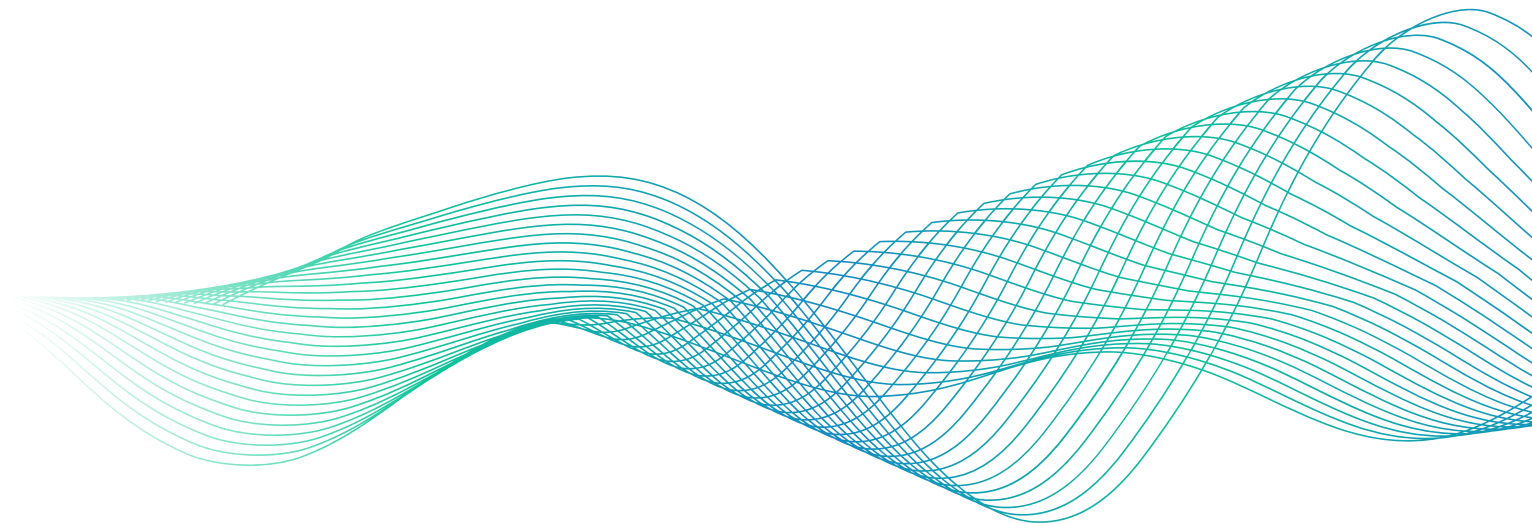# Istio-Based Service Mesh Products Vendor Comparison

Solo.io Gloo Mesh Enterprise takes on Red Hat's
OpenShift Service Mesh, Google's Anthos Service
Mesh, and VMware's Tanzu service Mesh

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Introduction

Service mesh vendors must now deliver value while meeting new challenges

Service-to-service connectivity across a hybrid environment comes with its challenges. Typical enterprise environments consist of containers, Kubernetes, VMs, bare metal, home-grown software, and off-the-shelf software, spanning private clouds, public clouds, and even mainframes. To overcome challenges with application-level networking across a footprint like this, companies must consider this inherent complexity, legacy, and sprawl while getting value that includes:

SOLO.IO INSIGHT

In deploying service mesh for large customers who are challenged to meet strategic goals, we have found that Istio-based platforms deliver the most value for even the most complex situations.

Ease of use

Improved developer and operations productivity

Intent-based declarative configuration and GitOps workflows

Consistent, multi-cluster operations with multi-tenancy

Hybrid/multi-cloud deployments, irrespective of underlying technology

Deep expertise and leadership in the service mesh ecosystem leveraged direct to the customer of underlying technology

Service Mesh Vendor Analysis

What is OpenShift Service Mesh®?

Vendor: Red Hat

Out-of-date Istio version

Customers are modernizing their application architecture, creating efficiencies, and reducing developer burden. However, there are Istio capabilities that have been available for two years but are not included in the OpenShift® Service Mesh. **Users will start on an out-of-date version of Istio.**

Vendor "fork" slows speed of change.

Our customers worry about lagging so far behind and for a good reason: OpenShift Service Mesh is a fork of Istio. Adopting a forked service mesh locks them into the vendor product and stalls the speed of upstream changes.

Lack of enterprise features

OpenShift Service Mesh does not support often-used enterprise features like VMs, integration with external CSRs for Custom CAs, and plugging in with external authorization or rate limiting systems. Additionally OpenShift Service Mesh does not support control plane canary upgrades which increases the risk of upgrades.

Limited expertise means slower deployment time.

Concerned about OpenShift Service Mesh support? Without Istio expertise, it is hard to architect, deploy, and operationalize a mesh. Red Hat is excellent at Kubernetes, but service mesh is not their area of expertise. Many of Red Hat's Istio engineering team have left the firm. Choose a vendor with deep field expertise and upstream leadership available to customers.
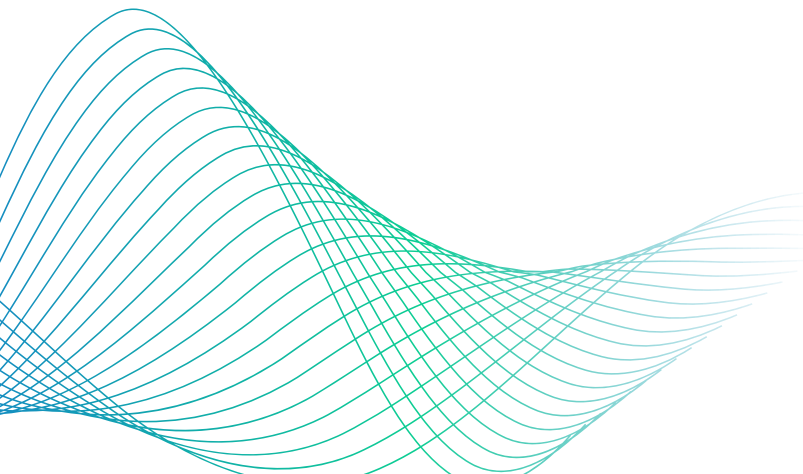
Service Mesh Vendor Analysis

What is Anthos Service Mesh?

Vendor: Google

Will it still be around?

Anthos is a complete Kubernetes platform including service mesh. Anthos, however, does not have the adoption for on-premises deployments Google is expecting and **could end up on the chopping block at Google**. As a result, Google decoupled the service mesh piece.

Light on features

Anthos Service Mesh (ASM) is not comparable to Gloo Mesh Enterprise. ASM is simply a re-skinned build of community Istio with fewer features. Anthos Service Mesh more directly compares to the **Istio distribution we ship with Gloo Mesh** and does not have multi-cluster automation, tenancy APIs, API gateway features, etc.

ASM requires ties to the Google Ecosystem

With ASM, companies are tied into the Google ecosystem. However, Gloo Mesh Enterprise creates a complete, portable solution for application networking across cloud providers. Gloo Mesh Enterprise (and Gloo Mesh Istio) are not tied to any Kubernetes distribution or cloud vendor.

Lack of Istio field support

Google's Customer Engineering teams are thinly spread across their kubernetes platforms, limiting service mesh support. But customers need dependable vendor support with customer-first field engagement models. Solo.io has dedicated field expertise so companies can quickly adopt, scale, and operationalize their service mesh.

Service Mesh Vendor Analysis

What is Tanzu Service Mesh (TSM)?

Vendor: VMware

Push for a bigger stack.

TSM does not work for our customers. TSM has out-of-the-box dashboards but VMware wants adoption of their entire stack, and does not integrate with popular tools like Prometheus, which is a must.

### Security integration may be a non-starter

TSM is rigid in its support for integrating with an organization's existing public key infrastructure (PKI), limited to using the Global Namespace certificate authority and cannot plugin with existing CA/RA providers. There are hard-coded out-of-the-box rotation policies every 90 days which are non-starters for customers. However, Gloo Mesh Enterprise has integrations with commonly used products like **Vault** and **AWS ACM**.

Lack of a consistent API gateway and security

VMware positions their software load balancer (AVI) but also the Istio ingress gateway, Mesh7, and Pivotal spring cloud gateway. These platforms have significant overlap, use differing technologies, and are challenging to configure.

Lack of Istio expertise

VMware lacks expertise to deploy and manage an Istio service mesh. For companies that depend on their vendor knowledge and support, VMware may not be an agile, service-oriented vendor.
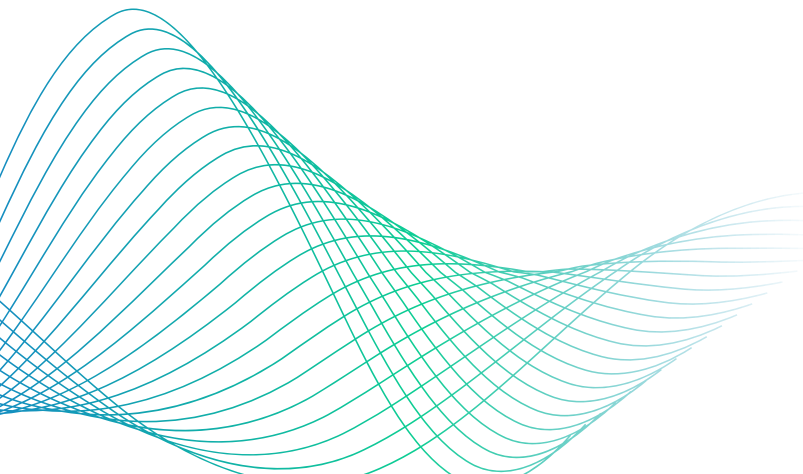
Service Mesh Vendor Analysis

What is Gloo Mesh Enterprise?

Vendor: Solo.io

Rest assured with extensive Istio expertise.

Gloo Mesh Enterprise is an Istio-based service mesh and management plane that simplifies and unifies the configuration, operation, and visibility of the service-to-service connectivity within distributed applications.

Dependable world-class Istio lifecycle and support.

Solo.io offers enhanced distributions of upstream open-source Istio (FIPS, ARM, LTS) and Envoy Proxy, production support, and simplified, centralized Istio and Envoy lifecycle management for greenfield and brownfield environments. All based on best practices learned from some of the largest Istio implementations in the world.

Includes easy-to-manage, federated multi-cluster and hybrid-cloud environments.

Discover, connect, secure, encrypt, observe, and troubleshoot application traffic within clusters, across clusters, clouds, and all major environments from a single management plane.

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Service Mesh Vendor Analysis

OPENSHIFT · Anthos · VMware Tanzu · GlooMesh

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What is Gloo Mesh Enterprise?

Vendor: Solo.io

## Allow end users safe configuration with multi-tenancy.

Easily delegate ownership of service mesh API access, configuration, and policy to different roles. Developers, SRE's, operations, and sys admins all benefit from agility without sacrificing control with multi-tenancy and self-service options.

Zero trust controls for comprehensive, built-in security.

Move beyond perimeter security and implement a Zero Trust model with unified security controls across all your application traffic patterns, including ingress (external client to the application), in-cluster (service-to-service) and egress (application to external client).

Unleash your productivity with proven extensibility features.

Customize API's with out-of-the-box extensions, create custom filters and protocol transformations, or use pre-built integrations for Web Application Firewall (WAF), Data Loss Prevention (DLP), and request and Response Transition. Customize Envoy proxies in any language and connect to legacy applications.
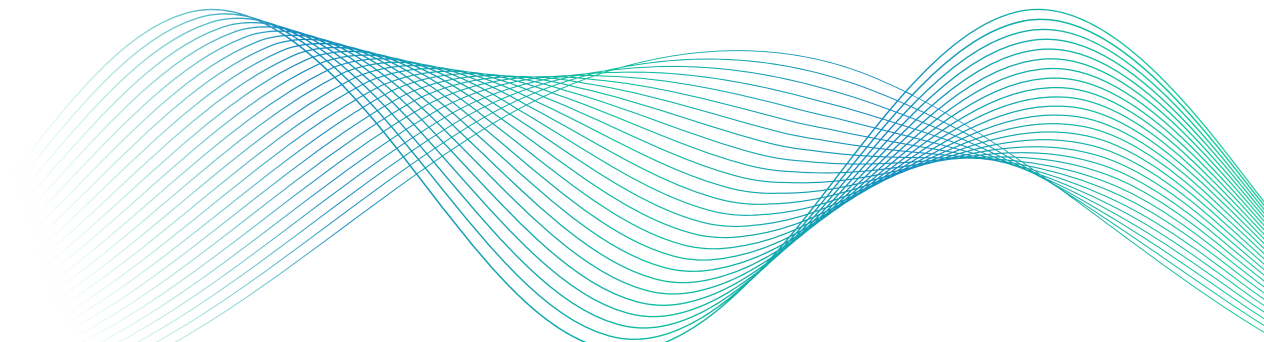
Why you should choose Gloo Mesh Enterprise and Solo.io

Gloo Mesh Enterprise is a complete and portable service mesh solution for application networking across cloud providers without being tied to any Kubernetes distribution or cloud vendor. We've proven that Gloo Mesh Enterprise is more flexible, adaptable, and agile that any other market-leading solution.

Our customer-first engagement model helps our customers adopt, scale, and operationalize their service-mesh architecture faster than an in-house build. We have the frontline experience to provide maturity, support, and expertise that other Istio-based service mesh vendors can't offer.

Still not sure? We've found that prominent vendors like Red Hat, Google, or VMware offer customers similar Service Mesh-related technologies like Kubernetes, virtualization, or a combination (Kubernetes, operating systems, etc.), along with some level of Service Mesh with their Kubernetes platforms.

However, many of these offerings are incomplete, only offering a "check the box" component to encourage customers to buy their entire platform.

At Solo.io, we are proud that Gloo Mesh Enterprise solves application-networking problems head-on without limitations from all-in-one vendor lock-in.

See for yourself.

Features	ANTHOS SERVICE MESH	OPENSHIFT SERVICE MESH	TANZU SERVICE MESH	GLOO MESH ENTERPRISE
Simplified API for multi-cluster management	✕	✕	✕	★ ★ ★
Multi-platform support	★	✕	★ ★	★ ★ ★
Dedicated service-mesh expertise working directly with customers	✕	✕	✕	★ ★ ★
Global name routing and failover	★	✕	★	★ ★ ★
Ease of use	✕	✕	★	★ ★ ★

Ready to learn more about the Istio-based product differences?

We dive a little deeper into the differences between the products in our blog. You can find more information and further analysis on the Istio-based products our engineering team conducted **here**.

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