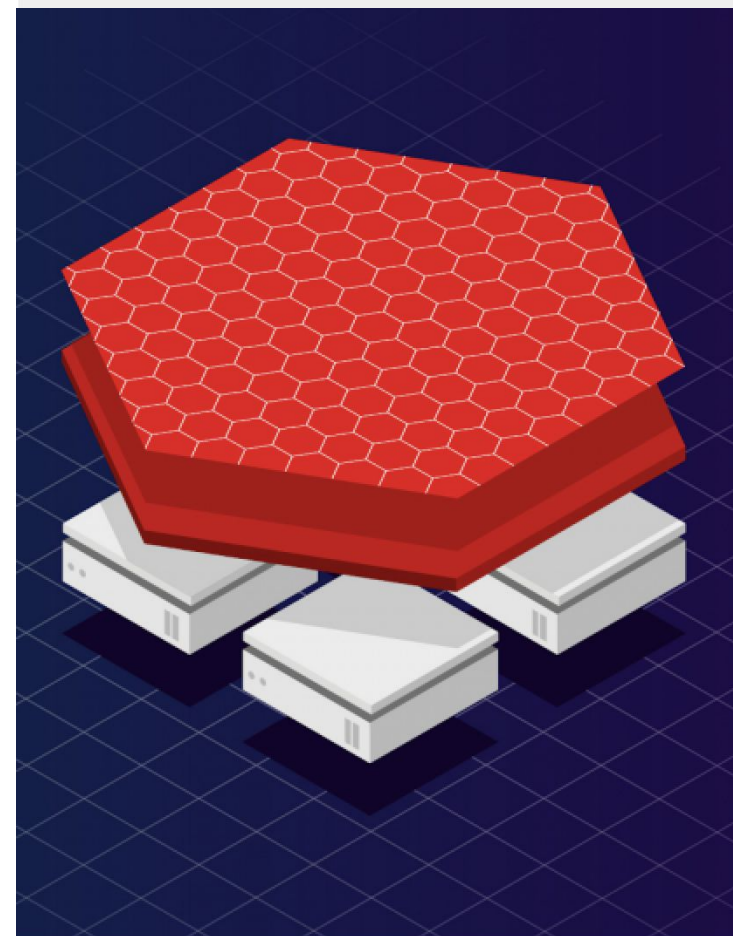
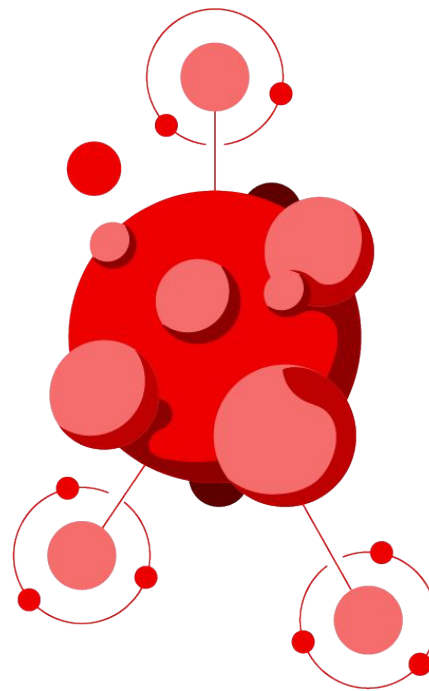


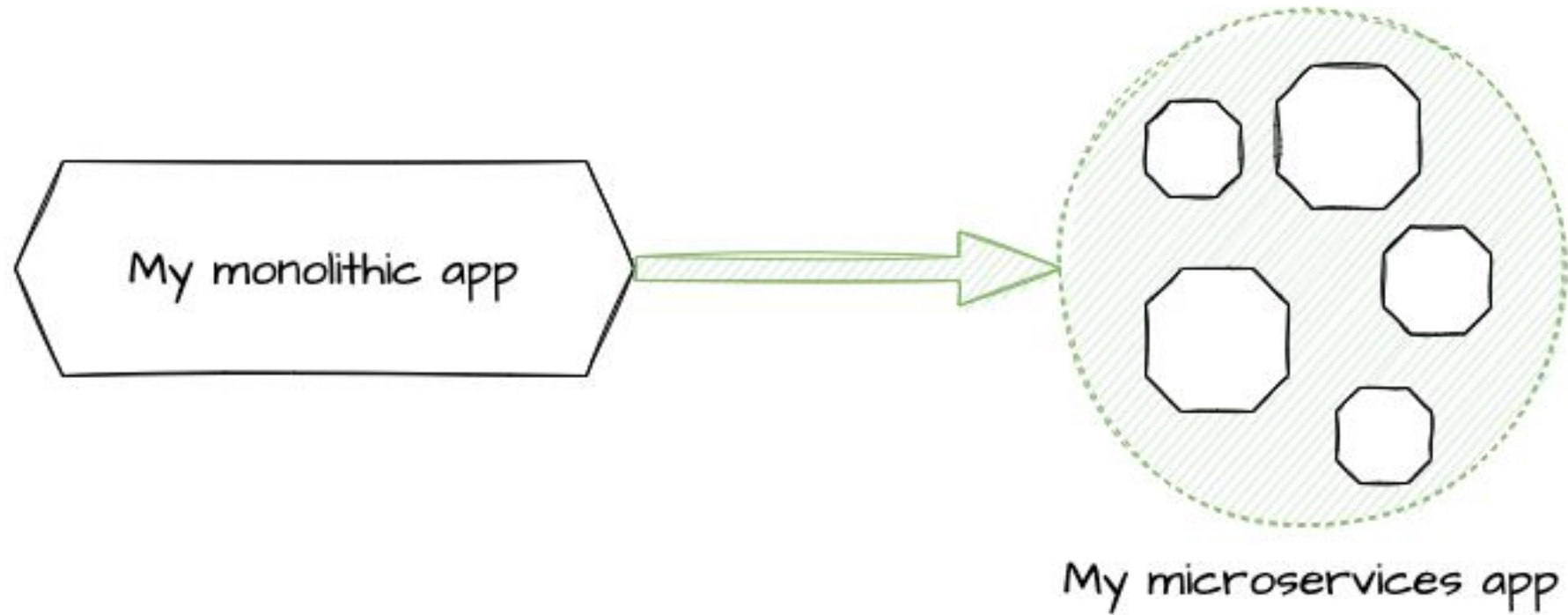
# Service Mesh 3

Ambient mode, traffic shaping,  
app observability



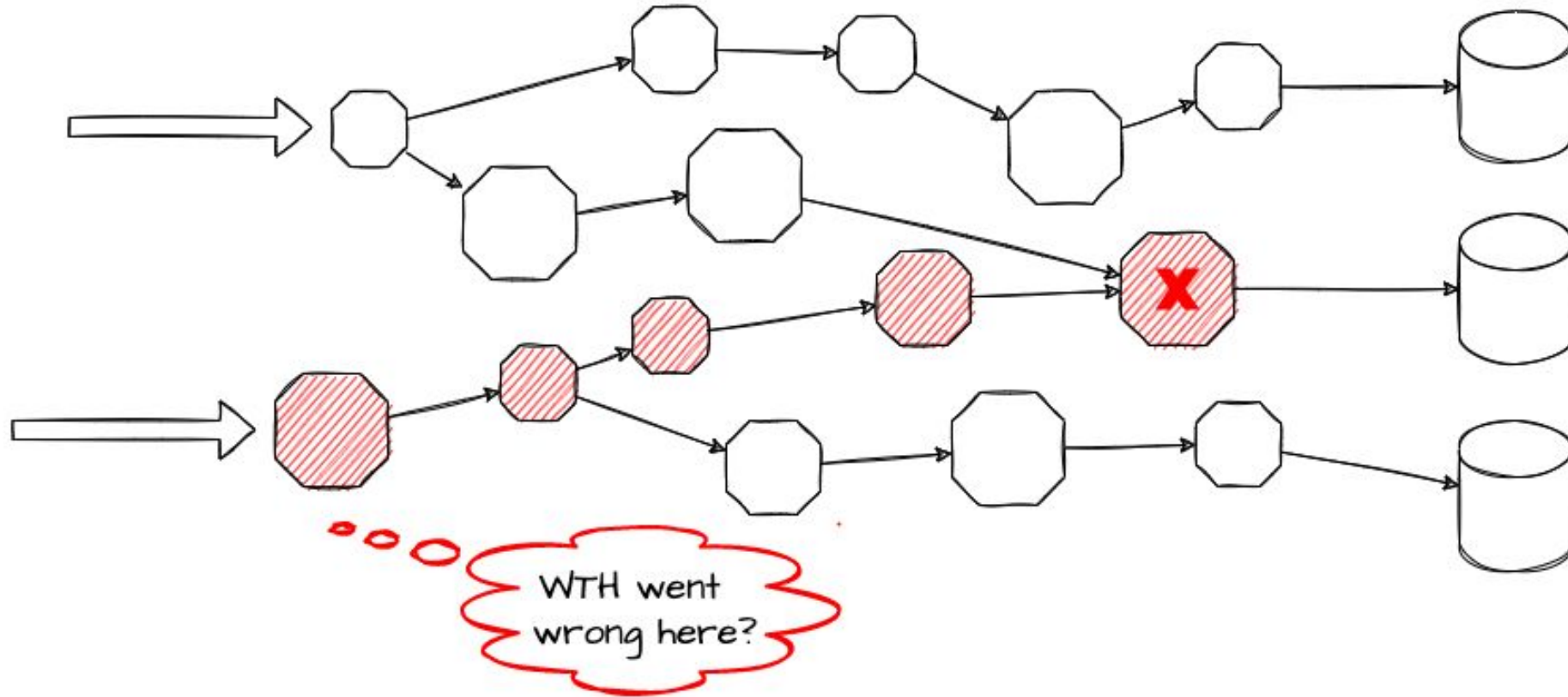
# What is a Service Mesh?

# From Monolith to Microservices...

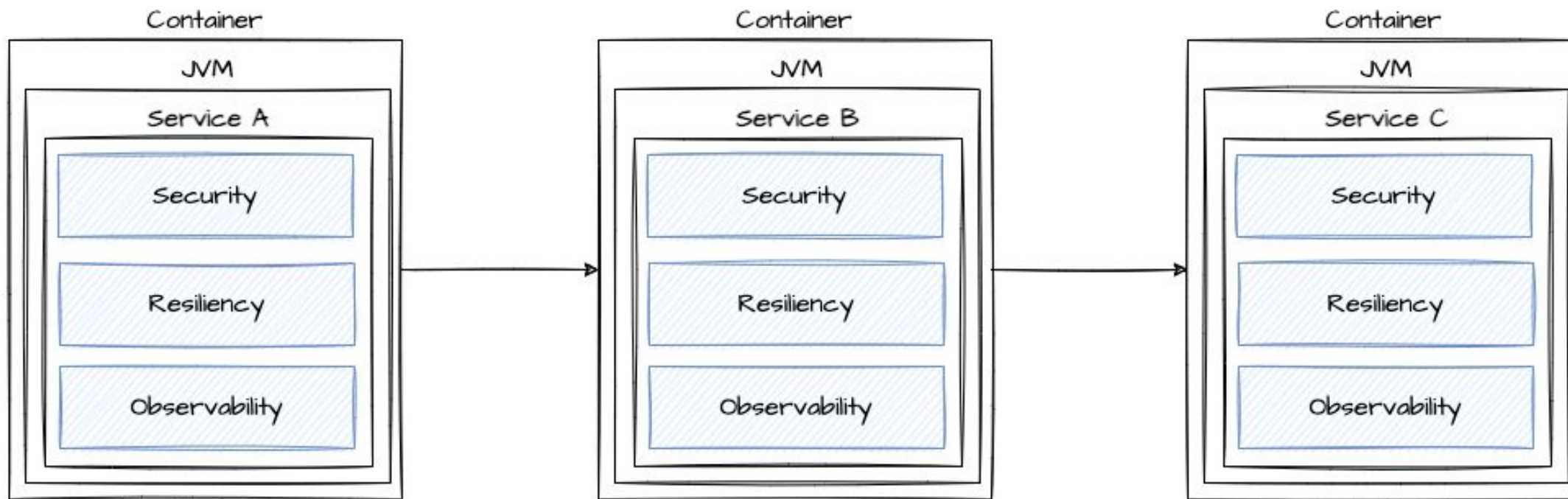




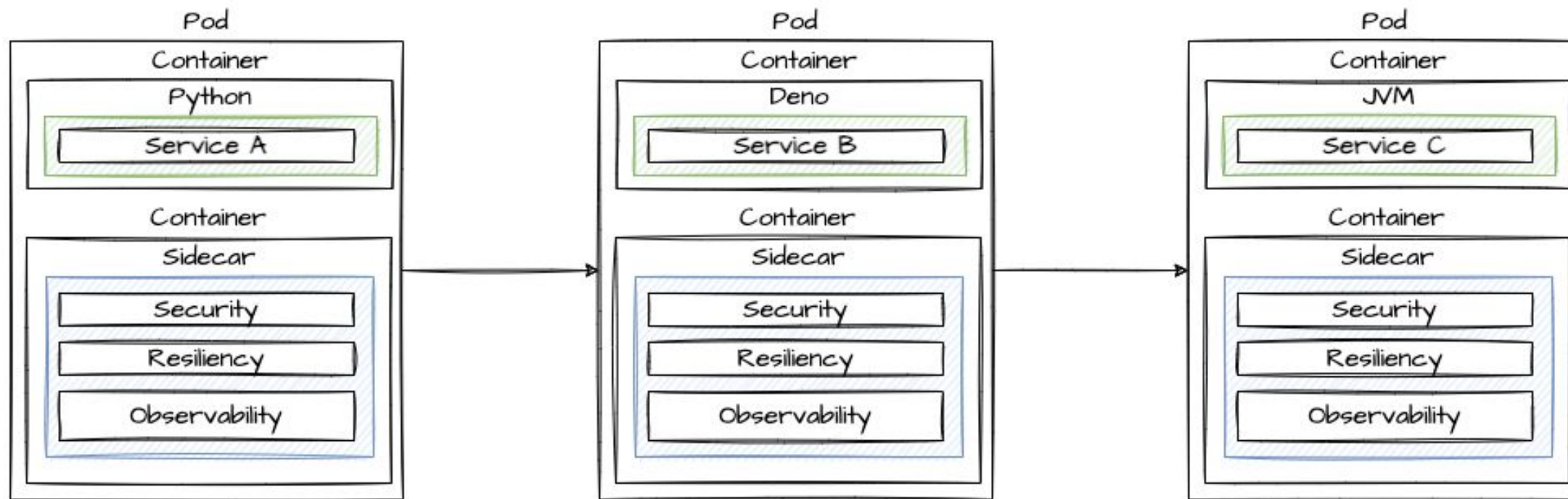
# Entering the beautiful world of Distributed Computing



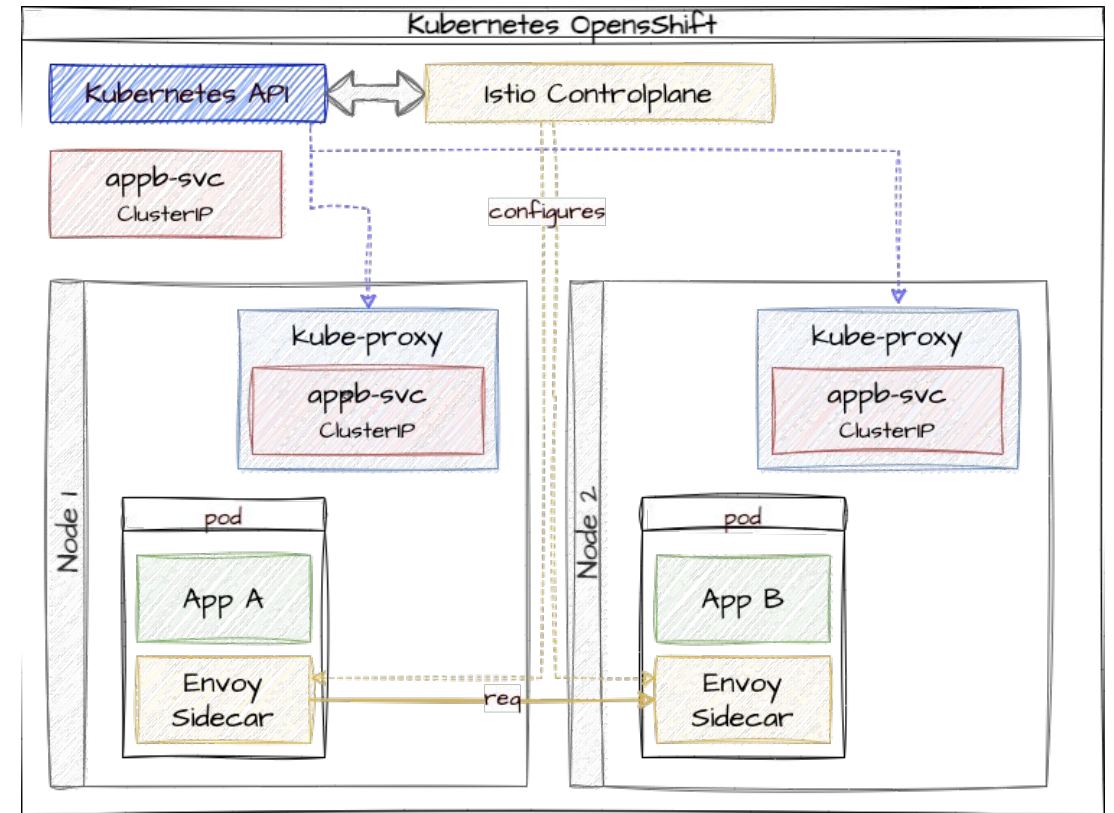
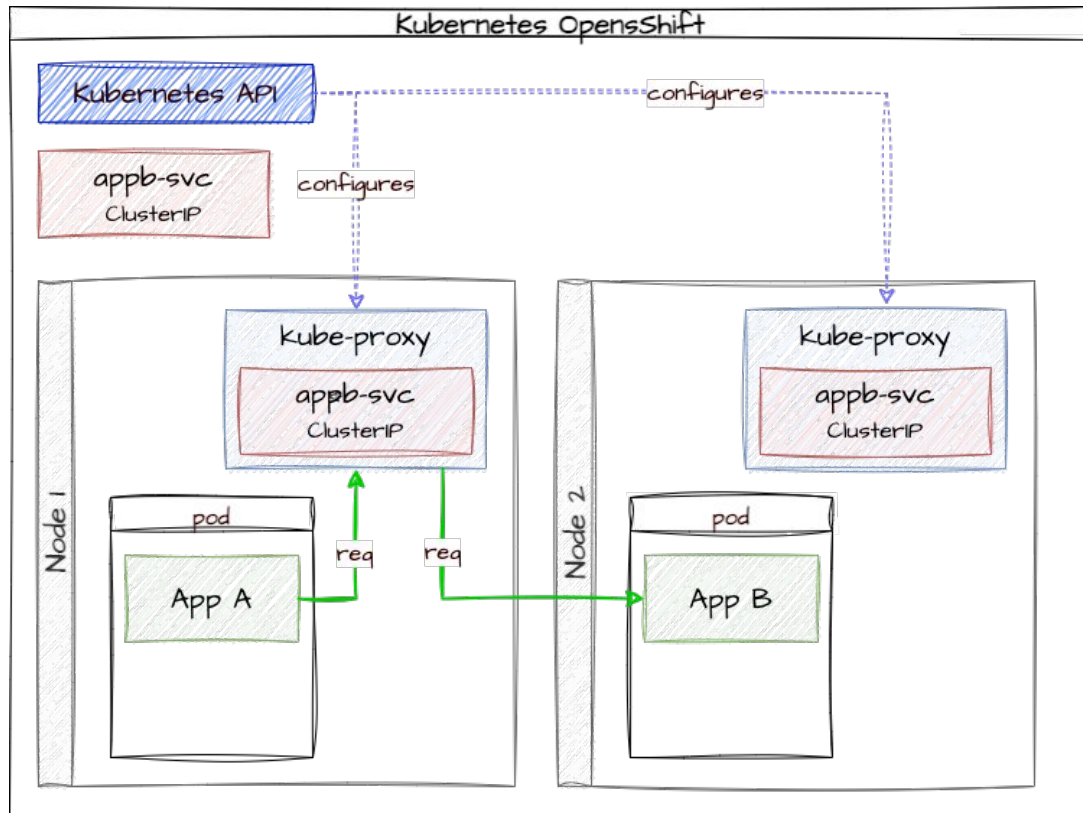
# The Library Service Mesh



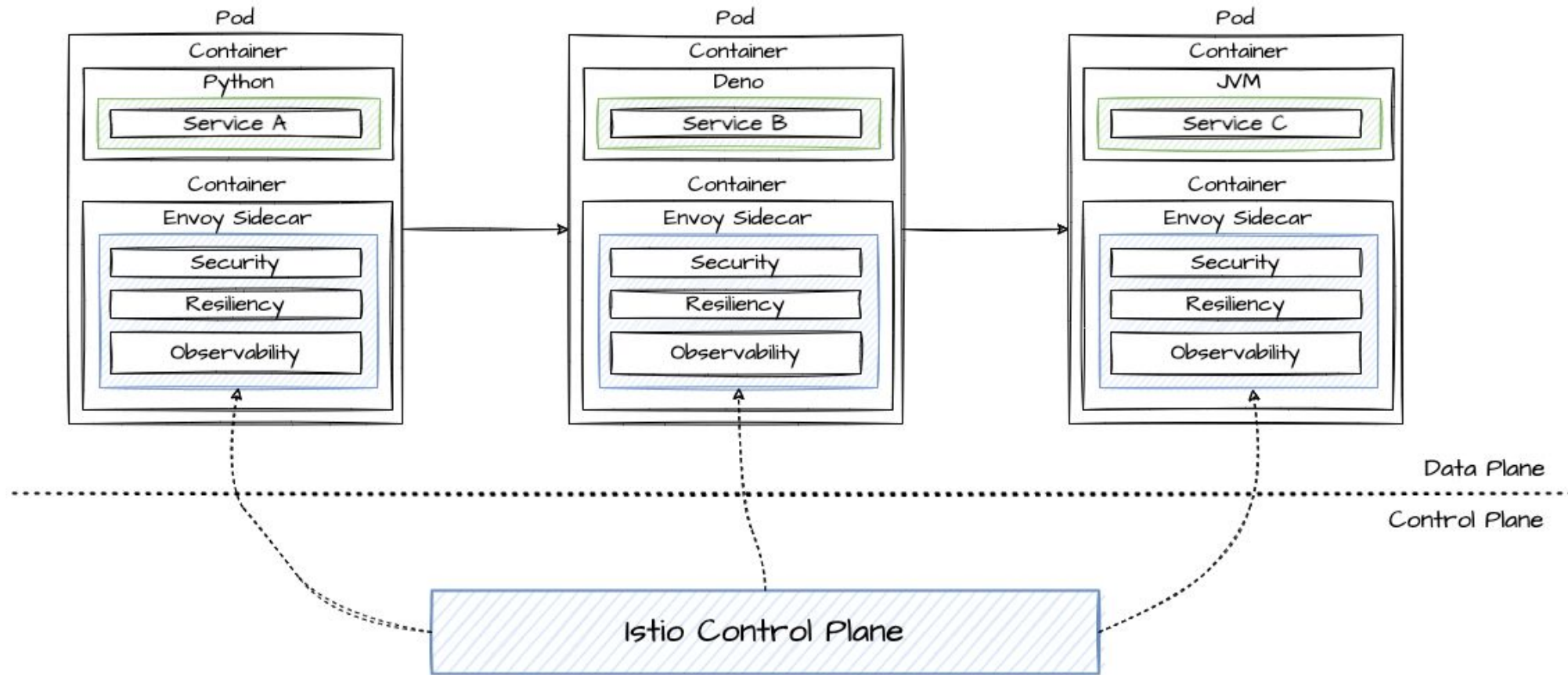
# Offloading functionality to a Sidecar



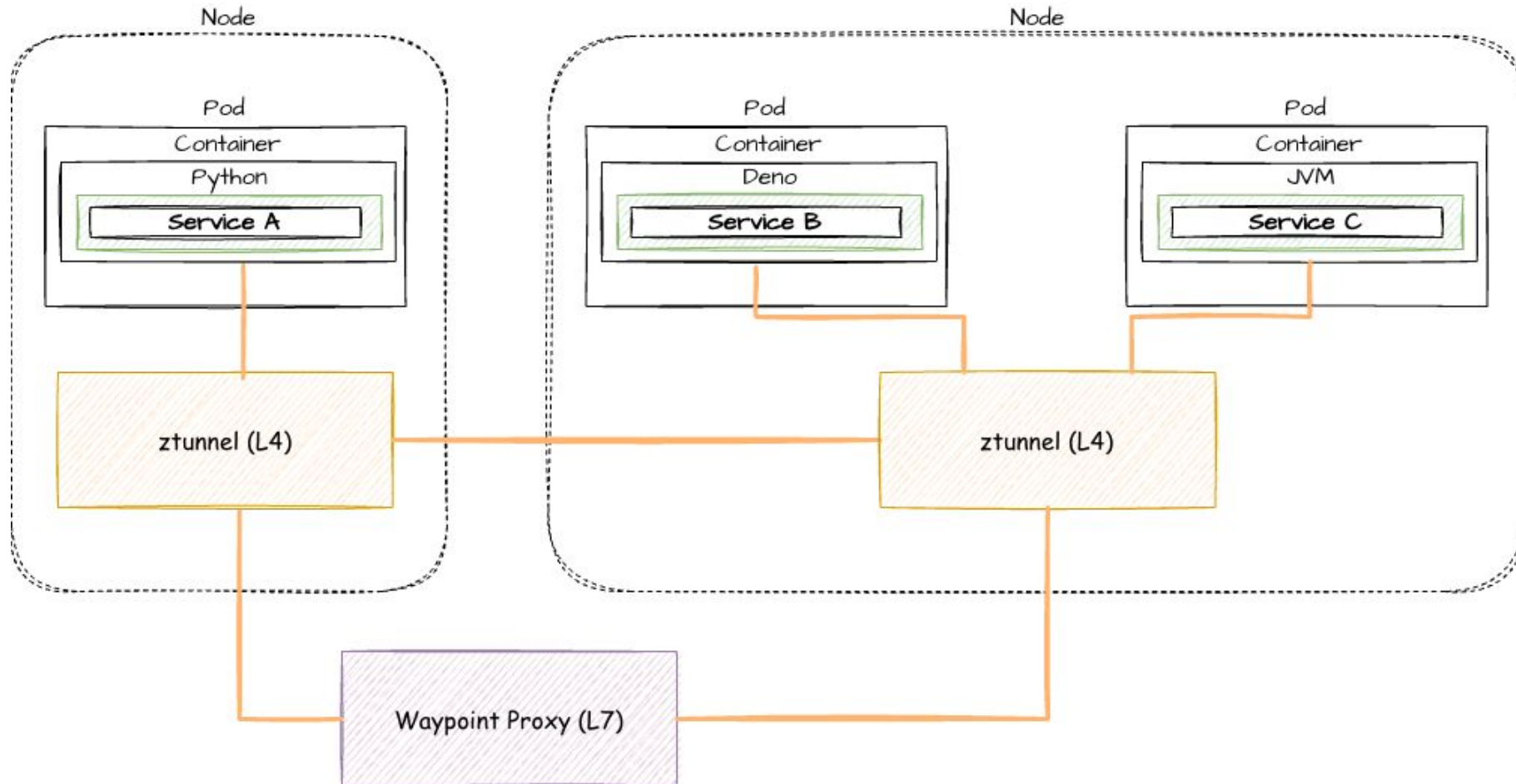
# Routing without and with a Service Mesh



# Service Mesh Data Plane and Control Plane

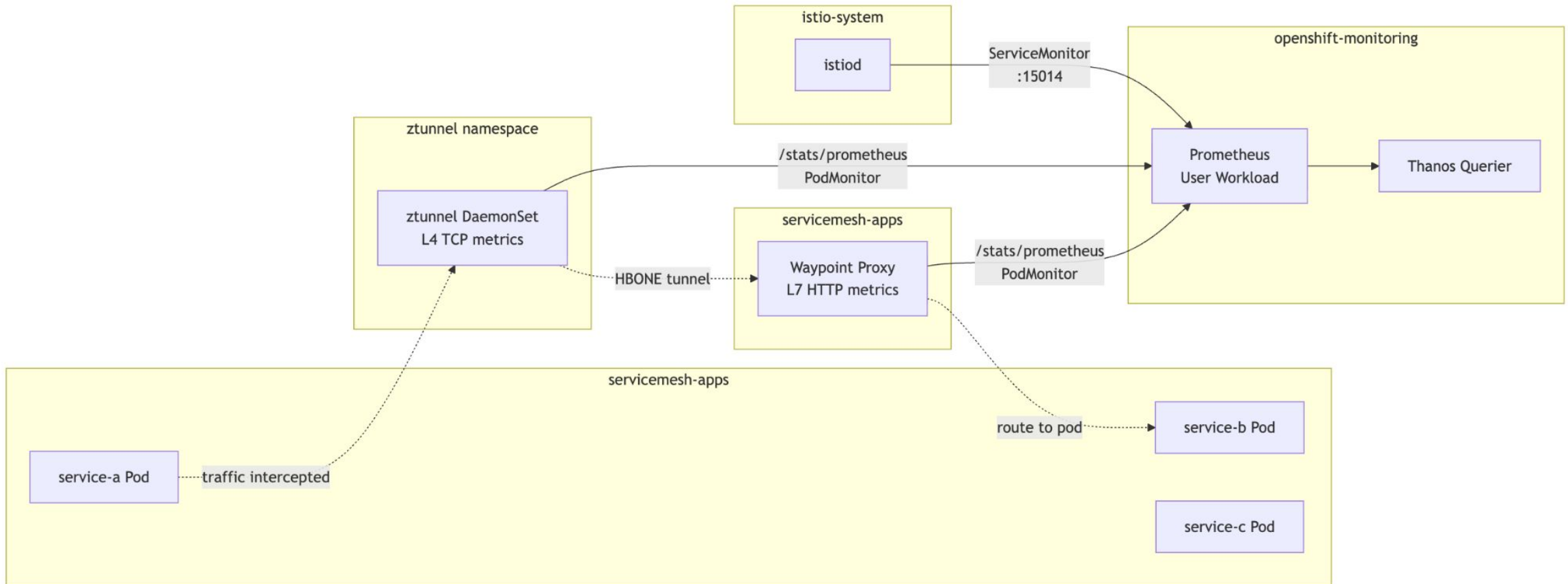


# Ambient (sidecar-less) mode

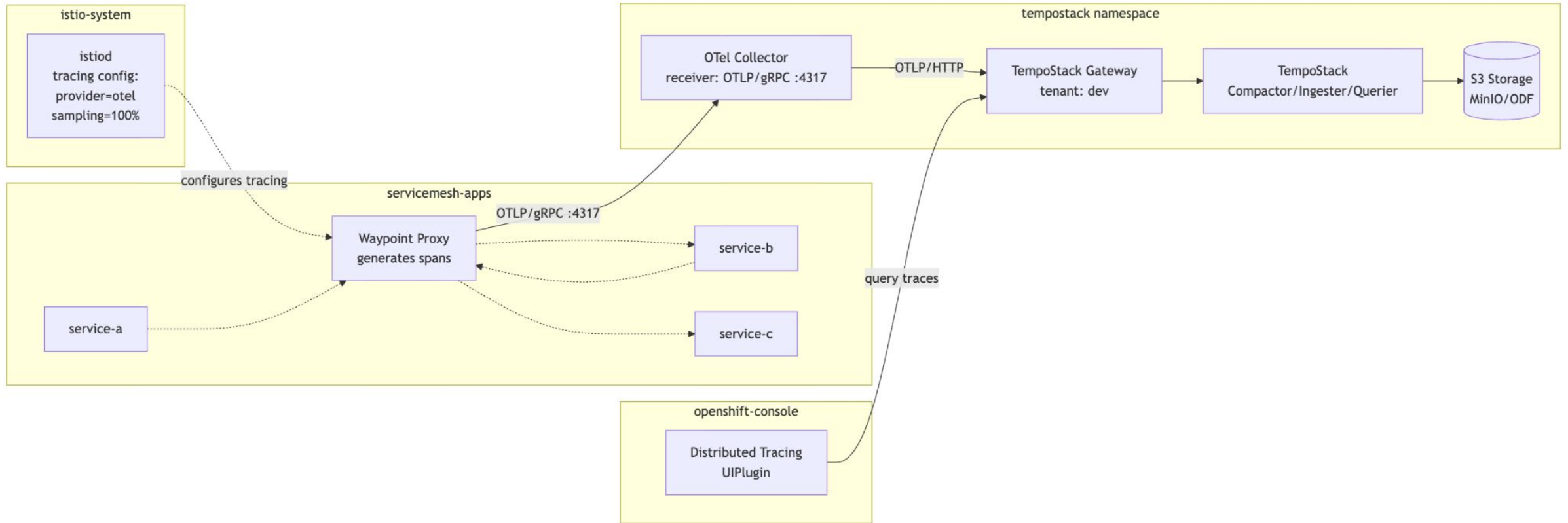


# Observability

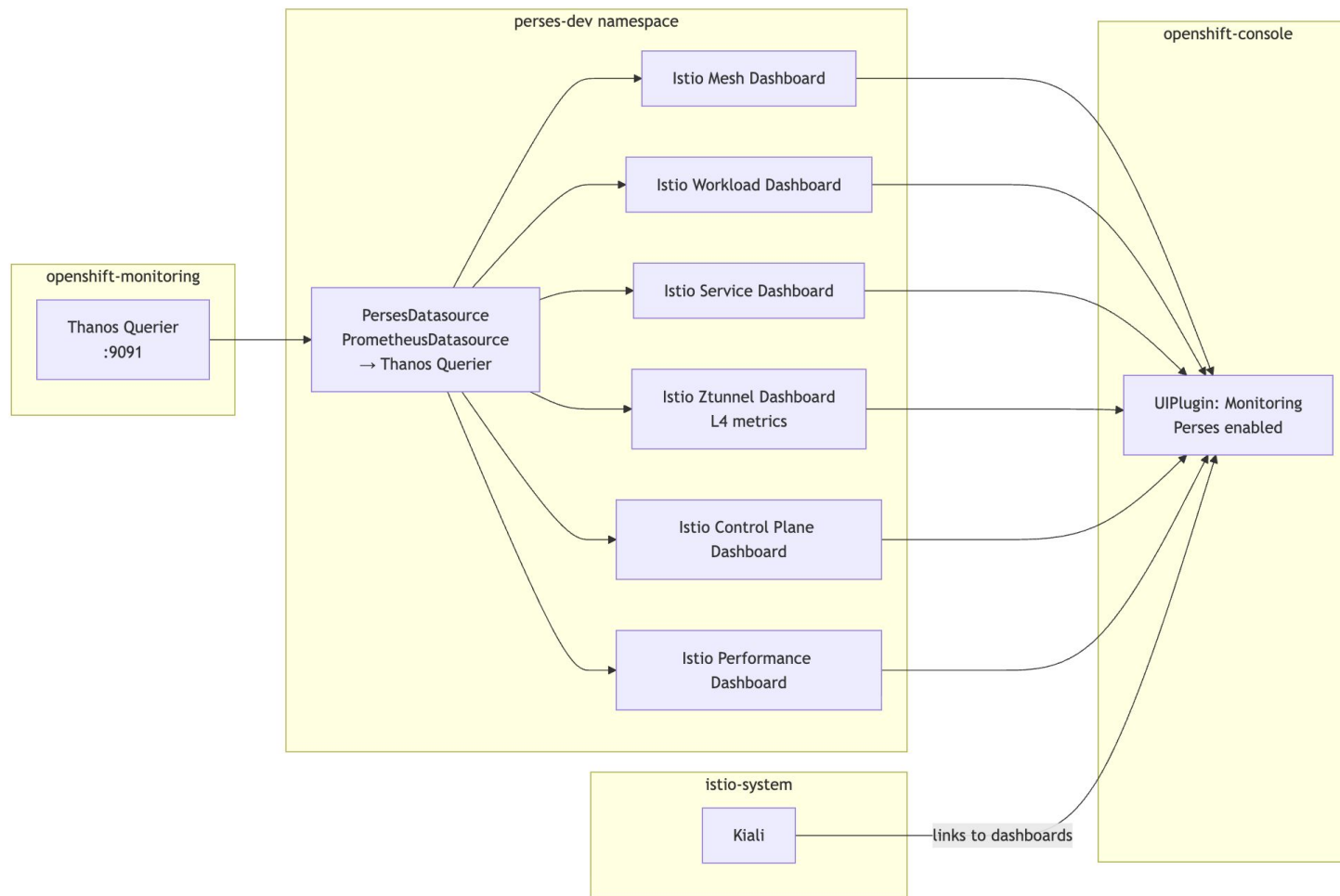
# Metrics (Prometheus + OpenShift User Workload Monitoring)



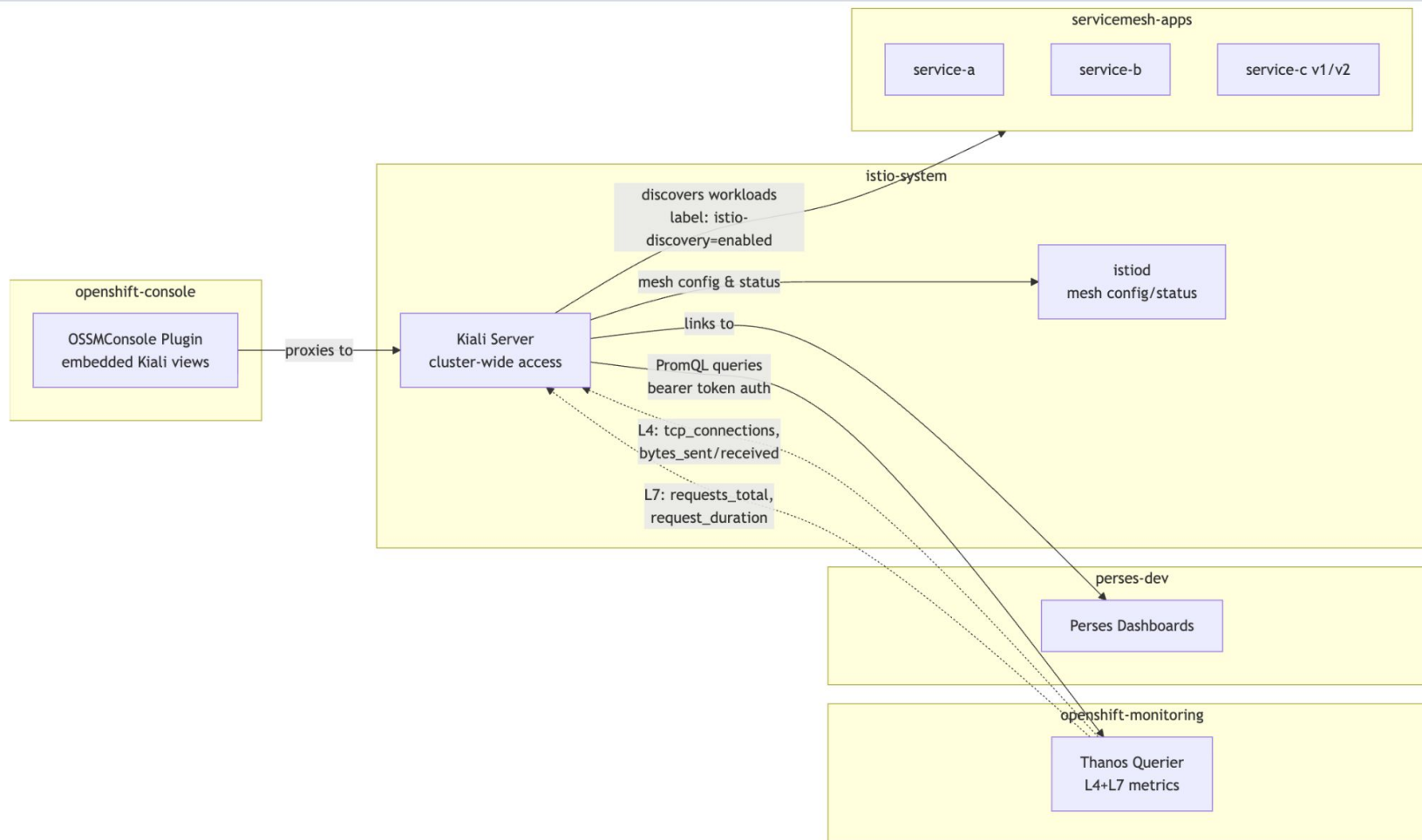
# Distributed Tracing (Tempo + OpenTelemetry Collector)



# Persees Dashboards (Visualization)



# Kiali (Service Mesh Topology & Observability Console)

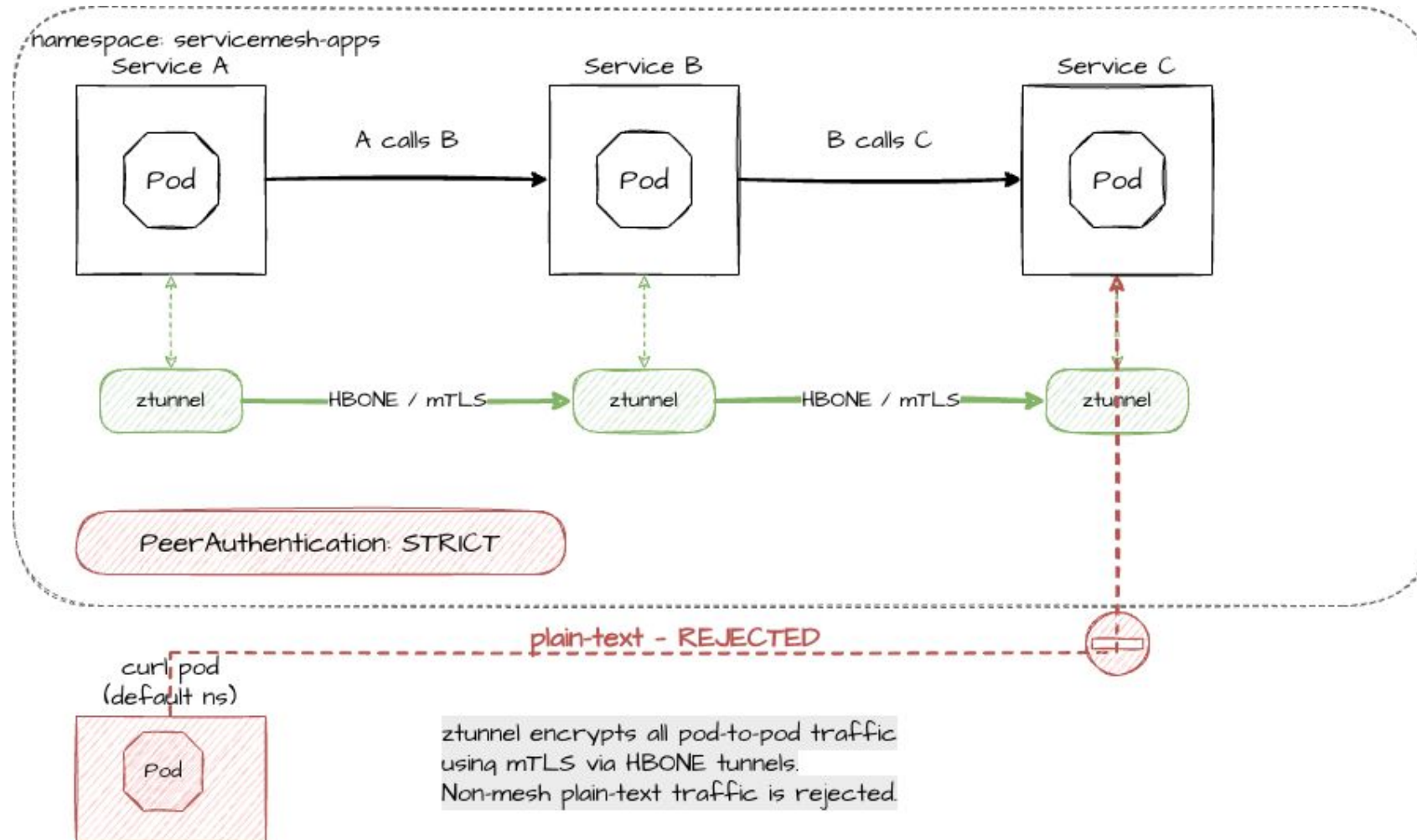


## Summary: End-to-End Data Flow

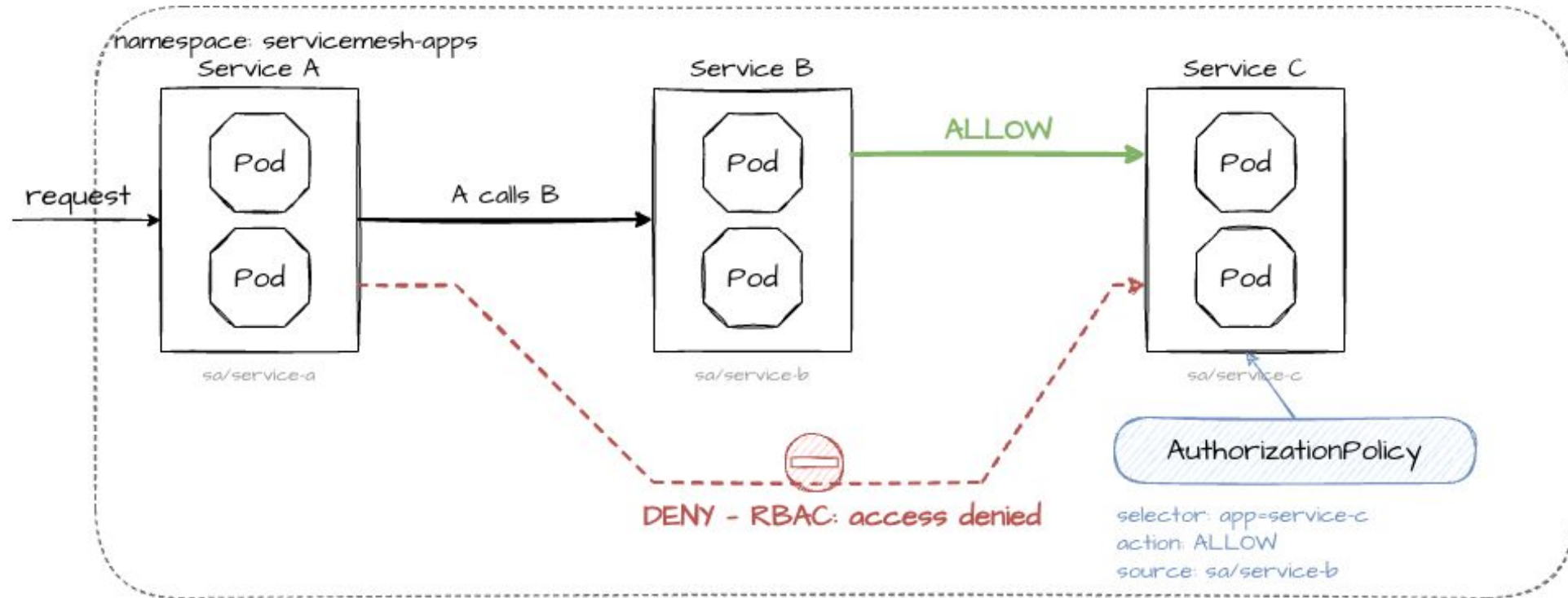
Layer	Source	Metrics Type	Collector	Storage	Visualization
L4	ztunnel	TCP connections, bytes	Prometheus (PodMonitor)	Thanos	Perses (Ztunnel Dashboard), Kiali
L7	Waypoint Proxy	HTTP requests, duration, codes	Prometheus (PodMonitor)	Thanos	Perses (Workload/Service/Mesh), Kiali
L7	Waypoint Proxy	Trace spans (OTLP)	OTel Collector	TempoStack (S3)	OpenShift Tracing UIPlugin, Kiali
Control Plane	istiod	Pilot metrics	Prometheus (ServiceMonitor)	Thanos	Perses (Control Plane Dashboard)

# Sample use-cases

# L4 Use Case: Strict mTLS

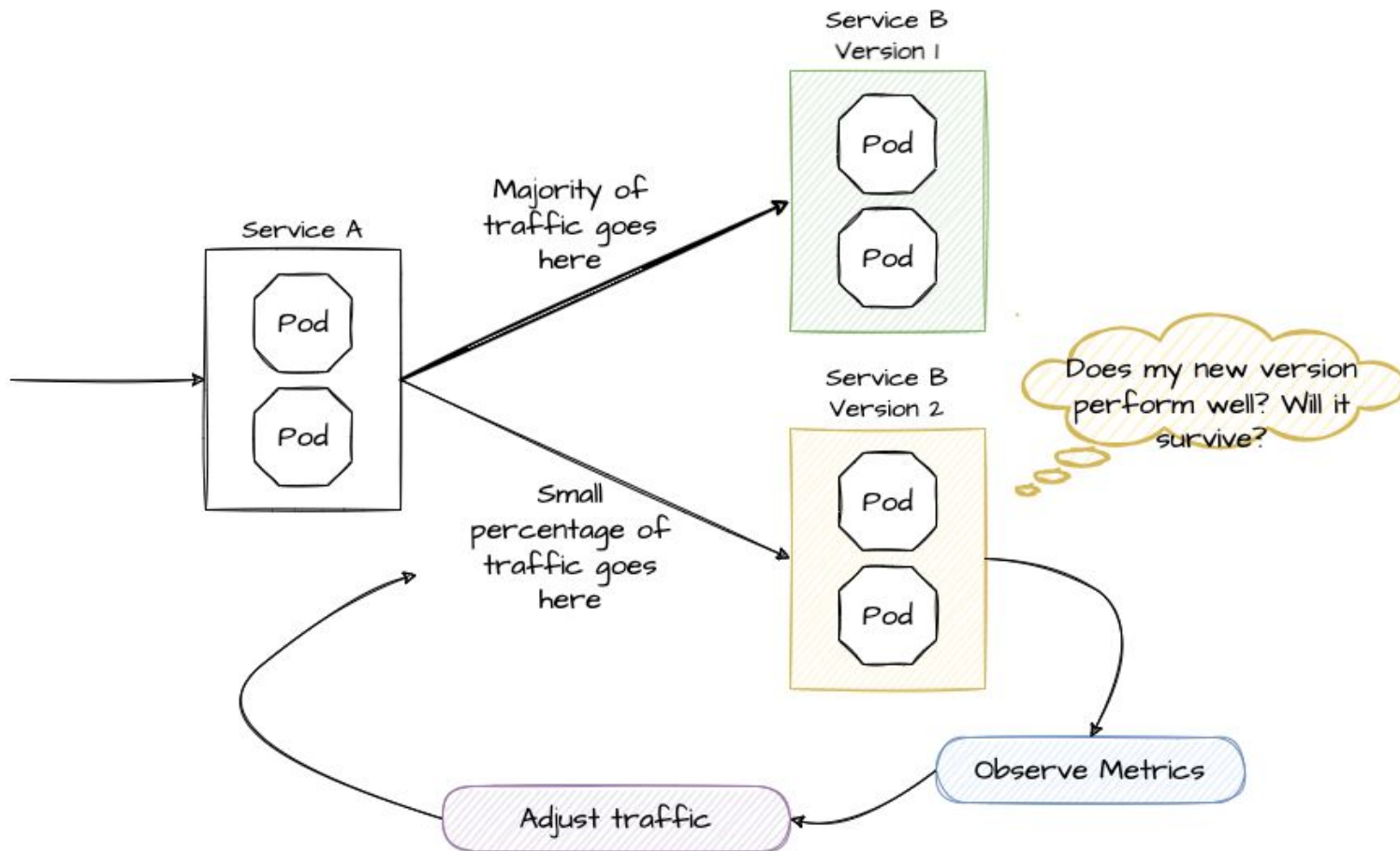


# L4 Use Case: Authorization Policy

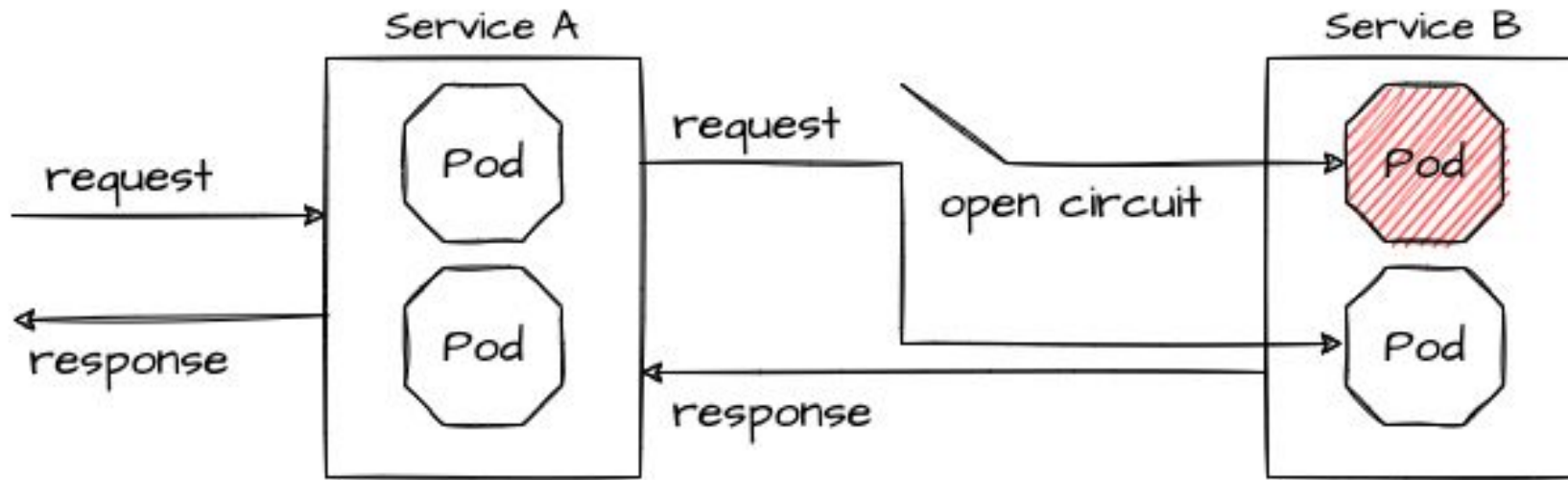


ztunnel checks the caller's SPIFFE identity (service account) at L4 and enforces the AuthorizationPolicy before the connection reaches Service C.

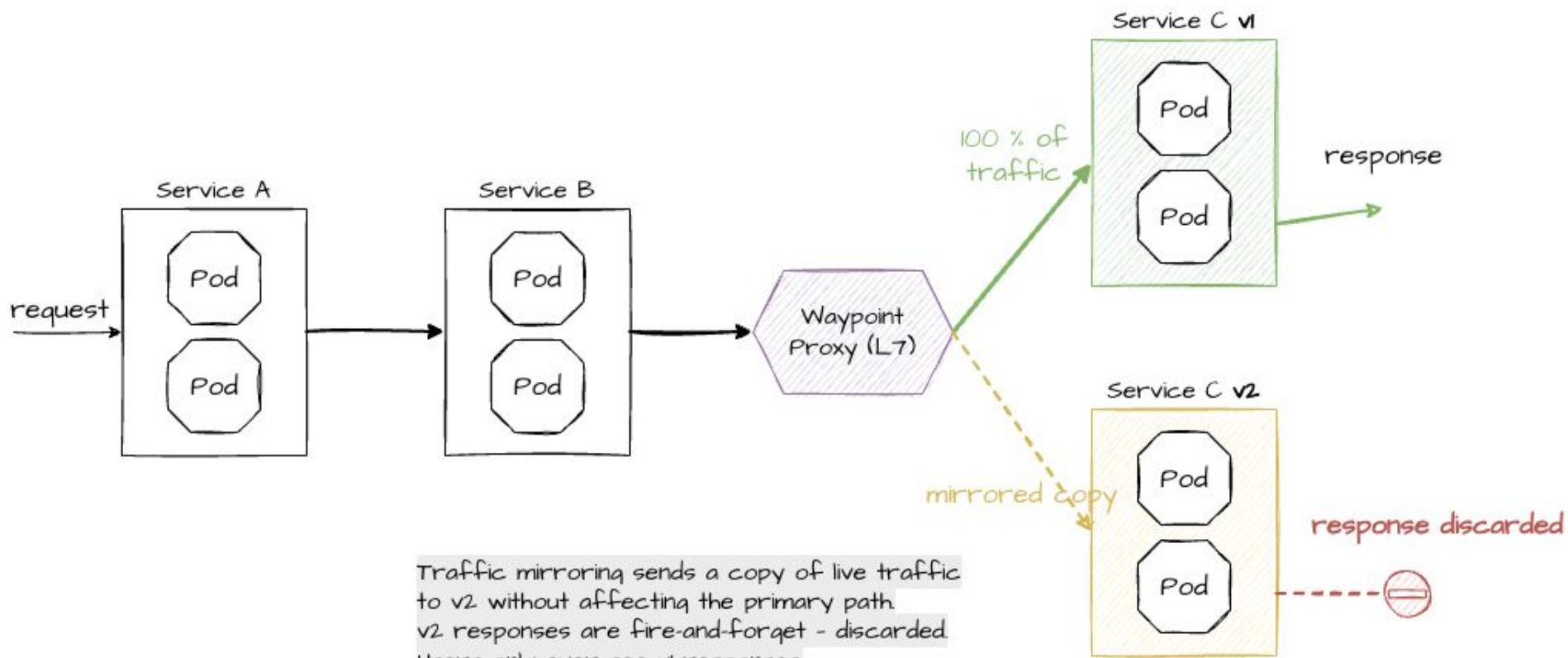
# L7 Use Case: Canary Release



# L7 Use Case: Circuit Breaker & Retry



# L7 Use Case: Traffic Mirroring



Traffic mirroring sends a copy of live traffic to v2 without affecting the primary path. v2 responses are fire-and-forget - discarded. Users only ever see v1 responses.

HTTPRoute: RequestMirror

# Thank you



[linkedin.com/company/Red-Hat](https://www.linkedin.com/company/Red-Hat)



[youtube.com/user/RedHatVideos](https://www.youtube.com/user/RedHatVideos)



[facebook.com/RedHatinc](https://www.facebook.com/RedHatinc)



[twitter.com/RedHat](https://twitter.com/RedHat)