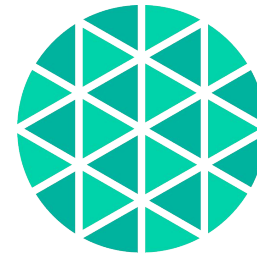


# Journey into the World of **Service Meshes & Meshery**

Adithya Krishna V Sharma, Red Hat

Nitish Karthik, Layer5



January 29th, 2022

DEVCONF.cZ

2022



**Adithya Krishna V Sharma**

Associate Software Engineer, Red Hat  
Meshery Maintainer (Docs), Layer5



**Nithish Karthik**

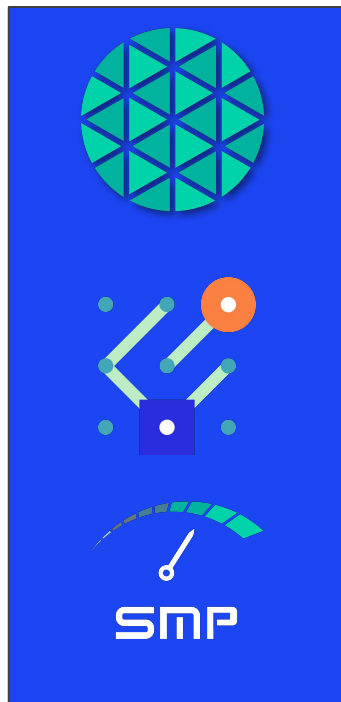
Meshery Maintainer, Layer5

Speakers

# Who we are

# What can you expect from this talk

1. What is a Service Mesh? Why do you need one?
2. Types of Service Meshes
3. What is Meshery?
4. SMI & SMP
5. Service Mesh Patterns
6. Leveraging power of patterns with MeshMap





# What is a Service Mesh?

- A service mesh is a dedicated infrastructure layer for facilitating service-to-service communication typically among microservices.



# Service Mesh Architecture

## Control Plane

- Provides policy, configuration, and platform integration.
- Takes a set of isolated stateless sidecar proxies and turns them into a service mesh.
- Does not touch any packets/requests in the data path.

## Ingress Gateway

## Data Plane

- Touches every packet/request in the system.
- Responsible for service discovery, health checking, routing, load balancing, authentication, authorization, and observability.

## Egress Gateway

## Why should you care?

- Organizations can benefit from a service mesh if you have large-scale applications composed of many microservices.
- Service meshes helps you to manage the communications between your services effectively.
- It decouples the developers and operators. Because service meshes manage the communication layer, they allow developers to focus on adding business value with each service they build, rather than worrying about how each service communicates with all other service.

# Its meshy out there



LINKERD



Istio



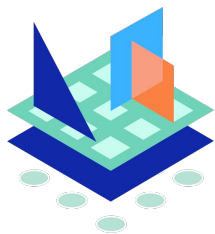
Network Service Mesh



VMware Tanzu



Kuma



Open Service Mesh



NGINX Service Mesh







**Why there are so many of these?**

# How do they contrast?

Categories	Non-Functional	Functional	Tools	
Service Mesh				
A10 Secure Service Mesh	App Mesh	Alibaba Cloud Service Mesh (ASM)	Aspen Mesh	Cilium
Citrix Service Mesh	Consul	Grey Matter	Istio	Kuma
Linkerd 1.x	Linkerd 2.x(Conduit)	NGINX Service Mesh	Traefik Mesh	Maistra
Mesher	SOFAMesh	Octarine	Open Service Mesh	Rotor
Yggdrasil	Zuul	Vulcand	Network Service Mesh	
Client Library				
Akka	Finagle	Hystrix	Ribbon	Go kit
Spring Boot	DropWizard	go-zero		
API Gateway				
Ambassador	Contour	Kong	OpenResty	3scale
Citrix ADC				
Service Proxy				
A10 Lightning ADC	Contour	Envoy	HAProxy	nginMesh
NGINX Plus	MOSN	Traefik	Vulcand	Citrix ADC CPX
Load Balancer				
A10 Thunder ADC	NGINX	Proxygen	Citrix ADC	kube-proxy

[bit.ly/devconf-sml](https://bit.ly/devconf-sml)



# Getting you out of the *mesh*



## MESHERY

Meshery is the open source, service mesh management plane that enables the adoption, operation, and management of any service mesh and their workloads

[meshery.io](https://meshery.io)

### Management Plane

- Provides backend system integration, expanded policy and governance, continuous delivery integration, workflow, chaos engineering, configuration and performance management and multi-mesh federation.

### Control Plane

- Provides policy, configuration, and platform integration.
- Takes a set of isolated stateless sidecar proxies and turns them into a service mesh.
- Does not touch any packets/requests in the data path.

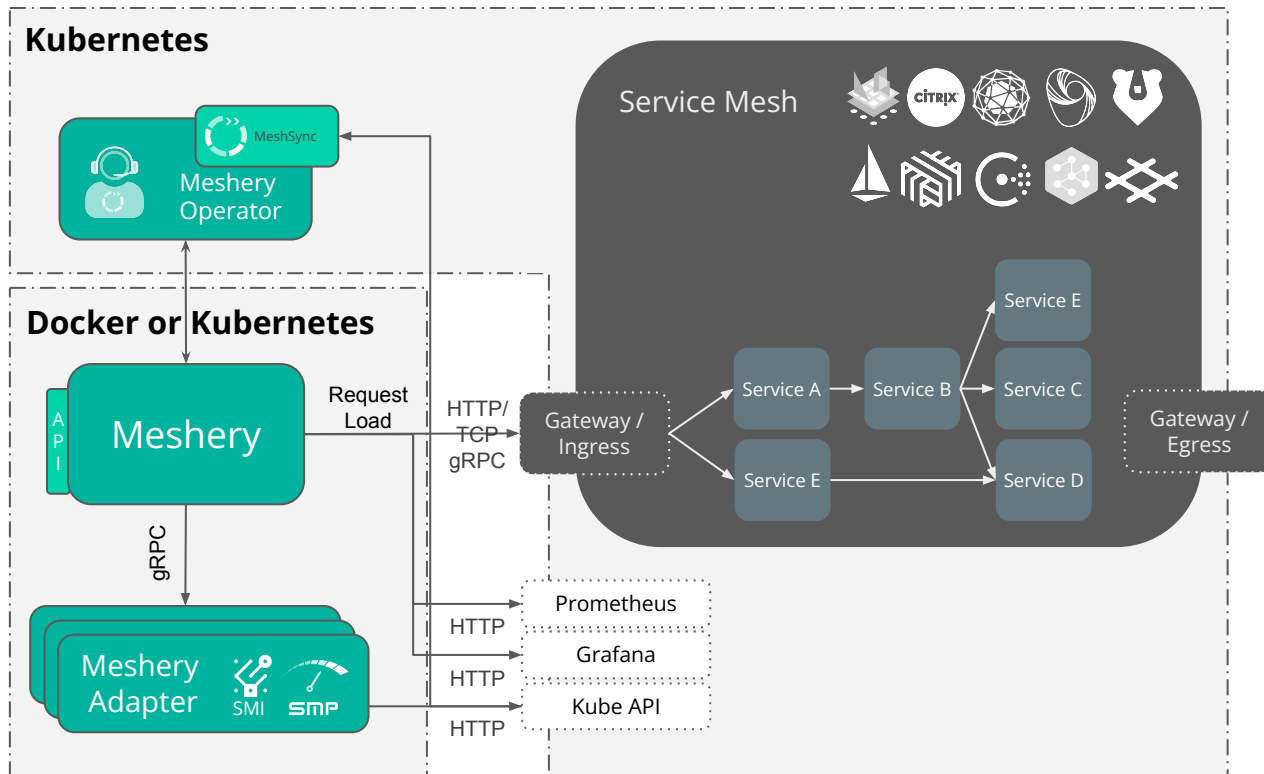
### Ingress Gateway

### Data Plane

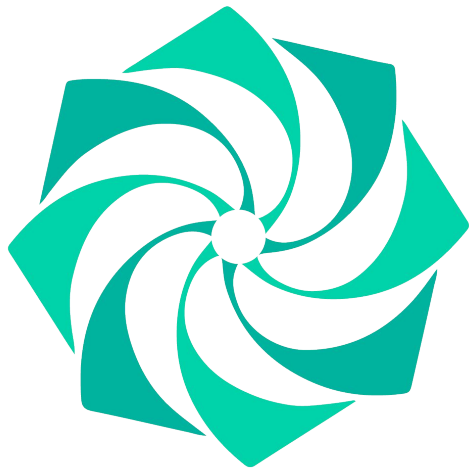
- Touches every packet/request in the system.
- Responsible for service discovery, health checking, routing, load balancing, authentication, authorization, and observability.

### Egress Gateway

# Meshery Architecture



# Service Mesh Patterns



**Service Mesh Patterns enable the business function in simple language.**

Patterns capture service mesh behavior in a single file and an end-user centric way.

**Service Mesh Patterns are service mesh agnostic.**

But, still allow users access service mesh-specific features and differentiation.

**Service Mesh Patterns are reusable.**

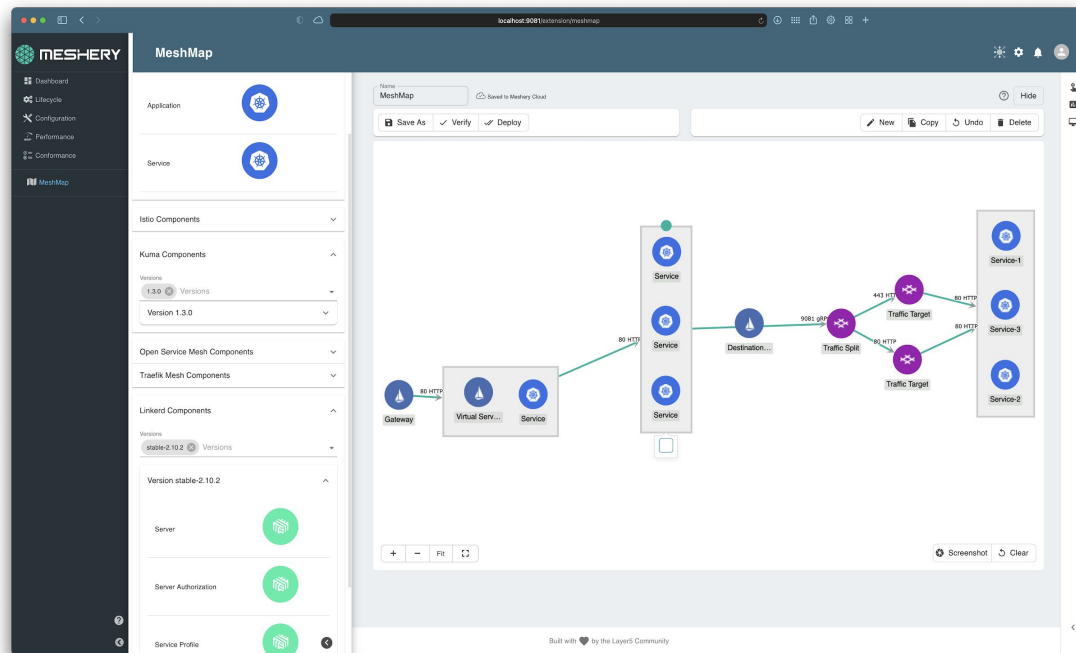
Not only are patterns idempotent, but you can easily copy a pattern and modify to suit.

[github.com/service-mesh-patterns](https://github.com/service-mesh-patterns)

[meshery.io/catalog](https://meshery.io/catalog)

# Leveraging the power of patterns with MeshMap

- A plugin for Meshery.
- Visual designer for kubernetes and service mesh deployments.
- Design, deploy and manage kubernetes based service mesh deployments.

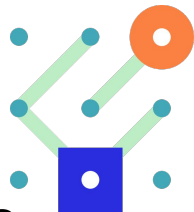


# It's Demo Time 🎉



SMI

## Service Mesh Interface



Service Mesh Interface is a standard interface for service meshes on kubernetes

- Flexibility to support new service mesh capabilities over time
- Innovation of service mesh technology
- Provider Agnostic

<https://smi-spec.io>

SMP

## Service Mesh Performance



Service Mesh Performance is vendor neutral service mesh performance measuring standard.

It provides a universal performance index to gauge a service mesh's efficiency against deployments in other organizations' environments

<https://smp-spec.io>



# Things are getting **#meshy** at Layer5 :)



[\*discuss.layer5.io\*](https://discuss.layer5.io)



[\*twitter.layer5.io\*](https://twitter.layer5.io)



[\*slack.layer5.io\*](https://slack.layer5.io)



[\*github.layer5.io\*](https://github.layer5.io)

# LAYER5



# Thank you for your attention

## Q&A

January 29th, 2022

Don't be a stranger, say Hello to us :)

**Adithya Krishna V Sharma**

Twitter: [@adii\\_kris](https://twitter.com/adii_kris) | LinkedIn: [/in/adiiikris](https://www.linkedin.com/in/adiiikris)

**Nithish Karthik**

Twitter: [@NithishKarthi11](https://twitter.com/NithishKarthi11) | LinkedIn: [/in/nithishkarthik](https://www.linkedin.com/in/nithishkarthik)