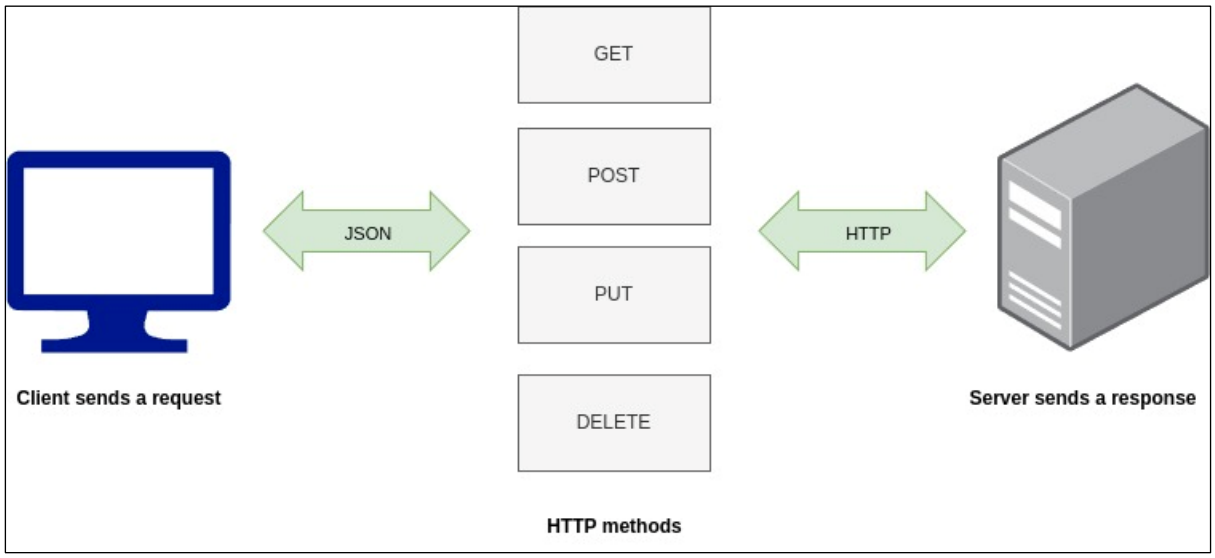
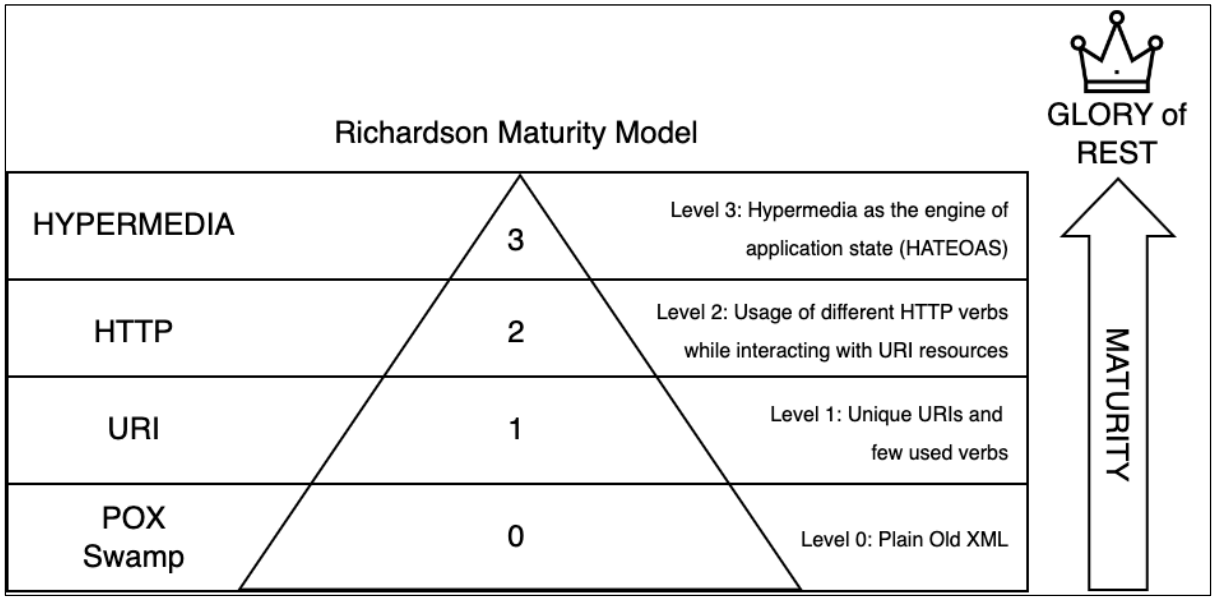
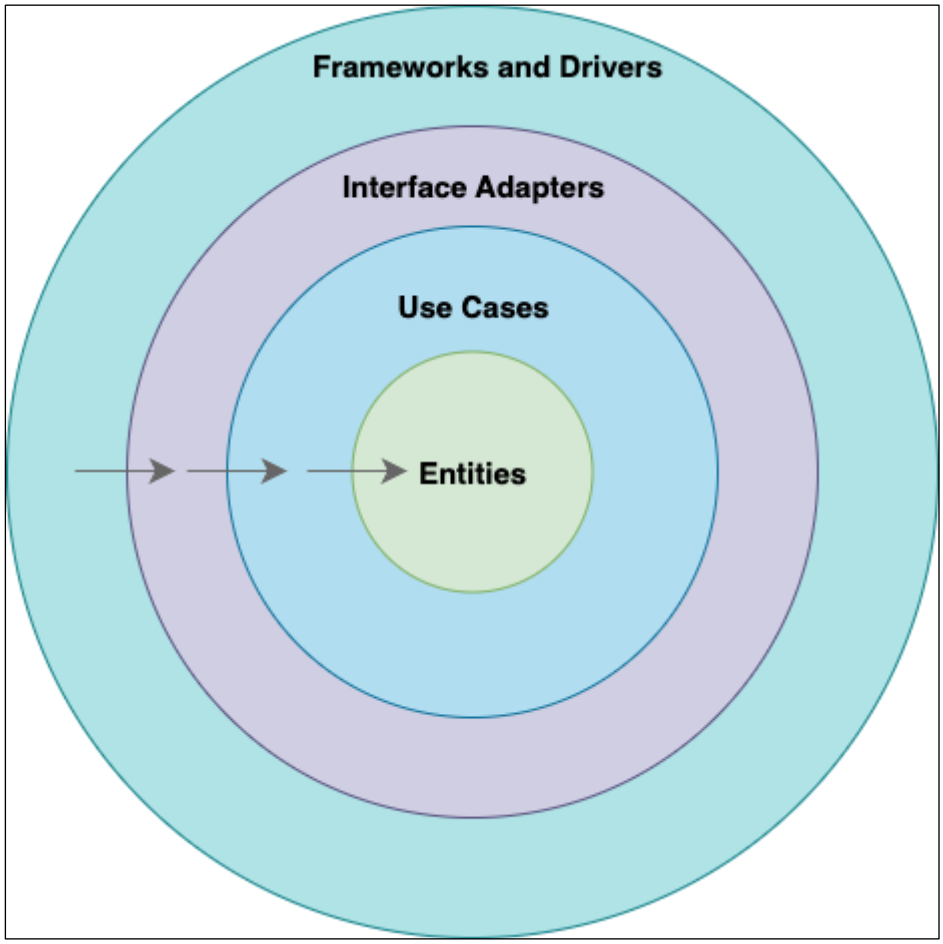
Chapter 1: Understanding RESTful Core Concepts

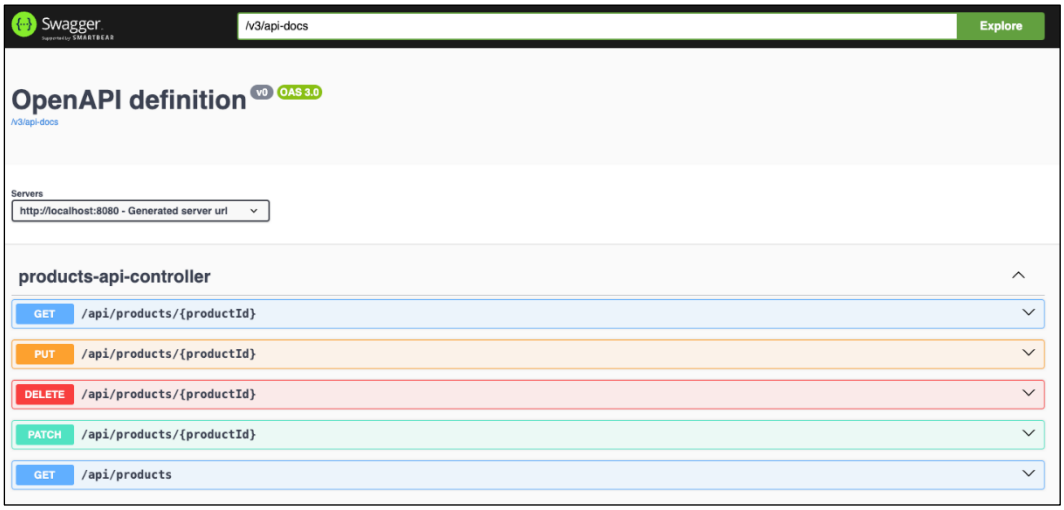


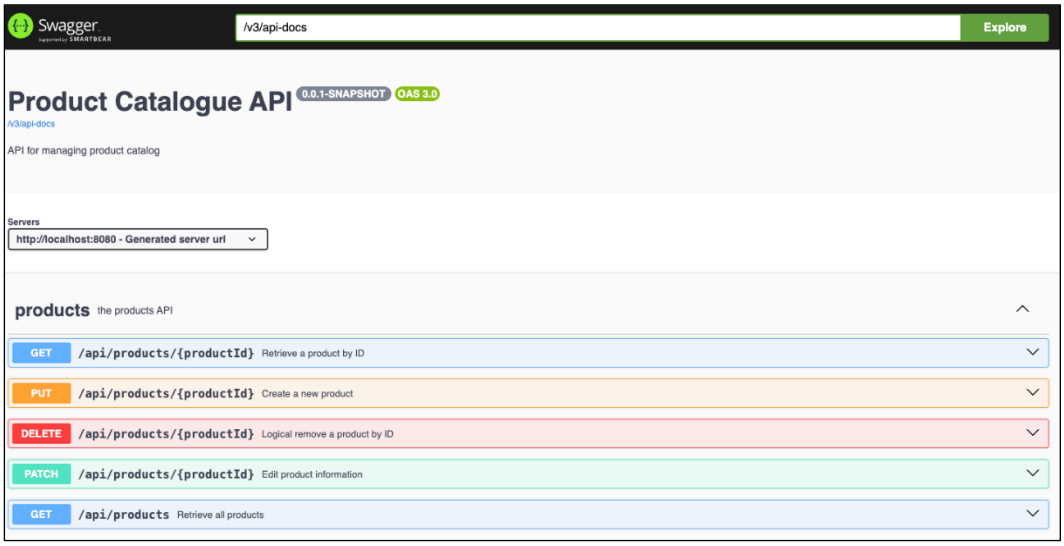


Chapter 2: Exposing a RESTful API with Spring

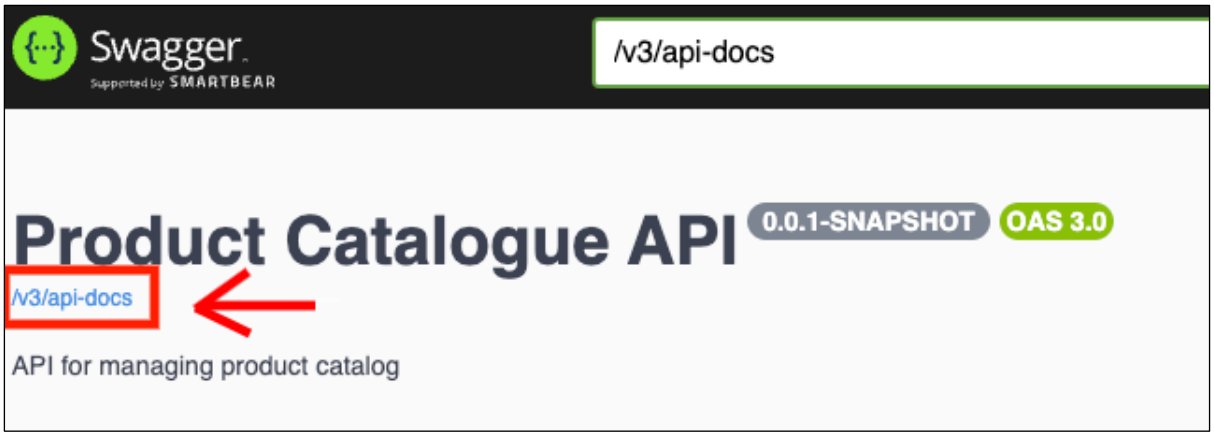


Chapter 3: Generating Code from OpenAPI

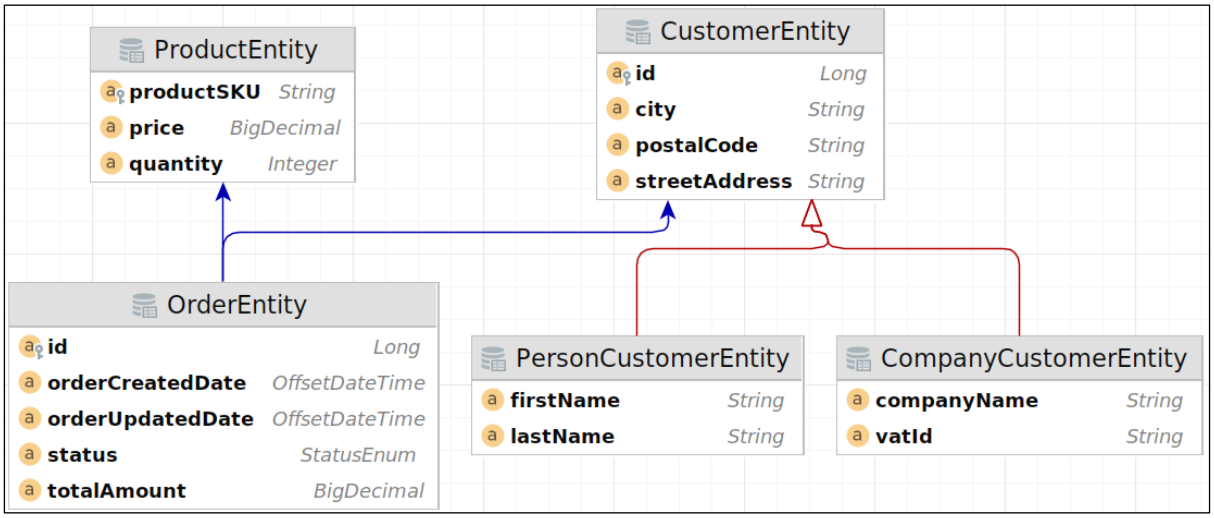


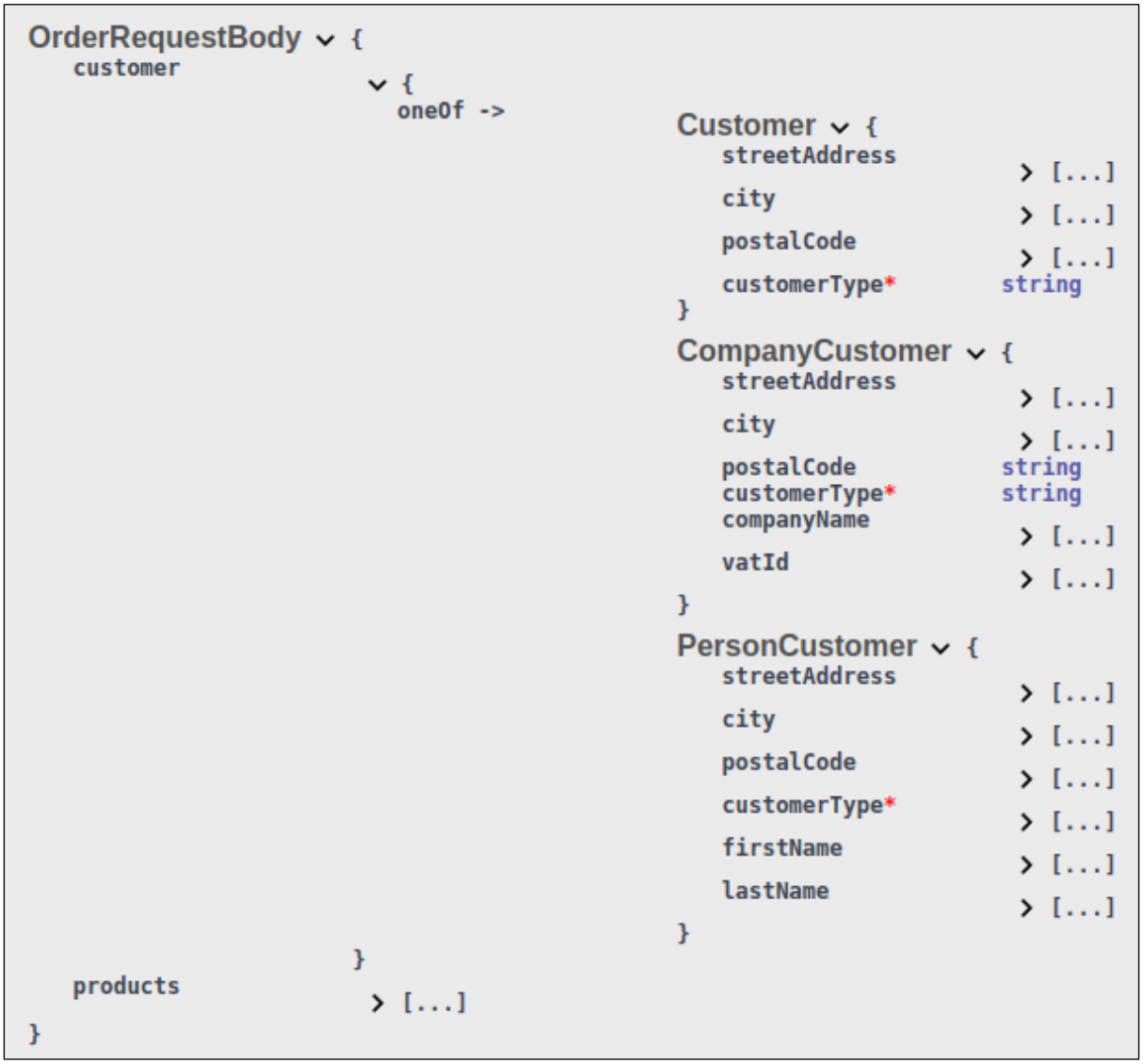


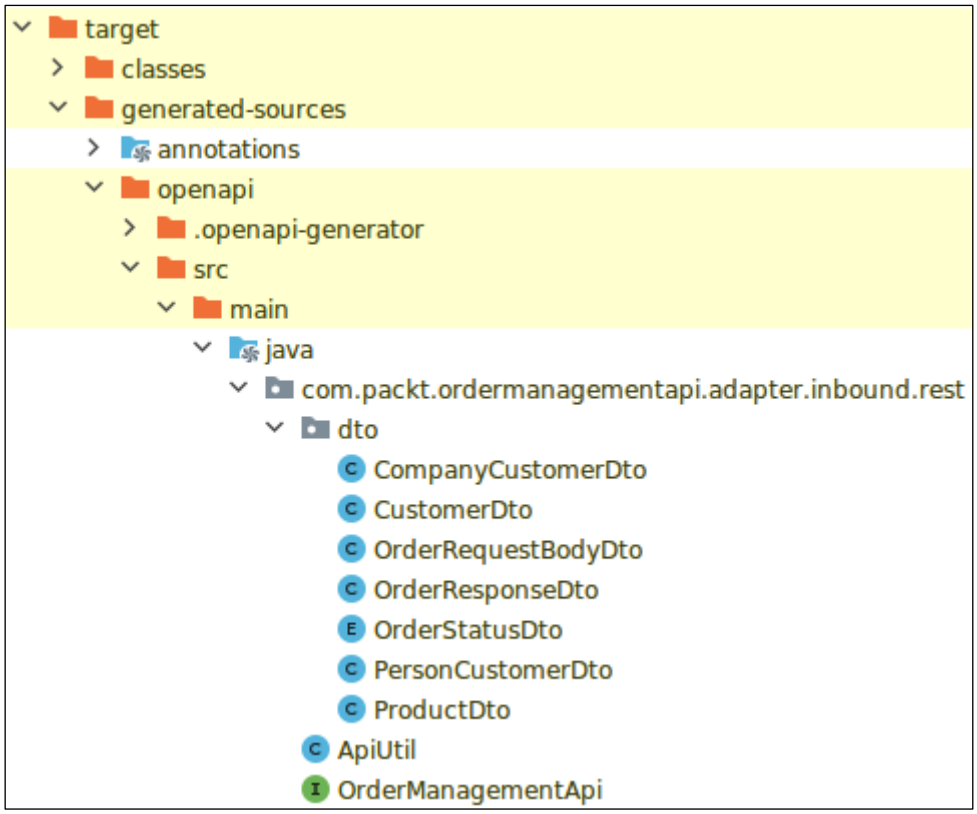


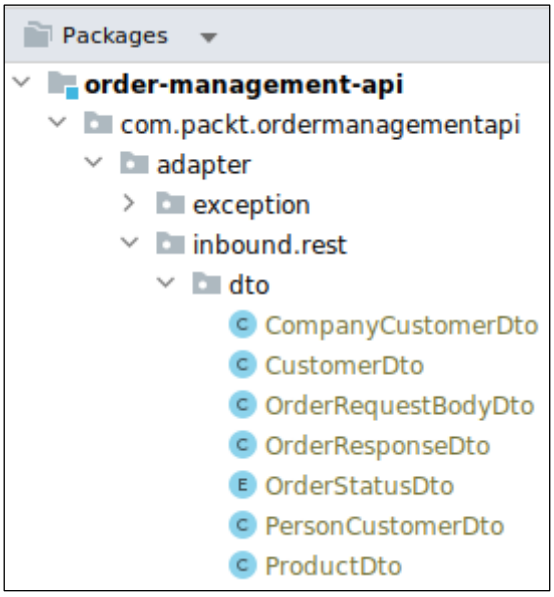

Swagger
Supported by SMARTBEAR
/v3/api-docs
Product Catalogue API
0.0.1-SNAPSHOT
OAS 3.0
/v3/api-docs
API for managing product catalog

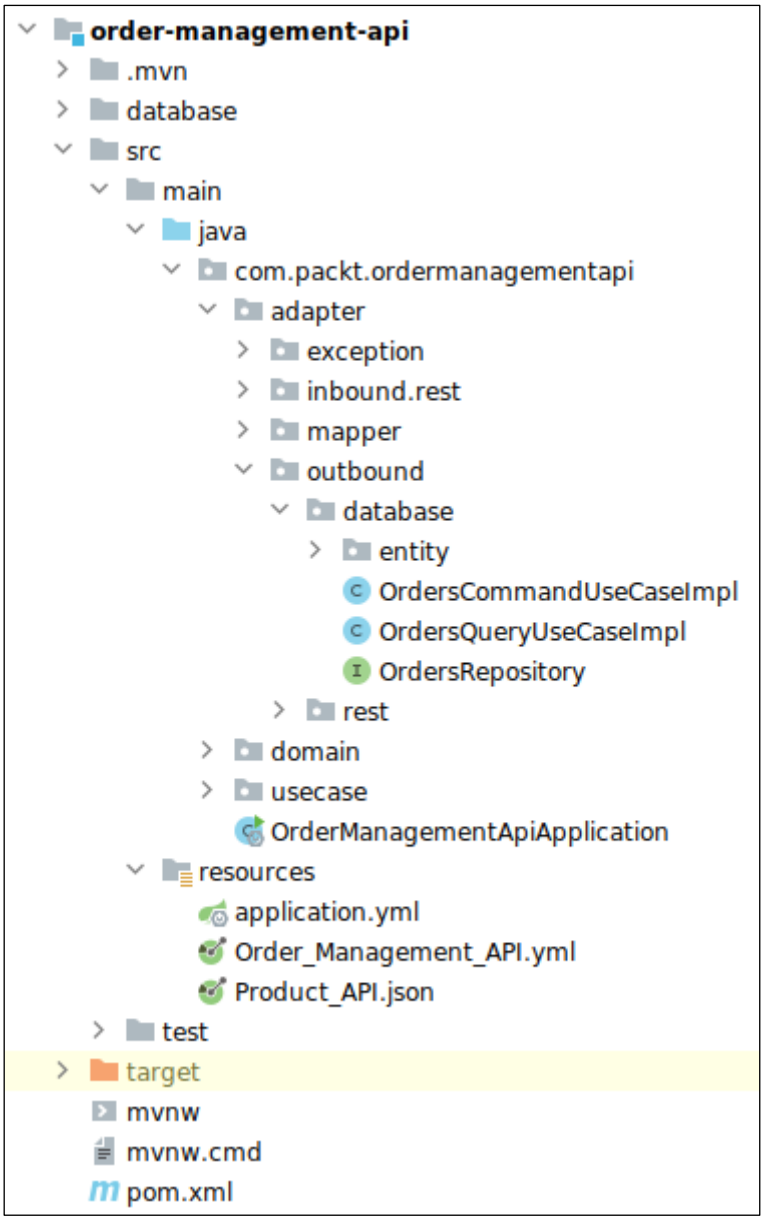
Chapter 4: Generating Code from OpenAPI

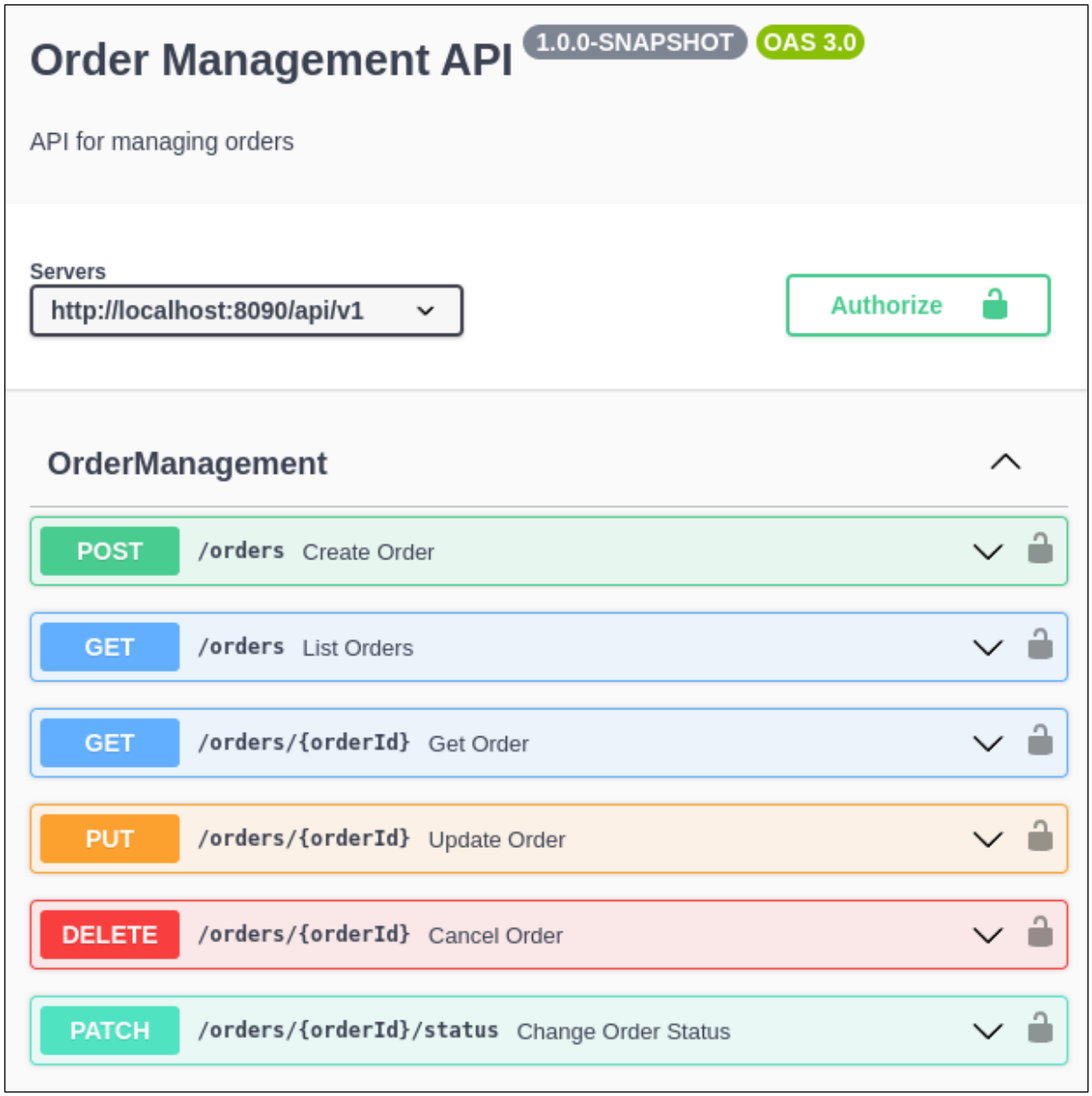




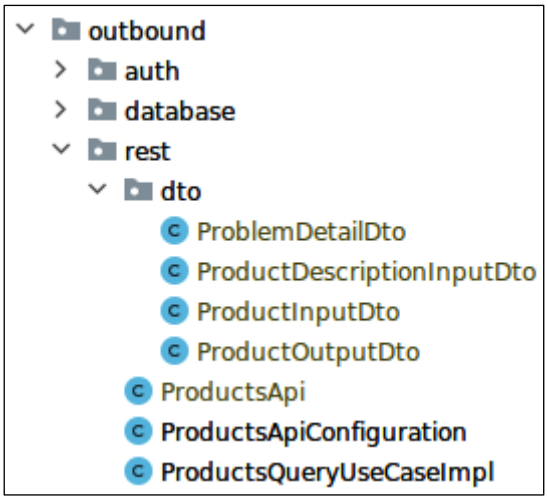

target
classes
generated-sources
annotations
openapi
.openapi-generator
src
main
java
com.packt.ordermanagementapi.adapter.inbound.rest
dto
CompanyCustomerDto
CustomerDto
OrderRequestBodyDto
OrderResponseDto
OrderStatusDto
PersonCustomerDto
ProductDto
ApiUtil
OrderManagementApi


Packages
order-management-api
com.packt.ordermanagementapi
adapter
exception
inbound.rest
dto
CompanyCustomerDto
CustomerDto
OrderRequestBodyDto
OrderResponseDto
OrderStatusDto
PersonCustomerDto
ProductDto

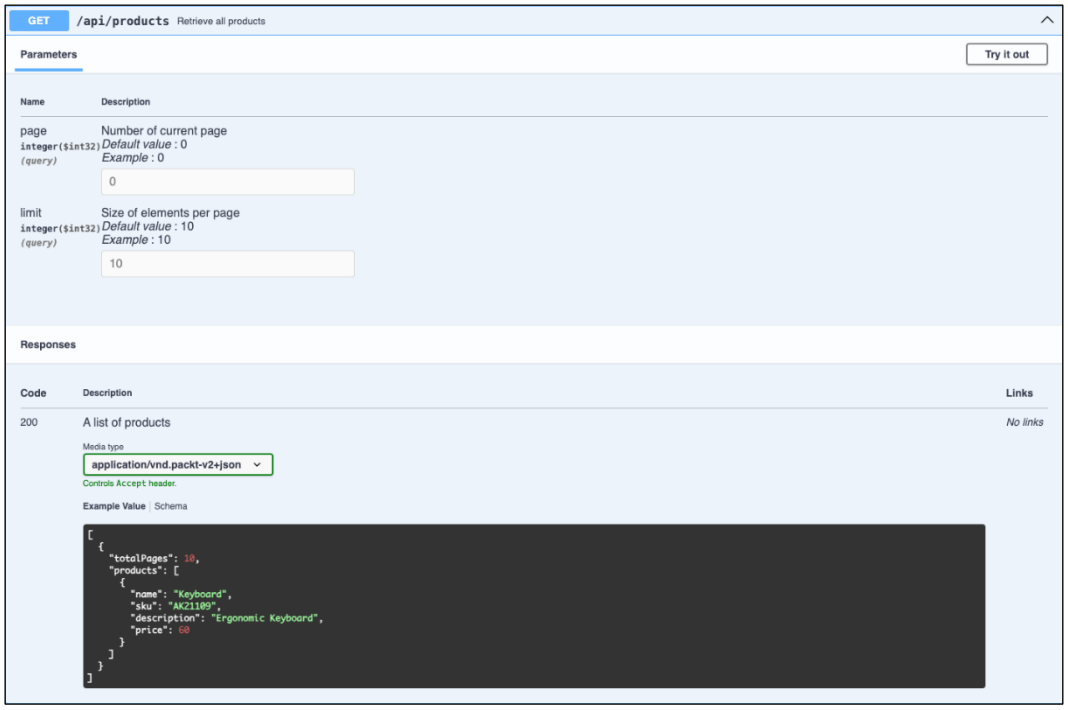

order-management-api
.mvn
database
src
main
java
com.packt.ordermanagementapi
adapter
exception
inbound.rest
mapper
outbound
database
entity
OrdersCommandUseCaseImpl
OrdersQueryUseCaseImpl
OrdersRepository
rest
domain
usecase
OrderManagementApiApplication
resources
application.yml
Order_Management_API.yml
Product_API.json
test
target
mvnw
mvnw.cmd
pom.xml

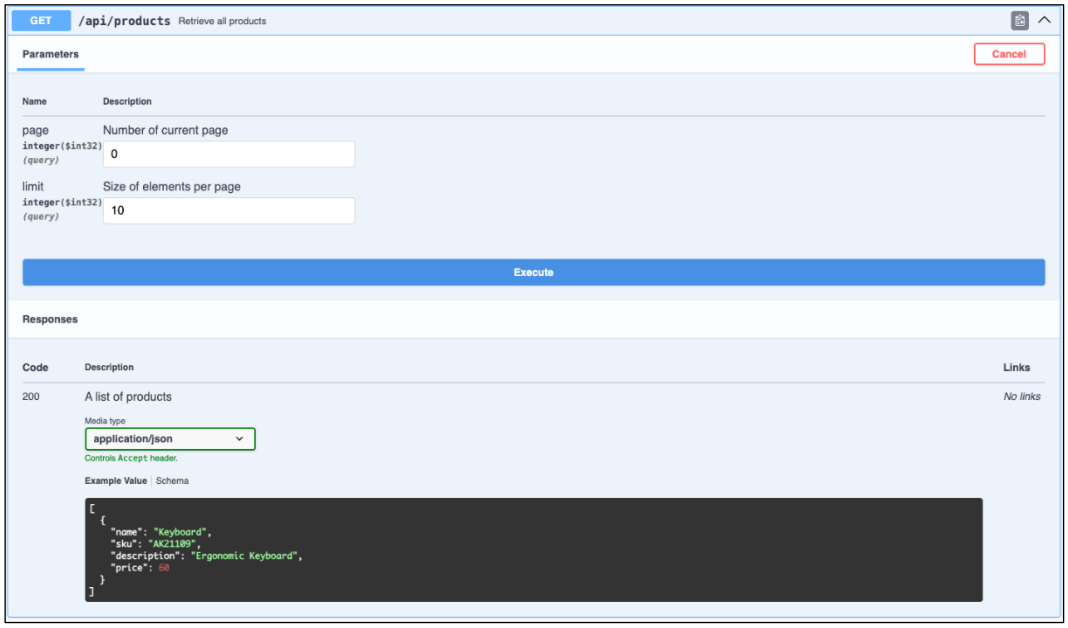


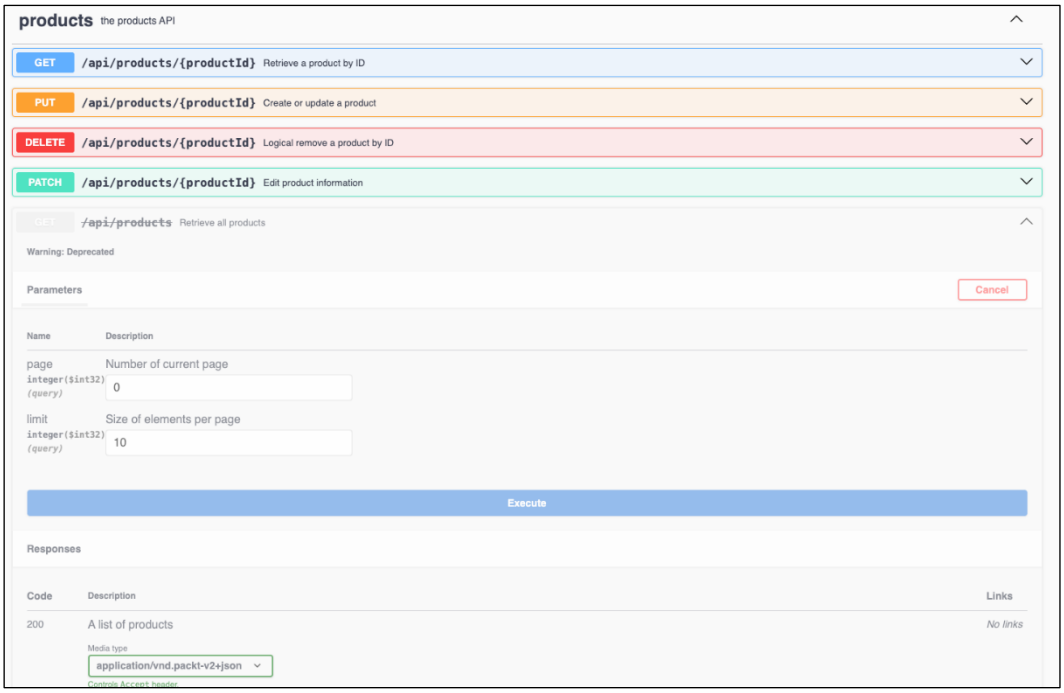

```java
public OrderRequest toOrderRequest(OrderRequestBodyDto orderRequestBody) {  2 usages
    if (orderRequestBody == null) {
        return null;
    } else {
        Customer customer = null;
        List<Product> products = null;
        customer = this.customerCustomMapper.customerDtoToCustomer(orderRequestBody.getCustomer());
        products = this.productDtoListToProductList(orderRequestBody.getProducts());
        OrderRequest orderRequest = new OrderRequest(customer, products);
        return orderRequest;
    }
}
```


outbound
auth
database
rest
dto
ProblemDetailDto
ProductDescriptionInputDto
ProductInputDto
ProductOutputDto
ProductsApi
ProductsApiConfiguration
ProductsQueryUseCaseImpl

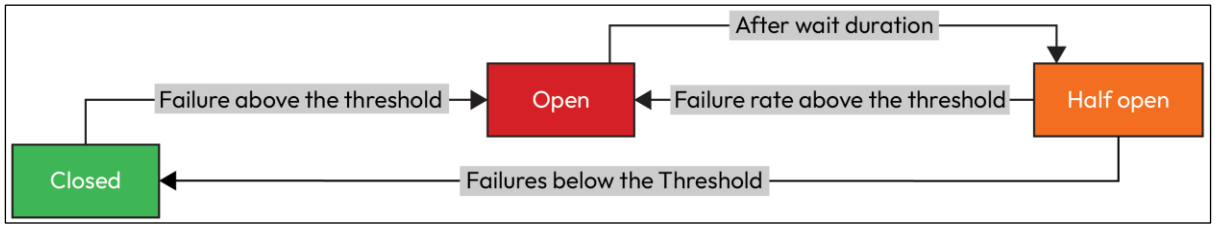
Chapter 5: Managing API Evolution



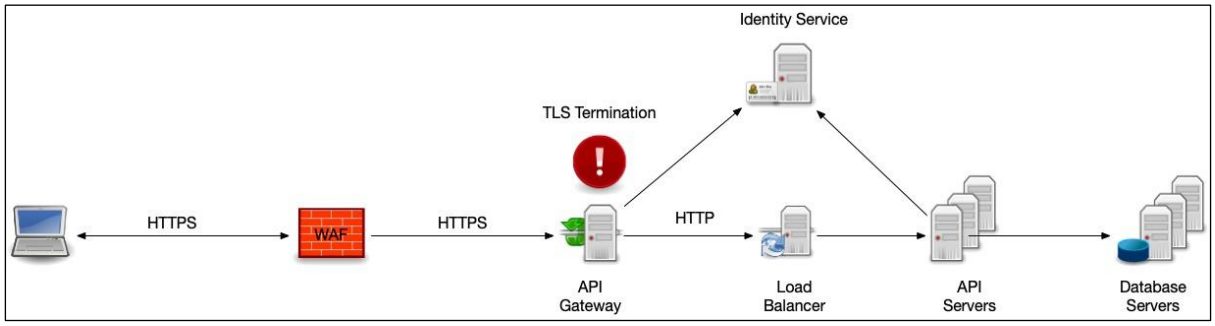


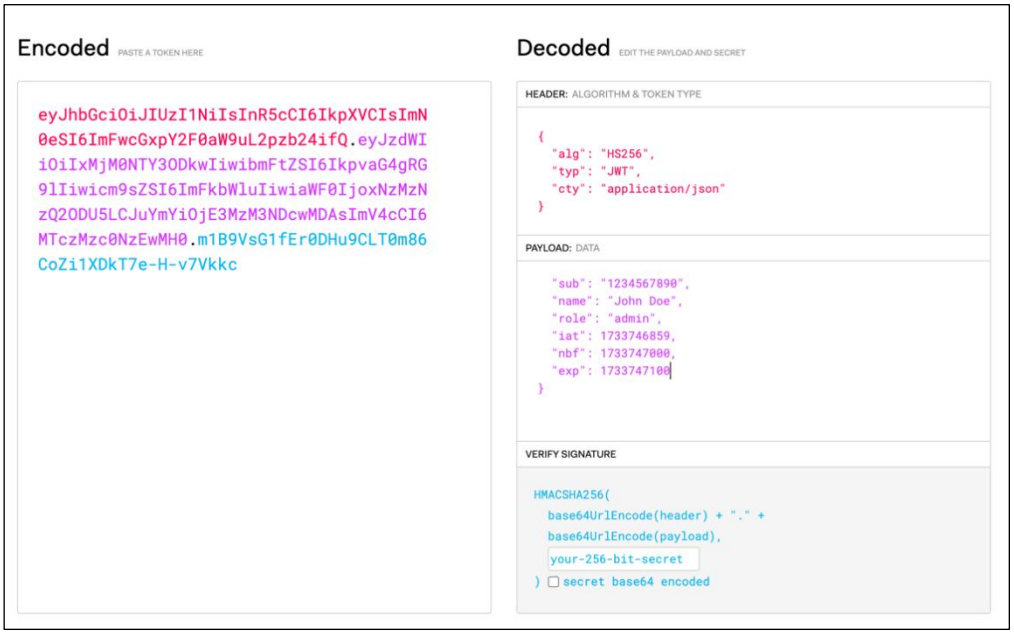

products the products API
GET /api/products/{productId} Retrieve a product by ID
PUT /api/products/{productId} Create or update a product
DELETE /api/products/{productId} Logical remove a product by ID
PATCH /api/products/{productId} Edit product information
GET /api/products Retrieve all products
Warning: Deprecated
Parameters
Cancel
Name
Description
page
integer($int32)
(query)
Number of current page
0
limit
integer($int32)
(query)
Size of elements per page
10
Execute
Responses
Code
Description
Links
200
A list of products
No links
Media type
application/vnd.packt-v2+json
Controls Accept header.

Chapter 6: Advanced API Concepts and Implementations

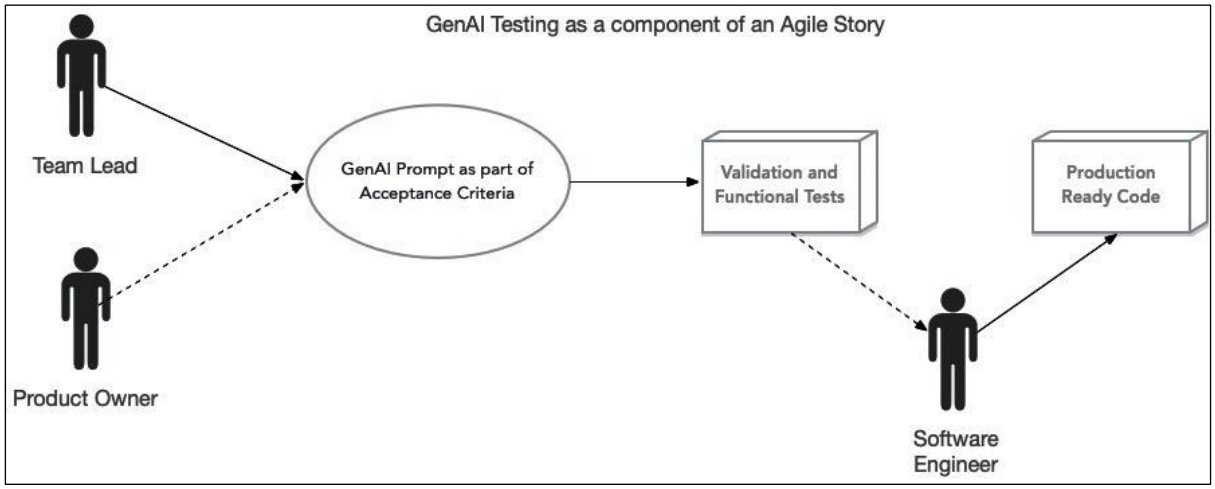


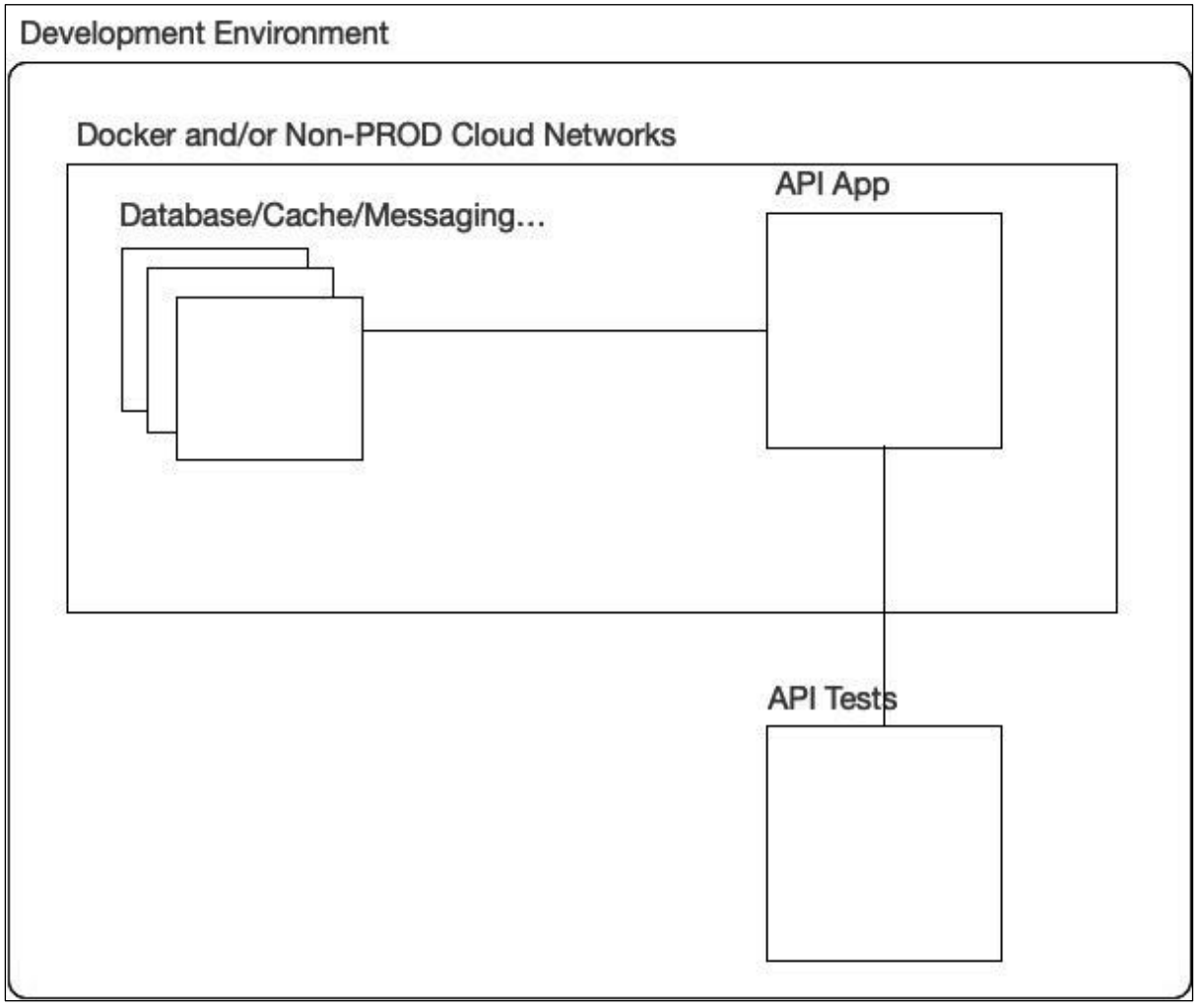
Chapter 7: Securing Your RESTful APIs



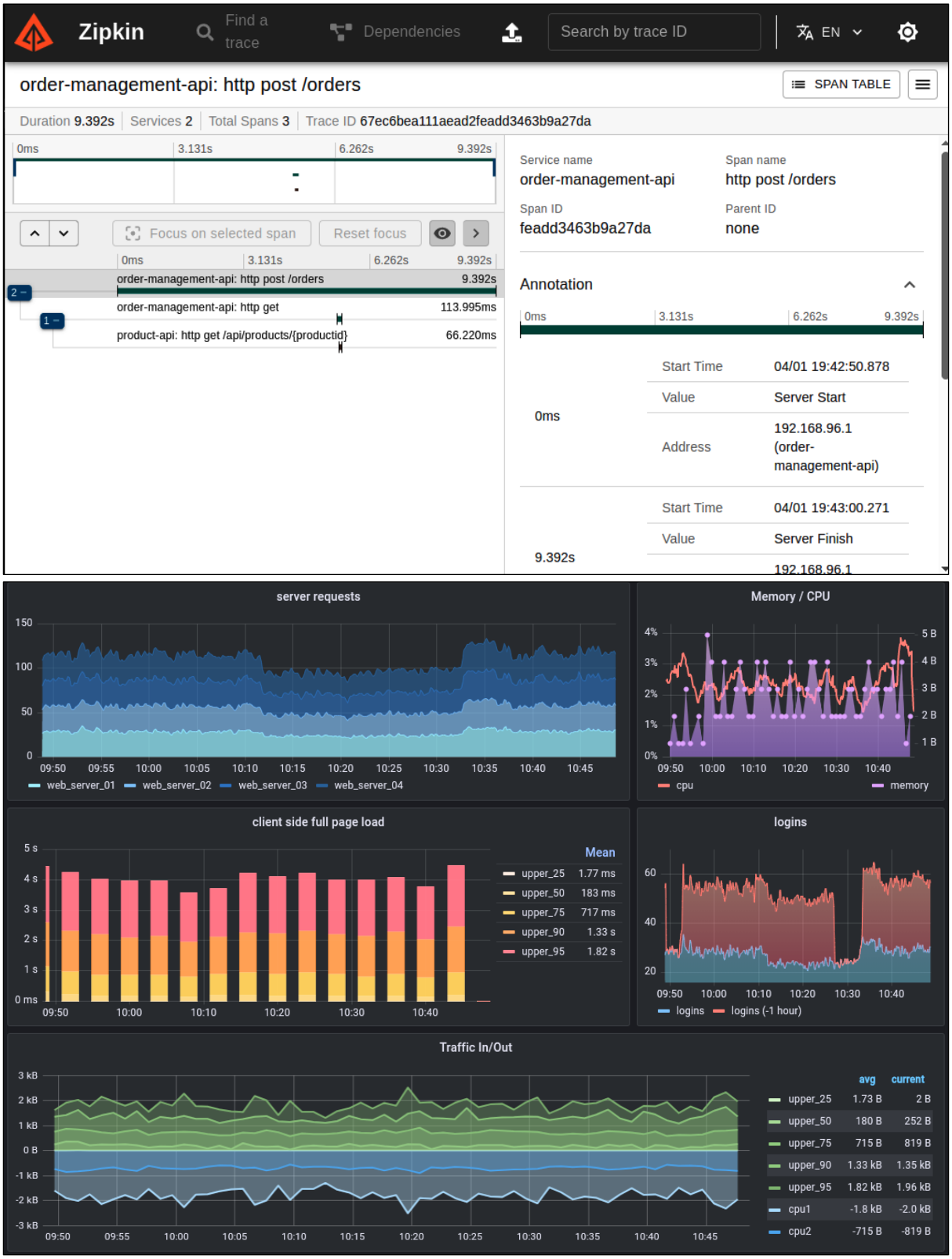


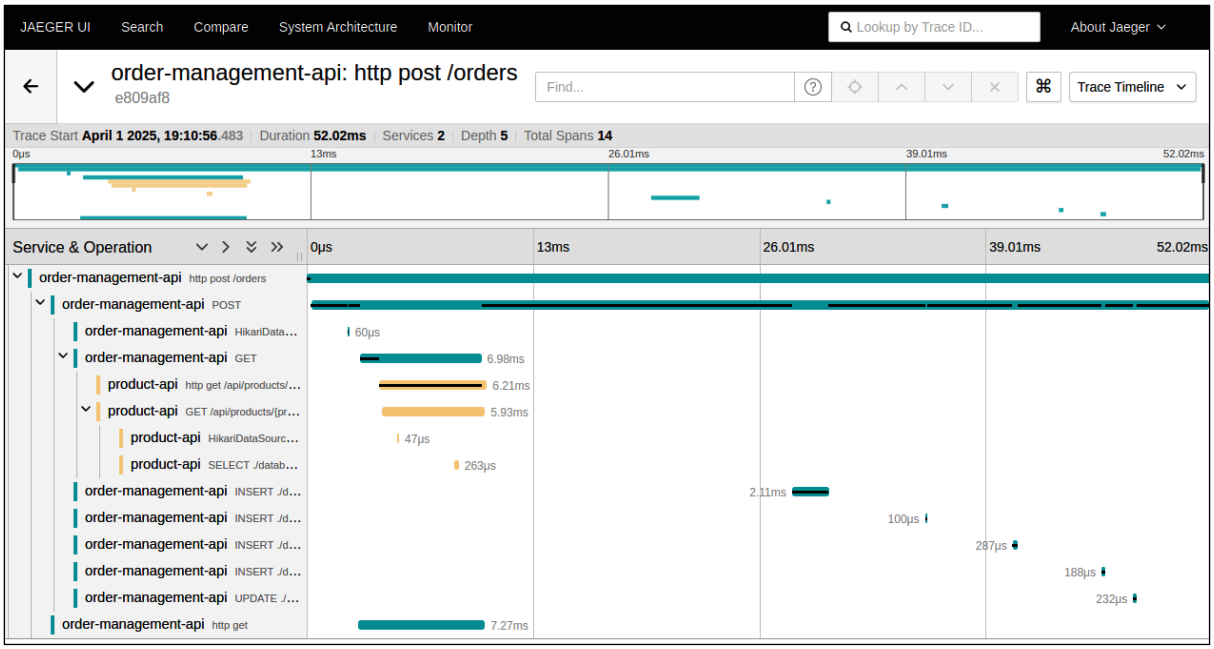
Chapter 8: Testing Strategies for Robust APIs

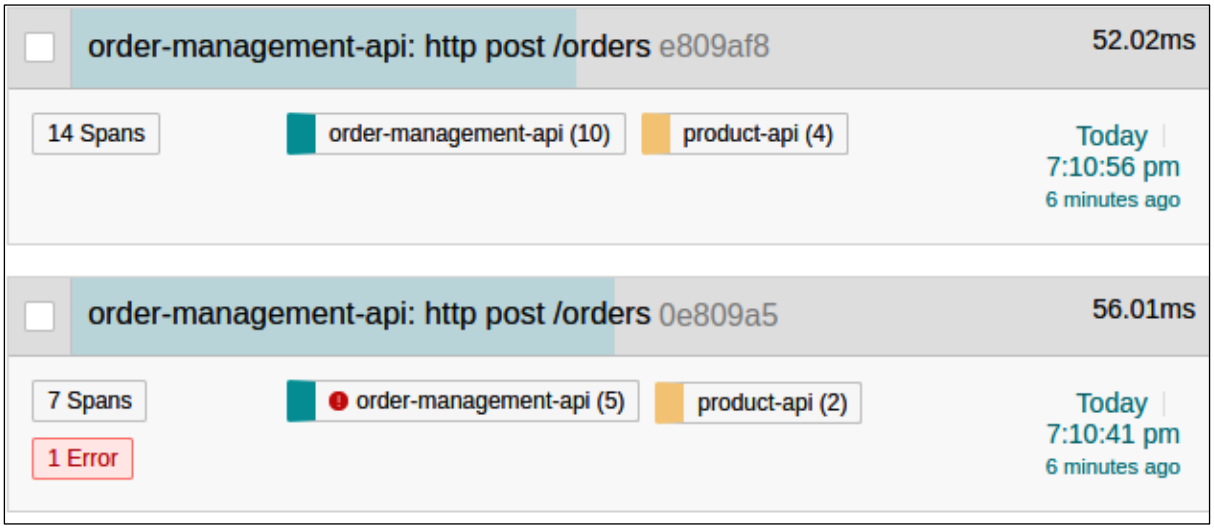




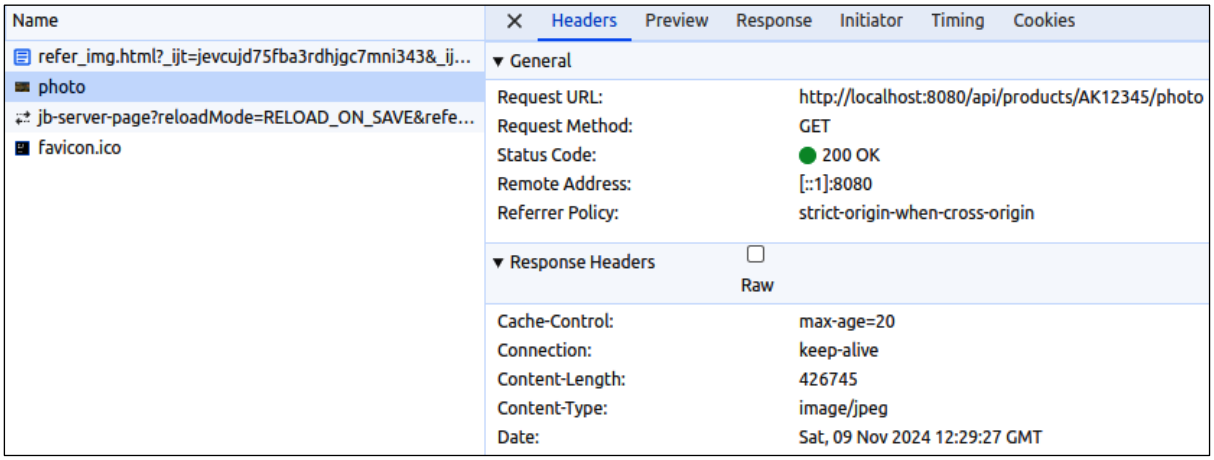
Chapter 9: Monitoring and Observability

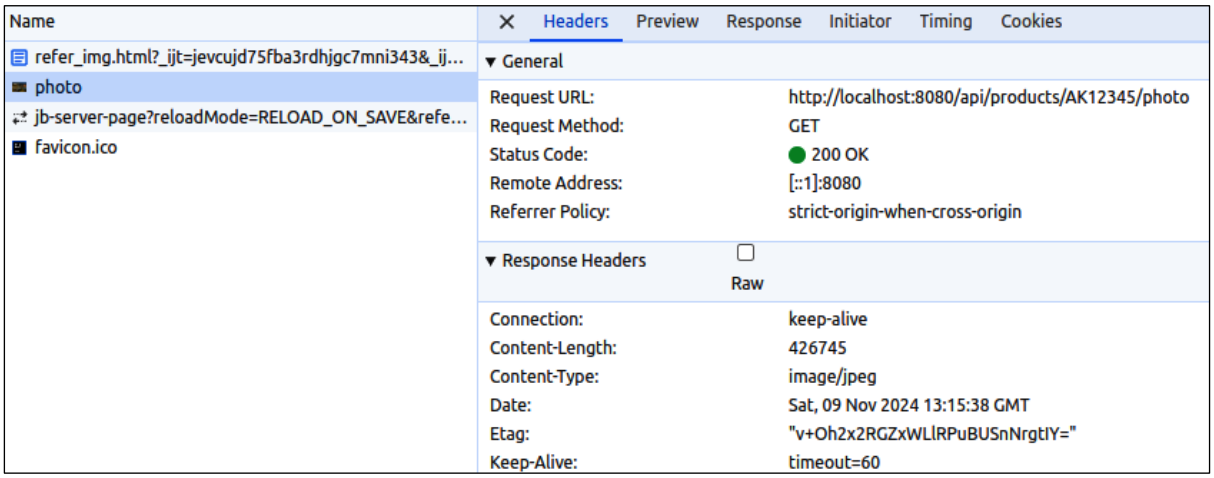


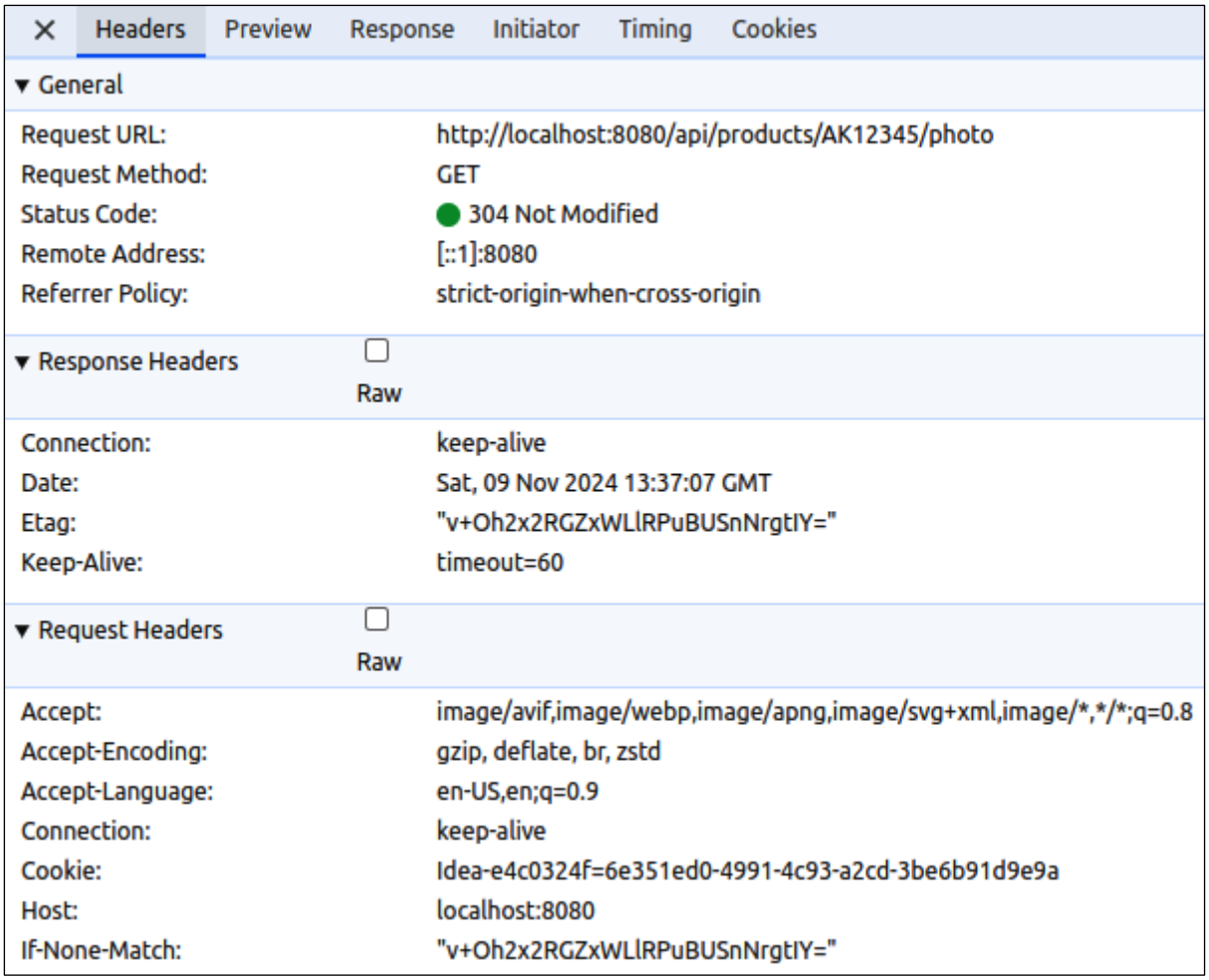

JAEGER UI
Search
Compare
System Architecture
Monitor
Lookup by Trace ID...
About Jaeger
order-management-api: http post /orders
e809af8
Find...
Trace Timeline
Trace Start April 1 2025, 19:10:56.483 | Duration 52.02ms | Services 2 | Depth 5 | Total Spans 14
0µs
13ms
26.01ms
39.01ms
52.02ms
Service & Operation
order-management-api http post /orders
order-management-api POST
order-management-api HikariData...
order-management-api GET
product-api http get /api/products/...
product-api GET /api/products/{pr...
product-api HikariDataSourc...
product-api SELECT /datab...
order-management-api INSERT /d...
order-management-api INSERT /d...
order-management-api INSERT /d...
order-management-api INSERT /d...
order-management-api UPDATE /...
order-management-api http get
60µs
6.98ms
6.21ms
5.93ms
47µs
263µs
2.11ms
100µs
287µs
188µs
232µs
7.27ms


order-management-api: http post /orders e809af8
52.02ms
14 Spans
order-management-api (10)
product-api (4)
Today
7:10:56 pm
6 minutes ago
order-management-api: http post /orders 0e809a5
56.01ms
7 Spans
order-management-api (5)
product-api (2)
1 Error
Today
7:10:41 pm
6 minutes ago

Chapter 10: Scaling and Performance Optimization Techniques

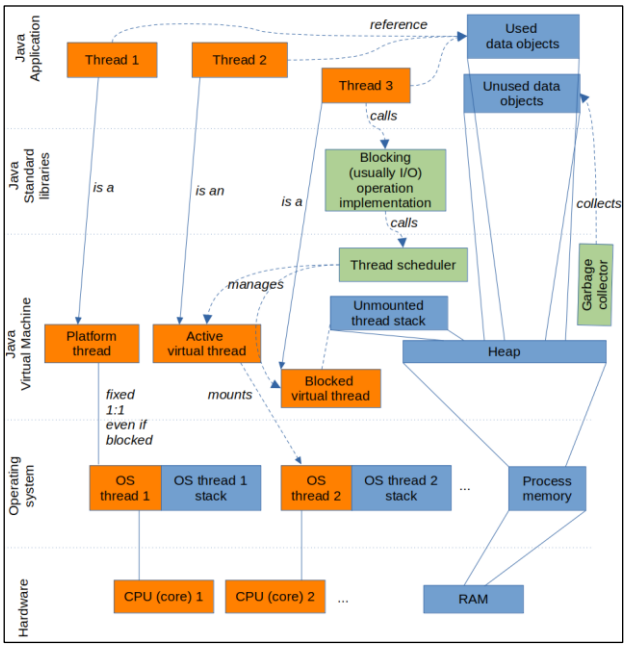


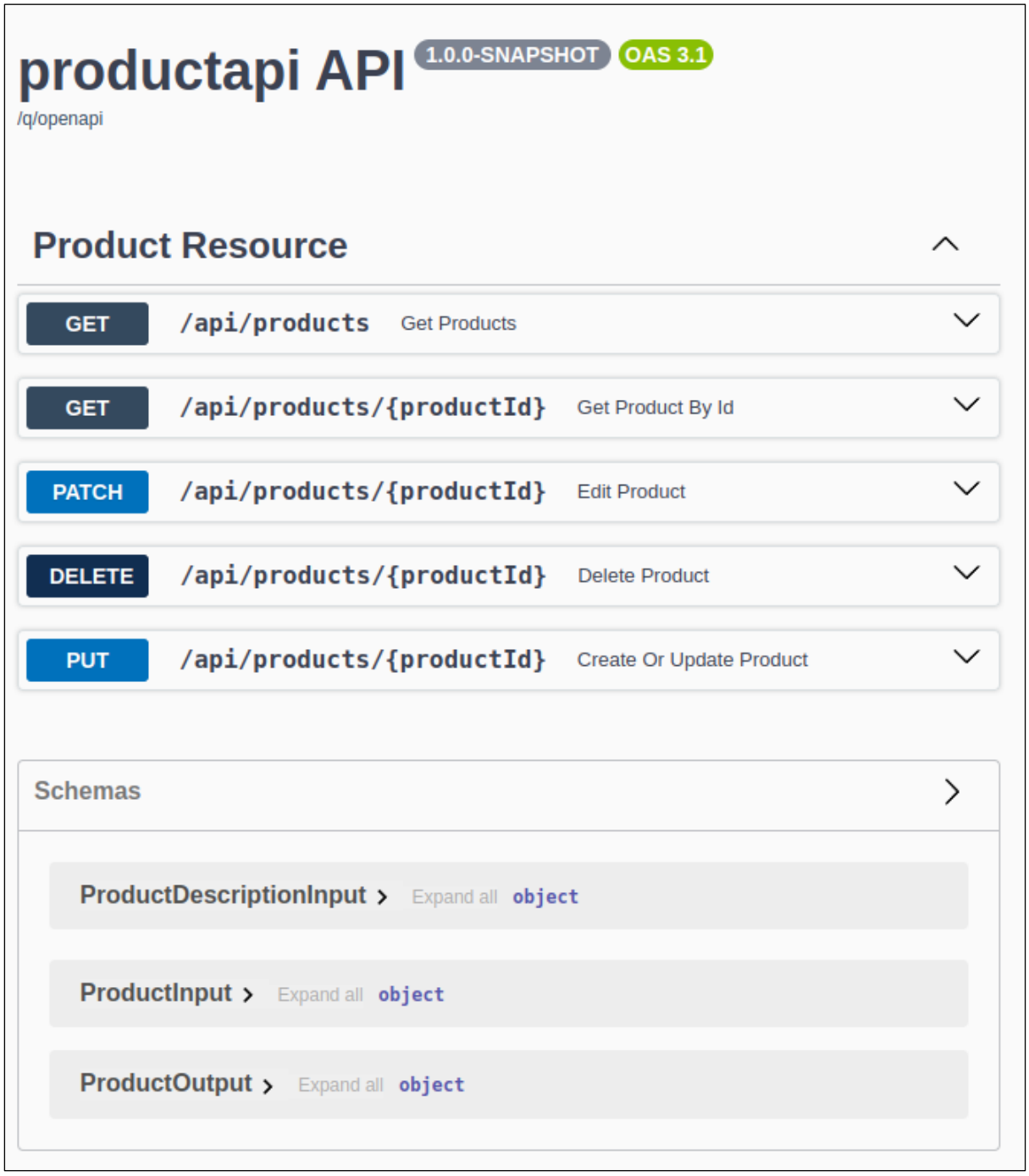


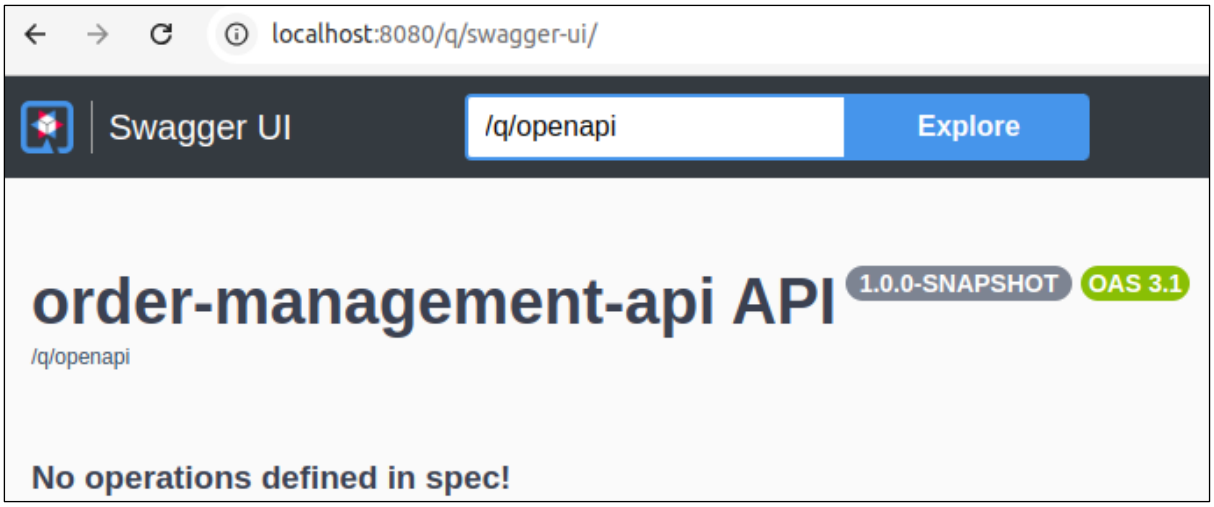

Headers
Preview
Response
Initiator
Timing
Cookies
▼ General
Request URL:
http://localhost:8080/api/products/AK12345/photo
Request Method:
GET
Status Code:
304 Not Modified
Remote Address:
[::1]:8080
Referrer Policy:
strict-origin-when-cross-origin
▼ Response Headers
Raw
Connection:
keep-alive
Date:
Sat, 09 Nov 2024 13:37:07 GMT
Etag:
"v+Oh2x2RGZxWLlRPuBUSnNrgtIY="
Keep-Alive:
timeout=60
▼ Request Headers
Raw
Accept:
image/avif,image/webp,image/apng,image/svg+xml,image/*,*/*;q=0.8
Accept-Encoding:
gzip, deflate, br, zstd
Accept-Language:
en-US,en;q=0.9
Connection:
keep-alive
Cookie:
Idea-e4c0324f=6e351ed0-4991-4c93-a2cd-3be6b91d9e9a
Host:
localhost:8080
If-None-Match:
"v+Oh2x2RGZxWLlRPuBUSnNrgtIY="

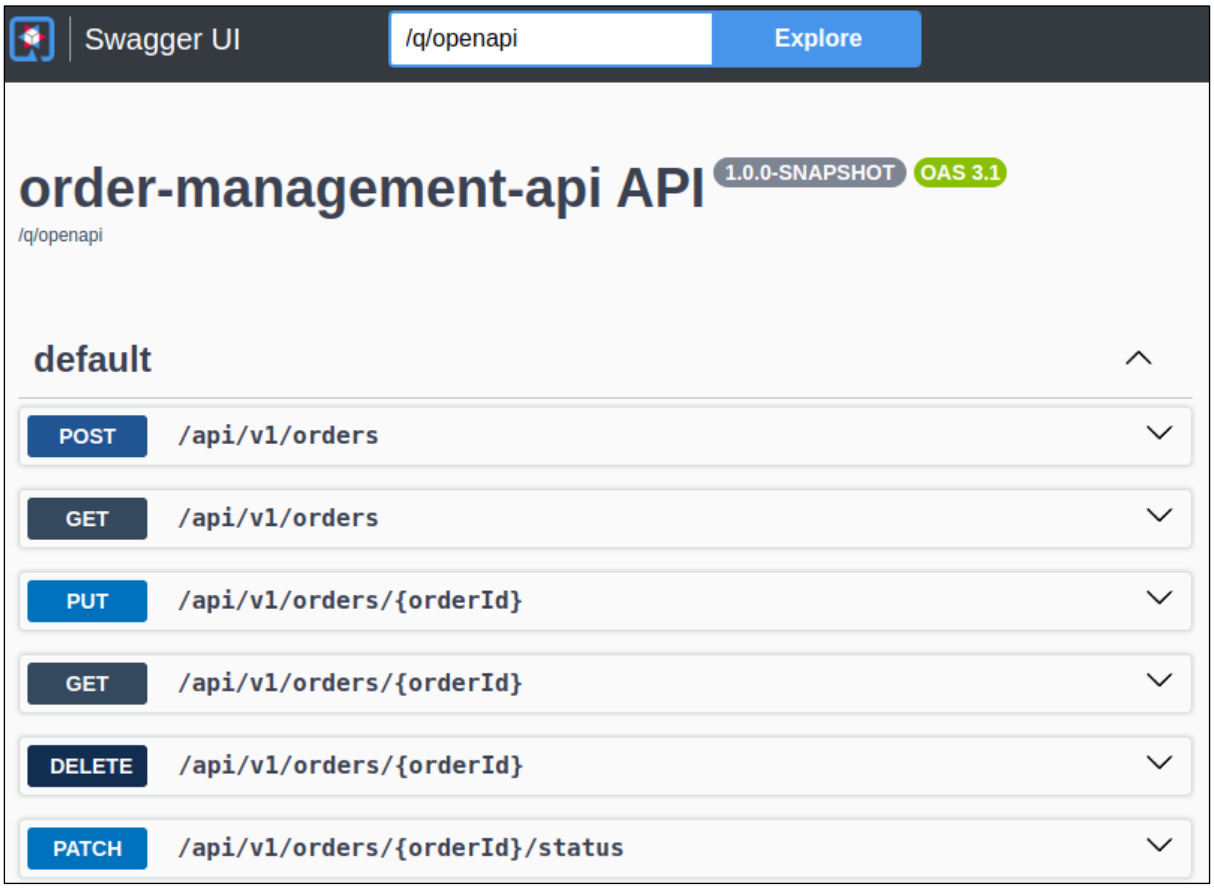

Headers
Preview
Response
Initiator
Timing
Cookies
This request has no response data available.

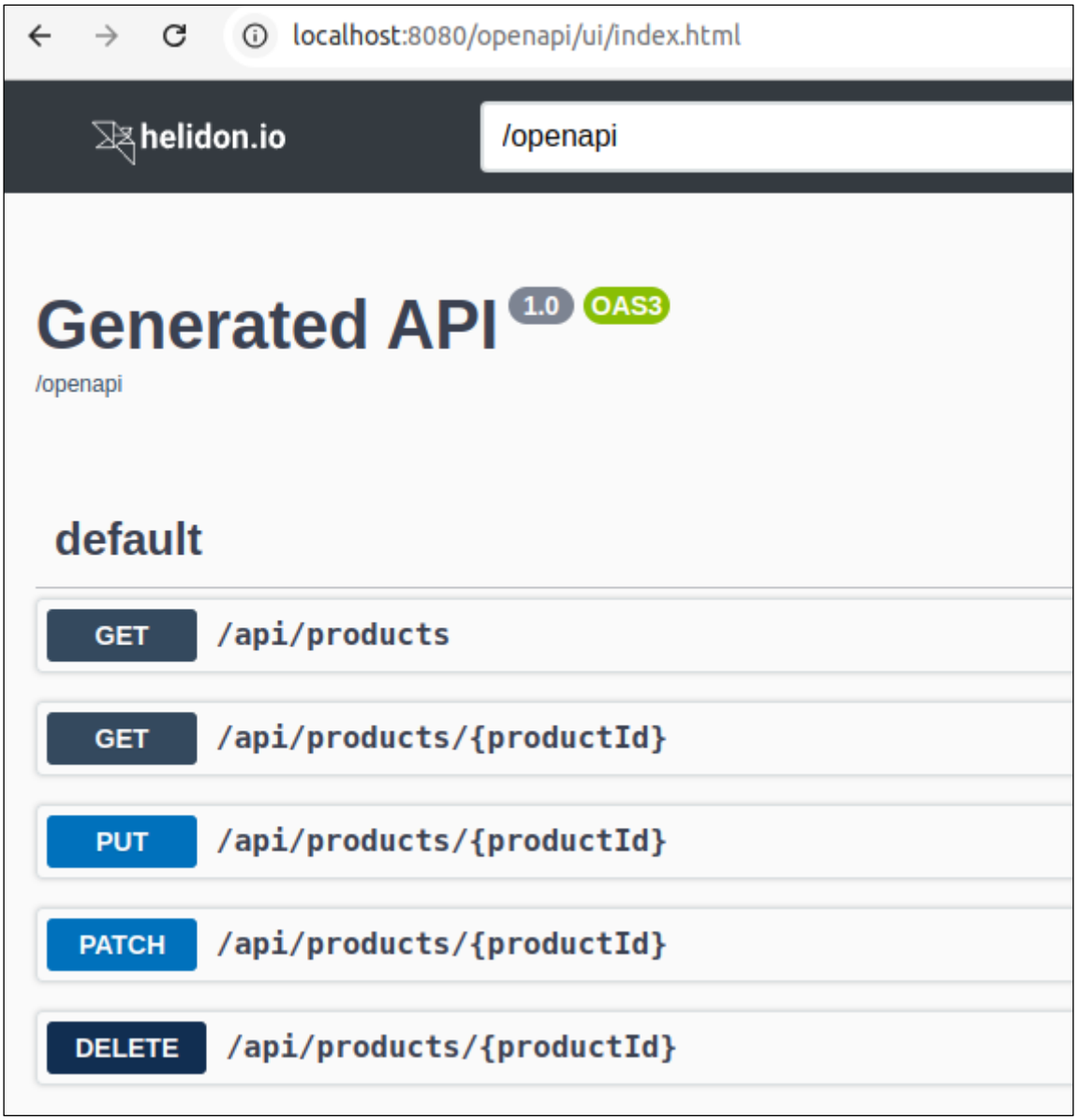
Name	Headers	Preview	Response	Initiator	Timing	Cookies
refer_img.html?_ijt=gi8iej6jkrv9ddt0di3kcfgcg4&_ij_r…	▼ General					
photo	Request URL:	http://localhost:8080/api/products/AK12345/photo				
jb-server-page?reloadMode=RELOAD_ON_SAVE&refe…	Request Method:	GET				
	Status Code:	200 OK				
	Remote Address:	[::1]:8080				
	Referrer Policy:	strict-origin-when-cross-origin				
	▼ Response Headers	☐ Raw				
	Connection:	keep-alive				
	Content-Length:	215865				
	Content-Type:	image/jpeg				
	Date:	Sat, 09 Nov 2024 13:44:44 GMT				
	Etag:	"y9QsxNhl+qCEhmNq0fW9vBoOYFY="				




productapi API
1.0.0-SNAPSHOT
OAS 3.1
/q/openapi
Product Resource
GET /api/products Get Products
GET /api/products/{productId} Get Product By Id
PATCH /api/products/{productId} Edit Product
DELETE /api/products/{productId} Delete Product
PUT /api/products/{productId} Create Or Update Product
Schemas
ProductDescriptionInput Expand all object
ProductInput Expand all object
ProductOutput Expand all object

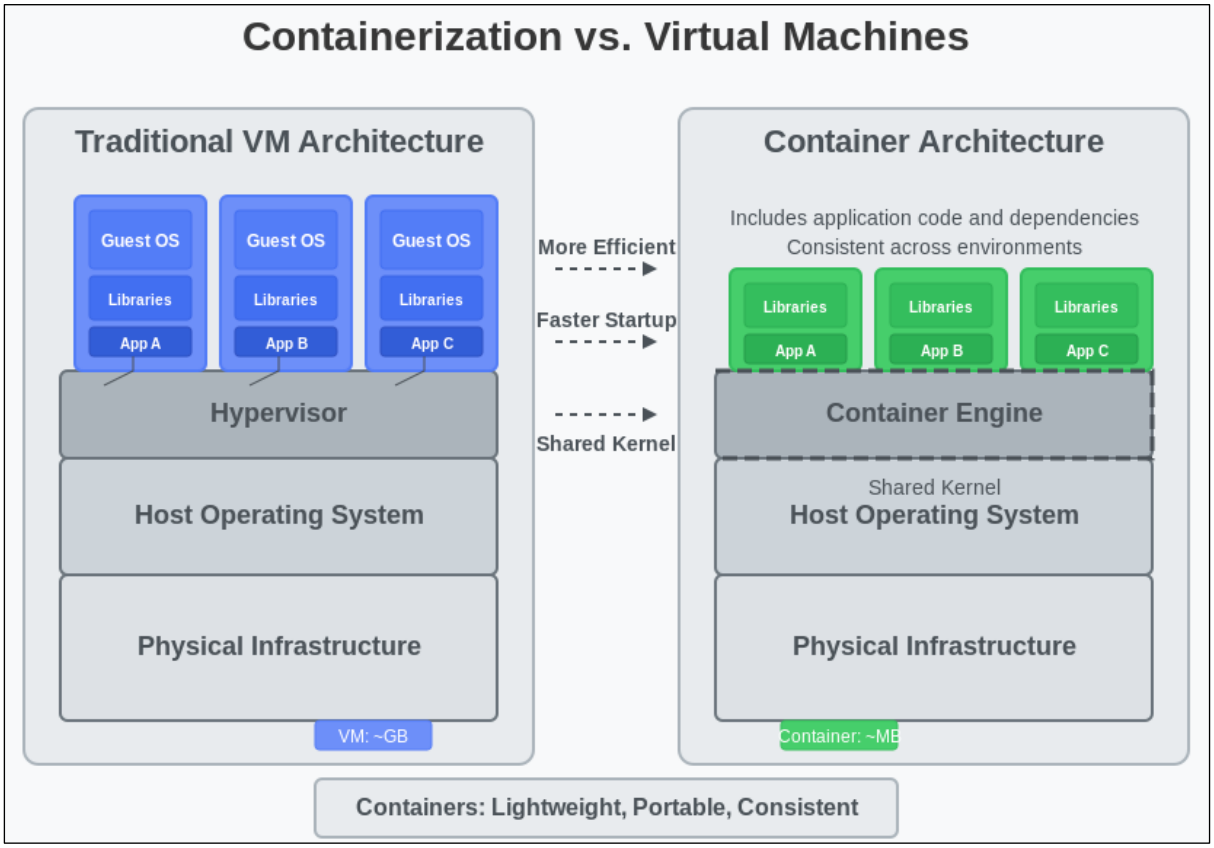

localhost:8080/q/swagger-ui/
Swagger UI
/q/openapi
Explore
order-management-api API
1.0.0-SNAPSHOT
OAS 3.1
/q/openapi
No operations defined in spec!

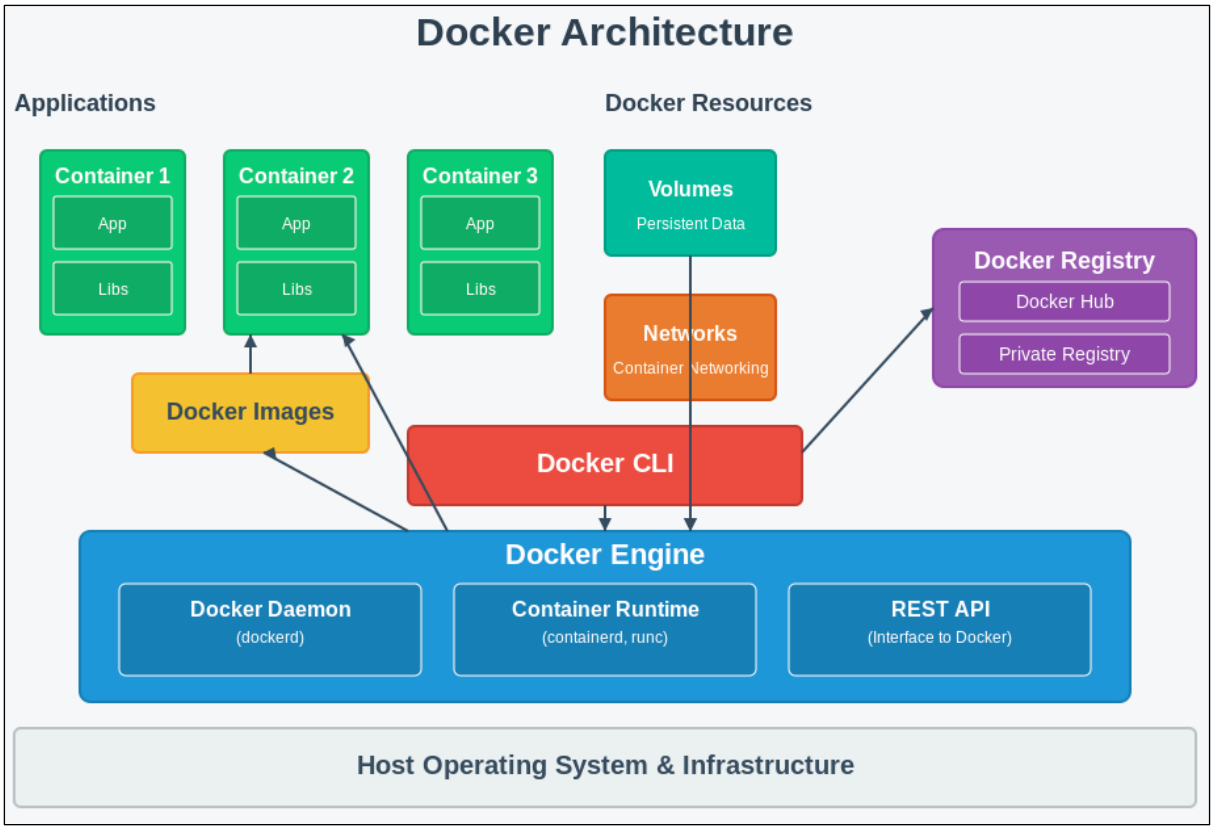

Swagger UI
/q/openapi
Explore
order-management-api API
1.0.0-SNAPSHOT
OAS 3.1
/q/openapi
default
POST /api/v1/orders
GET /api/v1/orders
PUT /api/v1/orders/{orderId}
GET /api/v1/orders/{orderId}
DELETE /api/v1/orders/{orderId}
PATCH /api/v1/orders/{orderId}/status

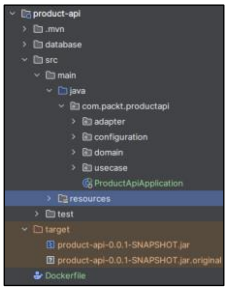

localhost:8080/openapi/ui/index.html
helidon.io
/openapi
Generated API
1.0
OAS3
/openapi
default
GET
/api/products
GET
/api/products/{productId}
PUT
/api/products/{productId}
PATCH
/api/products/{productId}
DELETE
/api/products/{productId}

Chapter 12: Deploying APIs

```
src/
├── main/
│   ├── resources/
│   │   ├── application.yml          # Common settings for the Order API
│   │   ├── application-dev.yml      # Local development settings
│   │   ├── application-test.yml     # Automated testing environment settings
│   │   └── application-prod.yml     # Production deployment settings
```




Docker Architecture
Applications
Docker Resources
Container 1
App
Libs
Container 2
App
Libs
Container 3
App
Libs
Volumes
Persistent Data
Networks
Container Networking
Docker Registry
Docker Hub
Private Registry
Docker Images
Docker CLI
Docker Engine
Docker Daemon
(dockerd)
Container Runtime
(containerd, runc)
REST API
(Interface to Docker)
Host Operating System & Infrastructure


product-api
.mvn
database
src
main
java
com.packt.productapi
adapter
configuration
domain
usecase
ProductApiApplication
resources
test
target
product-api-0.0.1-SNAPSHOT.jar
product-api-0.0.1-SNAPSHOT.jar.original
Dockerfile