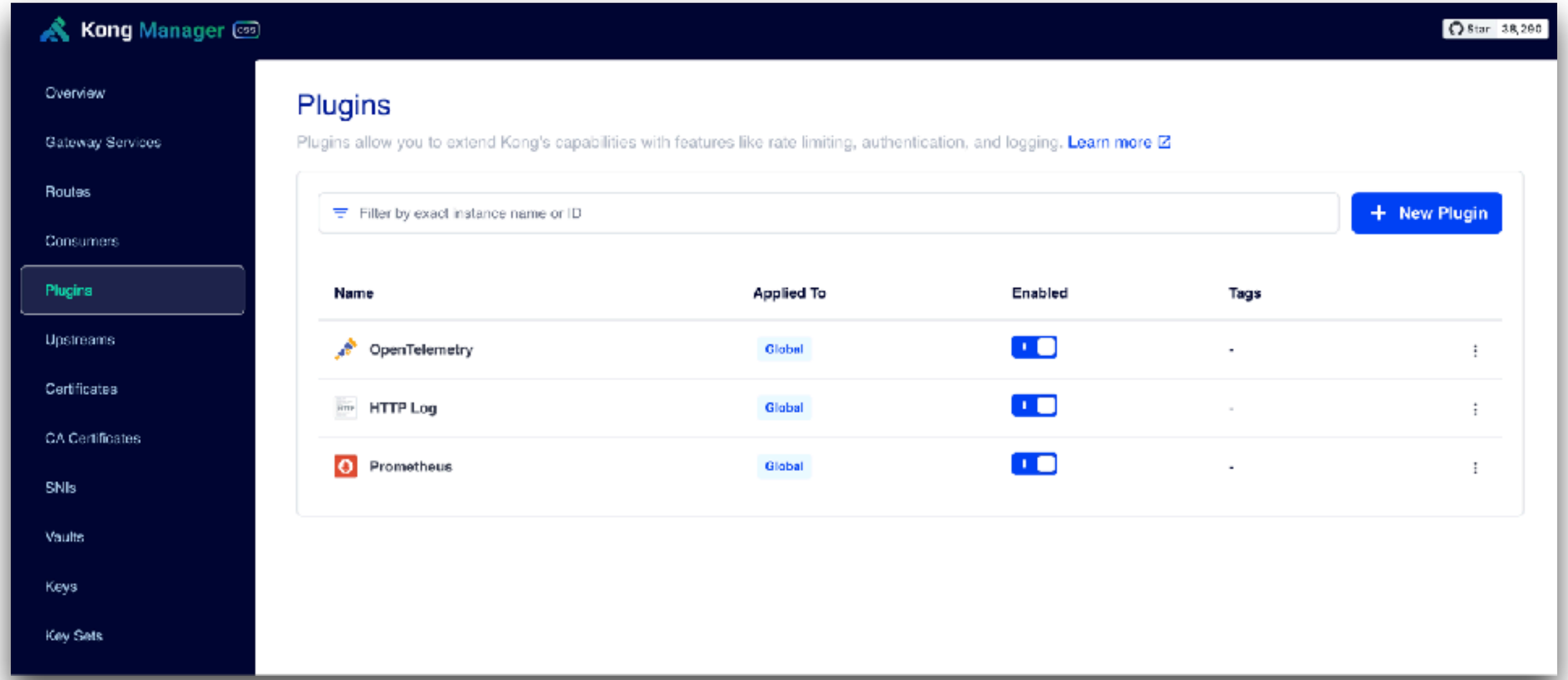
Kong plugins



https://docs.konghq.com/hub/

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decK

Manage Kong in Declarative way

https://docs.konghq.com/deck

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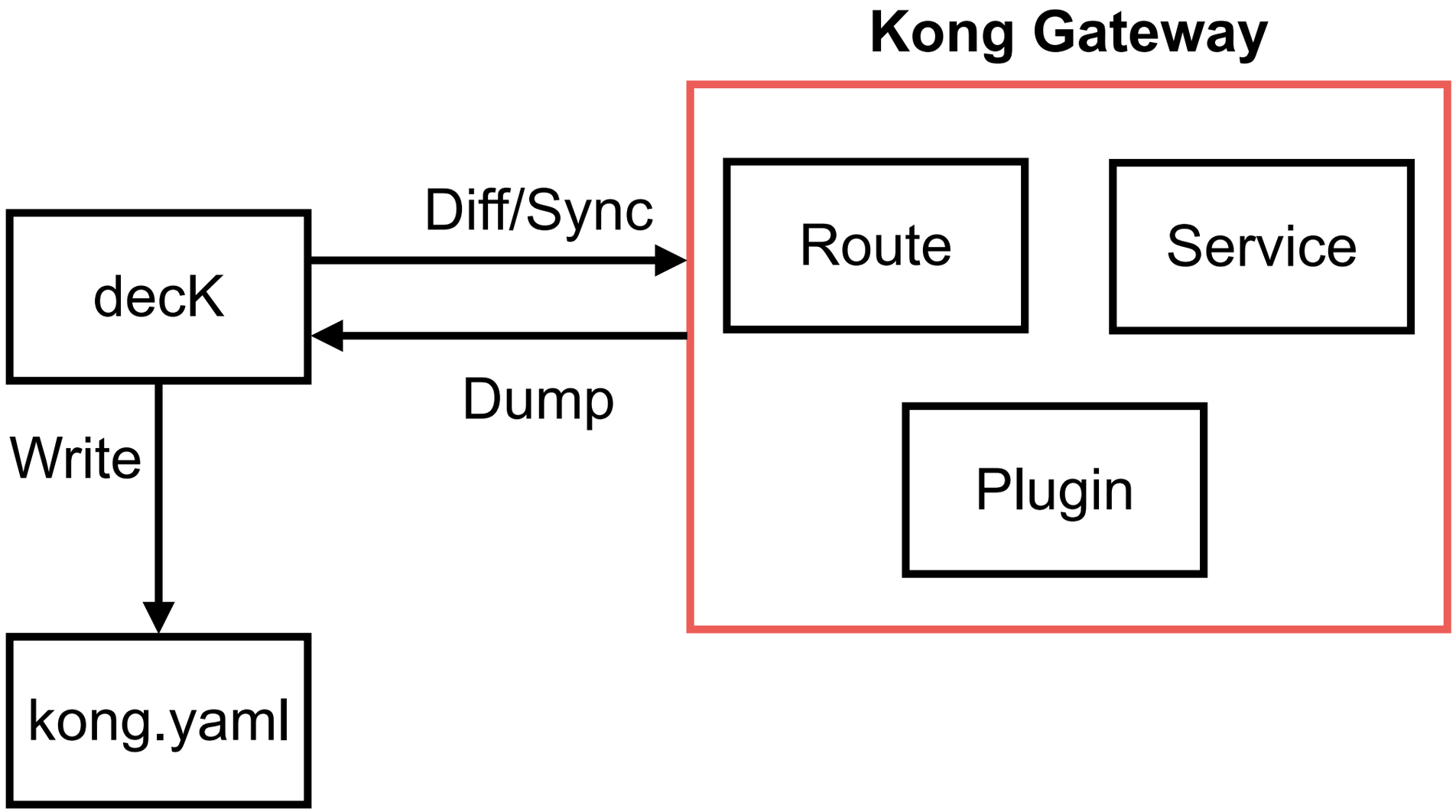
Working with decK



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