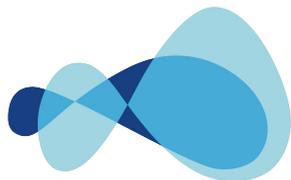


envoy

# Envoy Intro

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Tetrate

Lizan Zhou  
05-22-2019

# State of microservice networking in industry

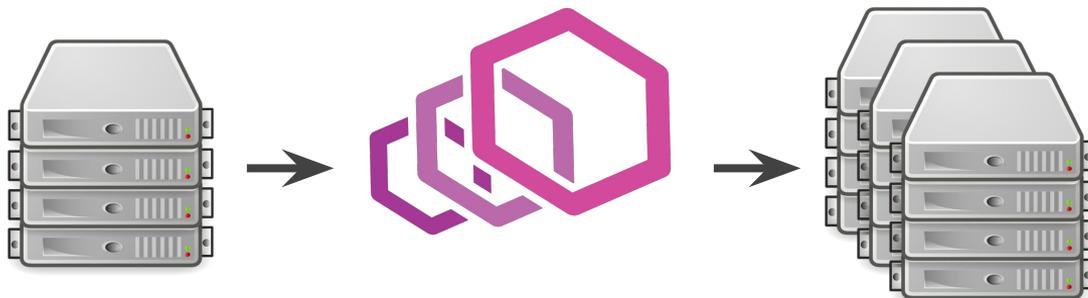
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- **Languages** and frameworks.
- **Protocols** (HTTP/1, HTTP/2, gRPC, databases, caching, etc.).
- **Infrastructures** (IaaS, CaaS, on premise, etc.).
- Intermediate **load balancers** (AWS ELB, F5, etc.).
- **Observability** output (stats, tracing, and logging).
- Implementations (often partial) of **retry**, **circuit breaking**, **rate limiting**, **timeouts**, and other distributed systems best practices.
- **Authentication** and **Authorization**.
- Per language **libraries** for service calls.

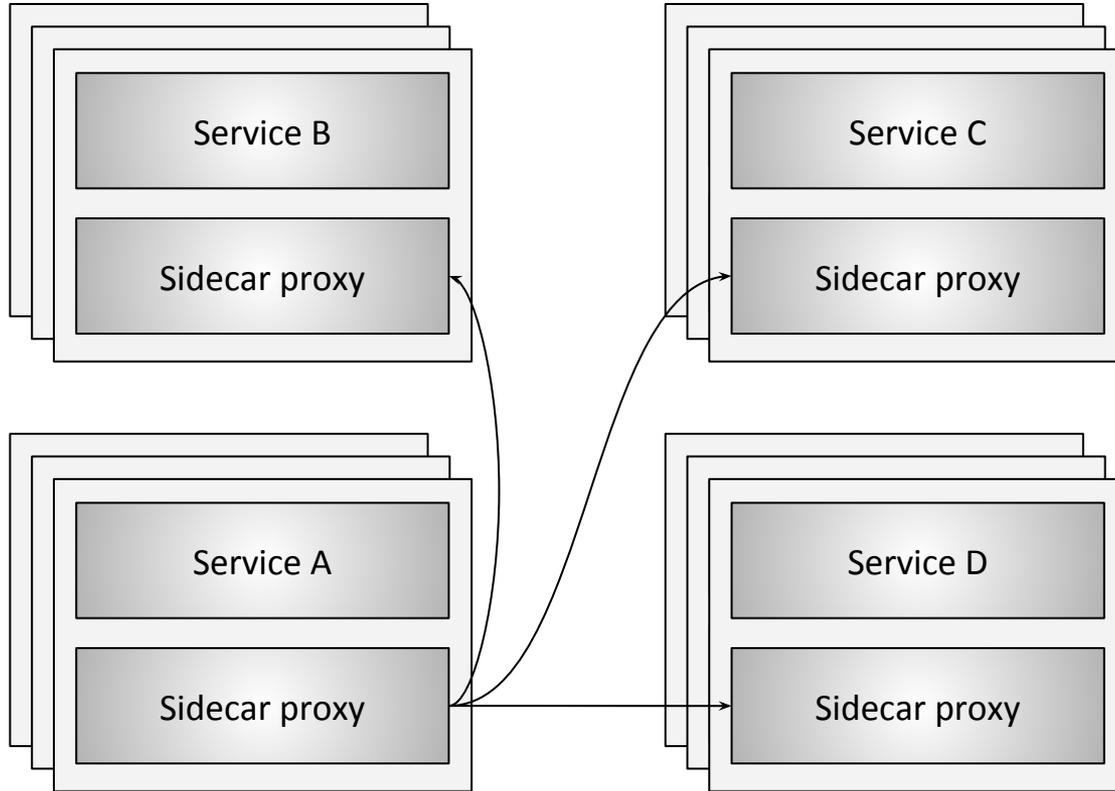
# What is Envoy?

*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.*



# Service mesh refresher



# Envoy refresher

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- **Out of process architecture**
- **High performance / low latency code base**
- **L3/L4 filter architecture**
- **HTTP L7 filter architecture**
- **HTTP/2 first**
- **Service discovery and active/passive health checking**
- **Advanced load balancing**
- **Best in class observability** (stats, logging, and tracing)
- **Authentication and authorization**
- **Edge proxy**

# Envoy config management via xDS APIs

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- Envoy is a **universal data plane**
- xDS == \* Discovery Service (various configuration APIs). E.g.,:
  - LDS == Listener Discovery Service
  - CDS == Cluster Discovery Service
- Both gRPC streaming and JSON/YAML REST via proto3!
- Central management system can control a fleet of Envoys **avoiding per-proxy config file hell**
- **Global bootstrap config** for every Envoy, rest taken care of by the management server
- Envoys + xDS + management system == **fleet wide traffic management distributed system**

# Envoy Adoption

 airbnb	 amazon web services™	Booking.com	 cookpad
 DigitalOcean	ebay		Google
GOJEK 	GRUBHUB	IBM	Medium
 Microsoft	NETFLIX	Pinterest	 salesforce
	stripe	 Square	Tencent 腾讯
 twilio	Uber	verizon✓	vmware®
 vSCO	YAHOO! JAPAN	yelp*	

# Why Envoy + Q&A

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- Quality + velocity
- Extensibility
- Eventually consistent configuration API
- No “open core” / paid premium version. It’s all there.
- **Community, community, community**

