





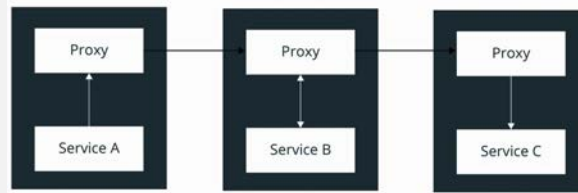
Architecting Resilient Microservices: A Deep Dive into building a
Service Mesh with Envoy



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- Challenges with Microservices architecture
 - What is Service mesh pattern and its core features
 - The Envoy proxy
 - Understanding the use case / Problem
 - Devising a solution
 - Benefits
- 

What is Service mesh?

- Service mesh is a popular solution for managing communication between individual microservices in a microservice application.
- It makes communication between services reliable and secure.
- The service mesh provides multiple features/ offerings ,without the need for a shared asset such as an API gateway or ESB



if Service A wants to call Service C, there is no direct call to the destination service. The request is routed to the local proxy and the proxy routes it to the destination service. so the service instance isn't aware of the outside world and is only aware of the local proxy.

Capabilities of Service mesh

Distributed Tracing



Traffic Shifting



Service Discovery



Rate Limiting



Load Balancing



Circuit Breaking



Authentication & Authorization

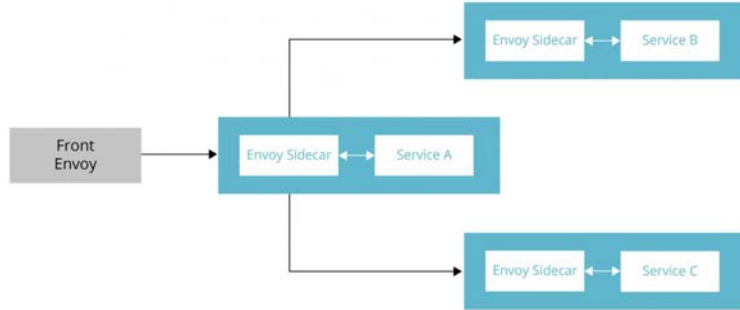


Observability



What is Envoy?

- Envoy is a high-performance proxy server that can be used to provide advanced load balancing, traffic management, and observability capabilities for service-to-service communication in a distributed system



Envoy isn't the only choice when building a service mesh, other proxies like Nginx, Traefik and more are perfectly suitable

Functioning/Capabilities of Envoy

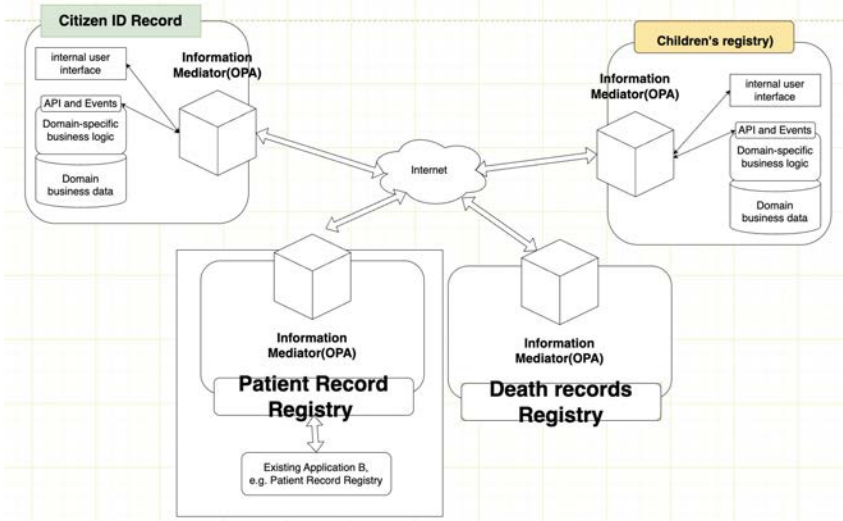
- Envoy configuration mainly consists of:
 - Listeners
 - Routes
 - Clusters
 - Endpoints

Envoy Architecture



Use case - Problem statement

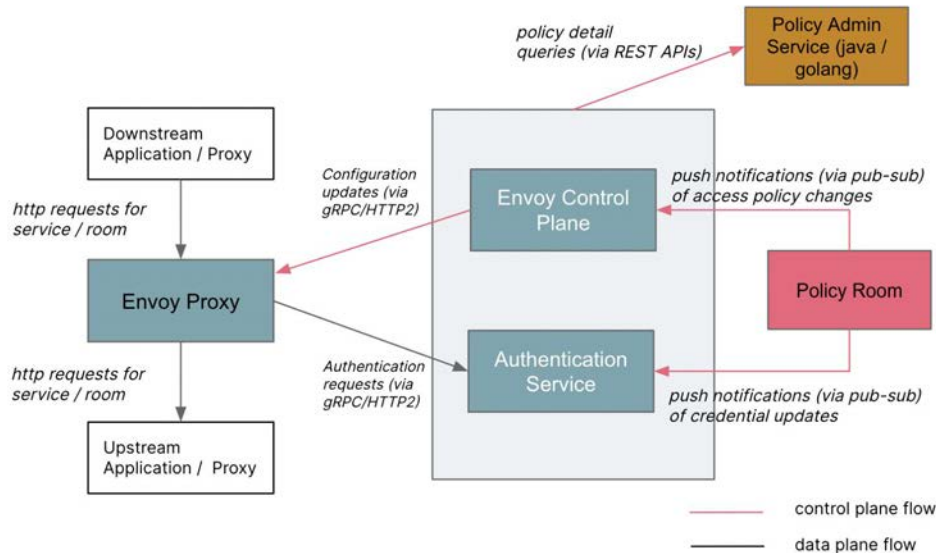
Use Case : Government record registry



Requirements :

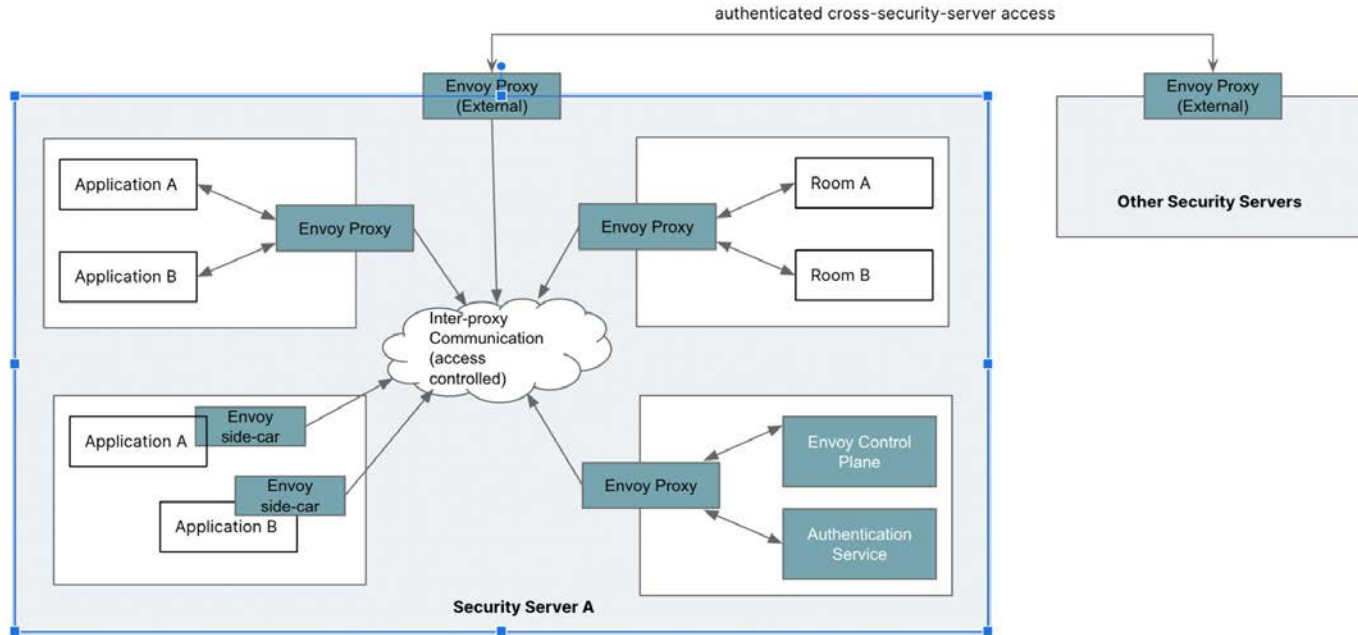
Various components deployed as “**Security server**” through which different BB’s and Applications can communicate synchronously, with each other securely based on policy enforced.

Proposed solution



The “mediate” part of information mediator BB which enforces access policies for services as well as the pubsub solution.

Deployment of Security Proxy Components



Justification about the solution



Thank you!