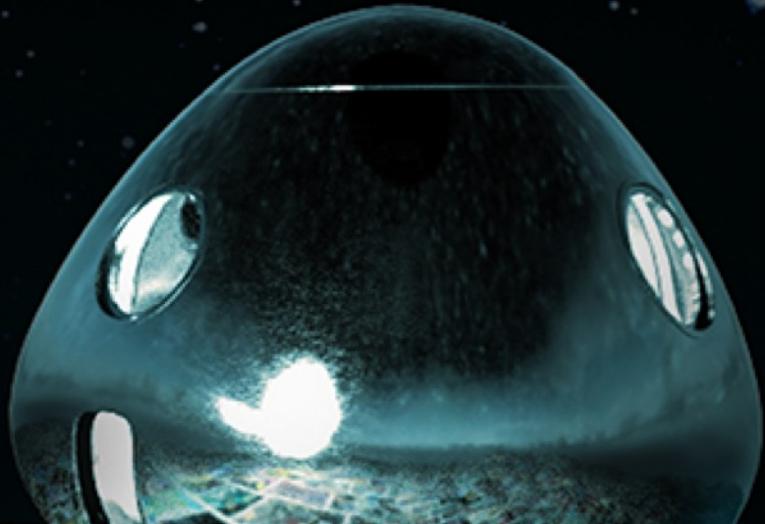




Running Service Mesh with Viveport DevOps

林哲毅 Lin Che-l

forrest_lin@htc.com



VIVEPORT

About Me

Working Experiences

- 1 year as Patent Engineer at AIPT
- 1 year as IT Support at TutorABC
- 1 year as NOC at HTC VIVEPORT
- 2 years as DevOps at HTC VIVEPORT

Hobbies

- Bass Guitar
- Swimming
- Learning Japenese
- BattleTag: rainchei#3364



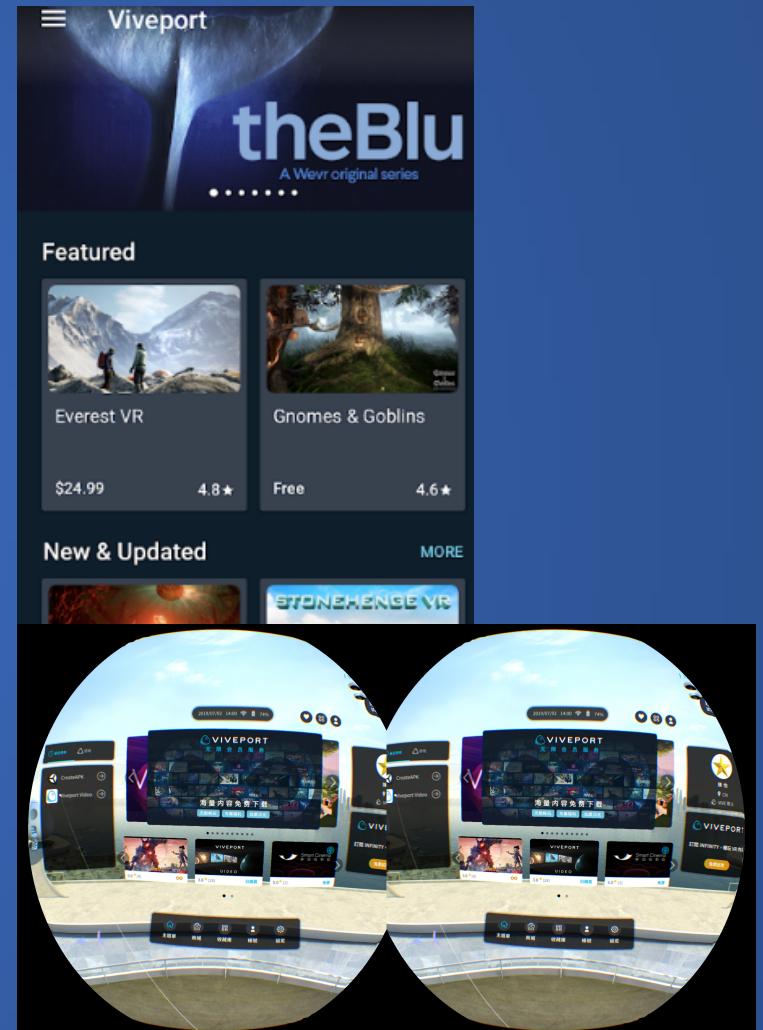
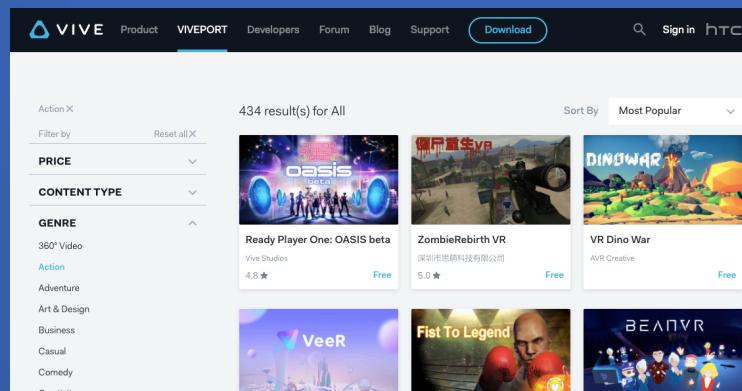
Introduction of VIVEPORT



VIVEPORT™

VIVEPORT Services

- On the web
- Mobile VR
- PC Client
- In VR Headset
- Developer
- Arcade
- Enterprise



Not Only We Provide Games, But Also...

- Games
- Art
- Education
- Enterprise
- Healthcare
- Advertisement
- **Video Streaming**
- And so on...





VIVEPORT

INFINITY

NEW! VIVEPORT Subscription updated to VIVEPORT Infinity

VIVEPORT Infinity is the first unlimited subscription service for VR and offers the best value and choice for VR customers today. This update means titles get paid when played and developers can expect a larger audience, increased revenue, and a healthier software ecosystem. Join under "Program Opt-ins".

All titles	Title	Distribution Target Channel	Target Platform	Last Updated	Status	Purchase Counts	Version Type
	SDET_UPLOAD_1...	Home	Mobile	Jul 1, 2019	In Progress	-	Draft
	SDET_UPLOAD_x...	Home	Mobile	Jul 1, 2019	Published	-	Public

VIVEPOWER STATION
Content Review
CMS Admin v0.2.1

Store Operation

- Campaign v0.4.0
- Review v1.0.25
- Blacklist v1.0.4
- Options v1.0.3

Backend Services

您專屬的虛擬遊樂世界

Viveport Arcade 提供 700 種以上的內容品項，是世界最大的 VR 虛擬實境娛樂場平台內容供應商，預計至 2018 年底建佈的機台將會突破 2,000 座。

娛樂內容品項種類 動作類 冒險類 親子娛樂類 教育

SUPERHOT VR: Arcade Edition \$5/小時 | \$49.99/月 Action Shooter 13+

Skyworld: Kingd... \$4/小時 | \$39.99/月

VDA WINTER: APEX CONSTRUCT \$1/小時 | \$9.99/月

Apex Construct \$1/小時 | \$9.99/月

BOSSUR \$5/小時 | \$49.99/月

SKYRACE \$5/小時 | \$49.99/月

VR宇宙的神秘寶石
跳過漫長的旅程進入未知世界
我們挑動了你可能沒有聽過的最好的VR遊戲

HIGHLIGHTS

- New In Infinity
- New And Updated
- Most Popular
- Vive Arts
- ARTE Trips
- Featured For Windows MR

FEATURED IN INFINITY

- SYNTH RIDERS NT\$318
- DREADHALLS NT\$278
- SKYWORLD KINGDOM BRAWL NT\$226

GENRE

- 360° Video
- Action

VIVEPORT INFINITY Start Now

Roles Composition

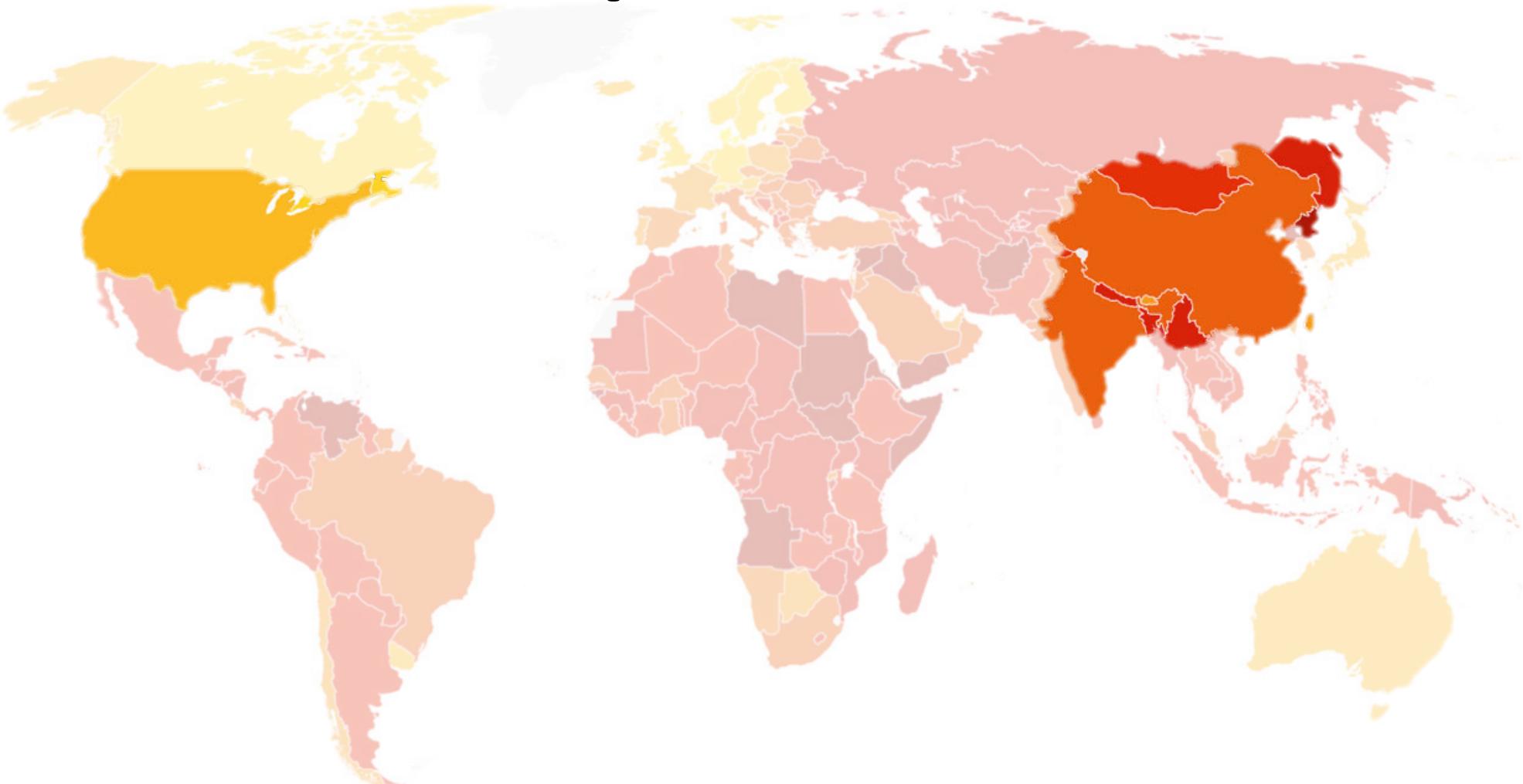
Marketing

Product Owner

Designer

Operation

Engineering



VIVEPORT™

Overview

- Talk about why we (VIVEPORT) choose to run on Kubernetes/Service Mesh
- Learn the basics of Kubernetes/Service Mesh
- Getting familiar with Istio
- Live Demo*

[*] better to install kubectl/minikube beforehand

Live Demo

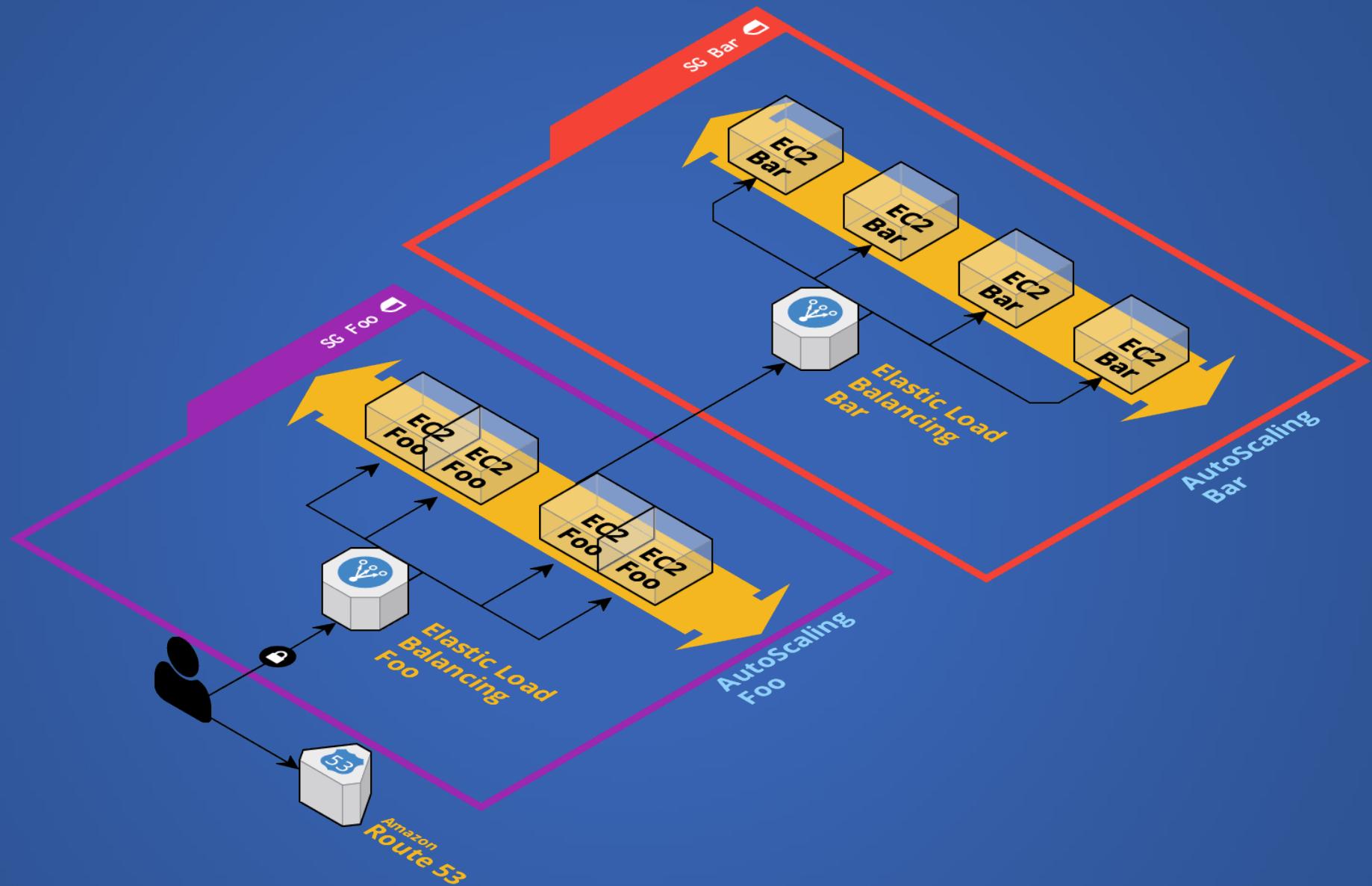


viveport.com/istio

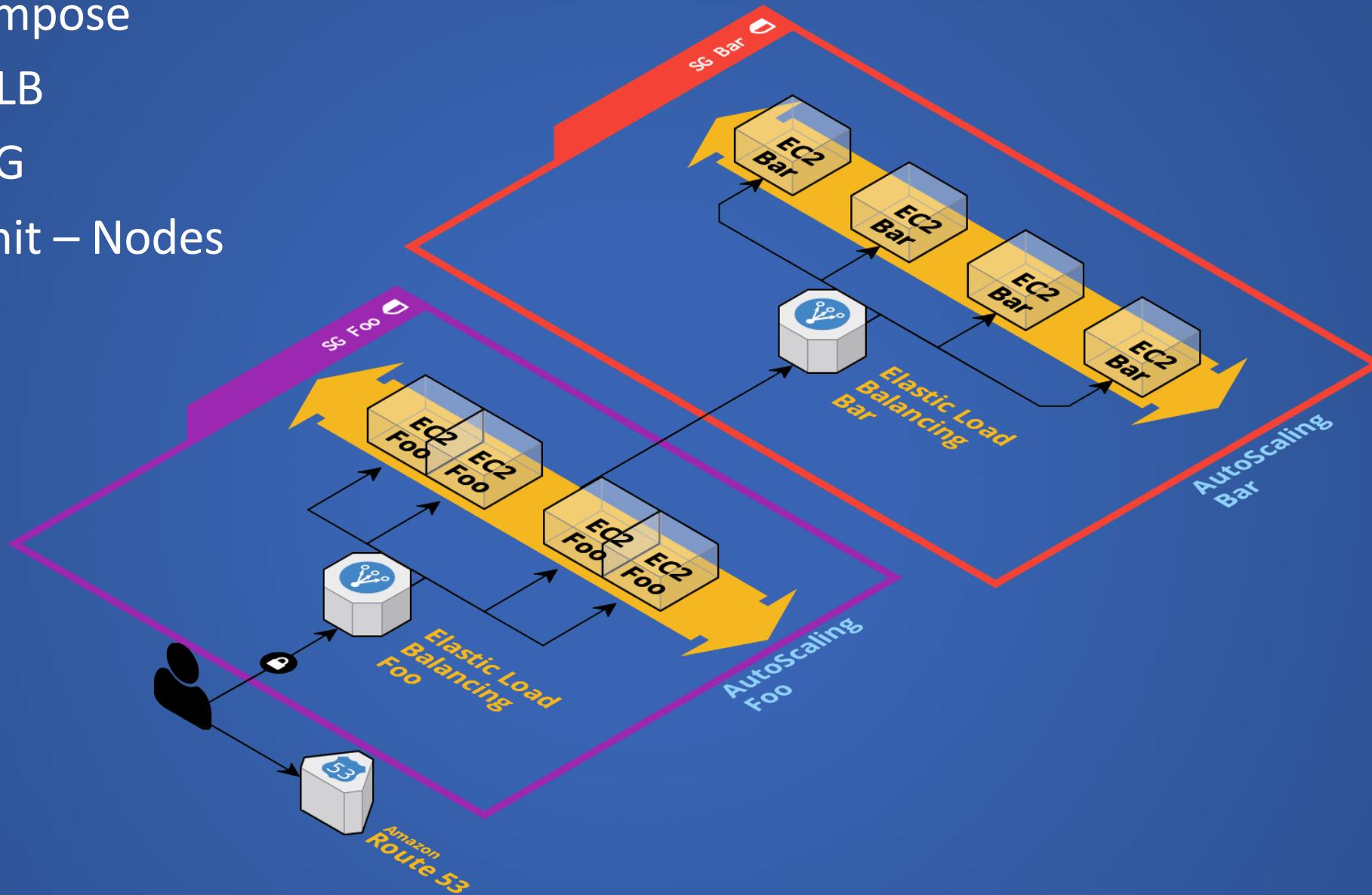
github.com/rainchei/istio-workshop

Why Did We Choose To Run On Kubernetes?

- Before we running on Kubernetes, it looked like this ...



- Docker-compose
- Multiple ELB
- Multiple SG
- Release Unit – Nodes



Some Kubernetes Basics

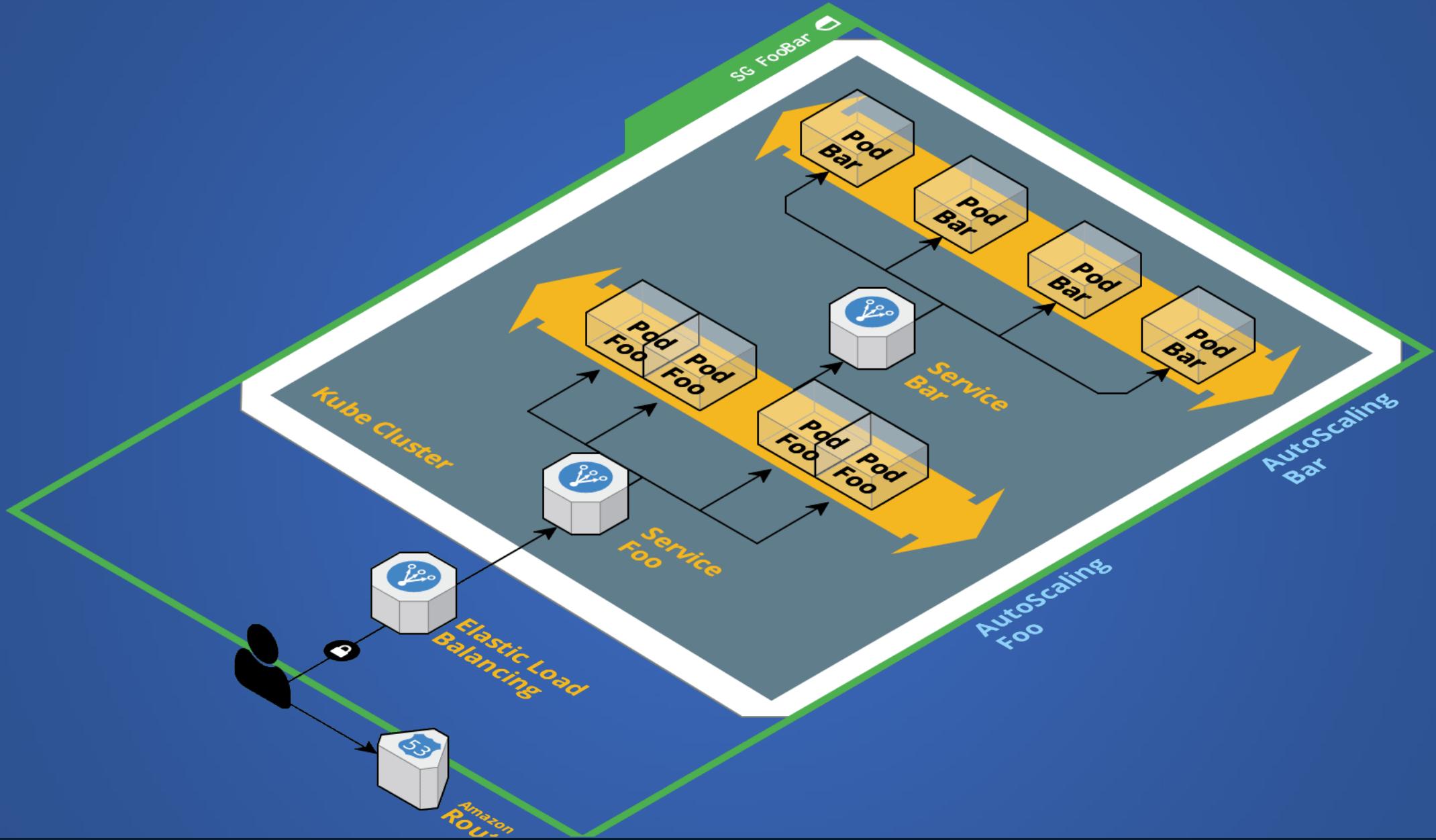
- What is a Pod?
 - The minimal scalable unit which represents processes running on the Cluster
- What is a Service?
 - Act like a load balancer across a set of pods, which has its own DNS name
- What is a Node?
 - A worker machine contains resources to run pods, which could be a VM or physical machine

Some Kubernetes Basics

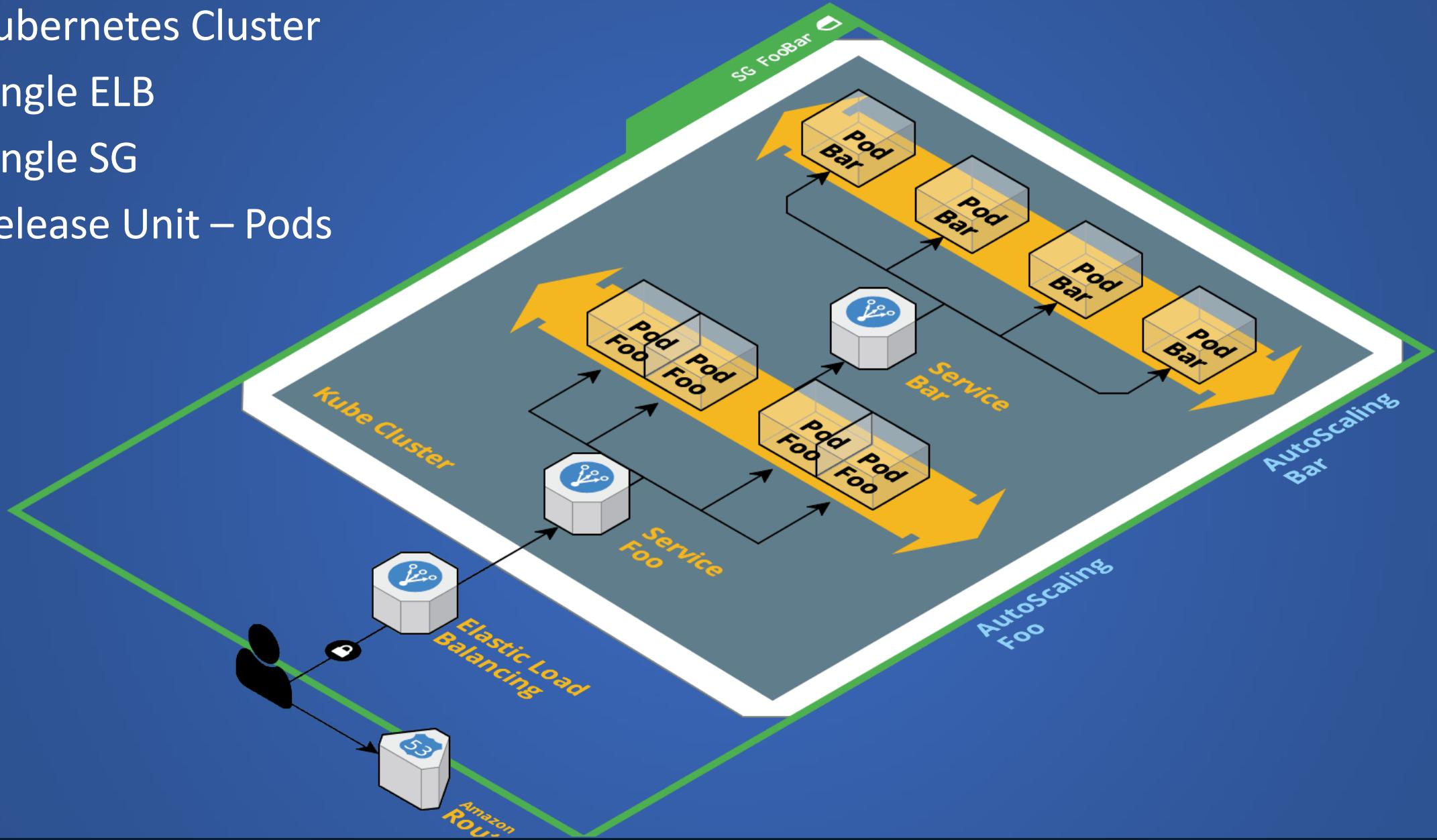
- What is a Cluster?
 - A group of nodes which shares the same cluster network
- Kubernetes Network Model
 - Pods on a node can communicate (usually via Services) with all pods on all nodes

Why Did We Choose To Run On Kubernetes?

- So now we runs on Kubernetes, it looks like this ...



- Kubernetes Cluster
- Single ELB
- Single SG
- Release Unit – Pods

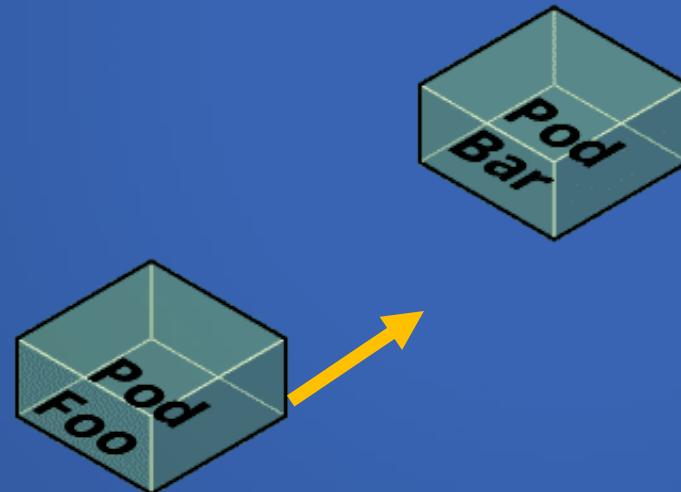


So ... This Is Why We Run On Kubernetes

- Automation DevOps (CI/CD)
- Reliability
- Availability
- Visualization
- Monitoring

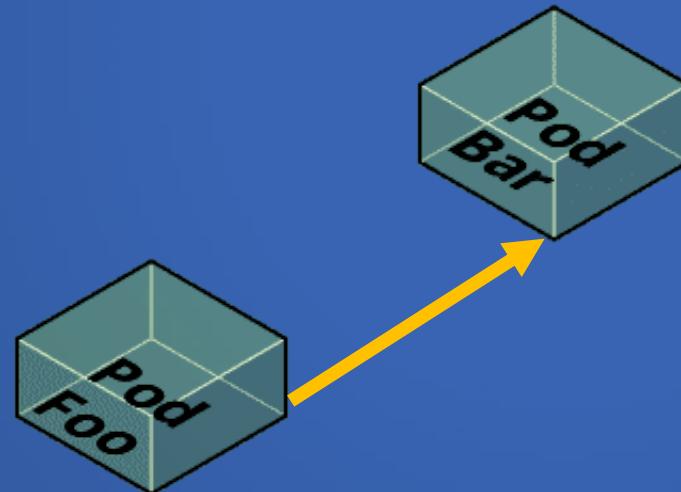
Why Do We Need Service Mesh?

- Kubernetes is good, but does it have it all?



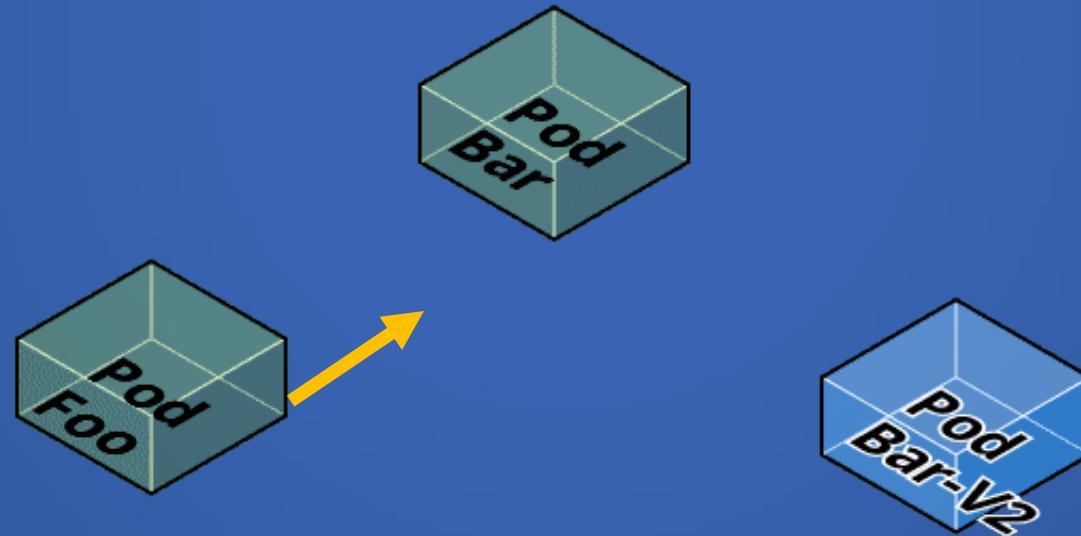
Why Do We Need Service Mesh?

- Kubernetes is good, but does it have it all?



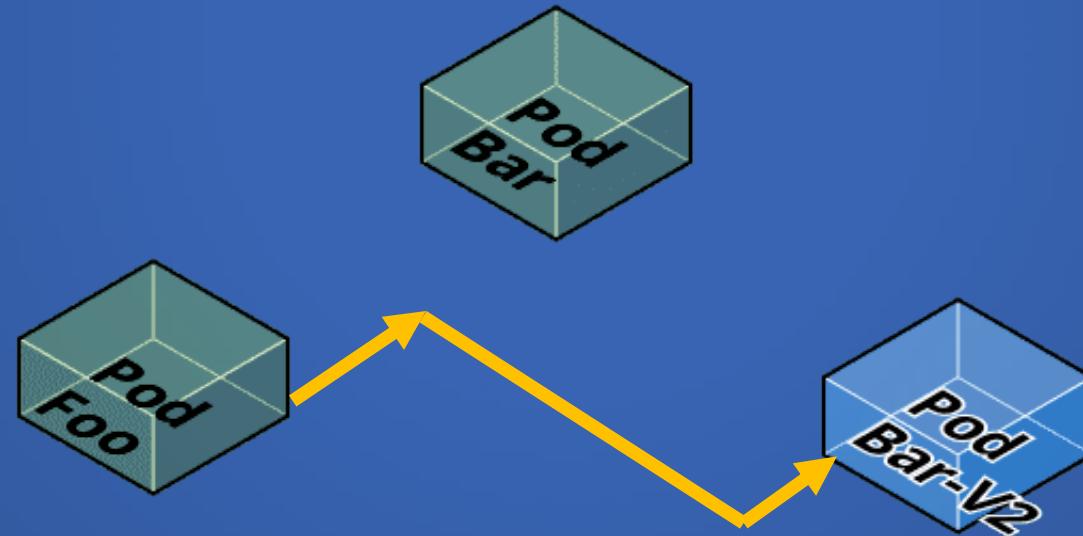
Why Do We Need Service Mesh?

- What if we want to control the network connections in between pod-to-pod communications?



Why Do We Need Service Mesh?

- What if we want to control the network connections in between pod-to-pod communications?



What Is Service Mesh?

- What we really want is to have ...

- Connect
- Secure
- Control
- Observe

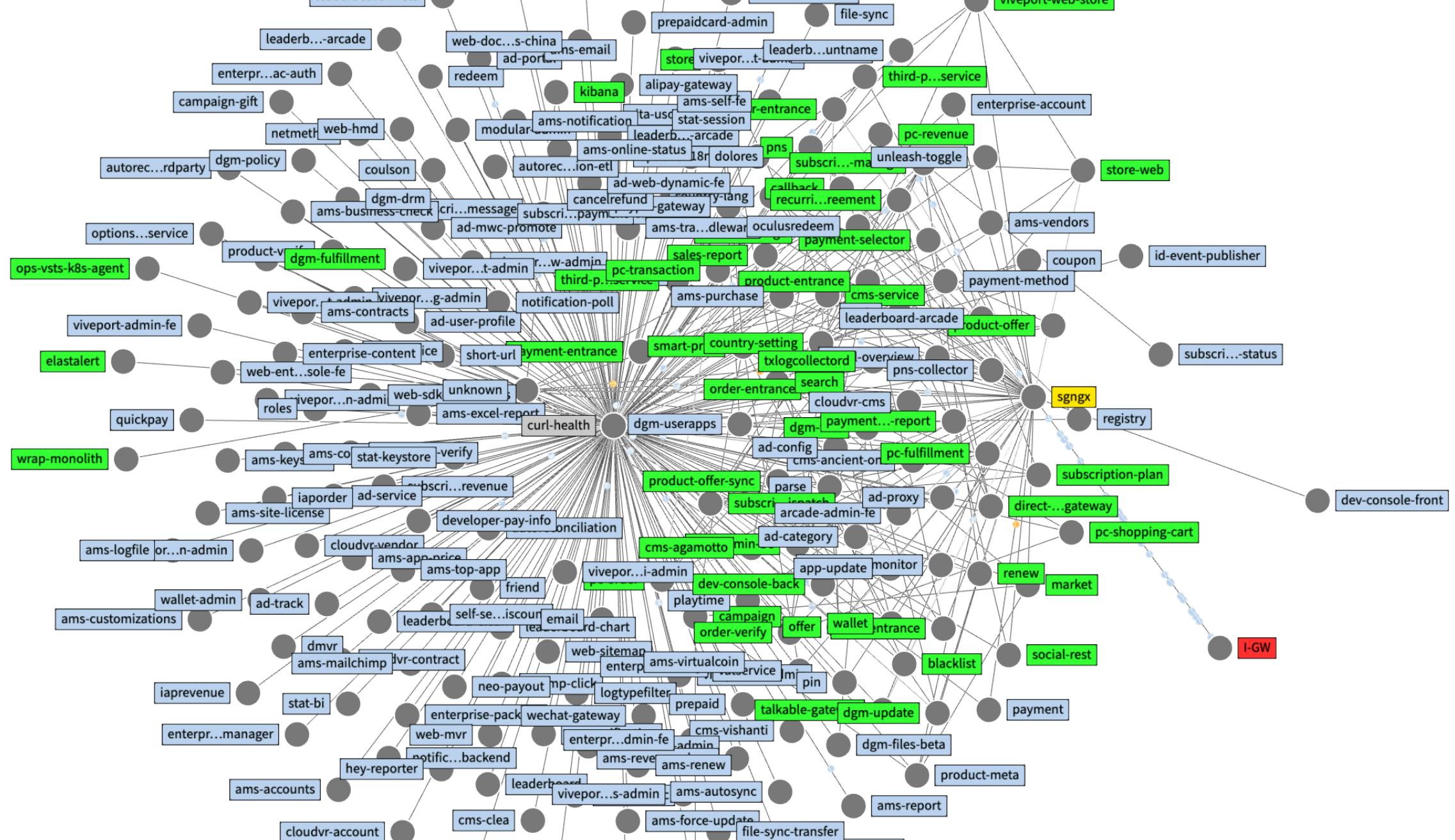
What Is Service Mesh?

- A managed mesh of services*
- It is designed to handle the a high volume of network-based **communications/interactions** between microservices
- It ensures that these network communications are fast, reliable, and secure

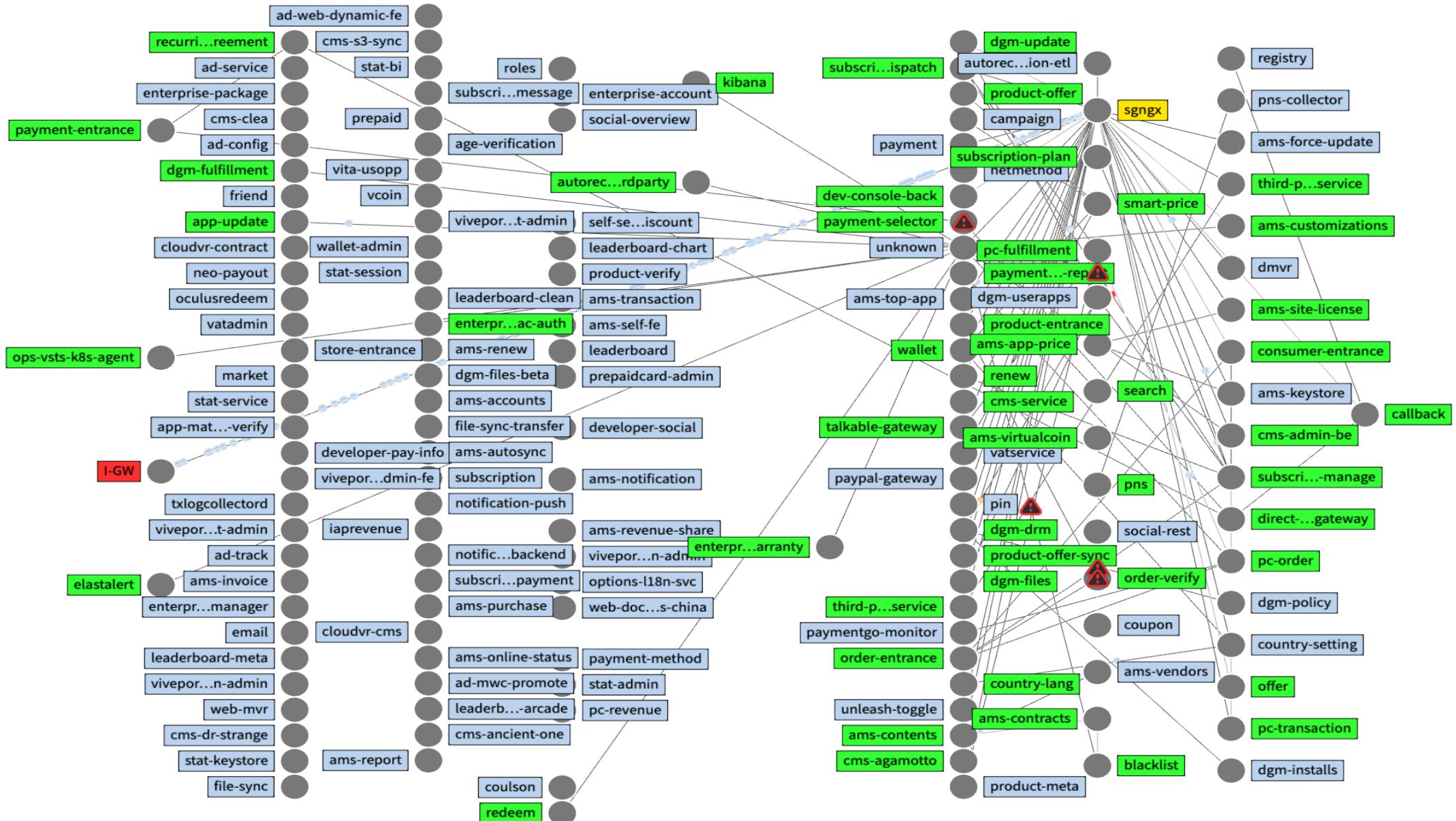
[*] Istio is a Service Mesh **Infrastructure** that allow us to manage the communications/interactions among microservices

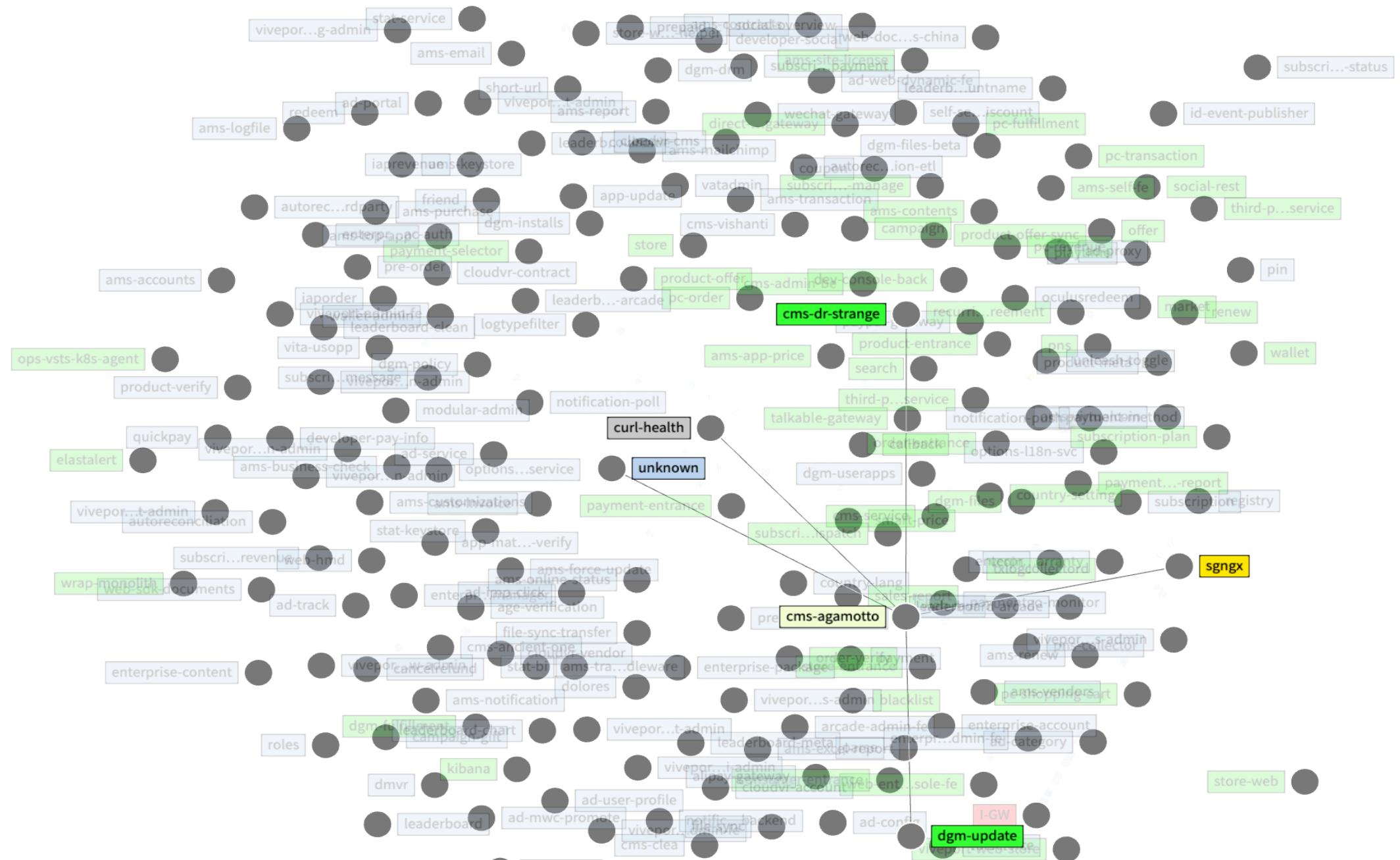
What Is Service Mesh?

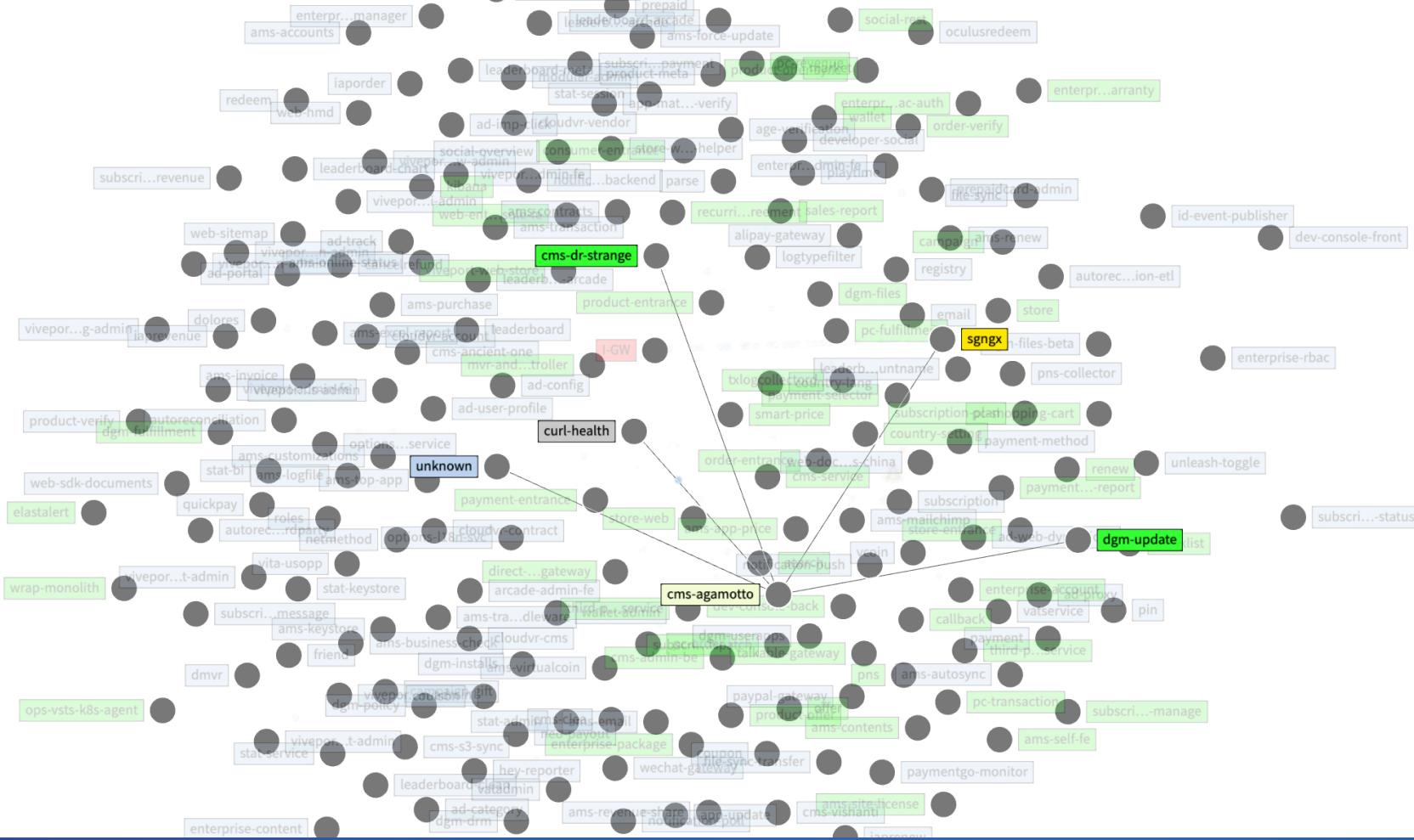
- So now we runs on **Service Mesh**, it looks like this ...



VIVEPORT™







cms-agamotto app_to_app

Notices

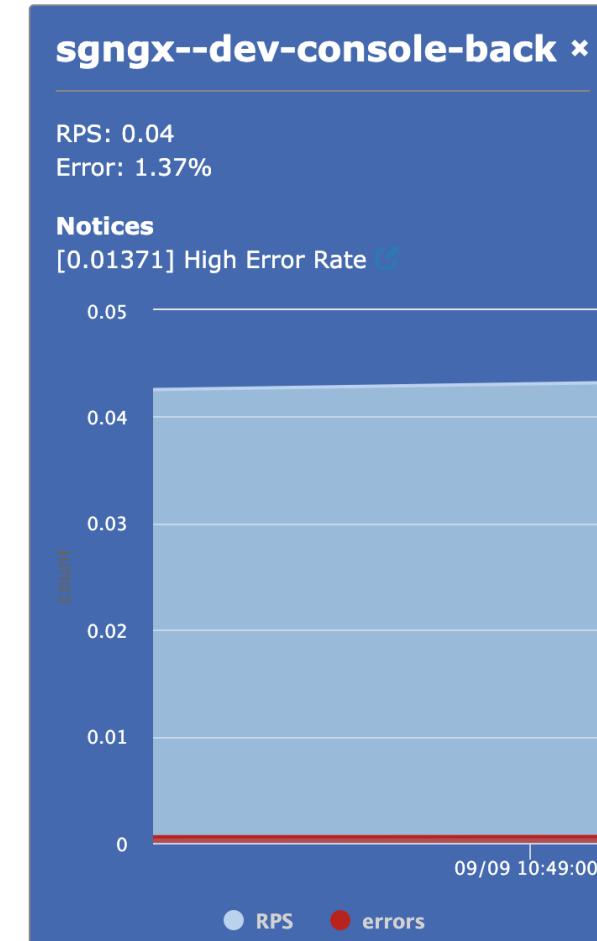
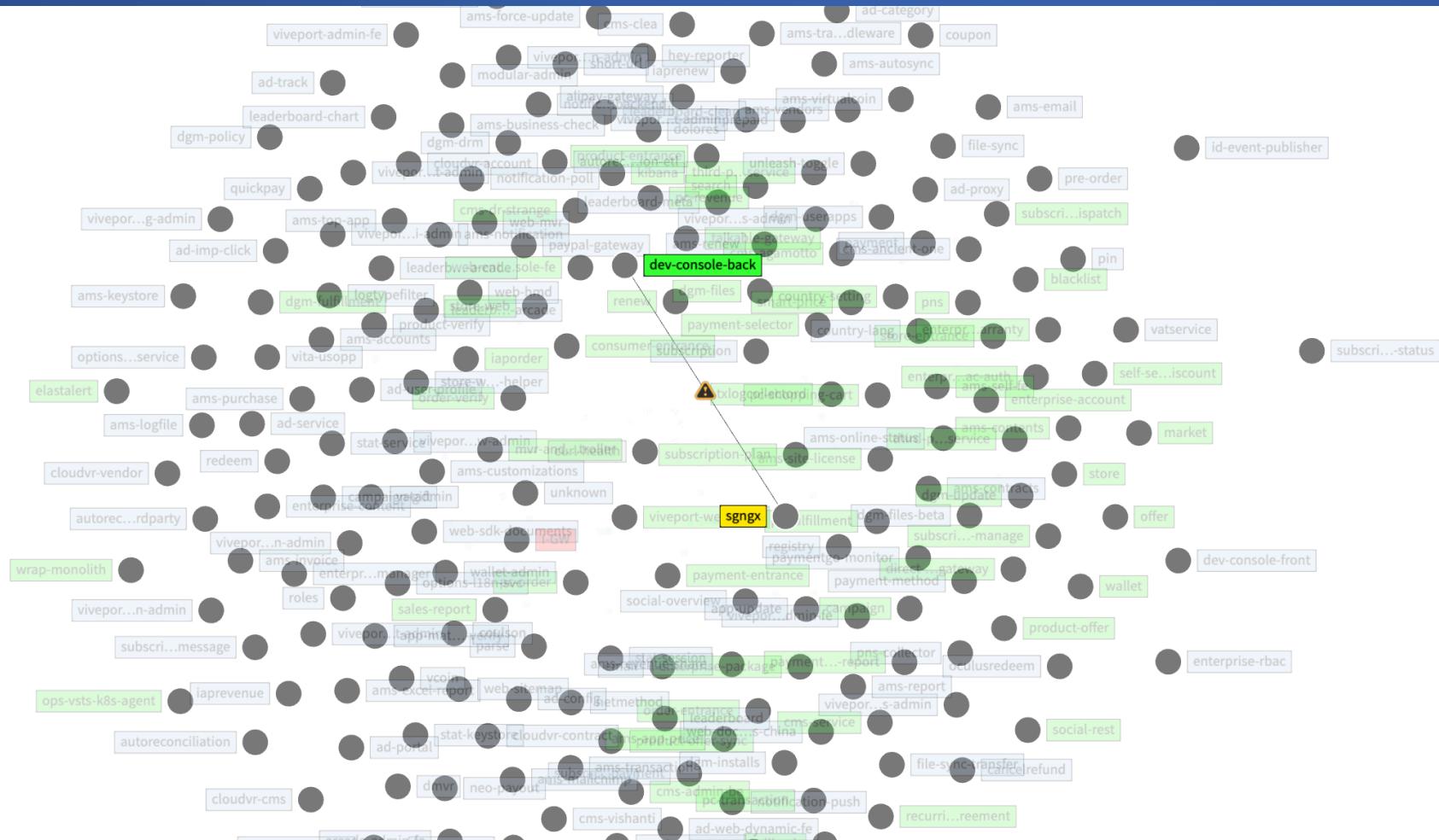
None

▼ INCOMING CONNECTIONS 3

Service	RPS	Errors
curl-health	0.04	0%
dgm-update	0.02	0%
sgnx	0.02	0%

▼ OUTGOING CONNECTIONS 2

Service	RPS	Errors
unknown	0.02	0%
cms-dr-strange	0.02	0%



VIVEPORT™

The Logical Blocks For Istio

- Envoy
- Pilot
- Citadel
- Mixer

No Envoy Be Like ...



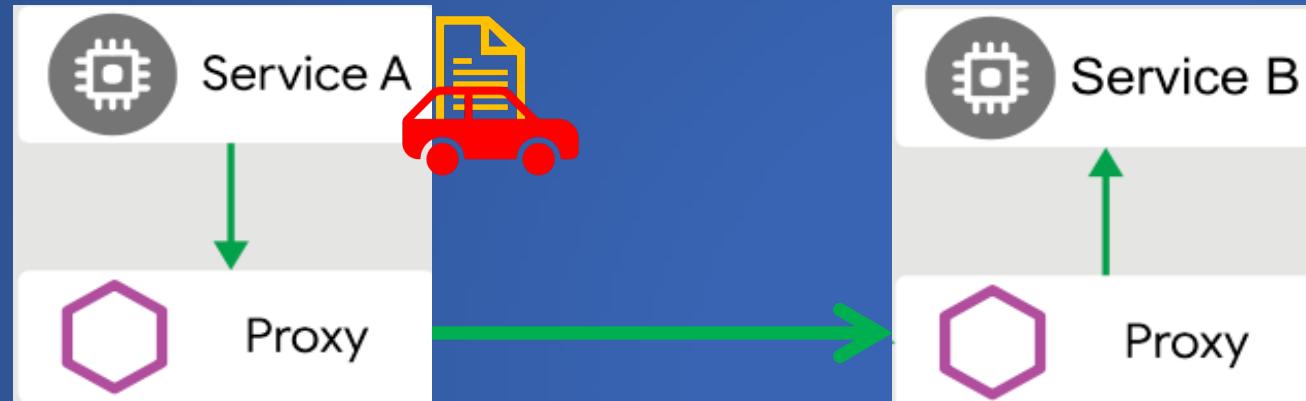
[Note]

For this diagram,
“Service”
actually means
“Pod” !

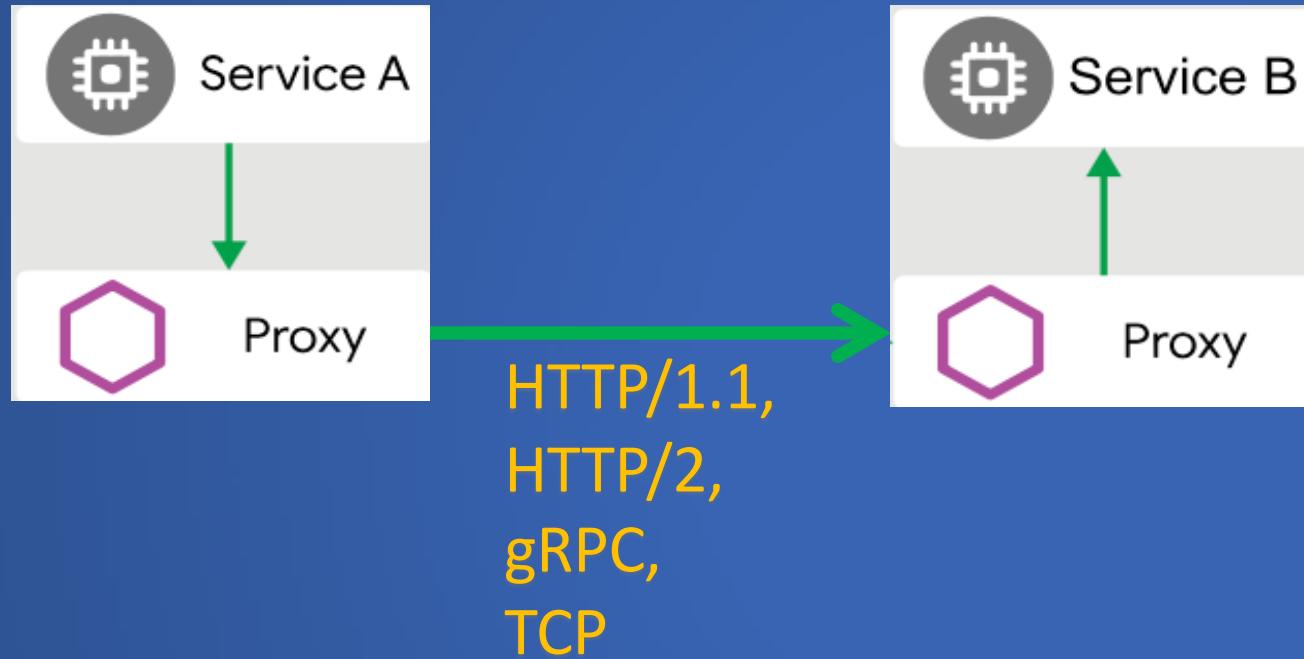
Envoy



Envoy



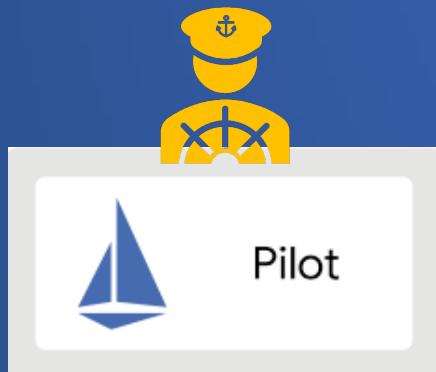
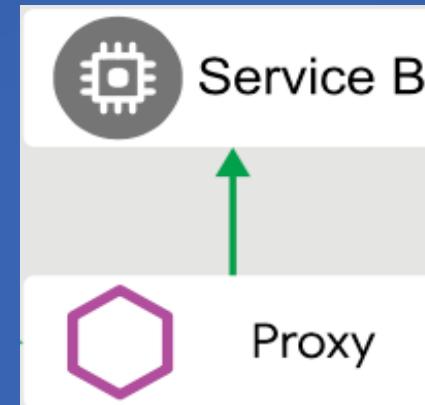
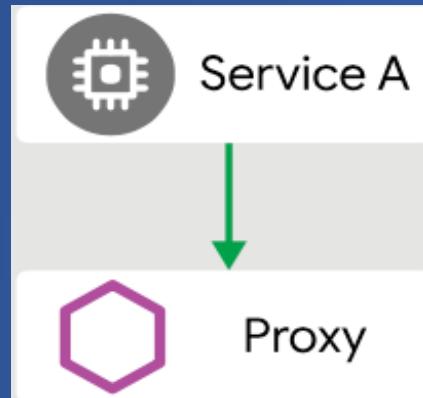
Envoy



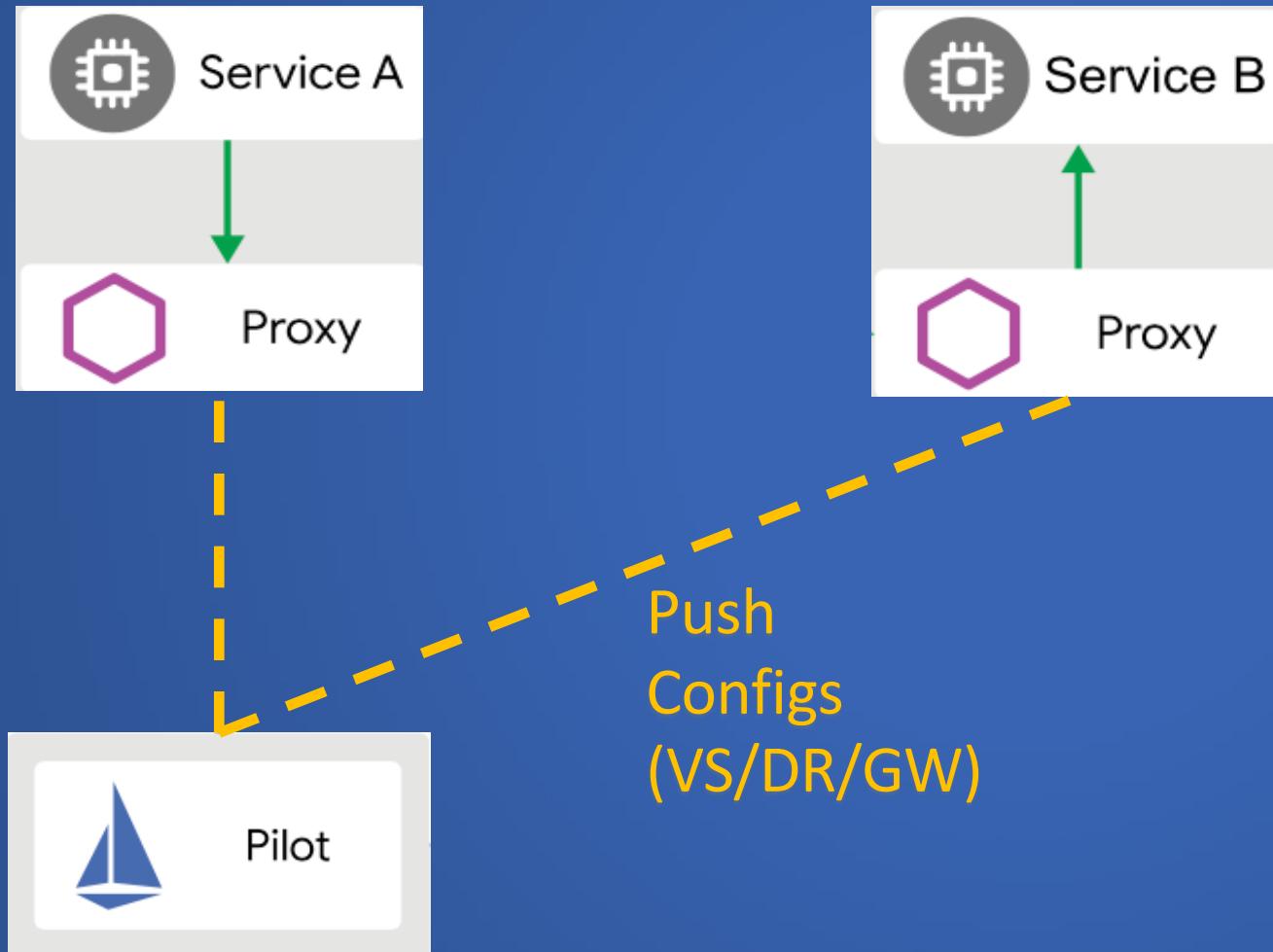
- hijack all inbound and outbound traffic for all pods
- data plane



Pilot



Pilot

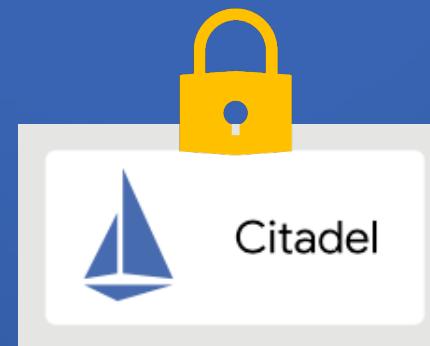
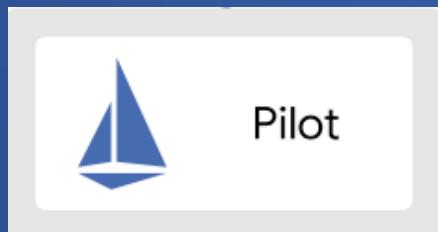
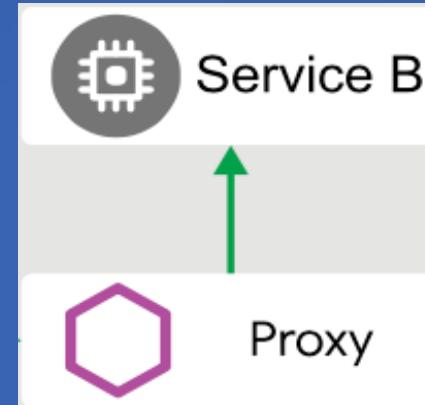
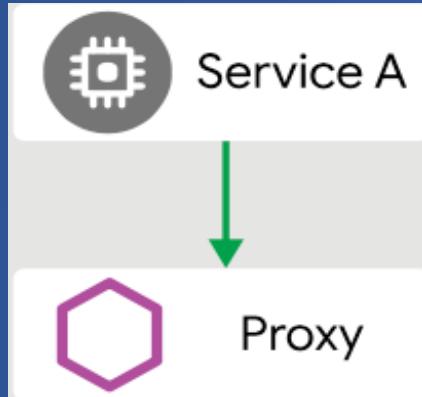


- traffic management for intelligent routing and resiliency
- service discovery for the Envoy sidecars

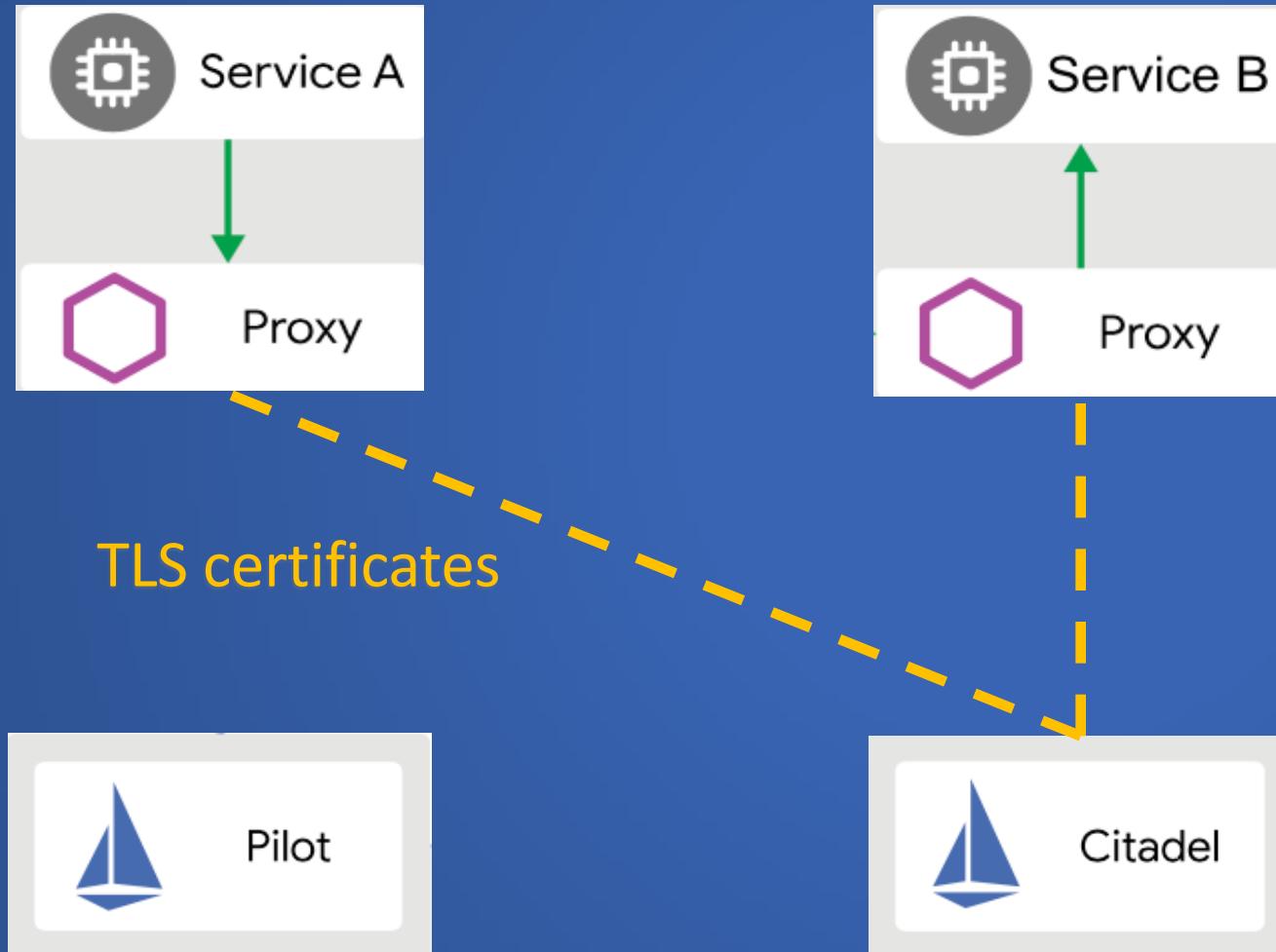
Some Pilot Configs

- Virtual Service
 - For a given service name, how do I route to the backend?
- Destination Rule
 - How do I talk to those backends?
- Gateway
 - Expose the given VirtualService to the outside world

Citadel



Citadel

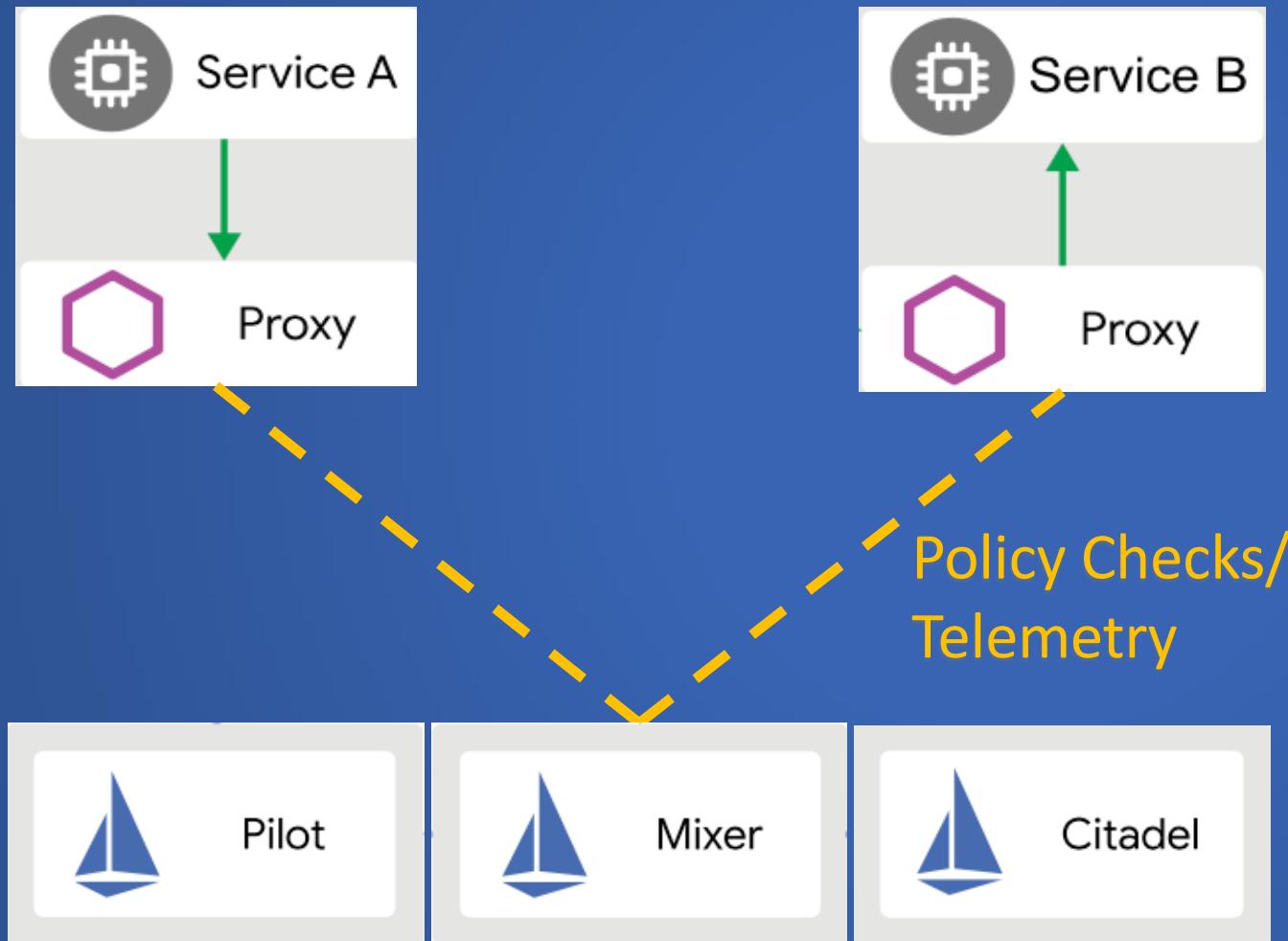


- identity and credential management
- enables strong service-to-service and end-user authentication

Mixer



Mixer



- collects telemetry data from Envoy proxy
- enforces access control and usage policies

Live Demo



viveport.com/istio

github.com/rainchei/istio-workshop

Q & A

Forrest_Lin@htc.com



VIVEPORT™

We Are Hiring !

Jane_Wei@htc.com