

KEA

Resources and microservices

Responsible of K8s cluster: Smolkin Mikhail

Product description

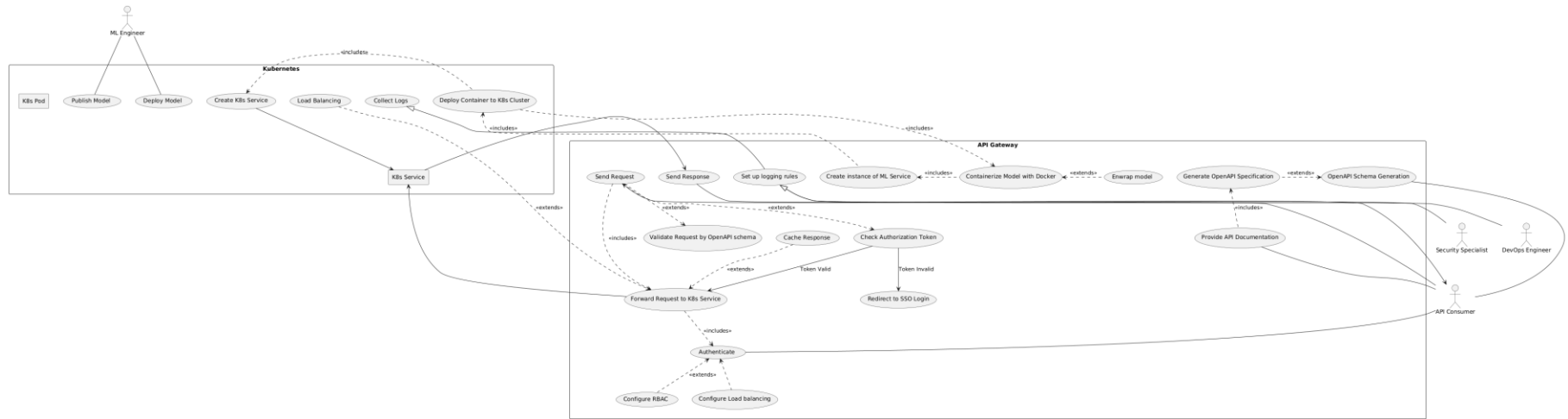
The product is a platform for deploying, managing, and scaling machine learning models in production. It offers a secure, flexible environment for automating ML tasks like model versioning, routing, and monitoring. With Kubernetes integration and containerization support, it's designed for developers, ML engineers, and enterprises needing scalable, reliable ML infrastructure.

Team K8C: Tsurkan Daniel; Dandamaev Gadji; Tsaturyan Konstantin; Smolkin Mikhail

Project repo: <https://github.com/fanglores/Advanced-Software-Design>

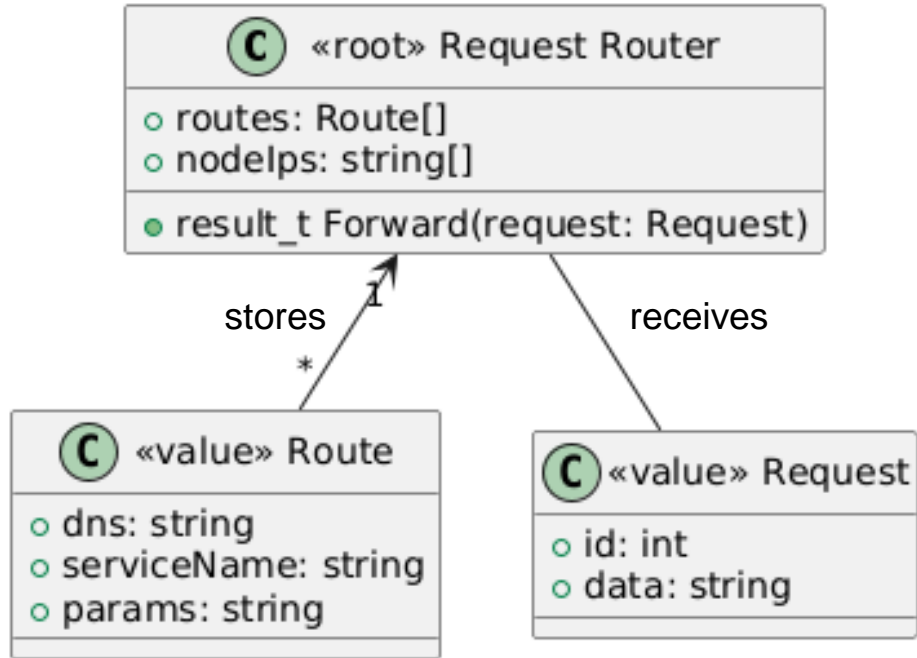
This report: [https://github.com/fanglores/Advanced-Software-Design
/blob/master/Practice%20Tasks/Module2/Task_9.1/Task_9.1.pdf](https://github.com/fanglores/Advanced-Software-Design/blob/master/Practice%20Tasks/Module2/Task_9.1/Task_9.1.pdf)

Use case diagram

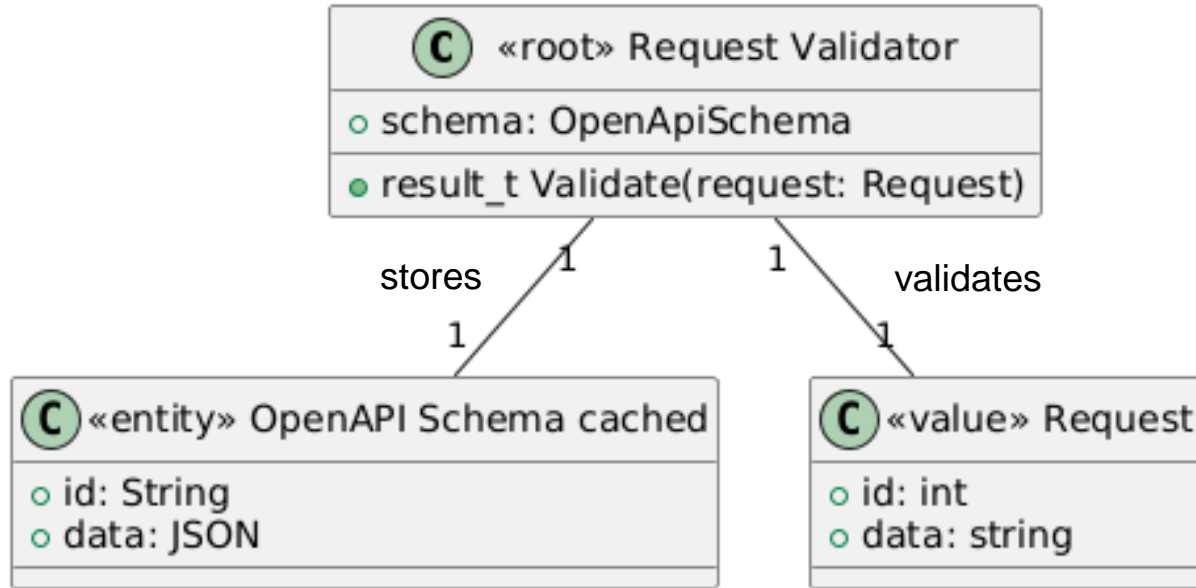


<https://github.com/fanglores/Advanced-Software-Design/tree/master/General/UseCases>

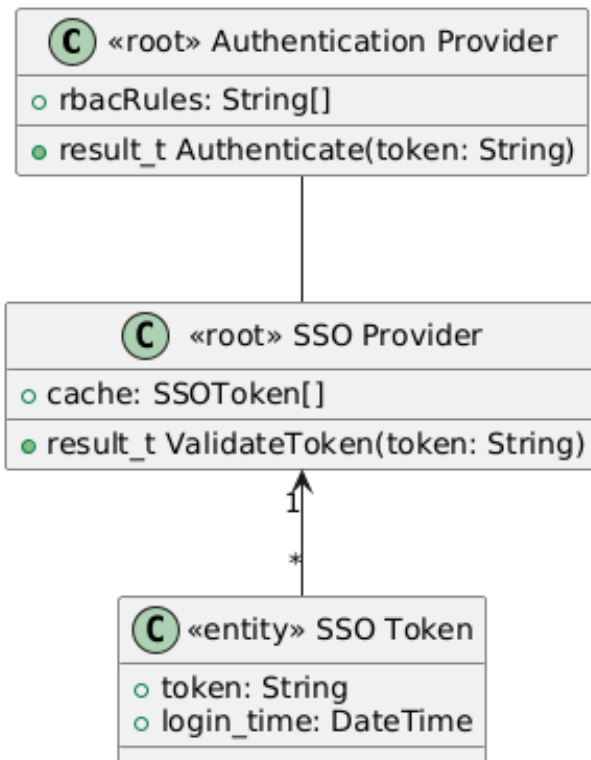
Request Router Aggregation



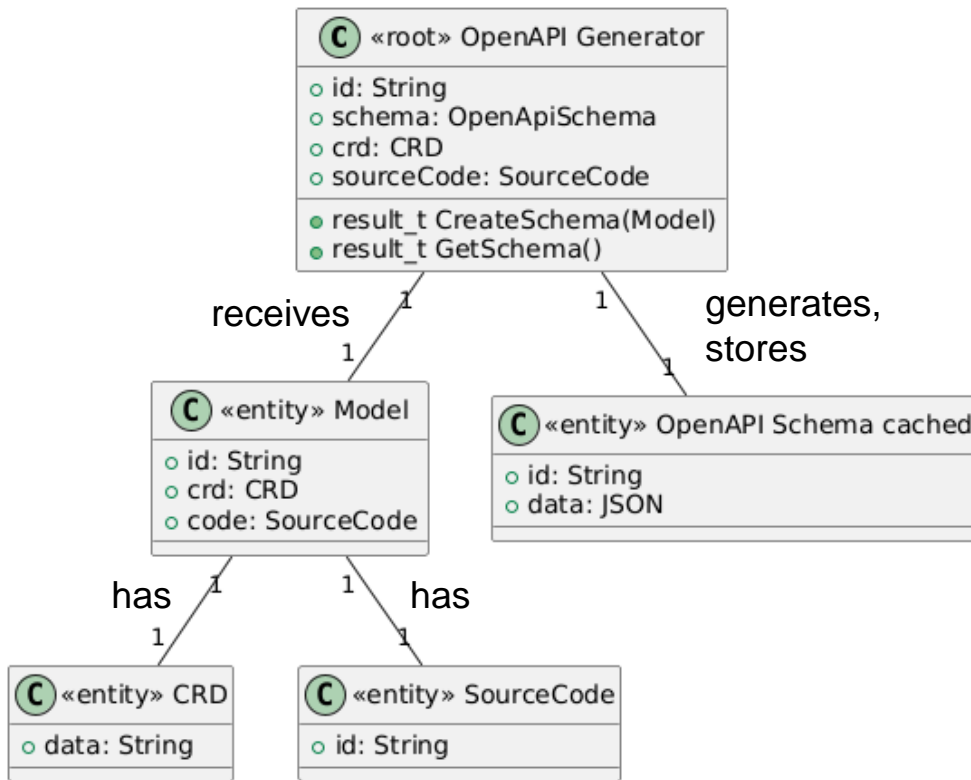
Request Validator Aggregation



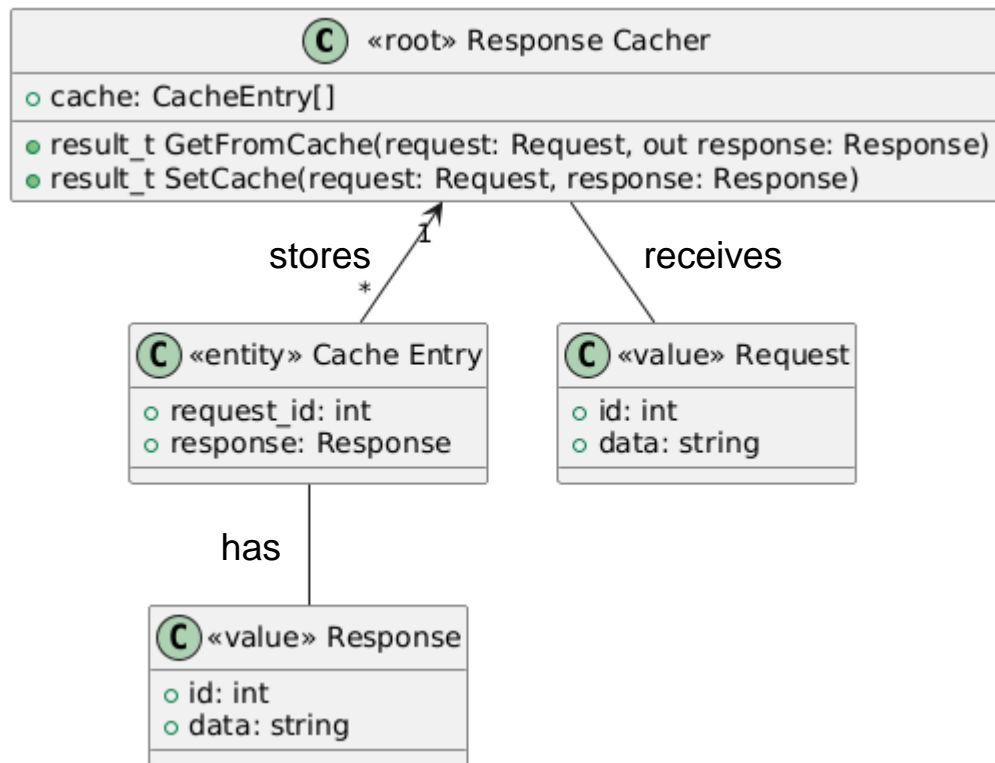
Authentication Provider Aggregation



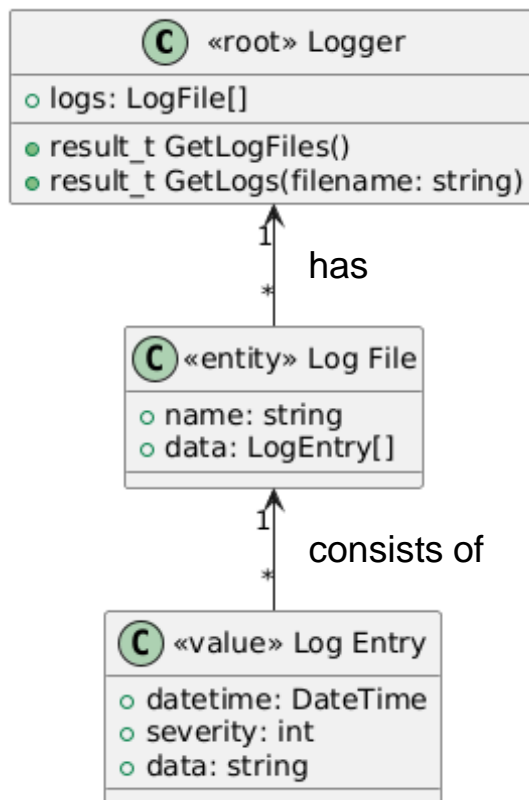
OpenAPI Generator Aggregation




Response Cacher Aggregation



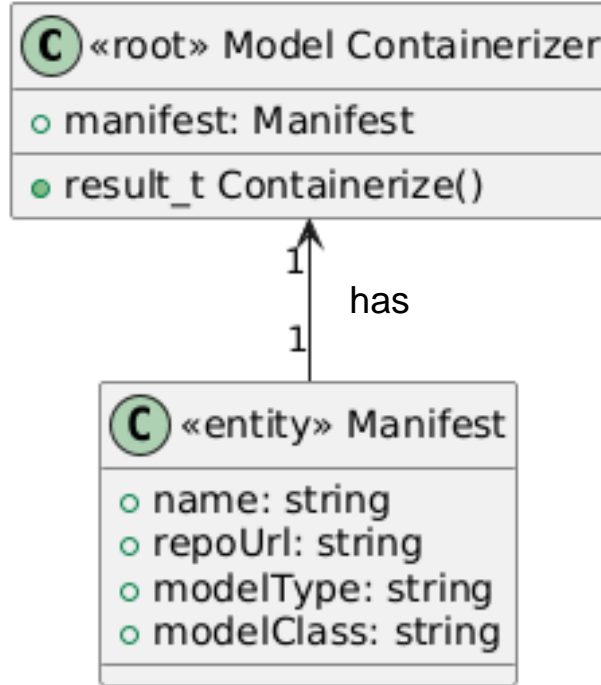
Logger Aggregation



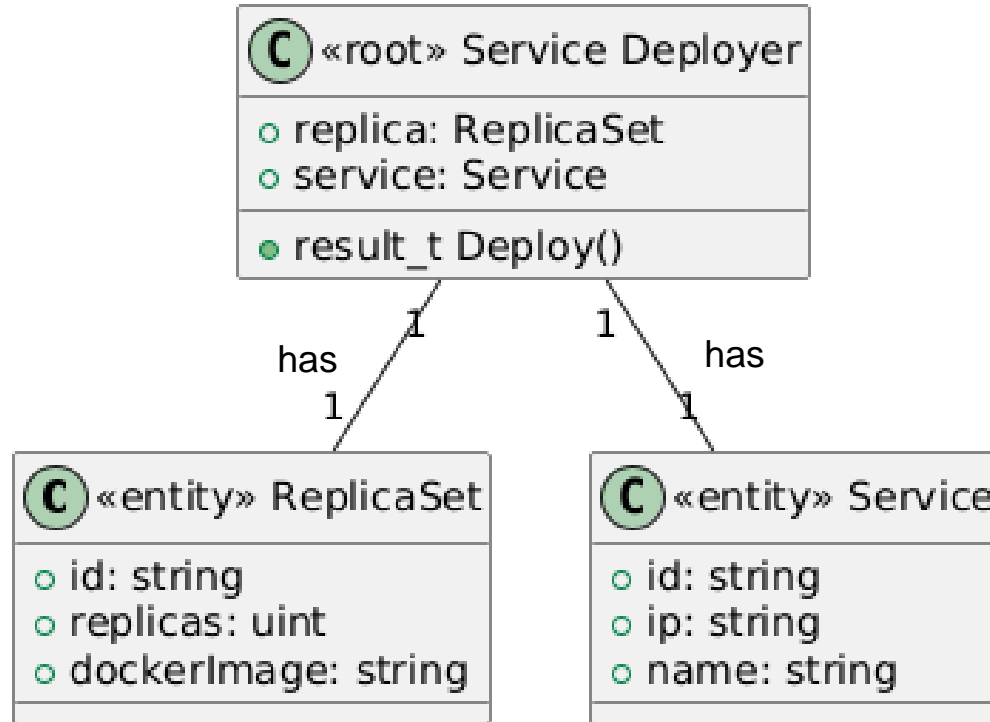
Load Balancer Aggregation

 «root» Load Balancer
○ weights: map<id: int, weight: int>
● result_t Get(id: int, out value: int)
● result_t Set(id: int, value: int)

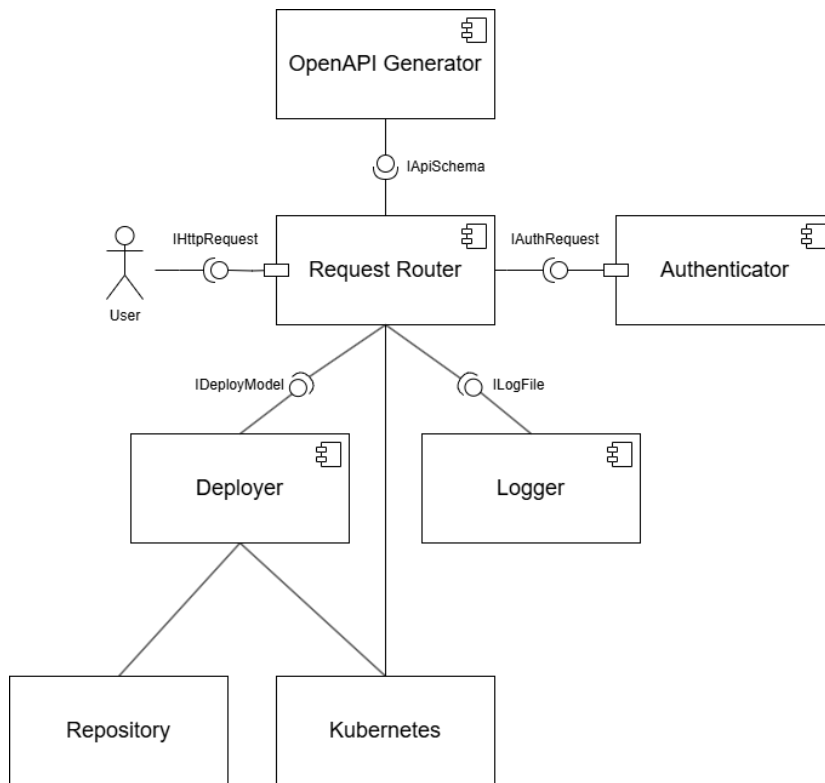
Model Containerizer Aggregation



Service Deployer Aggregation



Service diagram



Traceability

Microservice (component)	Resources (provided interfaces)	Domain classes in the microservice	Use case that use the microservice
Request Router	IHttpRequest	Request Router, Request Validator, Load Balancer, Response Cacher	Request Routing, Request Validation, Load balancing
Authenticator	IAuthRequest	Authentication Provider	Authentication
Deployer	IDeployModel	Model Containerizer, Service Deployer	Model containerization, Service deployment
OpenAPI Generator	IApiSchema	OpenAPI Schema Generator	OpenAPI schema generation
Logger	ILogFile	Logger	Logging Rules