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Optimizing Service Mesh Configurations

Powered by Admiral

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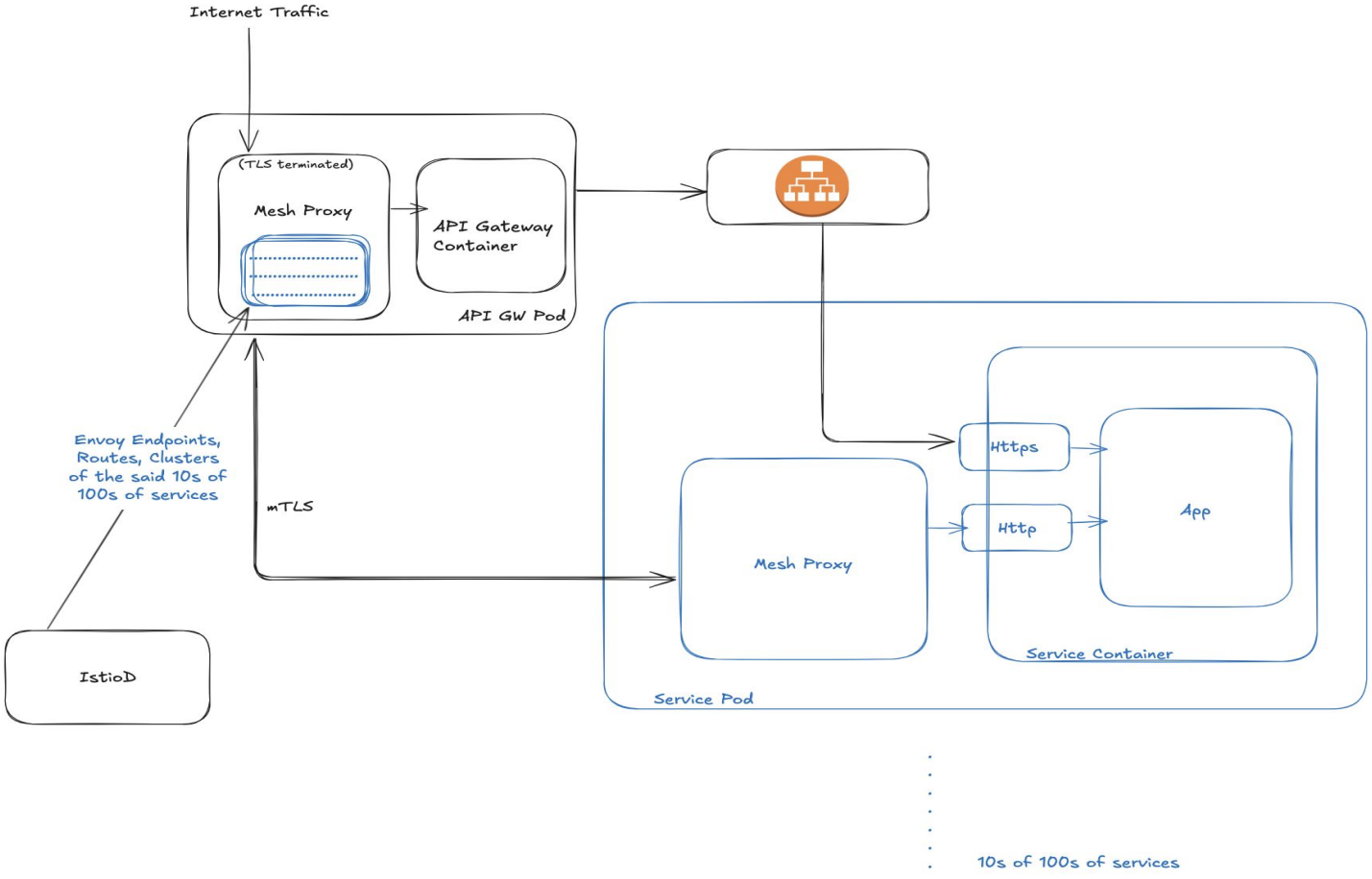
The architecture that started it all!



Service Mesh Complexity: Not optimized for configurations

Classic Example: North South GW

>10K

Mesh-driven service interactions

Shard knows whom to call but platform has one identity in Mesh eyes

<10%

Configurations are actually of use

Proxy's main thread takes longer for DNS resolutions post startup

UH

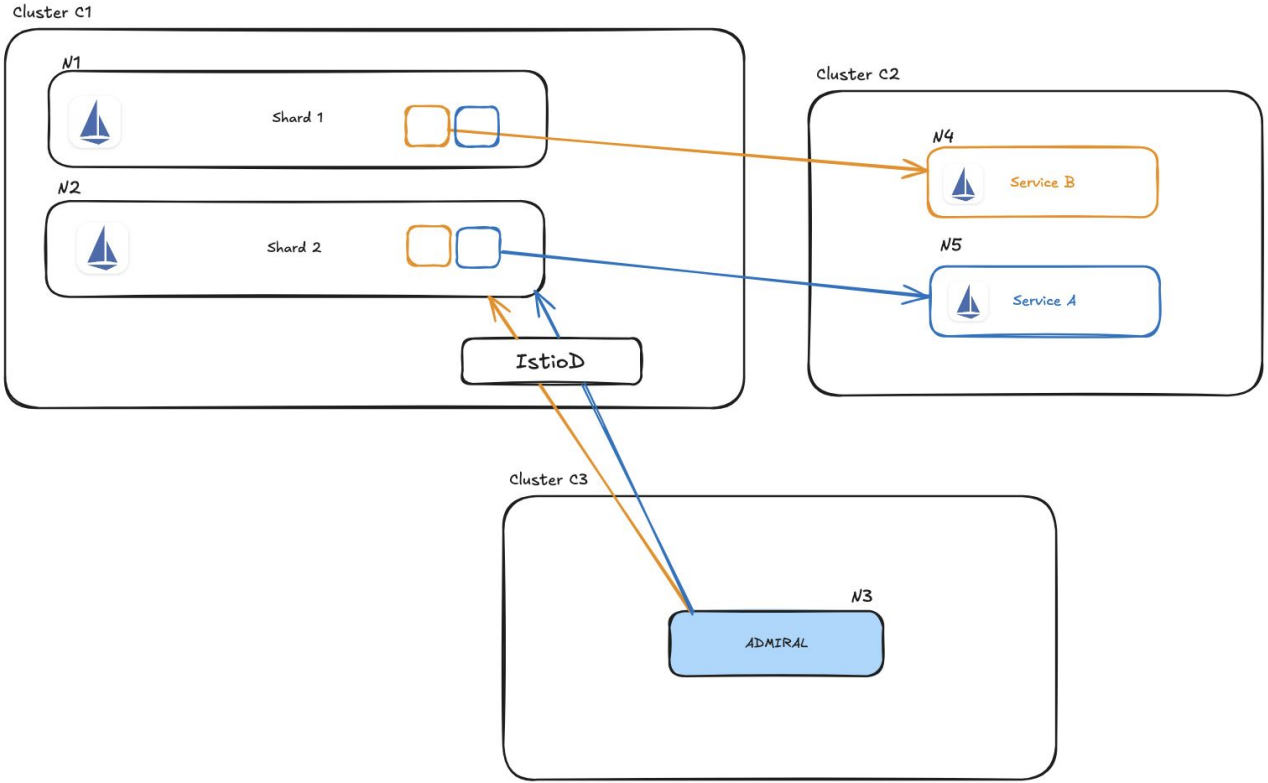
The deadly no_healthy_upstream because of DNS timeouts

Cost through the roof

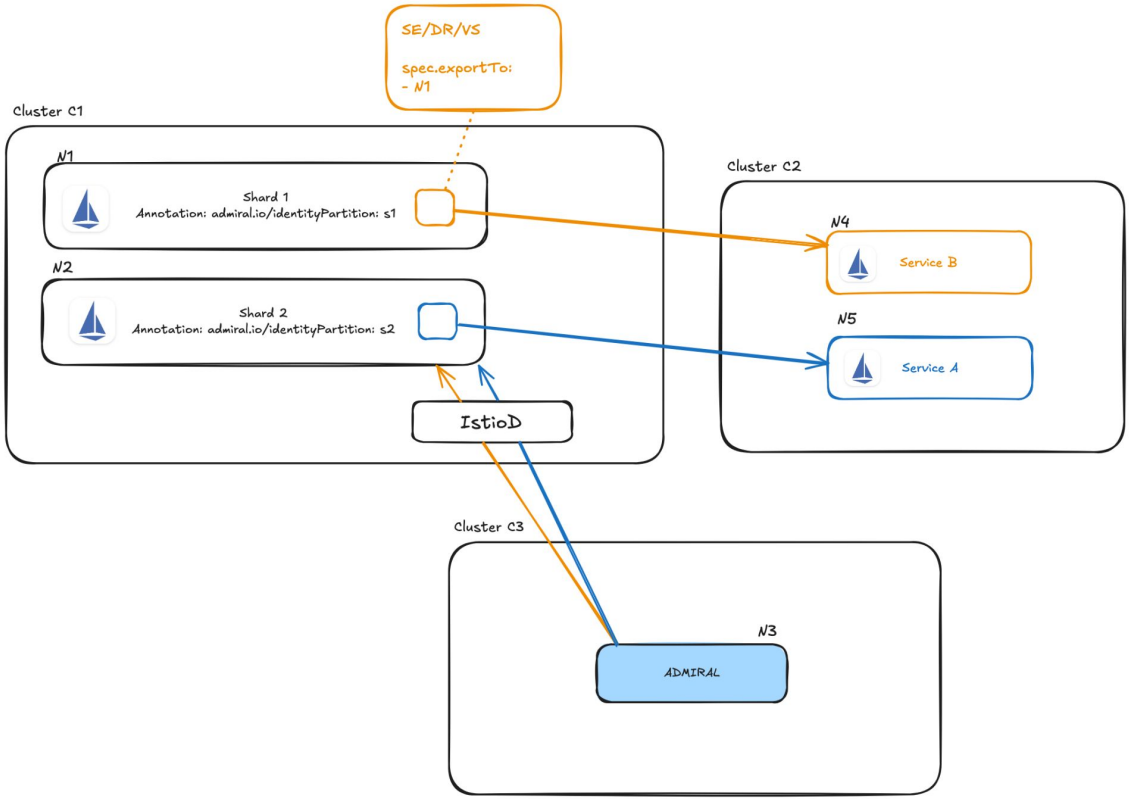
$$$$$$

Low Pod Density
High proxy resource utilization
High Data Transfer Costs

Non-optimized mesh configurations



Unlocking Efficiency: Optimized Approach



The Benefits Breakdown: Cost, Performance and Scale

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KubeCon CloudNativeCon North America 2024

Classic Example: North South GW

25-30

Per shard service interactions. Now operating on shard basis as designed for Non Mesh case- 10% decrease in pod count

Shard knows whom to call AND SO DOES MESH

~90%

Reduction in SE, DR, VS configuration per namespace

Initial DNS resolutions post proxy startup conclude at lightning speed

<80%

Reduction in calls to Node local DNS and >40% reduction of load for CoreDNS. UH because of DNS timeouts ELIMINATED.

Yearly Savings of >$1M

$$

Higher Pod Density, ~75% reduction of proxy resources, >$600K savings for cross AZ data transfer

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Shard Aware Mesh service discovery made EASY!

Check out
https://github.com/istio-ecosystem/admiral