

# Service Mess to Service Mesh

by Rob Richardson

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https://robrich.org/



### About Me

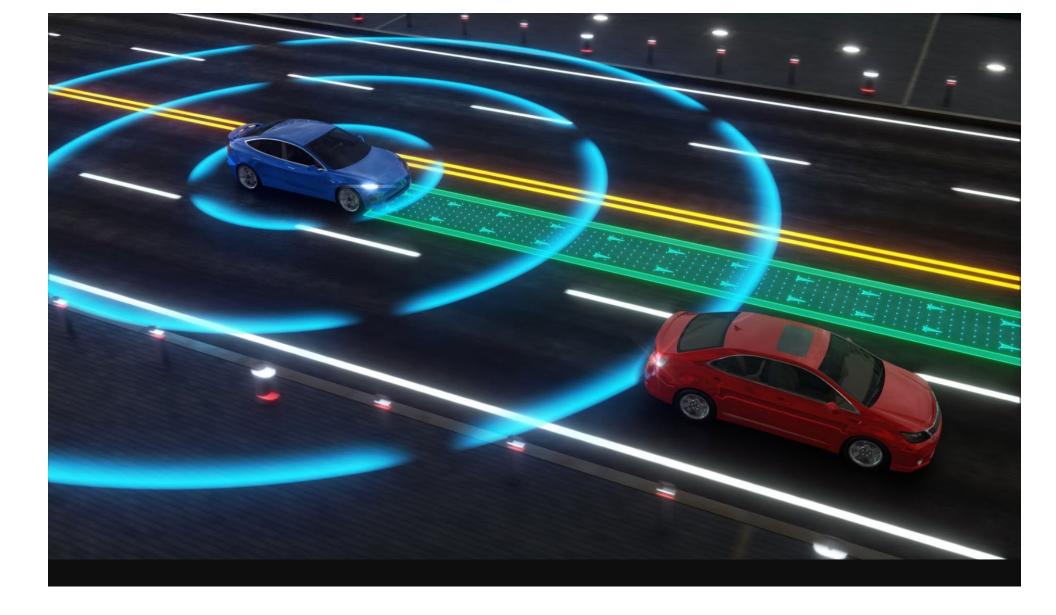
Rob Richardson is a software craftsman building web properties in ASP.NET and Node, React and Vue. He's a frequent speaker at conferences, user groups, and community events, and a diligent teacher and student of high quality software development. You can find this and other talks on https://robrich.org/presentations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





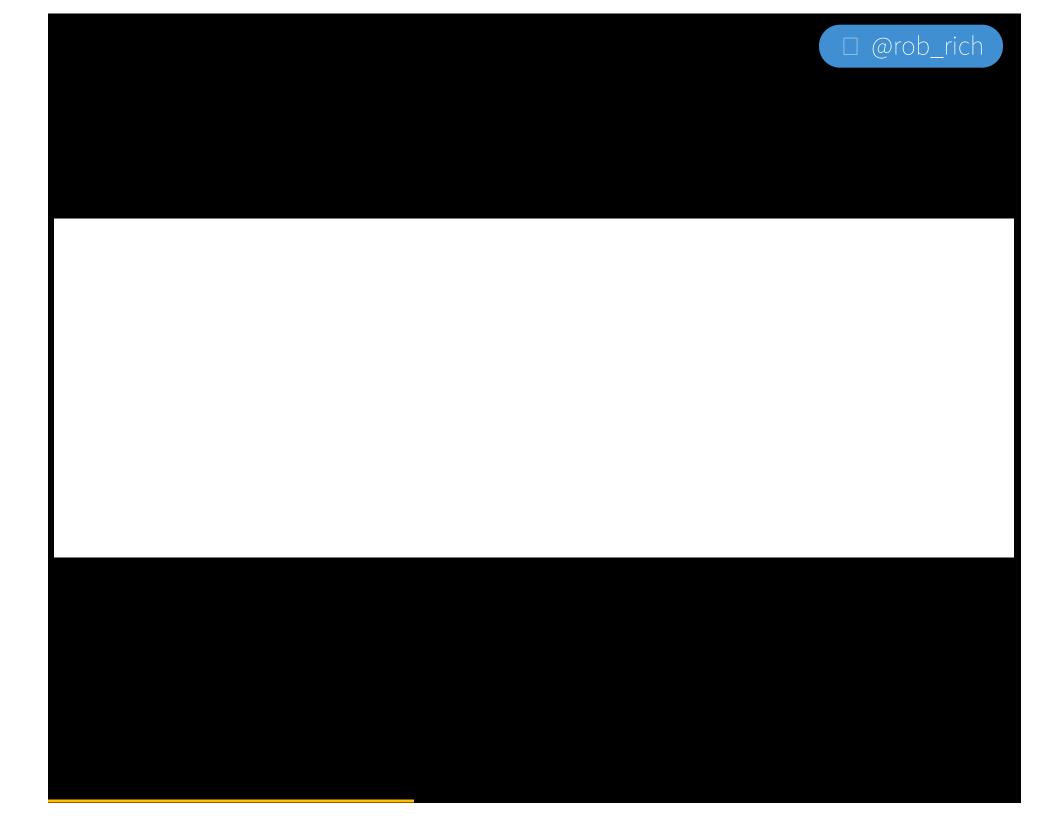






# Let's talk about Service Mesh!

- 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







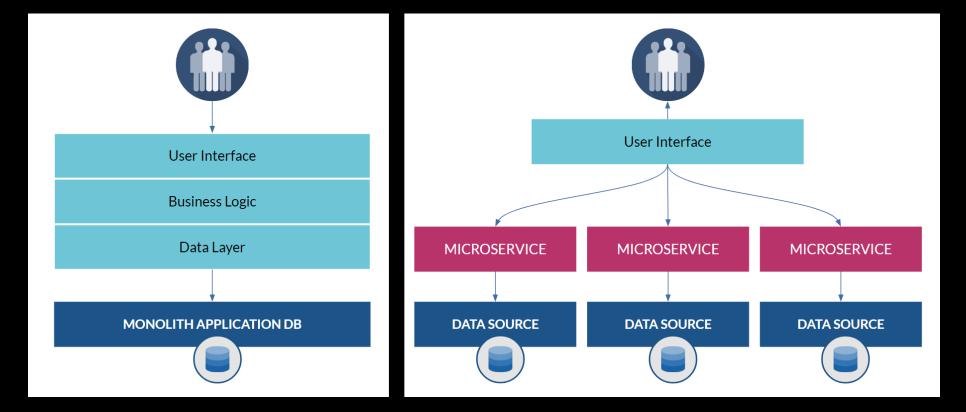
#### OBSERVE monitor network

# CONTROL access policies

SECURE mutual TLS



## From Monlithic to Microservices

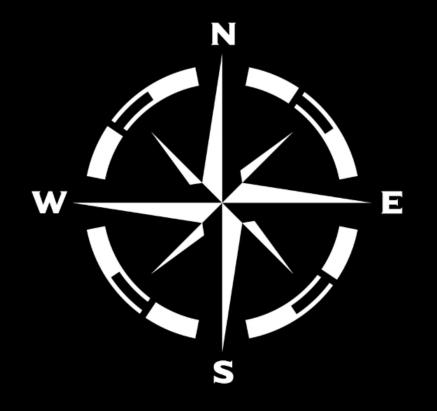




### From North-South to East-West

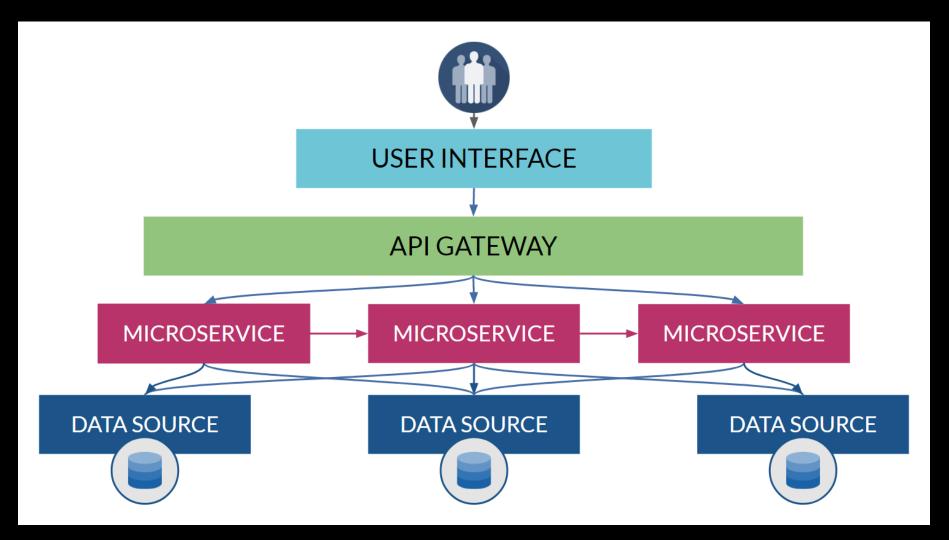
#### • North - South

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



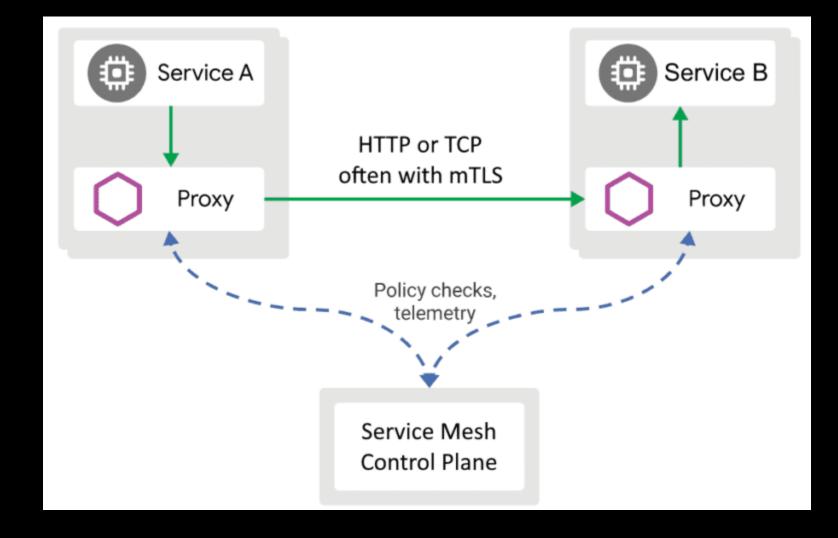


# The Challenge with API Gateways





# 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

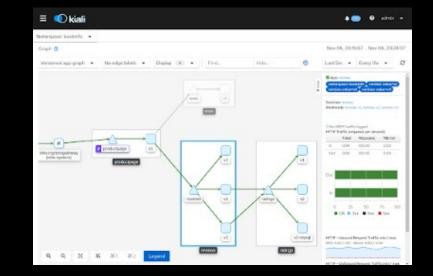


Circuit Breaker A / B Testing

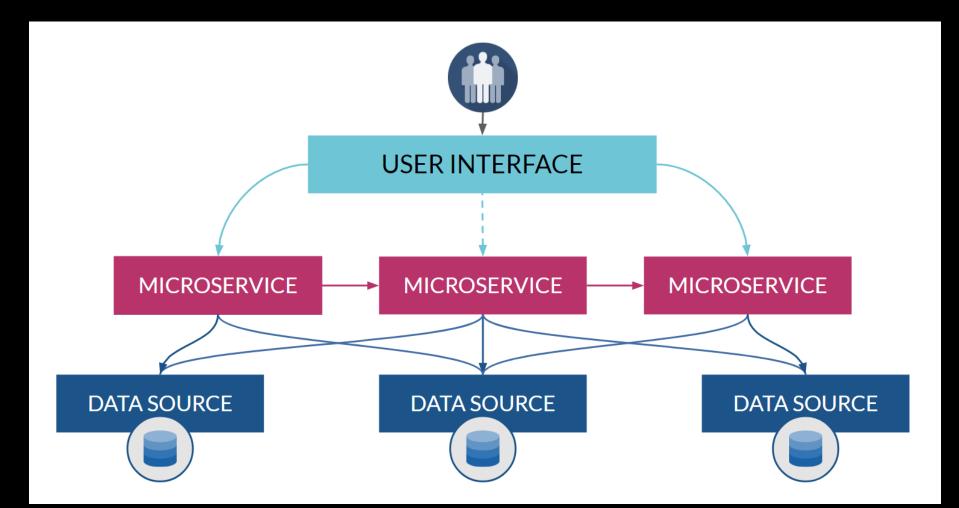
Beta Channel

## Dashboards

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# Prevent Unexpected Traffic Patterns





## Service Meshes

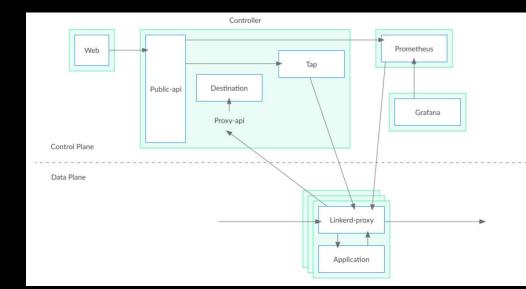
- Istio
- Linkerd
- Consul
- Open Service Mesh



# Linkerd

### Methodology: Linkerd focuses on simple setup and critical features

Add 3rd party components to get additional features







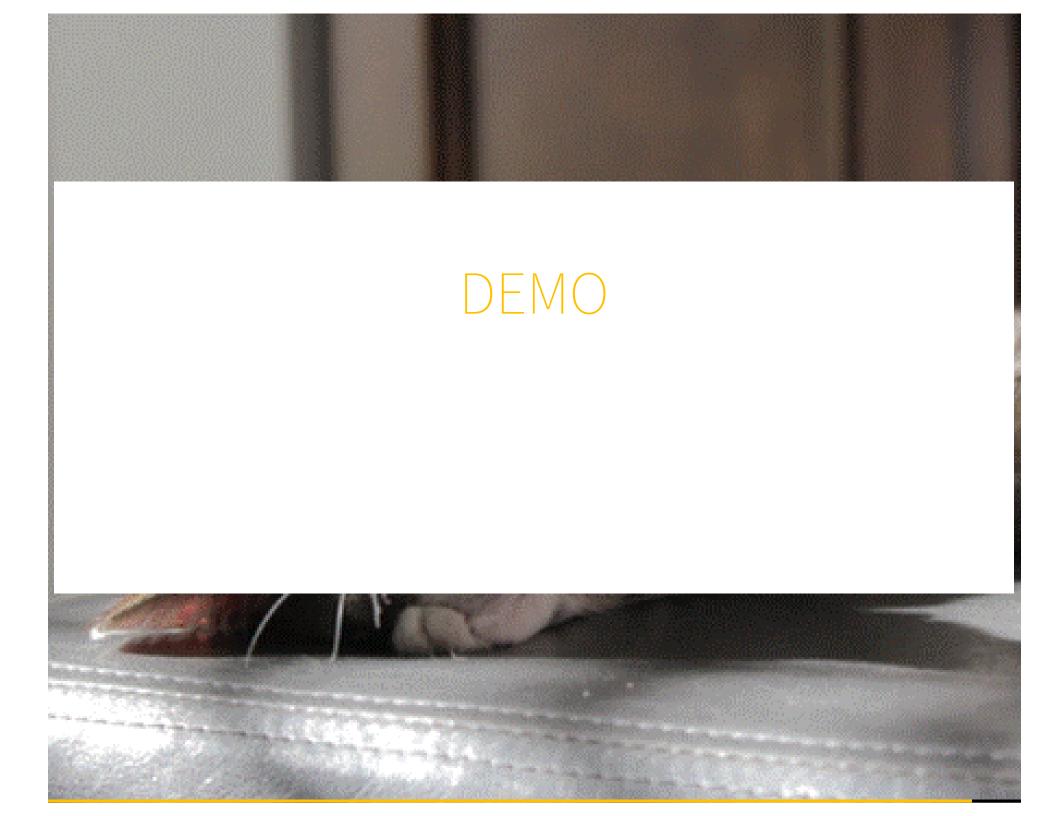
# Methodology:

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



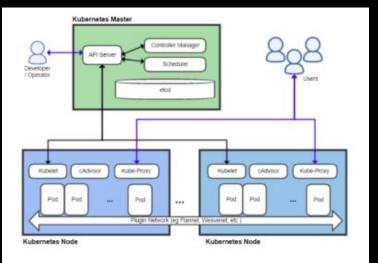
Monitoring, Logging, Service Health

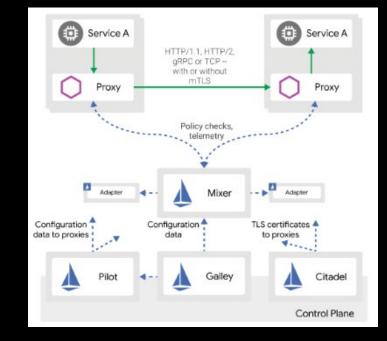
Intelligent Routing

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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