

DACM CASE



CONTENTS

01

Identifying issues

Looking at the specification and source material.

02

Making decisions

What do we do with what is not specified?
Scoping the case.

03

What is missing?

What has intentionally been left out.

04

Solution architecture

Layers, DTOs, Interfaces, etc.

05

Deployment architecture

How an AWS deployment could look like.

06

Summary

What could have been different.

IDENTIFYING ISSUES

Models:

- Keys - How do they work?
- Inconsistent casing
- Magical values like "ToBeDefined"
- Integer properties that are sometimes strings
- Etc.

Data:

- Replicated data between models
- Missing link between models



MAKING DECISIONS

Technical:

- REST
- AWS
- Docker
- .Net 8 - Use minimal API project template

Scoping:

- Implement GET, POST, PUT, DELETE endpoints for Asset
- Implement GET endpoint for Order to prove missing link is implemented
- Implement Unit Test for one entity
- Implement Integration Test for one endpoint

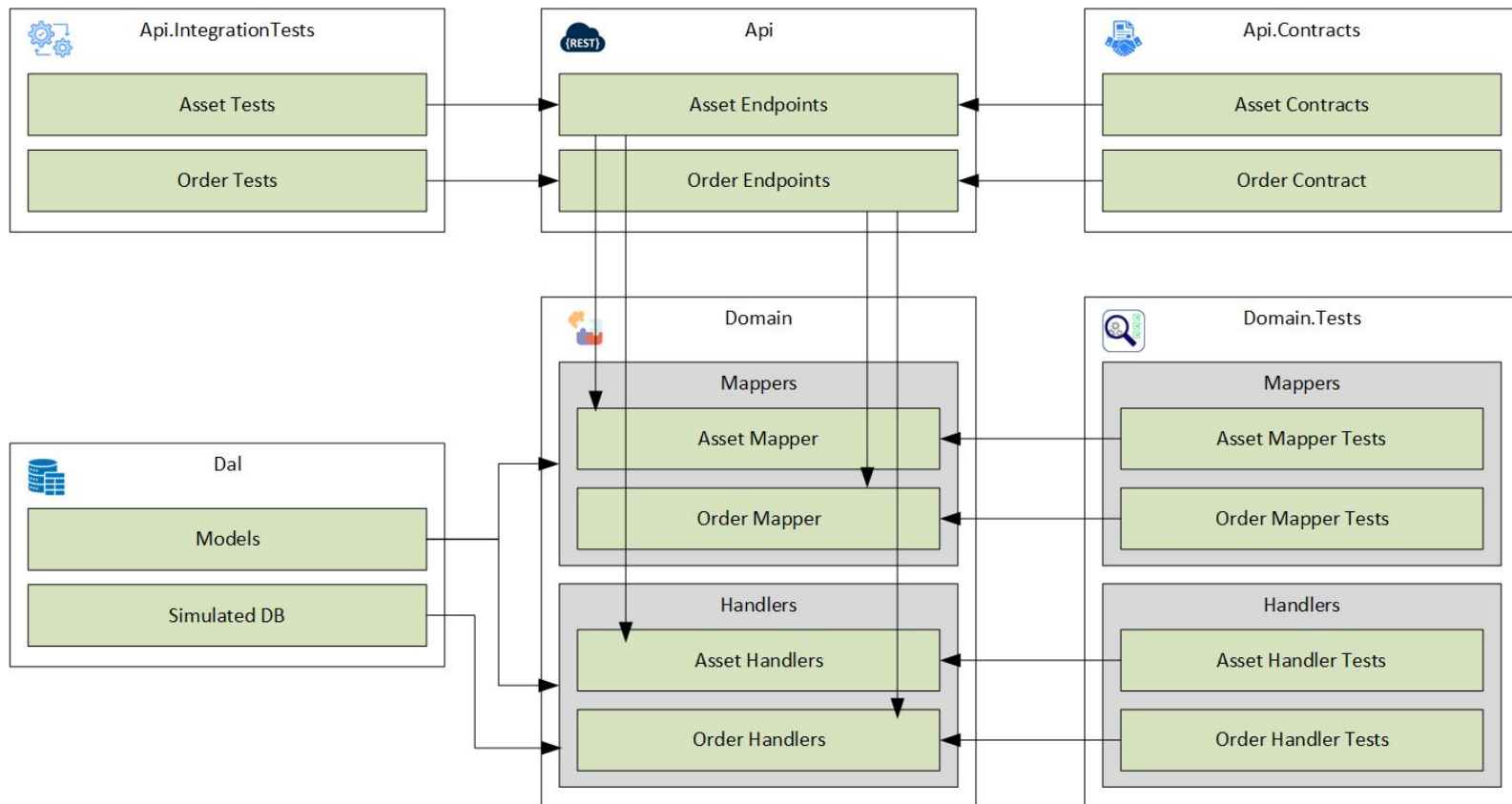
WHAT IS MISSING?

- Security, Credentials and Permissions
- Data Validation
- Versioning
- Caching
- Circuit Breaker
- Real source of Data (DB, API, ...)
- Pre-signed URLs for downloadables
- Etc.



SOLUTION ARCHITECTURE

- Separation and layers
- DTOs
- Test projects
- Maintainability
- Performance



Code Metrics Results						
Filter: None		Min: 	Max: 			
Hierarchy ^	Maintainability Index	Cyclomatic Complexity	Depth of Inheritance	Class Coupling	Lines of Source code	
▶ ■■ DacmCase.Api (Debug)	73	29	2	61	209	
▶ ■■ DacmCase.Api.Contracts (Debug)	100	37	1	6	36	
▶ ■■ DacmCase.Api.IntegrationTests (Debug)	86	5	2	24	99	
▶ ■■ DacmCase.Dal (Debug)	95	109	3	23	216	
▶ ■■ DacmCase.Domain (Debug)	90	42	1	19	214	
▶ ■■ DacmCase.Domain.Tests (Debug)	87	9	1	24	163	

DacmCase.Api

1.0
OAS3

https://localhost:32769/swagger/v1/swagger.json

Asset

GET /Api/Asset/Metadata/{assetId}

DELETE /Api/Asset/Metadata/{assetId}

POST /Api/Asset/Metadata

PUT /Api/Asset/Metadata

GET /Api/Asset/{assetId}/Ur1

Order

GET /Api/Order/Metadata/{orderNumber}

Order

GET /Api/Order/Metadata/{orderNumber}

Parameters

orderNumber

required

ORD123456789

Responses

200

Response body

```
{
  "orderNumber": "ORD123456789",
  "requesterName": "John Doe",
  "orderDate": "2023-06-27",
  "campaignName": "Star Wars Anniversary",
  "assetMetadataList": [
    {
      "assetId": "ASSET001",
      "name": "Millennium Falcon",
      "description": "High-resolution concept art of the Millennium Falcon spaceship.",
      "fileFormat": "null",
      "fileSize": null,
      "createdBy": "John Doe",
      "versionNumber": "1.0",
      "timestamp": "2023-07-03T10:00:00Z",
      "comments": "Approved final version of concept art.",
      "path": "/path/to/asset001.jpg",
      "pathPreview": "/path/to/preview/asset001_preview.jpg",
      "status": 1
    },
    {
      "assetId": "ASSET002",
      "name": "Light Saber Hologram",
      "description": "Hologram of a redline lightsaber.",
      "fileFormat": "null",
      "fileSize": null,
      "createdBy": "John Doe",
      "versionNumber": "1.0",
      "timestamp": "2023-07-03T10:00:00Z",
      "comments": "Approved final version of concept art.",
      "path": "/path/to/asset002.jpg",
      "pathPreview": "/path/to/preview/asset002_preview.jpg",
      "status": 1
    }
  ]
}
```

DacmCase.Api

GET /Api/Asset/Metadata/{assetId}

Parameters

assetId

required

ASSET001

Responses

200

Response body

```
{
  "orderNumber": "ORD123456789",
  "requesterName": "John Doe",
  "orderDate": "2023-06-27",
  "campaignName": "Star Wars Anniversary",
  "assetMetadataList": [
    {
      "assetId": "ASSET001",
      "name": "Millennium Falcon",
      "description": "High-resolution concept art of the Millennium Falcon spaceship.",
      "fileFormat": "null",
      "fileSize": null,
      "createdBy": "John Doe",
      "versionNumber": "1.0",
      "timestamp": "2023-07-03T10:00:00Z",
      "comments": "Approved final version of concept art.",
      "path": "/path/to/asset001.jpg",
      "pathPreview": "/path/to/preview/asset001_preview.jpg",
      "status": 1
    },
    {
      "assetId": "ASSET002",
      "name": "Light Saber Hologram",
      "description": "Hologram of a redline lightsaber.",
      "fileFormat": "null",
      "fileSize": null,
      "createdBy": "John Doe",
      "versionNumber": "1.0",
      "timestamp": "2023-07-03T10:00:00Z",
      "comments": "Approved final version of concept art.",
      "path": "/path/to/asset002.jpg",
      "pathPreview": "/path/to/preview/asset002_preview.jpg",
      "status": 1
    }
  ]
}
```

Formatted Raw Headers Request

Status: 200 OK Time: 460.86 ms Size: 2967 bytes

Body

application/json; charset=utf-8, 2967 bytes

```
{
  "orderNumber": "ORD123456789",
  "requesterName": "John Doe",
  "orderDate": "2023-06-27",
  "campaignName": "Star Wars Anniversary",
  "assetMetadataList": [
    {
      "assetId": "ASSET001",
      "name": "Millennium Falcon",
      "description": "High-resolution concept art of the Millennium Falcon spaceship.",
      "fileFormat": "null",
      "fileSize": null,
      "createdBy": "John Doe",
      "versionNumber": "1.0",
      "timestamp": "2023-07-03T10:00:00Z",
      "comments": "Approved final version of concept art.",
      "path": "/path/to/asset001.jpg",
      "pathPreview": "/path/to/preview/asset001_preview.jpg",
      "status": 1
    },
    {
      "assetId": "ASSET002",
      "name": "Light Saber Hologram",
      "description": "Hologram of a redline lightsaber.",
      "fileFormat": "null",
      "fileSize": null,
      "createdBy": "John Doe",
      "versionNumber": "1.0",
      "timestamp": "2023-07-03T10:00:00Z",
      "comments": "Approved final version of concept art.",
      "path": "/path/to/asset002.jpg",
      "pathPreview": "/path/to/preview/asset002_preview.jpg",
      "status": 1
    }
  ]
}
```

docker desktop

PERSONAL

Search for images, containers, ... Ctrl+K

Containers

Give feedback

Containers

Container CPU usage

0.06% / 1600% (16 CPUs available)

Container memory usage

6.99MB / 15.2GB

Search

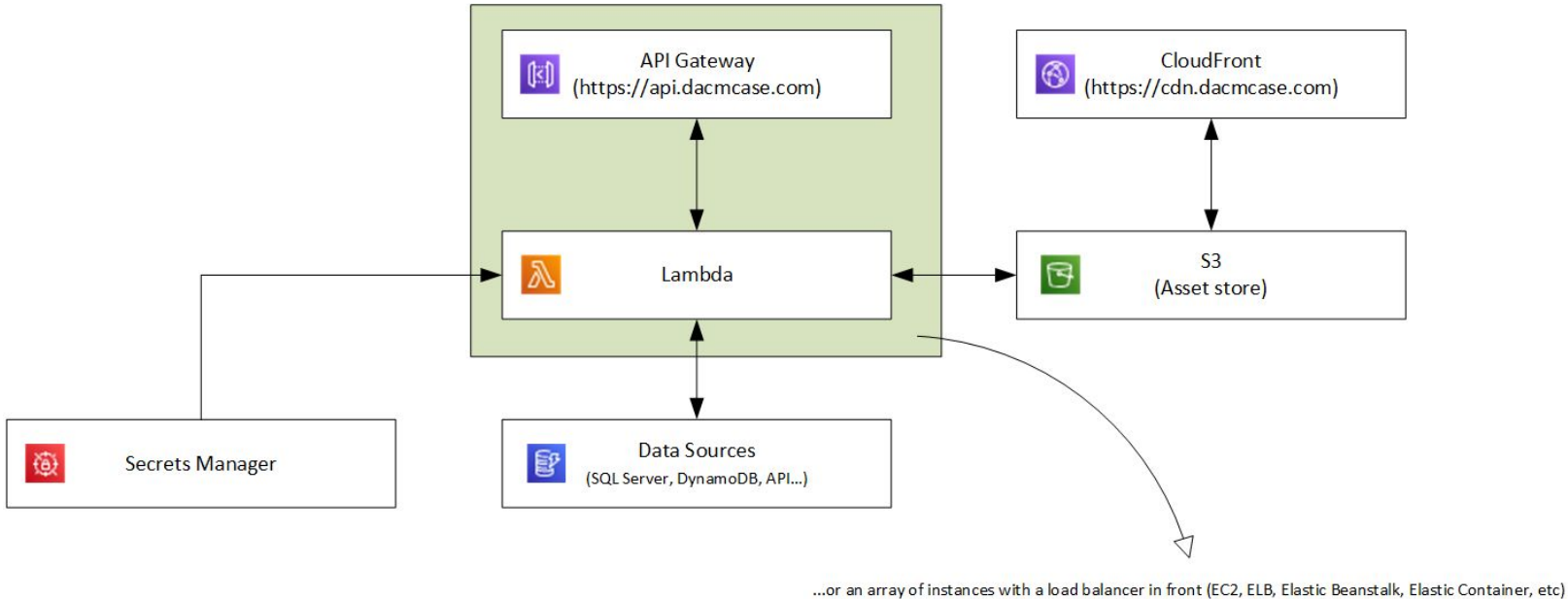
Only show running containers

	Name	Image	Status	Port(s)
	DacmCase.Api	dacmcase	Running	32768:8080 32769:8081

DEPLOYMENT ARCHITECTURE

- Simplest for this showcase
- Lambda vs. EC2 vs. Elastic Container vs. BeanStalk vs. ELB vs.
- CDN and Storage
- SQS
- Data sources
- Scalability - No bottlenecks
- Performance

Simplest deployment on AWS



SUMMARY

A lot of assumptions and decisions have been made.

