k8s_nemesis

Resources and microservices

K8s access to: Tamplon Andrey

Product description

Product Description: A cloud-native service designed to enhance application scalability and performance in Kubernetes (K8s) environments, specifically targeting machine learning (ML) applications with unique scaling and resource requirements.

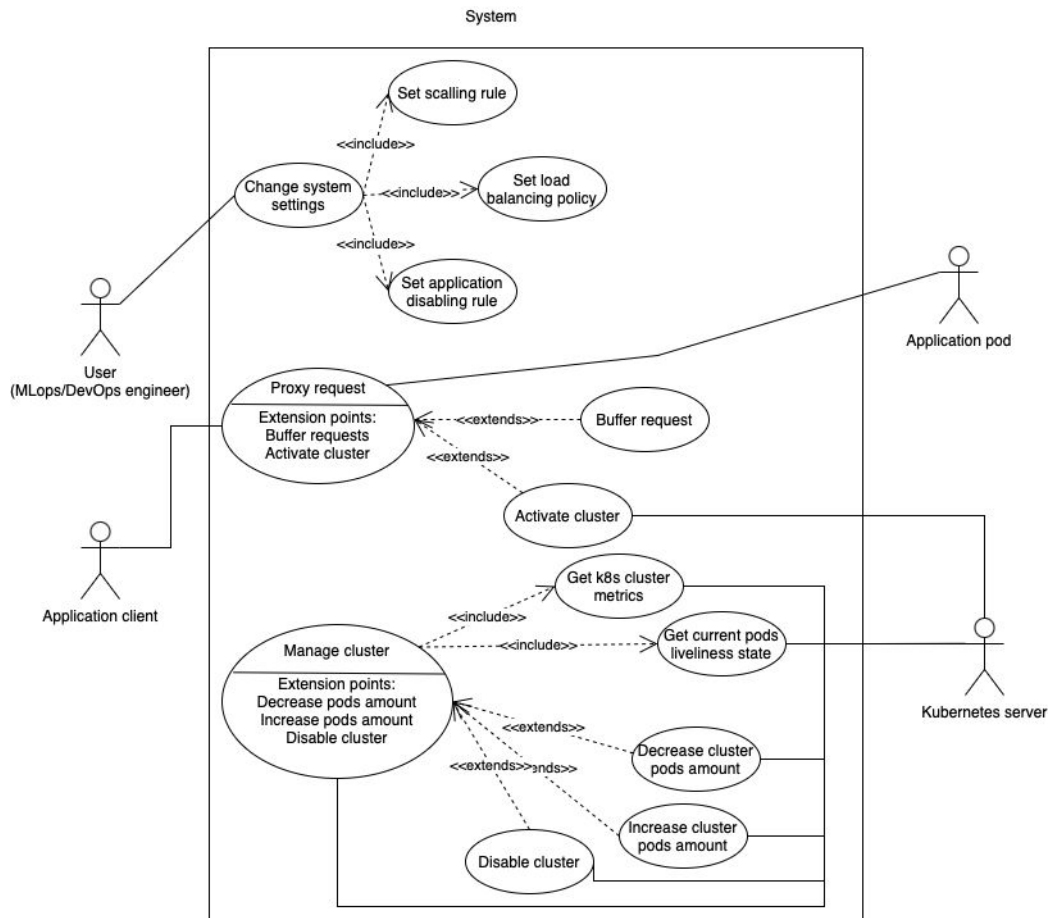Team: Sergey Lokhmatikov, Roman Kuzmenko, Andrey Tamplon

Repo: https://github.com/Lokhmat/k8s_nemesis/tree/main

Report: https://github.com/Lokhmat/k8s_nemesis/blob/main/task_9_1_slides.pdf

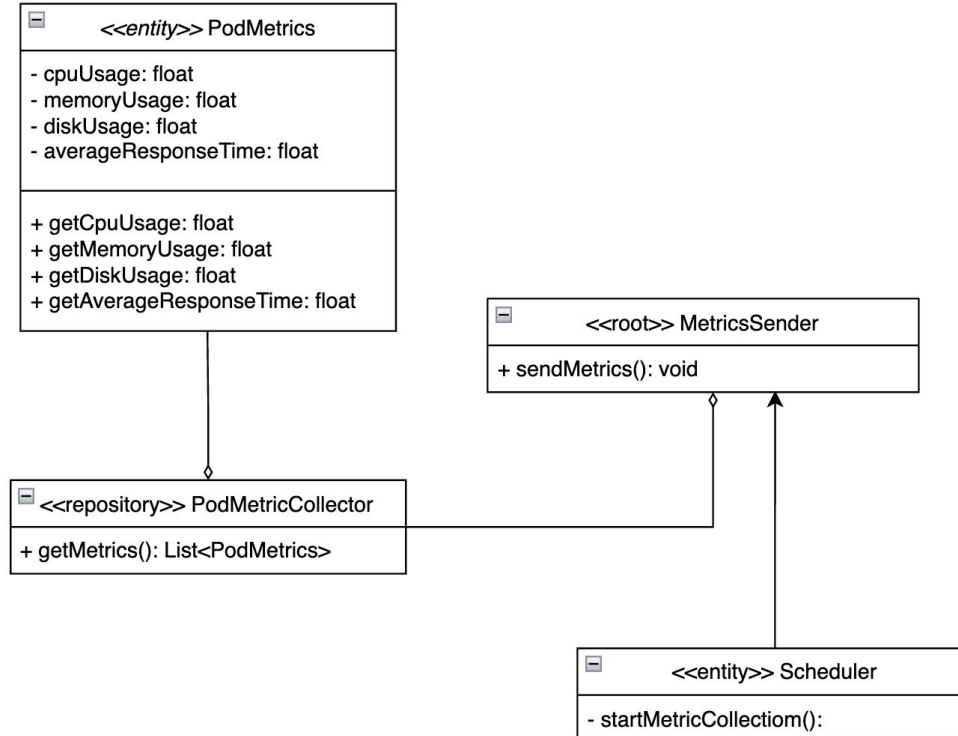# Use case diagram

Textual use case
scenarios:

https://github.com/Lokhm
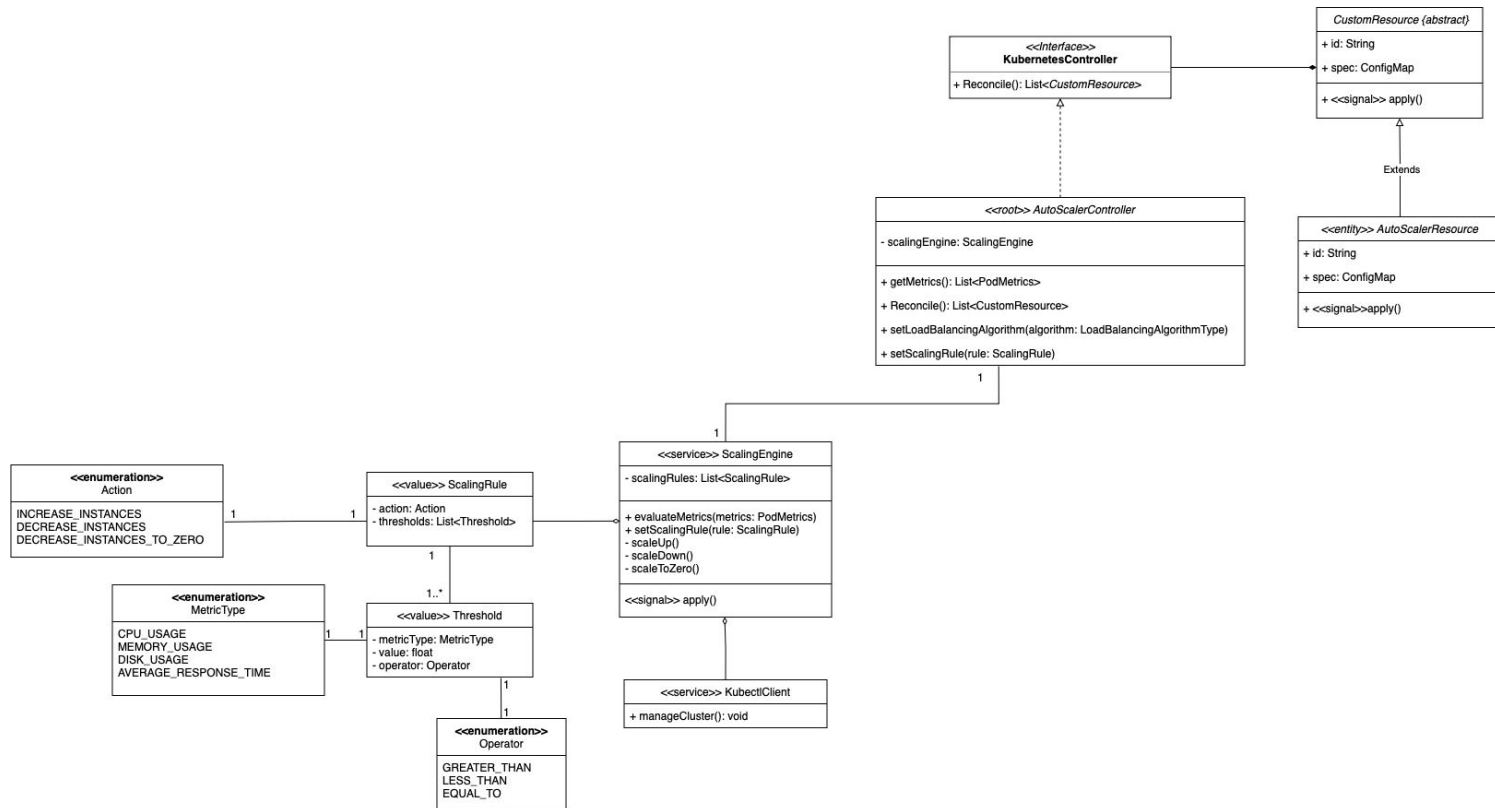at/k8s_nemesis/blob/mai
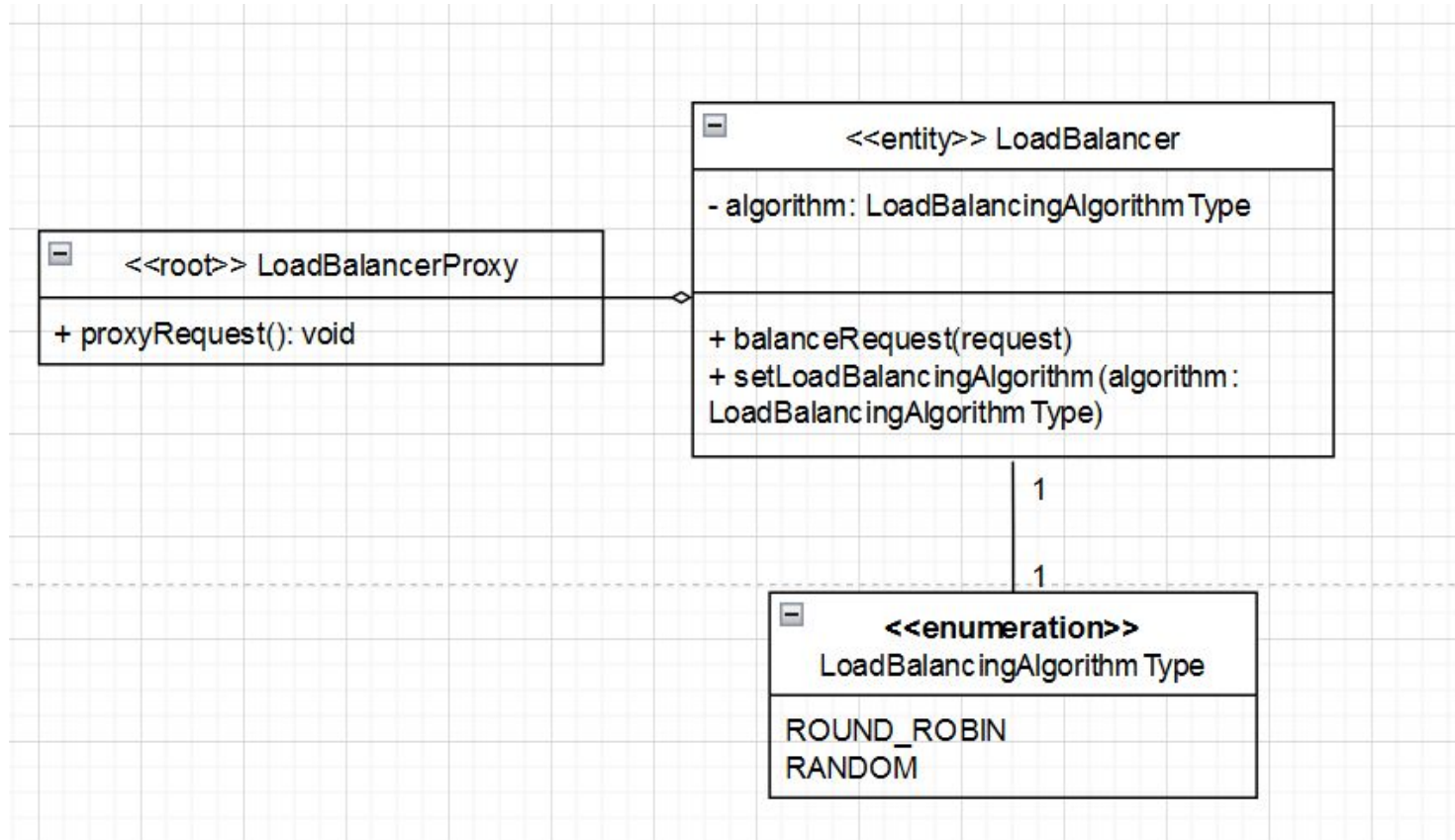n/final_task_materials/tex
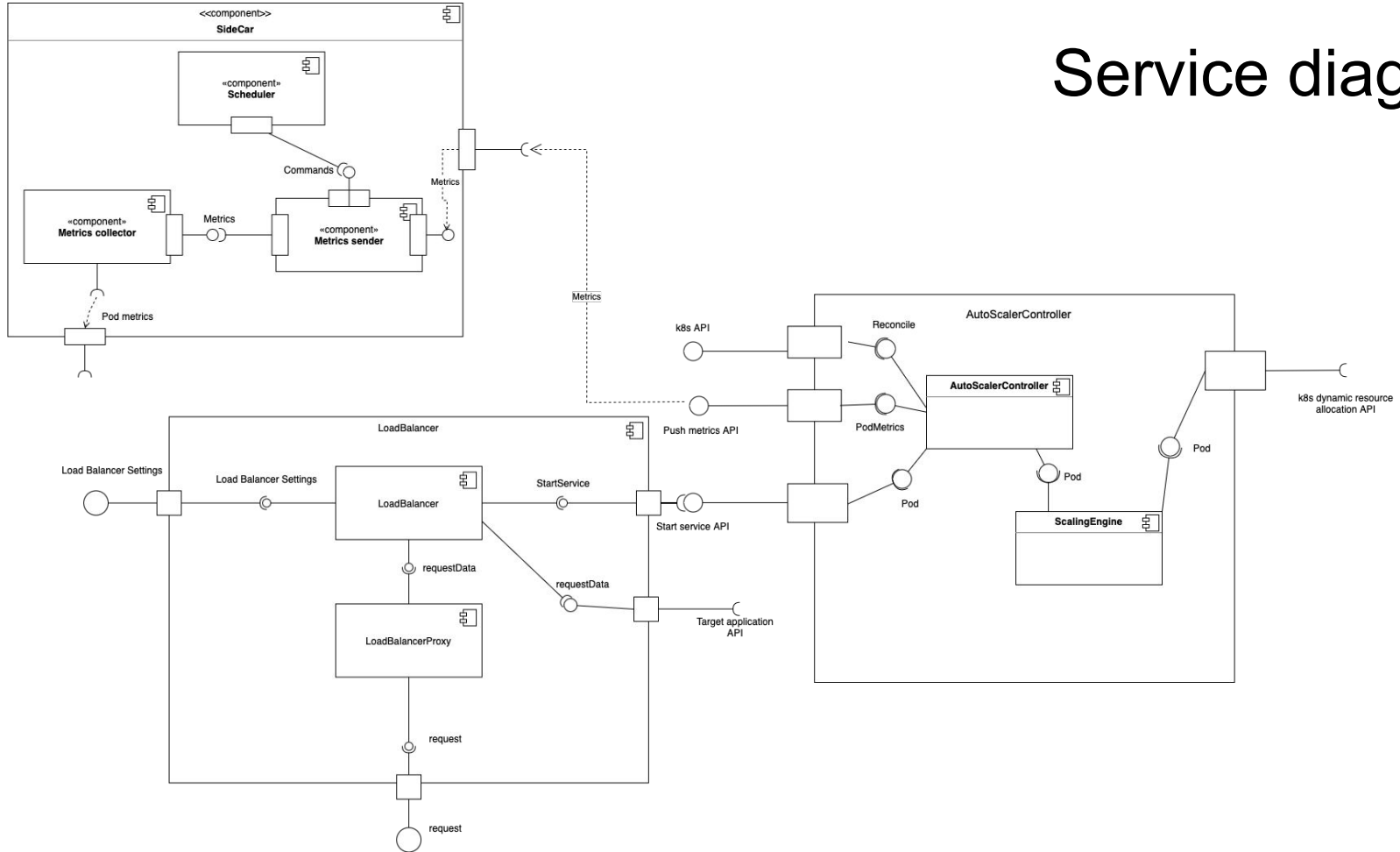tual_use_cases.md

Detailed class diagram - Sidecar

Detailed class diagram - Aggregate AutoScalerController

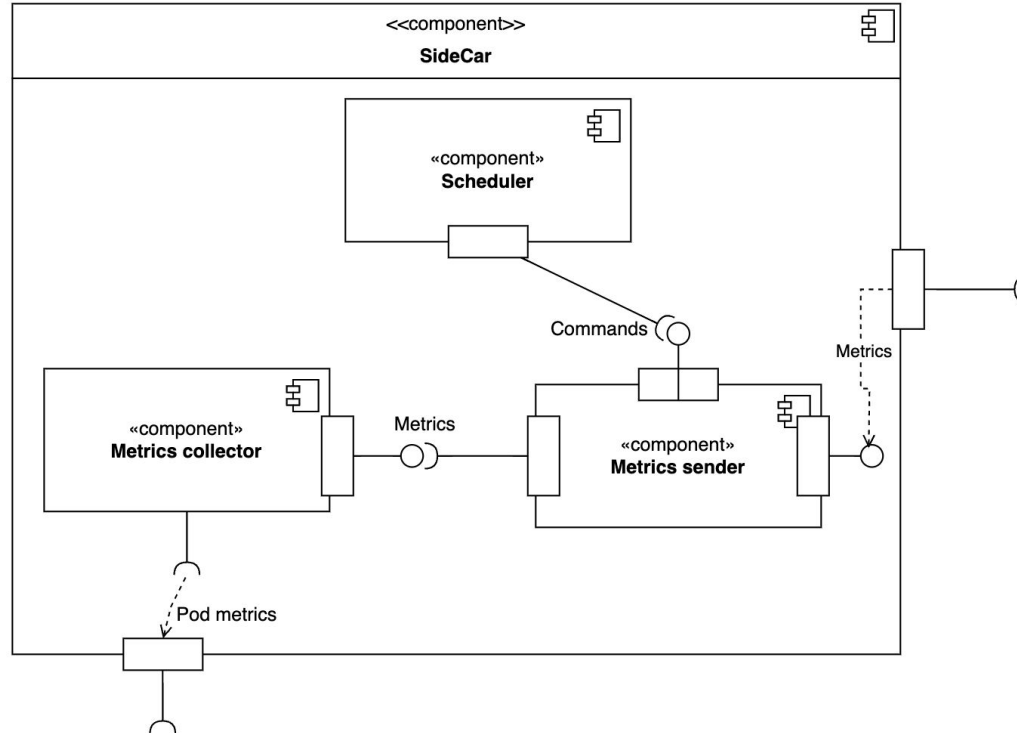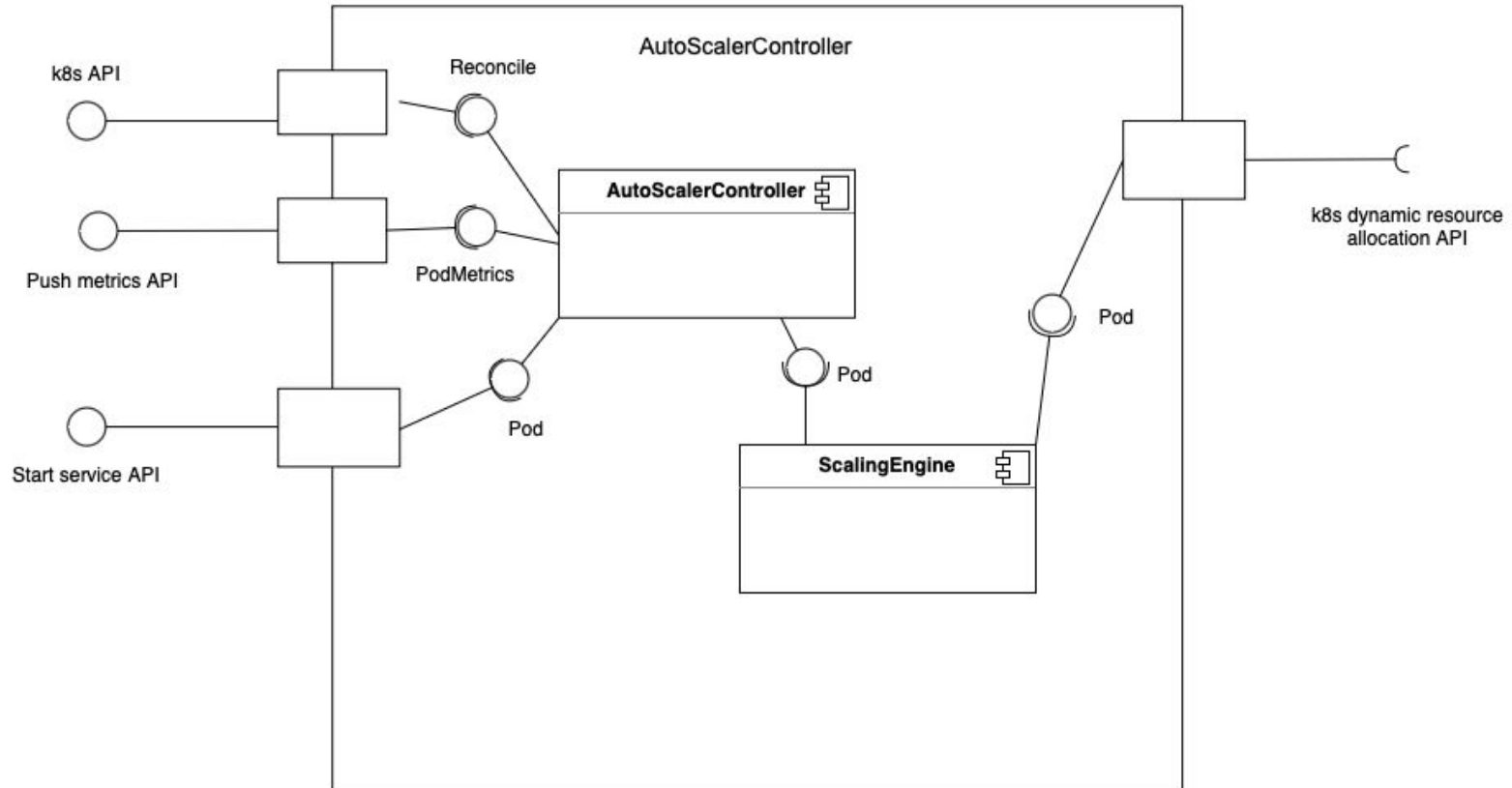# Detailed class diagram - Aggregate LoadBalancer
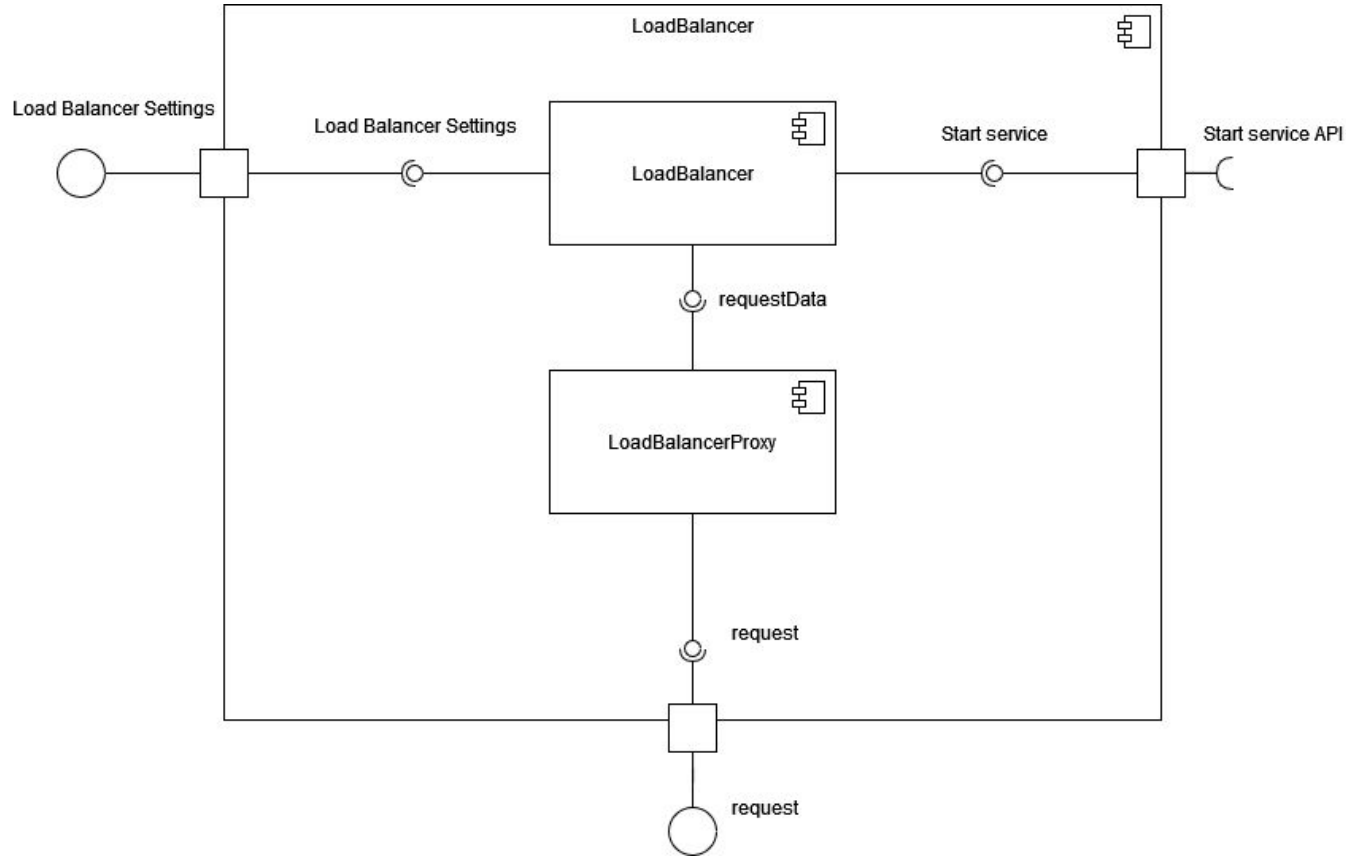
Service diagram

Component diagram - SideCar

Component diagram - AutoScalerController

Component diagram - LoadBalancer

Traceability

Microservice (component)	Resource (interface)	Domain classes in the microservice	Use case that use the microservice
SideCar	PodMetrics	Scheduler, PodMetricCollector	Get k8s cluster metrics
Auto Scaller	Pod, PodMetrics, Reconcile	AutoScalerController ScalingEngine	Manage Cluster(+all ext. points) Set load balancing policy Set application disable rule
Load balancer	Load Balancer settings requestData StartService request	LoadBalancer LoadBalancerProxy	Manage Cluster Set Load Policy Proxy request