



NOLSATU

Envoy Administration

Keywords

Proxy, Mircoservices, Istio



References

- <https://www.envoyproxy.io/>




Envoy

Envoy (1)

- Envoy is an open source edge and service proxy, designed for cloud-native applications
- Originally built at Lyft, Envoy is a high performance C++ distributed proxy designed for single services and applications, envoy designed for large microservice “service mesh” architectures.
- The project was born out of the belief that:
The network should be transparent to applications. When network and application problems do occur it should be easy to determine the source of the problem.

Envoy (2)

- Built on the learnings of solutions such as NGINX, HAProxy, hardware load balancers, and cloud load balancers, Envoy runs alongside every application and abstracts the network by providing common features in a platform-agnostic manner.
 - When all service traffic in an infrastructure flows via an Envoy mesh, it becomes easy to visualize problem areas via consistent observability, tune overall performance, and add substrate features in a single place.
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The key features

- Out of process architecture

Envoy is a self contained, high performance server with a small memory footprint. It runs alongside any application language or framework.

- HTTP/2 and gRPC support
- Advanced load balancing


Envoy supports advanced load balancing features including automatic retries, circuit breaking, global rate limiting, request shadowing, zone local load balancing.

- APIs for configuration management

Envoy provides robust APIs for dynamically managing its configuration.

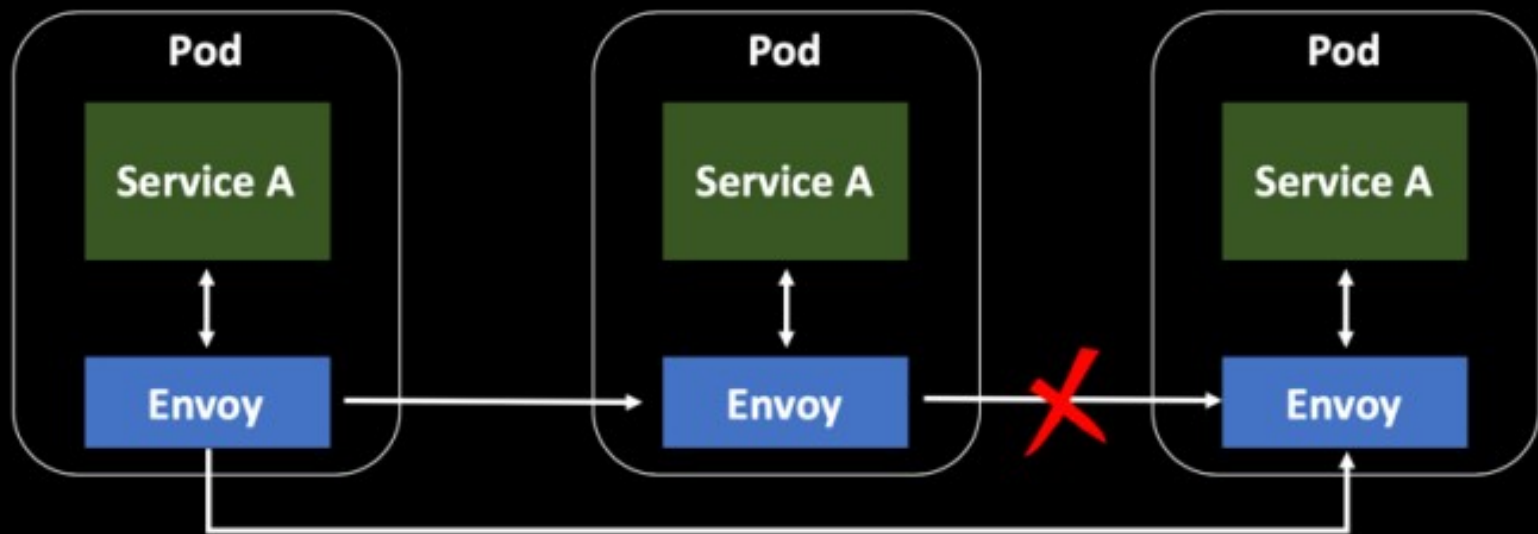
- Observability

Observability

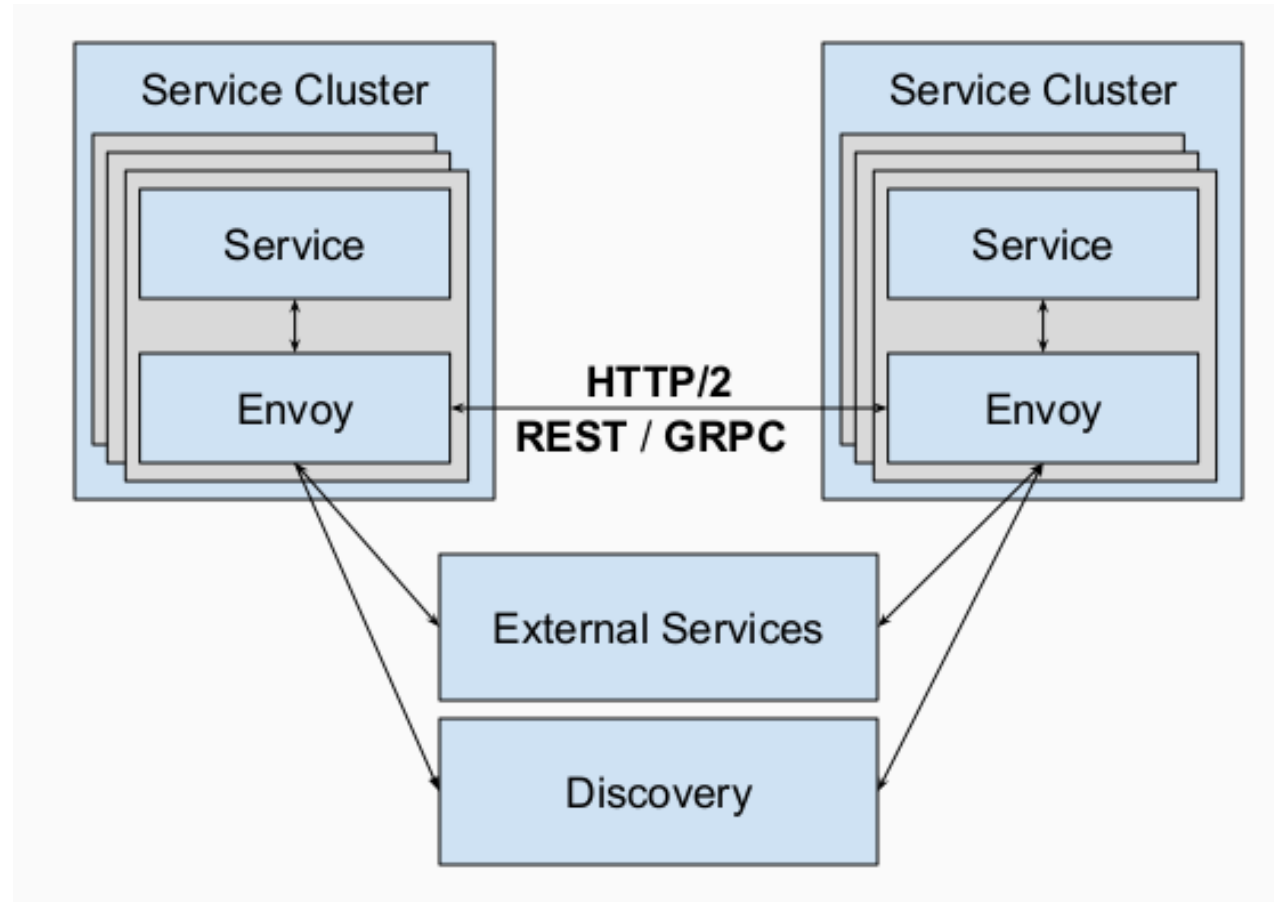
- Observability is by far the most important thing that Envoy provides.
 - Having all service-oriented architectures traffic transit through Envoy gives us a single place where we can:
 - 1) Produce consistent statistics for every hop
 - 2) Consistent logging
 - 3) Distributed tracing
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Advance Load Balancing

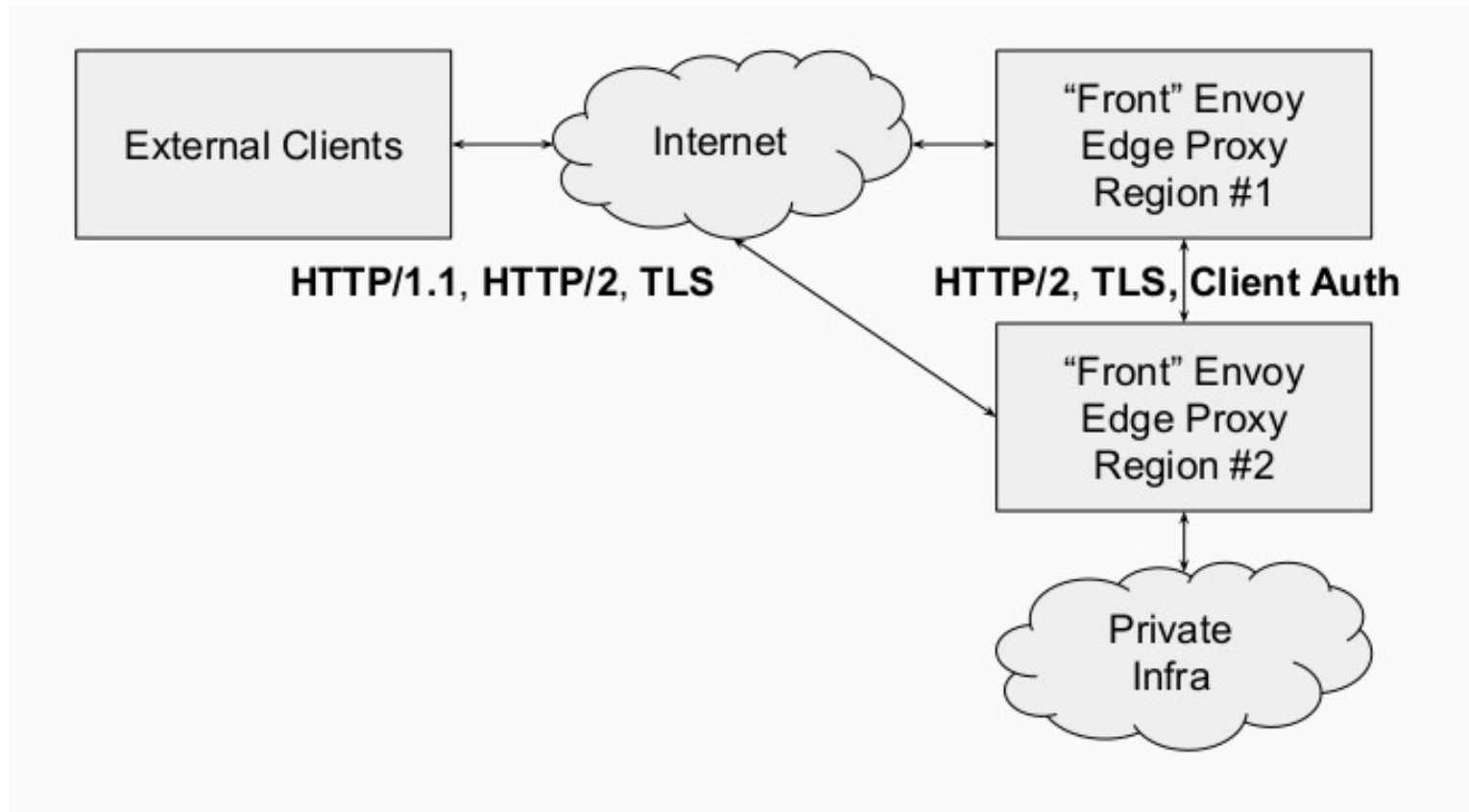
Istio Circuit Breaker



Envoy service to service topology



Envoy Edge Proxy topology





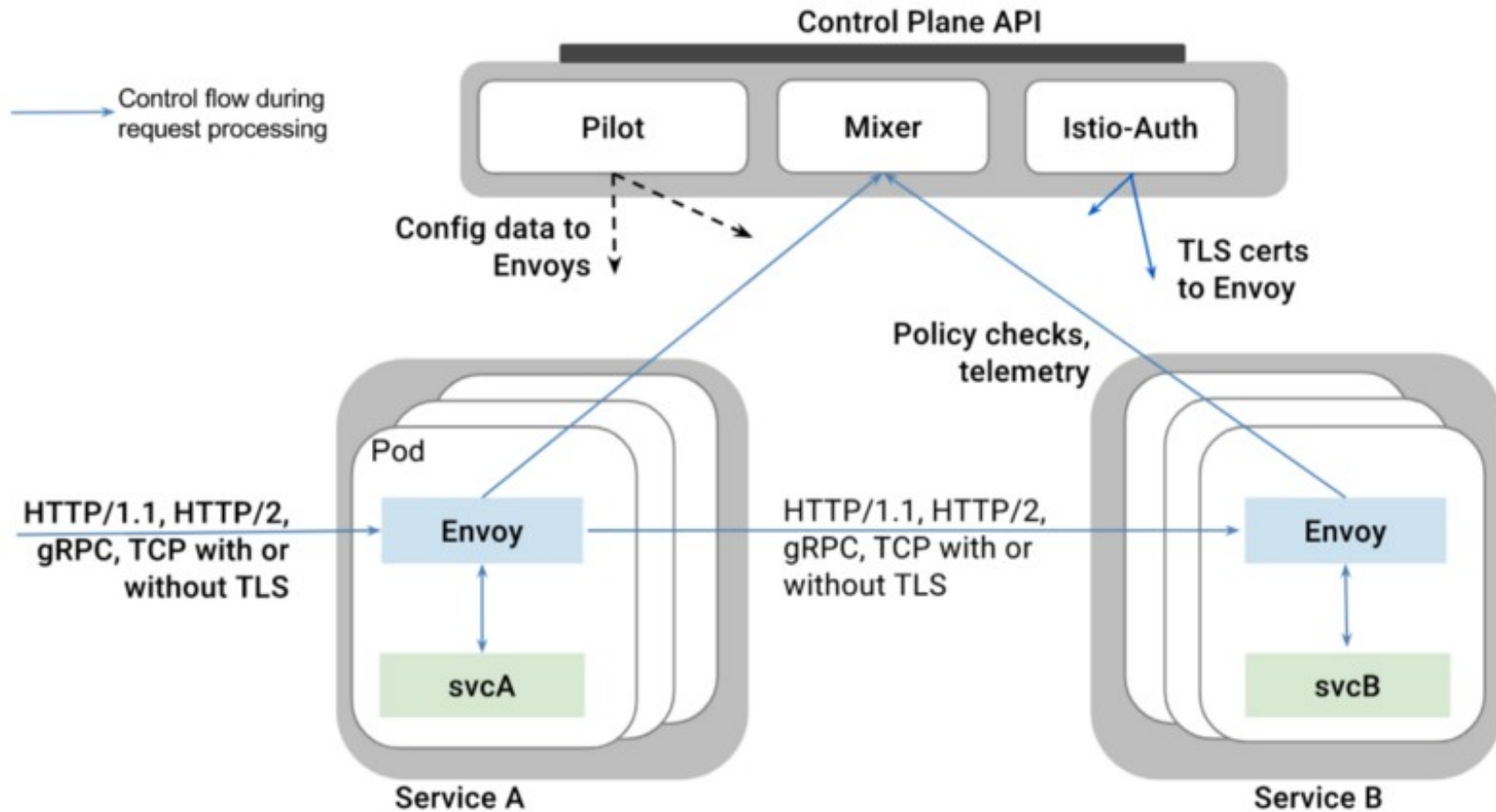
Istio & Envoy

Envoy & Istio

- “Raw Envoy” is still too hard to configure for most folks
- Hard to decouple network from deploy orchestration
- Build higher level control systems (universal dataplane)
- Istio!
- Istio use envoy in the data plane, composed of a set of intelligent proxies (Envoy) deployed as sidecars.



Envoy & Istio



Istio Architecture



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