**SJTU SAIL** (Software Architecture and Infrastructure Lab)

SHANGHAI JIAO TONG UNIVERSITY

# Dive into Istio

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2021-04

SAIL

# Service Mesh

- A service mesh is a dedicated infrastructure layer for handling **service-to-service communication**.

- It's responsible for the reliable delivery of requests through the complex topology of services that comprise a modern, cloud native application.

- In practice, the service mesh is typically implemented as an array of lightweight network proxies that are **deployed alongside application code**, without the application needing to be aware.

# Istio



## Istio
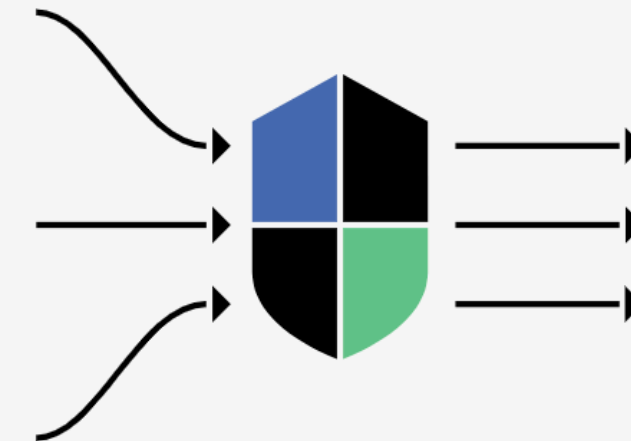
Connect, secure, control, and observe services.
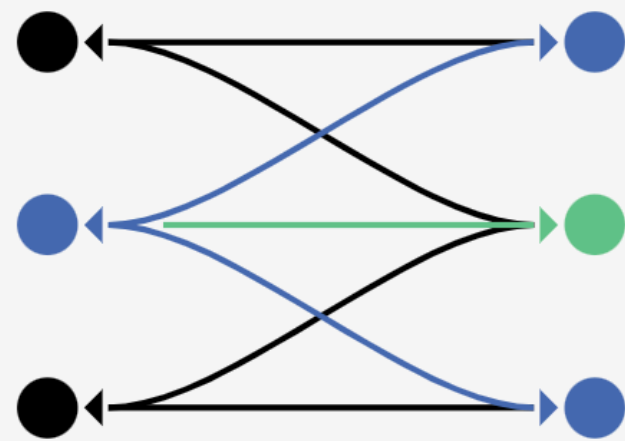


### Connect

Intelligently control the flow of traffic and API calls between services, conduct a range of tests, and upgrade gradually with red/black deployments.
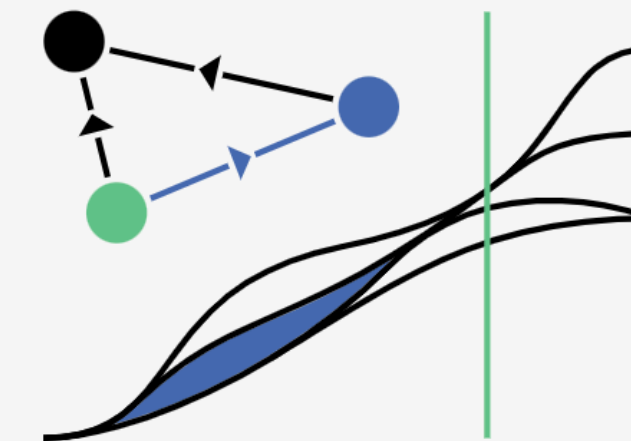


### Secure

Automatically secure your services through managed authentication, authorization, and encryption of communication between services.
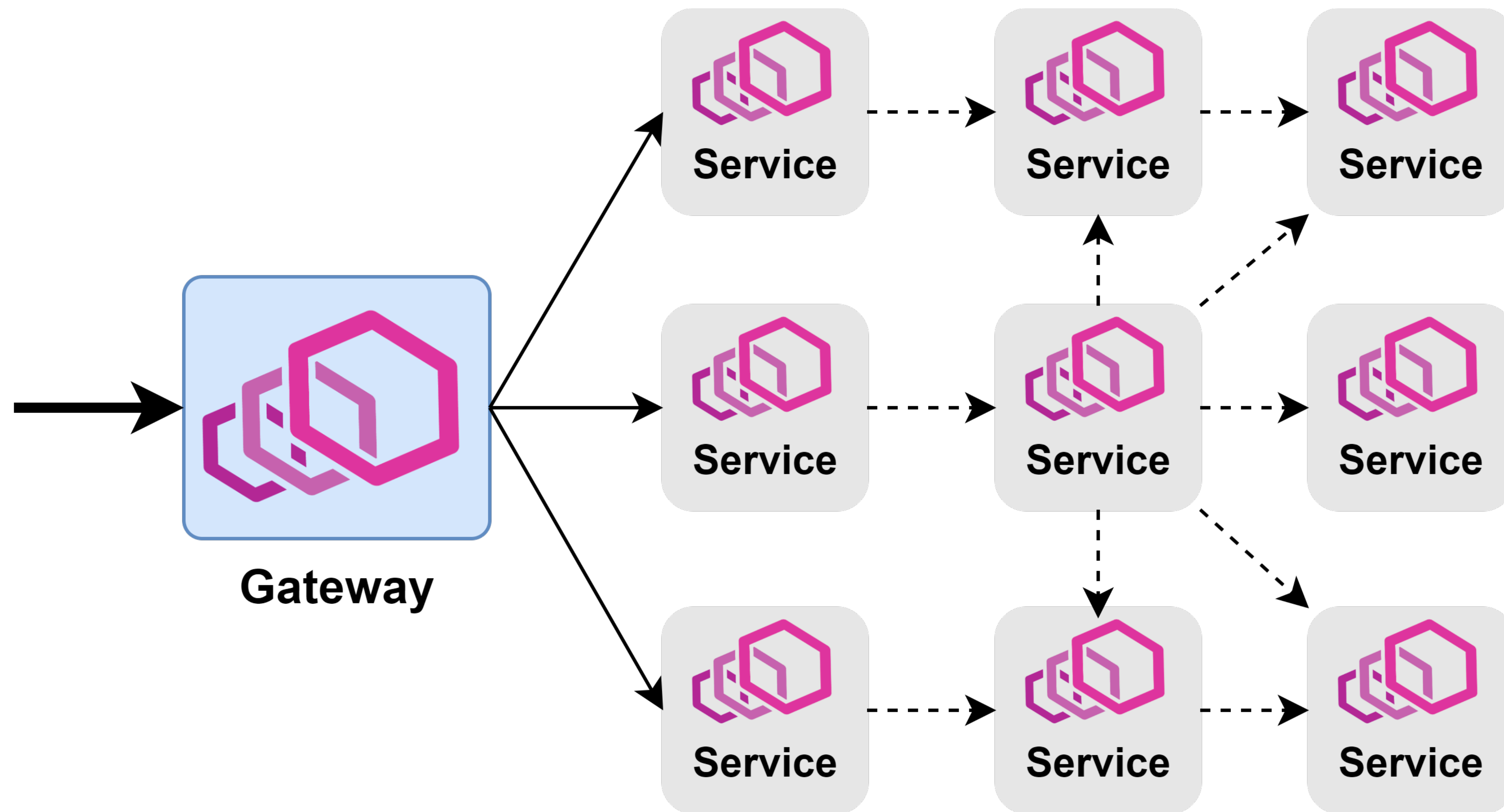


### Control

Apply policies and ensure that they're enforced, and that resources are fairly distributed among consumers.
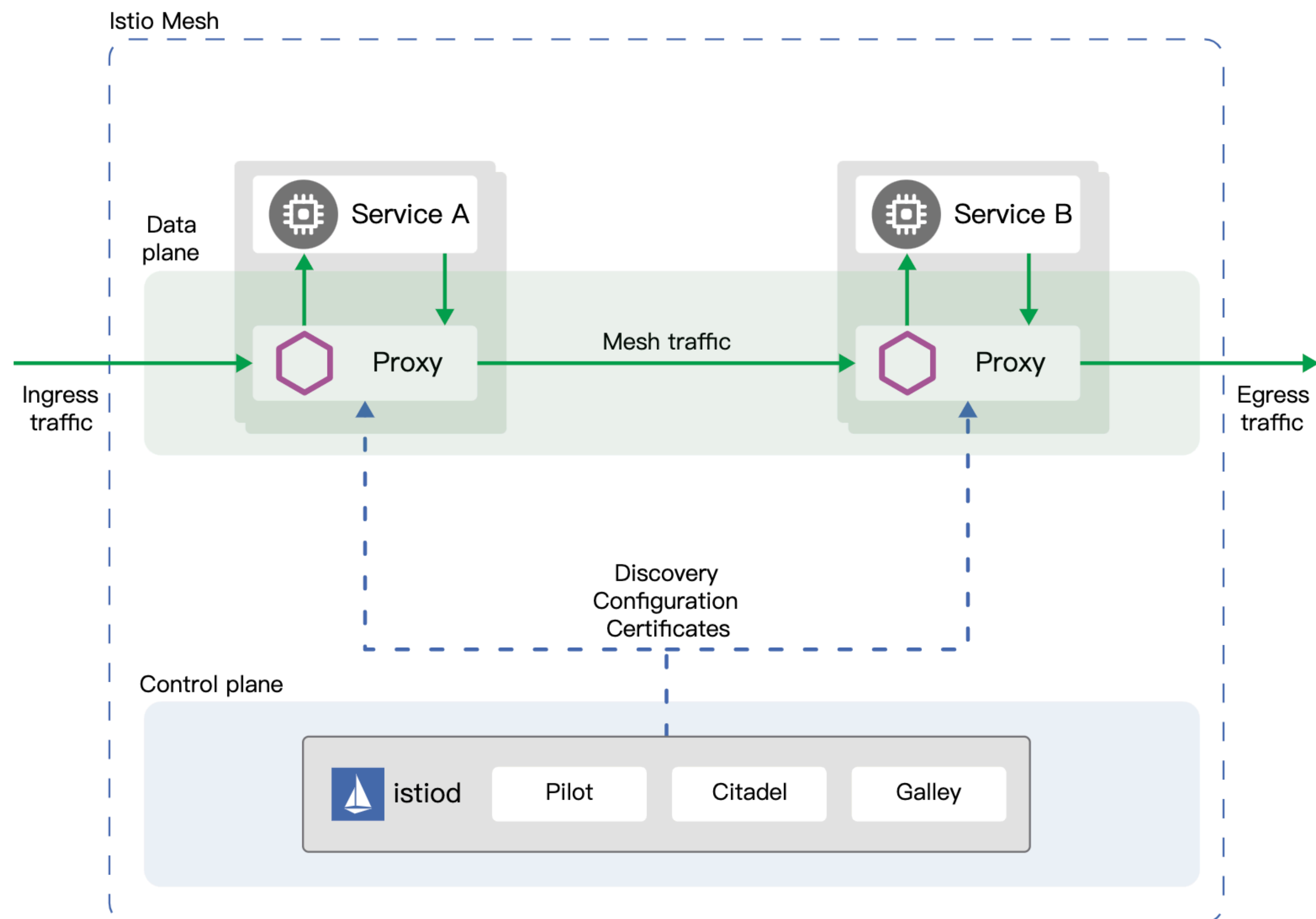


### Observe

See what's happening with rich automatic tracing, monitoring, and logging of all your services.
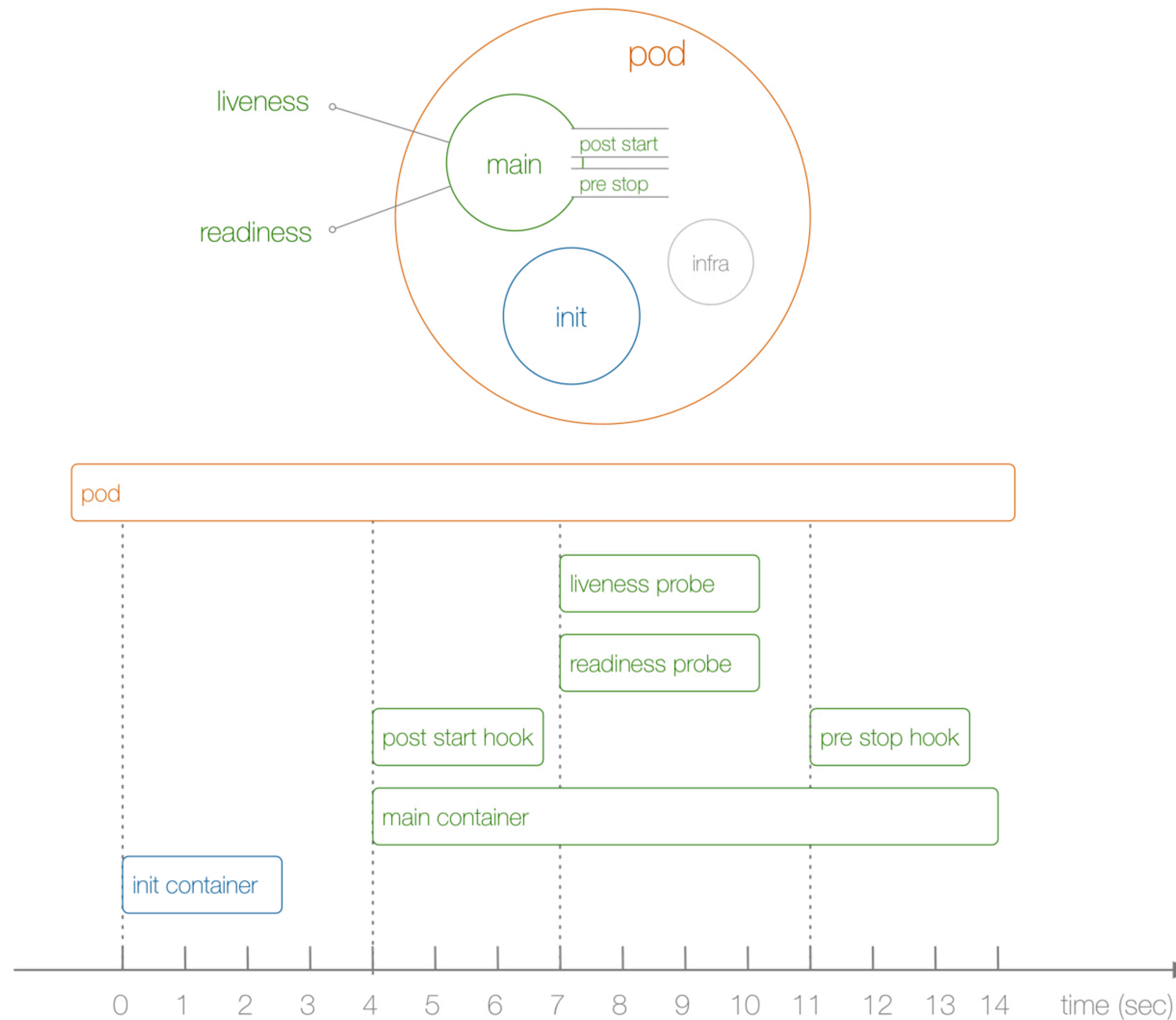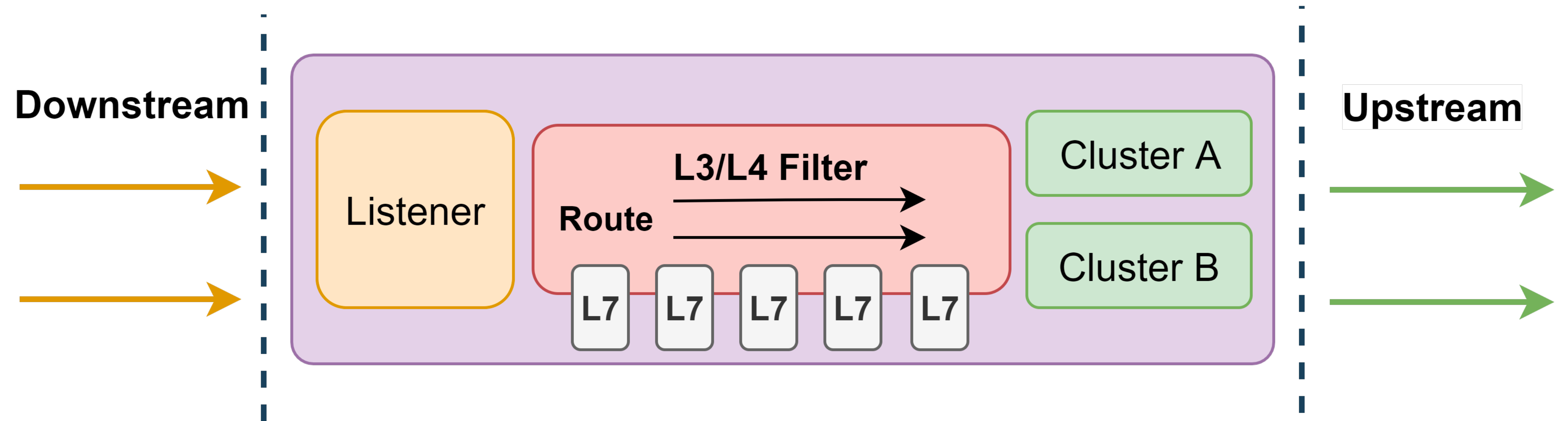
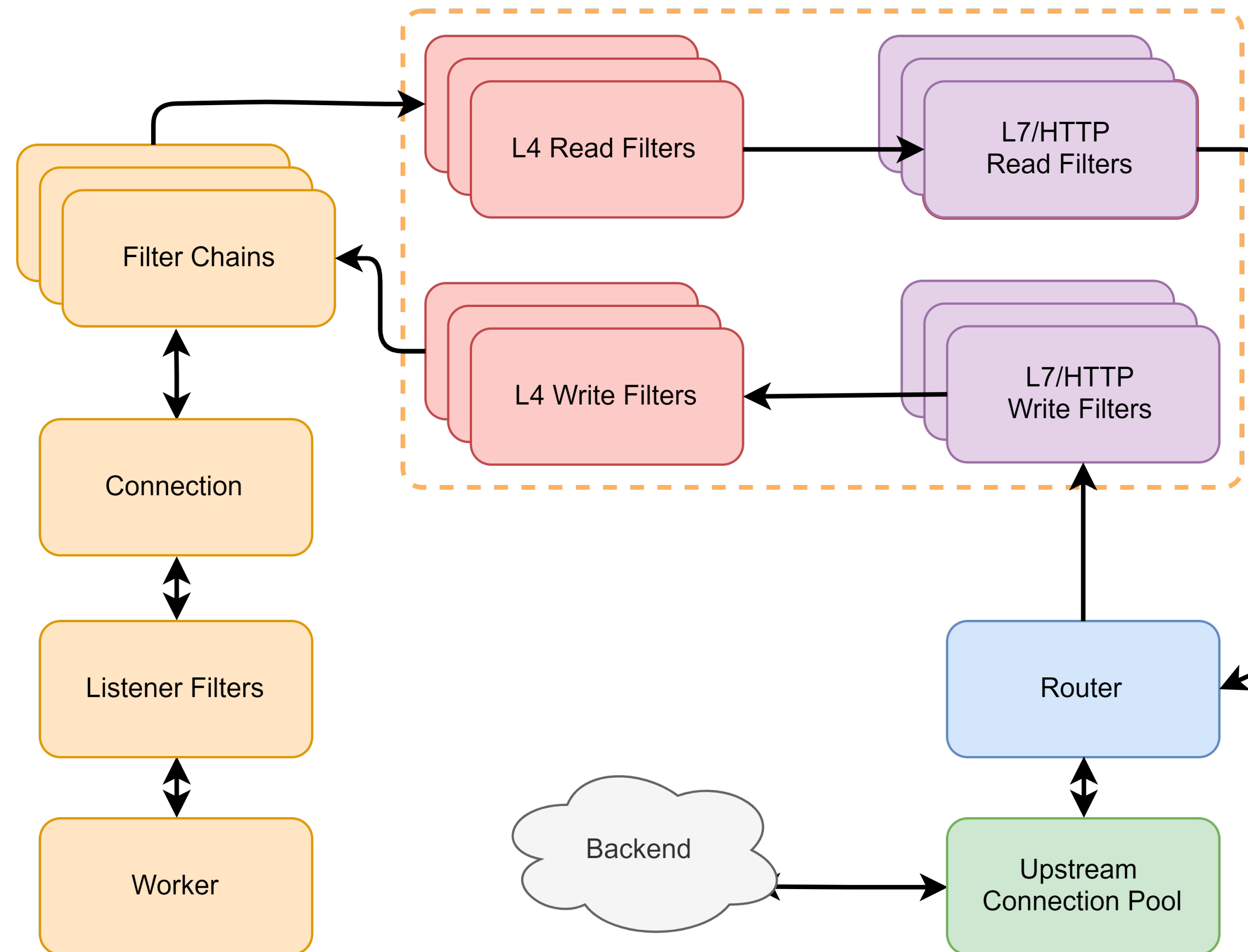# Istio Architecture
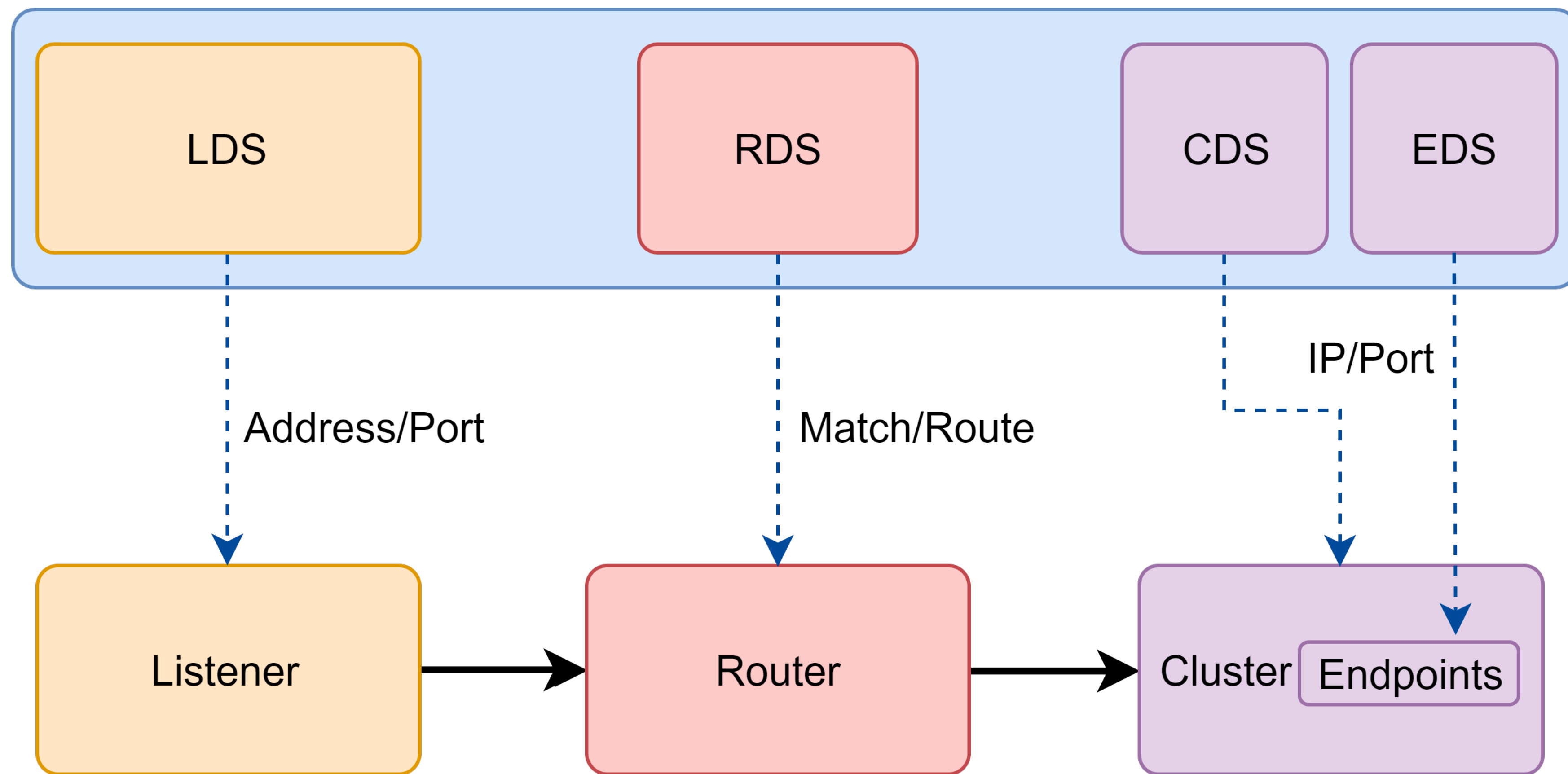
# Istio Architecture



Istio 架构

# Init Container

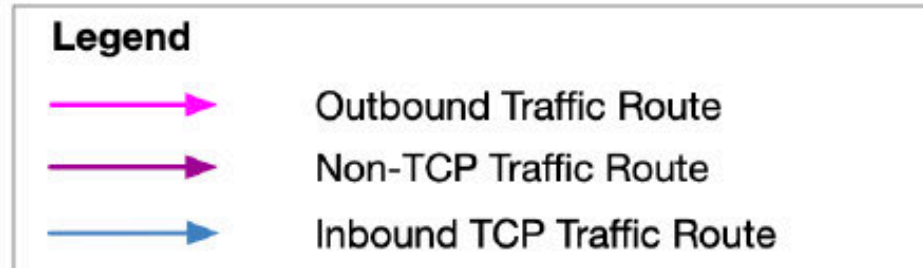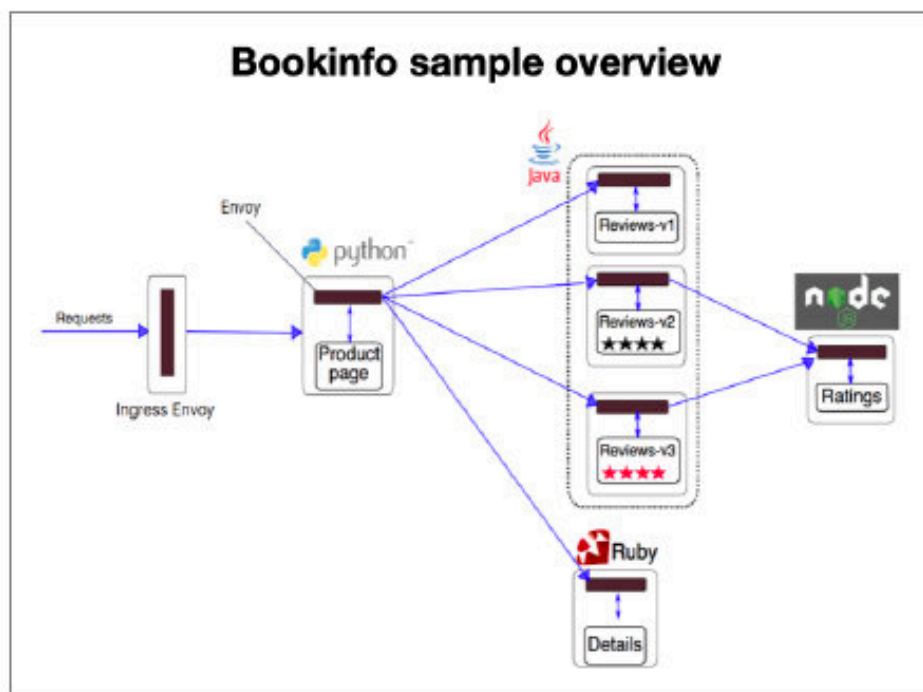# Envoy Architecture

# Envoy Chain

# Envoy xDS API

# Put all together…

# Thanks