

Service Mess to Service Mesh

by Rob Richardson

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https://robrich.org/



About Me

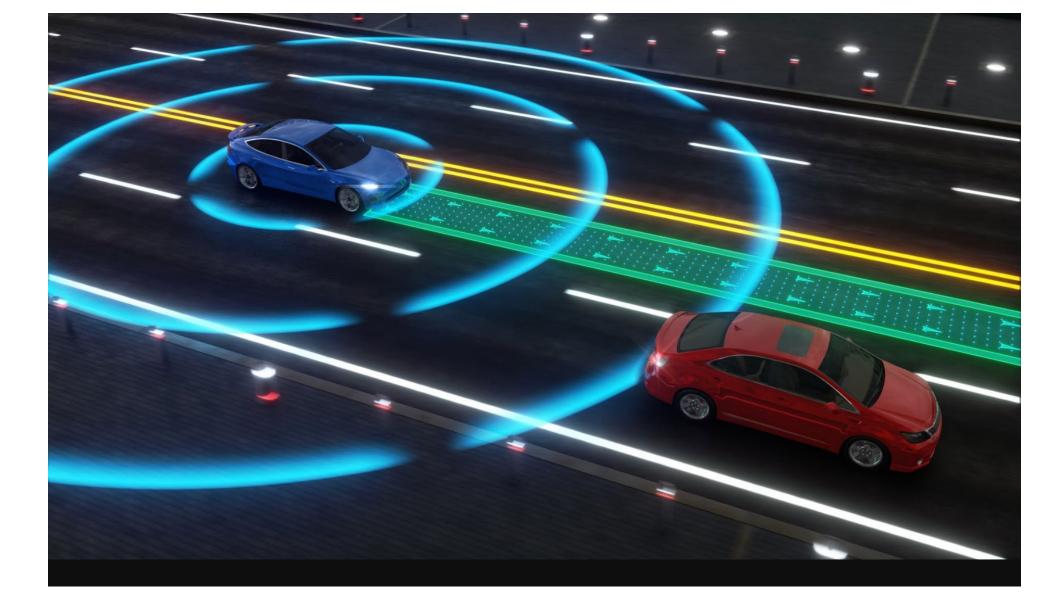
Rob Richardson is a software craftsman building web properties in ASP.NET and Node, React and Vue. He's a frequent speaker at conferences, user groups, and community events, and a diligent teacher and student of high quality software development. You can find this and other talks on https://robrich.org/presentations and follow him on twitter at @rob_rich.





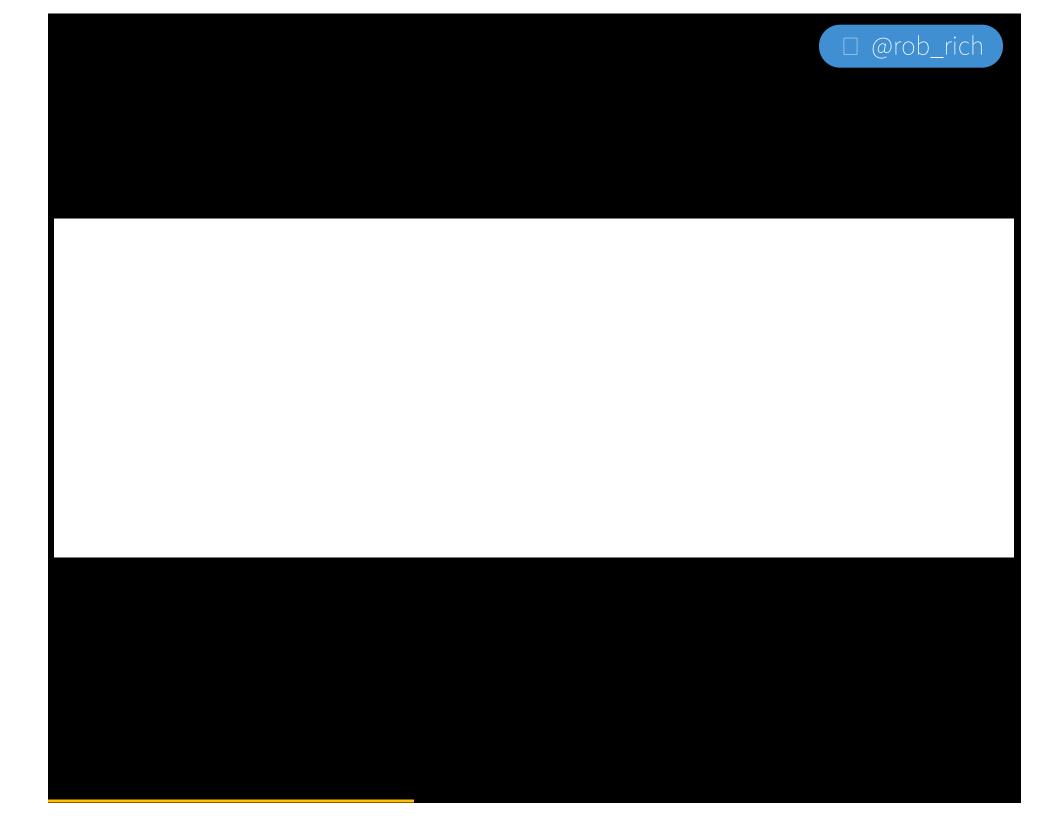






Let's talk about Service Mesh!

- What Is A Service Mesh
- From Monolithic to Microservices
- The Challenge with API Gateways
- Deep Dive into Service Mesh
- Demo
 - Istio
 - Linkerd
- Service Mesh Best Practices







Service Mesh







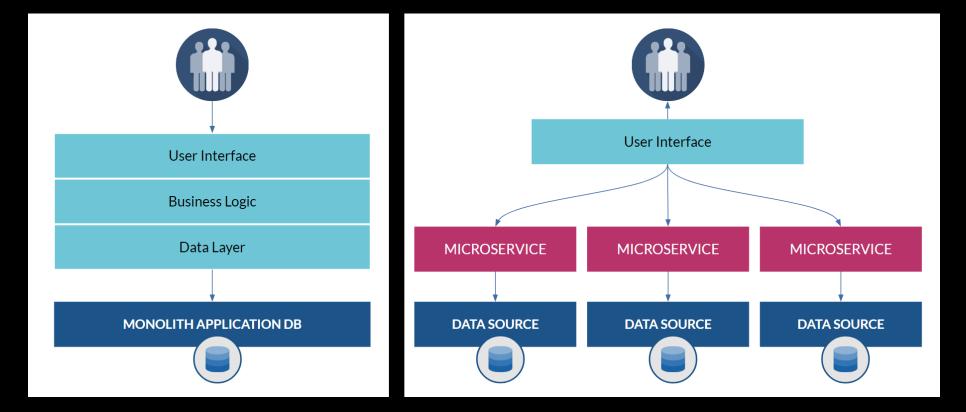
OBSERVE monitor network

CONTROL access policies

SECURE mutual TLS



From Monlithic to Microservices

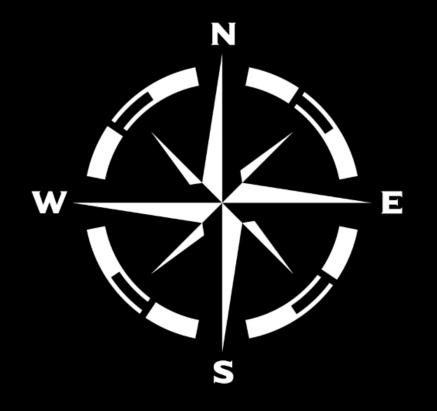




From North-South to East-West

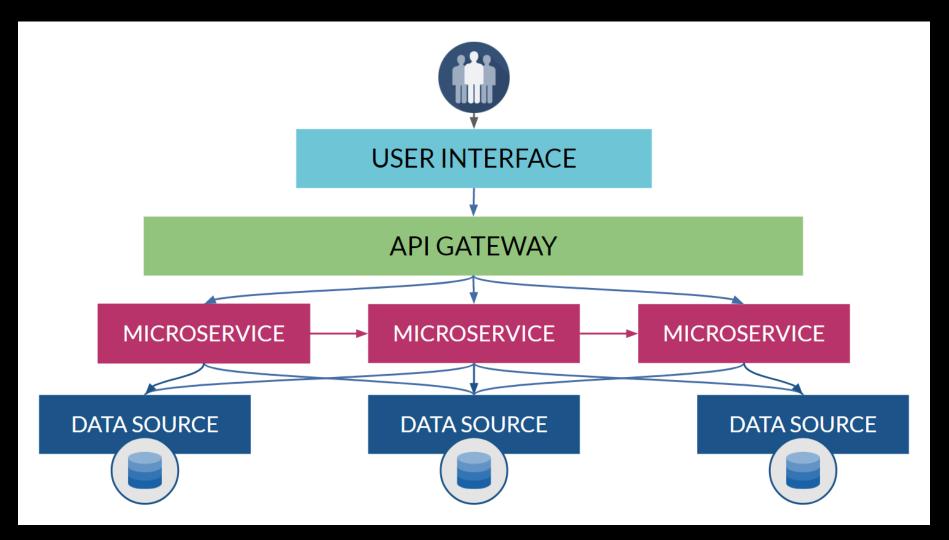
• North - South

- Network to Container
- Container to External Services
- East West
 - Between Containers



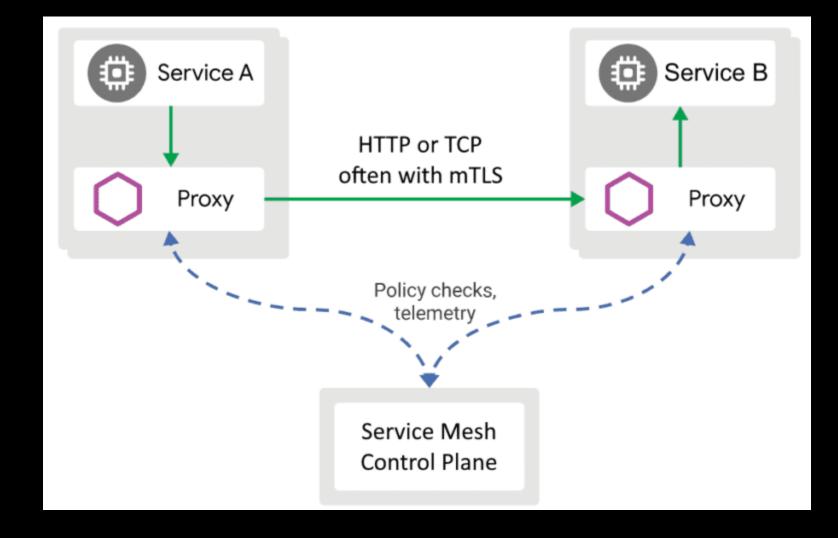


The Challenge with API Gateways





Service Mesh: How Does it Work?





Service Mesh







OBSERVE monitor network

CONTROL access policies

SECURE mutual TLS



More Than Just a Proxy





Service Health

Logging

Network Topology

More Than Just a Proxy

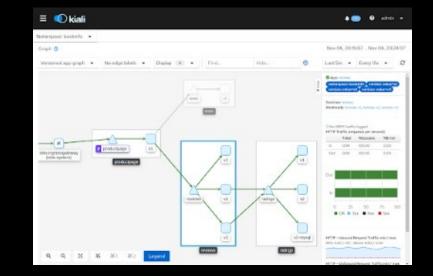


Circuit Breaker A / B Testing

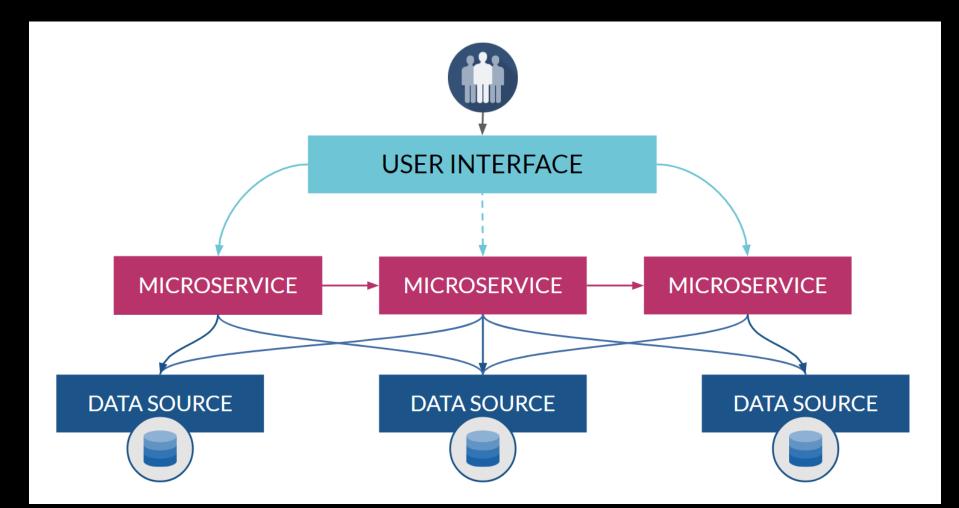
Beta Channel

Dashboards

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Prevent Unexpected Traffic Patterns





Service Meshes

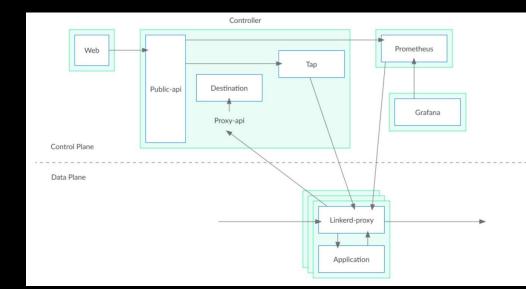
- Istio
- Linkerd
- Consul
- Open Service Mesh



Linkerd

Methodology: Linkerd focuses on simple setup and critical features

Add 3rd party components to get additional features







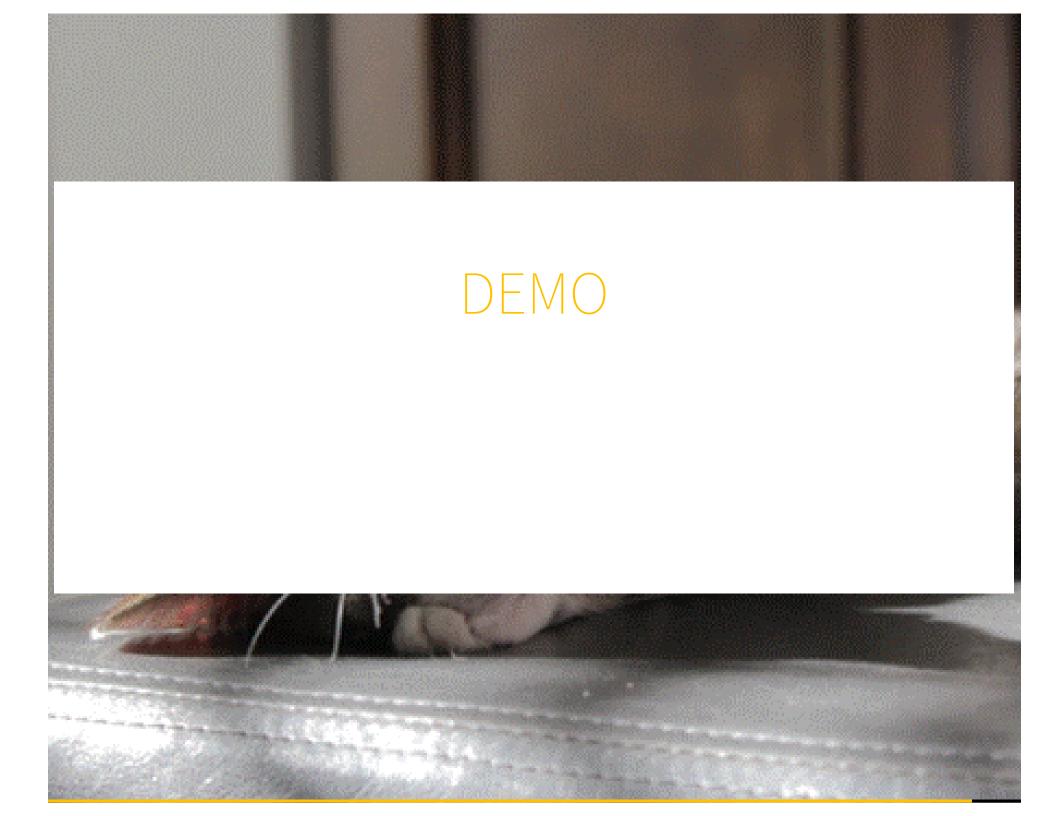
Methodology:

A kitchen sink of features to enable / disable

Istio combines third-party components:

- Envoy Proxy
- Prometheus events sink
- Grafana dashboard
- Jaeger tracing dashboard

apiVersion: networking.istio.io/vlalpha3			
kind: VirtualService			
metadata:			
name: bookinfo			
spec:			
hosts:			
- reviews			
http:			
- route:			
- destination:			
host: reviews			
subset: v1			
weight: 75			
- destination:			
host: reviews			
subset: v2			
weight: 25			





In a Nutshell



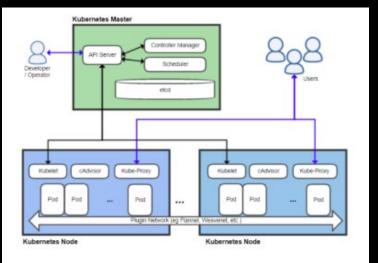
Monitoring, Logging, Service Health

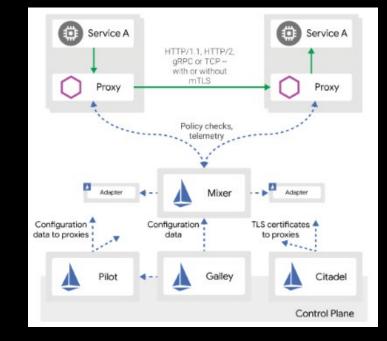
Intelligent Routing

Network Topology Diagram



Service Mesh Implementation Cost







Benefits of Service Mesh







OBSERVE transparency of communication

CONTROL enhanced resilience to network disruption SECURE abstraction without code changes

Use a Service Mesh if:

- Running highly sensitive workloads (PKI, PCI)
- Running untrusted workloads
- Running multi-tenant workloads
- Need security in depth
- Need A/B routing or a beta channel



Questions?

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