IMESH

SERVICE MESH MODERNISATION · CASE STUDY 2025

Going sidecar-less, at scale.

Mindtickle retired thousands of Envoy sidecars across 300+ production microservices — migrating to Istio Ambient Mesh in six months, with zero downtime and a materially lighter, lower-cost service mesh.

mindtickle	Istio	IMESH
THE CUSTOMER	THE TECHNOLOGY	THE PARTNER

AT A GLANCE

The outcome, up front

A SaaS leader running 300+ microservices on AWS EKS retired thousands of Envoy sidecars — without changing a single line of application code, and without a minute of downtime.

6 mo
End-to-end migration, zero downtime

300+
Microservices now running sidecar-less

~45%
Lower service-mesh operating cost

70%+
Lower data-plane CPU & memory cost

THE COMPANY

mindtickle | Sales & buyer enablement SaaS · American unicorn · 350+ customers worldwide

- 300+ microservices
- AWS EKS
- US & Singapore regions
- 80–90 nodes
- 330M requests / month

Trusted by teams at Splunk, MongoDB, Okta and Cisco.

BACKGROUND

A service mesh that already paid off

Mindtickle first partnered with IMESH to adopt **Istio** across its EKS estate. The goal: make a complex, constantly-scaling network resilient and observable — without diverting product engineers into building circuit-breaking, retries and rate-limiting inside hundreds of services written in Python, Go and Java.

IMESH delivered mTLS on critical routes, single-pane traffic observability, and resiliency controls applied at the mesh layer. The results were real and measurable.

>30%	~50%	Zero	Lower
More resilient & reliable apps	Faster MTTR via unified observability	Service disruption during rollout	Inter-zone data-transfer cost

> *"We selected Istio service mesh over others because it is open source, feature rich and offered native integrations with our existing network and observability software."*
>
> — MINDTICKLE DEVOPS TEAM

! **But as the platform grew past 300 services, the sidecar model that made all of this possible began to carry a cost of its own.**

THE CHALLENGE

The sidecar tax grows with you

In Istio's classic model, every pod runs its own Envoy proxy. That elegance becomes expensive at scale — and Mindtickle was well past the point where it showed up on the bill.

01

Compute overhead on every pod

Each of 300+ services ran an Envoy sidecar in every replica. Across the fleet that meant thousands of proxies reserving CPU and memory around the clock — capacity paid for whether or not traffic was flowing.

02

Operational drag on every upgrade

Mesh and application lifecycles were coupled. Upgrading the data plane meant rolling and restarting application pods across the entire estate — slow, careful, and risky at 330M requests a month.

03

A latency and cost floor

Every request traversed two proxies. East-west traffic between zones added hops and AWS cross-AZ data-transfer charges that climbed in lock-step with the business.

1 sidecar × every replica × 300+ services

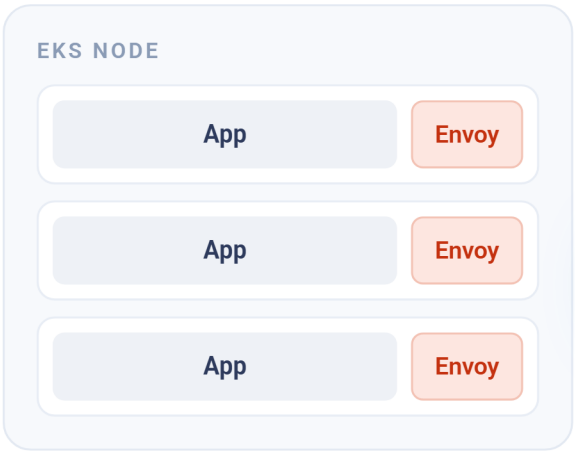
= thousands of proxies

THE DECISION

Istio Ambient Mesh: same Istio, no sidecars

Rather than rip-and-replace, IMESH moved Mindtickle to Istio's **ambient data plane** — keeping their existing Istio investment, APIs and policies while removing the per-pod proxy. Secure L4 connectivity with mTLS shifts to a shared per-node **ztunnel**; L7 features run on **waypoint** proxies only where a service actually needs them.

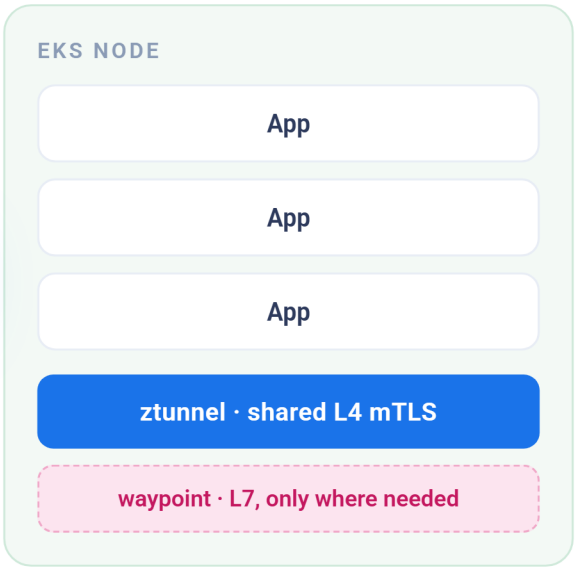
BEFORE · ISTIO SIDECARS



A proxy in every pod — multiplied across every replica.

MIGRATE

AFTER · ISTIO AMBIENT



One shared ztunnel per node. Pods run clean.

Keep the Istio investment

Pay for L7 only where used

Migrate incrementally

THE MIGRATION

Six months, zero downtime

IMESH ran the migration as a controlled, reversible sequence — each step validated in production before the next began. Application teams never had to stop shipping.

Weeks 1–4	**Assess & baseline**	Mapped 300+ services, captured every mTLS, policy and observability requirement, and set hard performance and cost baselines to measure against.
Weeks 5–10	**Pilot in production**	Moved low-risk namespaces to ambient and proved mTLS, telemetry parity and one-click rollback under real traffic.
Weeks 11–16	**Waypoints where needed**	Introduced L7 waypoint proxies only for services using rate limiting, retries and fault injection — paying for L7 precisely where it earns its keep.
Weeks 17–22	**Fleet cutover**	Migrated namespace by namespace with automated health checks at each gate. Product teams shipped features uninterrupted throughout.
Weeks 23–26	**Decommission & tune**	Removed the last sidecars, right-sized nodes against reclaimed capacity, and handed over runbooks under an ongoing SLA.

- 100% mTLS maintained throughout
- Every step reversible
- No app redeploys required

RESULTS

A lighter, faster, cheaper mesh

Same security posture. Same Istio APIs. A fraction of the overhead.

~45%

Lower service-mesh operating cost

70%+

Lower data-plane CPU & memory cost

6,000+

Envoy sidecars eliminated

~20%

Better p99 latency, east-west

300+

Services migrated sidecar-less

100%

mTLS coverage retained

The per-pod proxy was the single biggest line item in mesh overhead. Removing it converted directly into **reclaimed cluster capacity** and a **lower, more predictable cloud bill** — with no compromise on security or control.

WHY IT MATTERS

What this means at your scale

> Ambient gave us back the resources the sidecars were quietly consuming — at our scale, that is real money every month. IMESH ran the whole migration in production without our product teams losing a single sprint.

GK

Ganesh Kumar
Senior Manager, DevOps / SRE · Mindtickle

₹

Cost savings that compound

At hundreds of services and tens of thousands of pods, removing the per-pod proxy is reclaimed capacity and a lower cloud bill — every quarter, not once.

↑

No disruption to product velocity

The migration touched infrastructure, not application teams. Feature delivery never paused — a non-negotiable for a business at peak-traffic scale.

✓

De-risked and expert-led

IMESH owns the leading edge — design, cutover, tuning and SLA — so your teams adopt ambient with a proven playbook, not a science project.

IMESH

PARTNER WITH IMESH

Modernise your mesh with IMESH

We design, migrate, operate and support Istio — sidecar or ambient — for enterprises running mission-critical workloads at scale. Deep Istio expertise, guaranteed SLAs, and a track record of zero-downtime change.

- Architecture & migration strategy
- Production cutover & rollback safety
- Performance tuning & cost optimisation
- 24×7 SLA-backed operations

Let's map your path to ambient.

Contact Us →