KEA

Data design

Product description

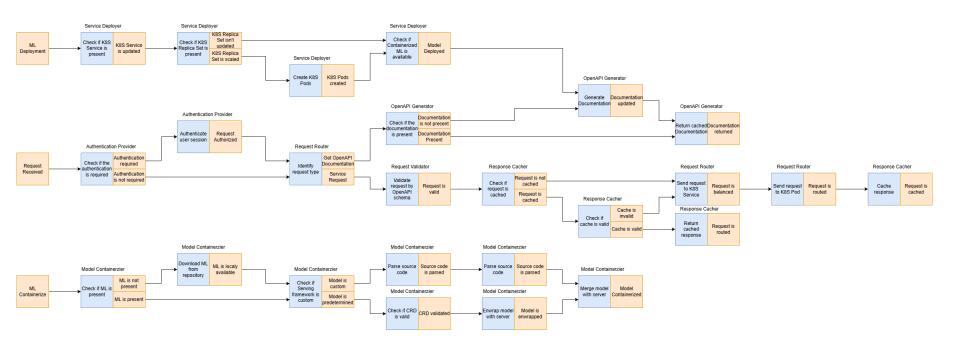
The product is a platform for deploying, managing, and scaling machine learning models in production. It offers a secure, flexible environment for automating ML tasks like model versioning, routing, and monitoring. With Kubernetes integration and containerization support, it's designed for developers,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

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

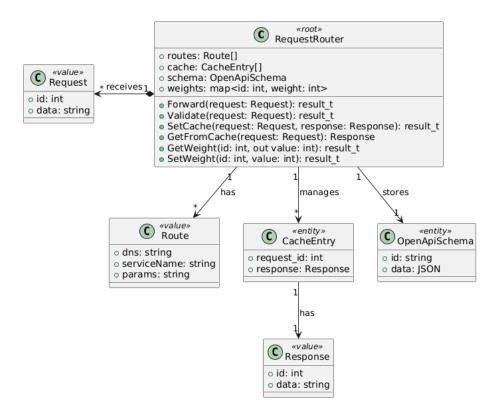
Project repo: https://github.com/fanglores/Advanced-Software-Design

This report: https://github.com/fanglores/Advanced-Software-Design /blob/master/Practice%20Tasks/Module2/Task_11/Task_11.pdf

Event flow



Logical data model RequestRouter

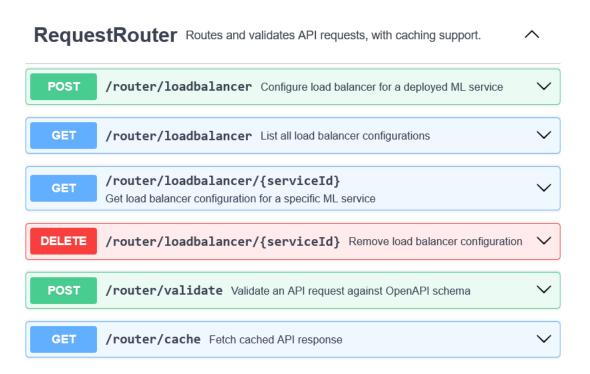


API usage RequestRouter

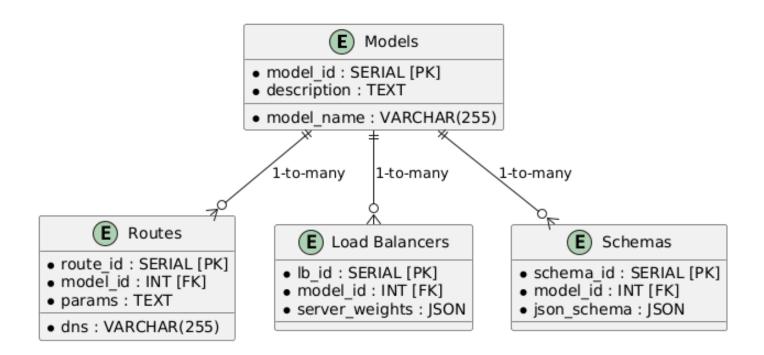
Use Case: Forward Request **Scenario**:

User sends request to a service

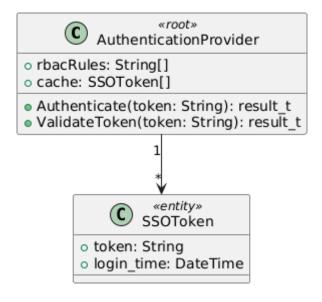
Request is being validated by OpenAPI schema Request is being forwarded to a specific K8s service



Physical schema RequestRouter



Logical data model Authenticator



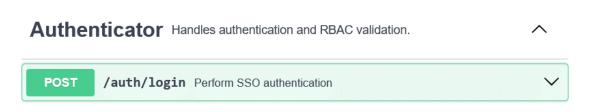
API usage **Authenticator**

Use Case: Authenticate

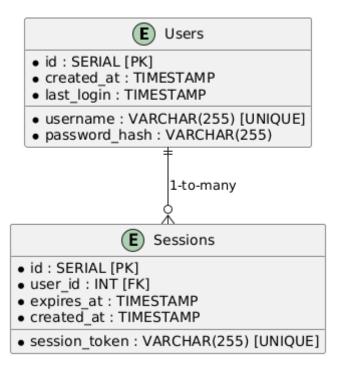
Scenario:

possibility

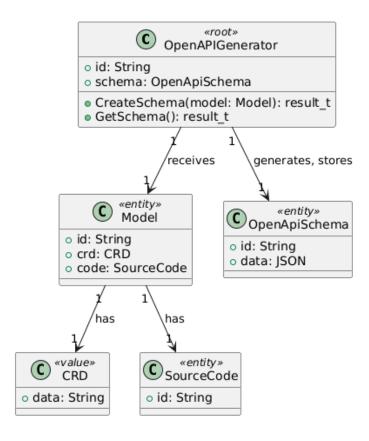
User sends request
Request is sent to
authentication
Request is checked for
SSO authentication



Physical schema **Authenticator**



Logical data model **OpenAPIGenerator**



API usage **OpenAPIGenerator**

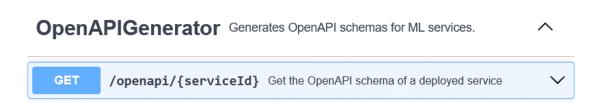
Use Case: Generate

OpenAPI Schema

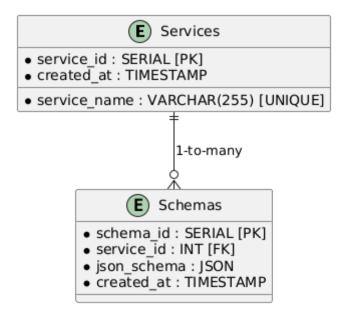
Scenario:

User sends request to get schema

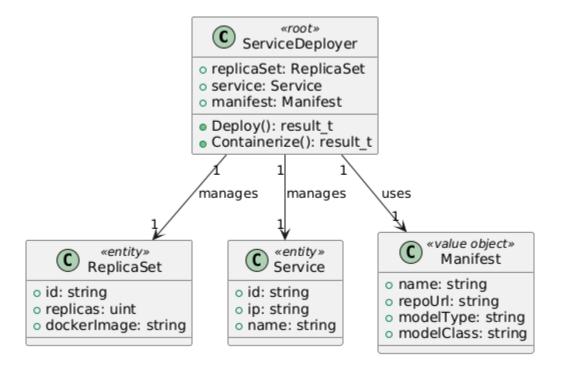
OpenApi Generator checks if schema is present, if not – creates it, returns actual schema



Physical schema **OpenAPIGenerator**



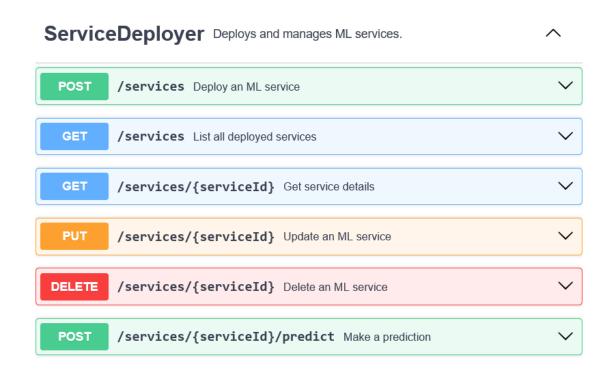
Logical data model ServiceDeployer



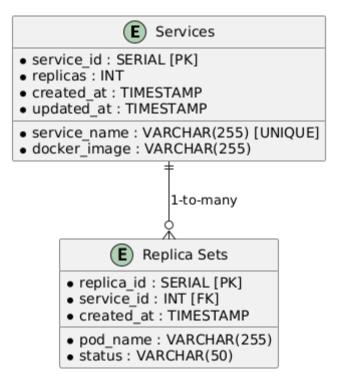
API usage **ServiceDeployer**

Use Case: Deploy Service **Scenario**:

User sends request to deploy ML Model ML Wrappers creates docker container Docker container is deployed via service into K8s



Physical schema **ServiceDeployer**



Team work

Request Router – Tsaturyan Konstantin

Authenticator – Dandamaev Gadji

OpenAPI Generator – Tsurkan Daniel

Service Deployer – Smolkin Mikhail