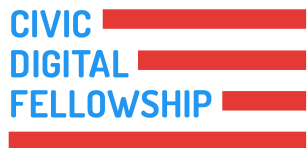


INTERNAL APIS + AMAZON WEB SERVICES

GSA IT - Office of the Chief Data Officer (CDO)

Rosemary Lanzano — Director of Enterprise Data Management



ALBERTA DEVOR
Brown University
Computer Science


KEY QUESTION

How can we create non-public REST APIs that are up to public standards?

OUTLINE

1. Building non-public APIs with public standards
2. AWS technology for APIs
3. Building modularity into existing APIs
4. Conclusions

1. BUILDING NON-PUBLIC APIS



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Tenant Satisfaction Survey Dataset


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ABOUT TENANT SATISFACTION SURVEY DATASET

The Tenant Satisfaction Survey (TSS) data set contains the results of the 2018 Tenant Satisfaction Survey. Each row in the data set contains a breakdown of scores for an individual survey question. In addition, each row represents an individual bureau within a building. For example, if users would like to calculate the overall agency satisfaction in a given building, they will need to aggregate the scores of all bureaus within that building.

If you would like to view the Tenant Satisfaction Tool itself, please search under "Reports" for "Benchmarking Initiative" and click on the TSS icon on the right side of the page.

1. BUILDING NON-PUBLIC APIS



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Document Type




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1. BUILDING NON-PUBLIC APIS



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| Year ▼ Agency ▼ Building ID ▼ Additional Filters ▼ | |
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1. BUILDING NON-PUBLIC APIS

- Working with private data
- Using external standards: GSA API Standards + Open API 3.0

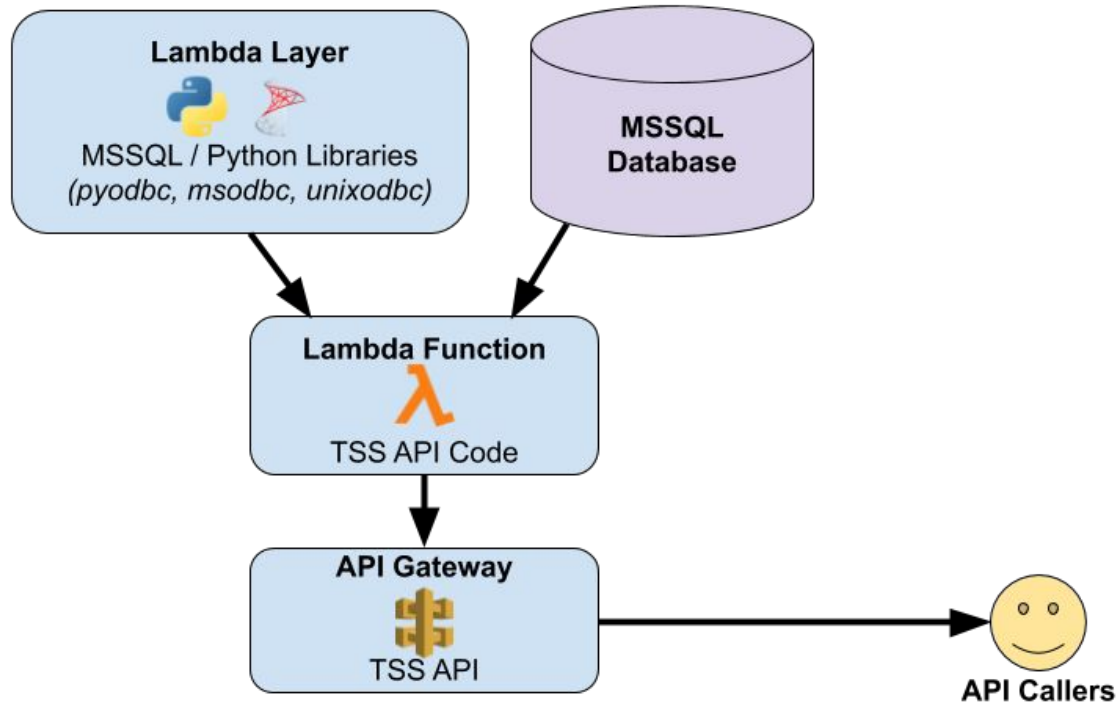
```
1  openapi: "3.0.0"
2  info:
3    version: 0.0.1
4    title: TSS D2D External Data API (Type 2)
5
6  paths:
7    /datasets/TSS:
8      get:
9        summary: Get data from a specified dataset
10       operationId: getDataset
11       parameters:
12         - in: query
13           name: dataYear
```

1. **Documentation:** Open API Specification YAML
2. **Security:** HTTPS, Authentication, etc.

2. AWS TECHNOLOGY

2. AWS TECHNOLOGY

System Overview

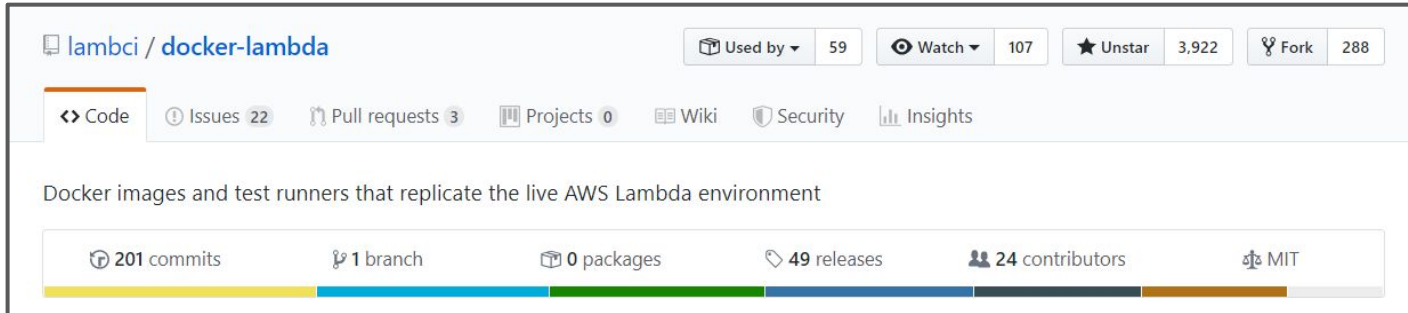
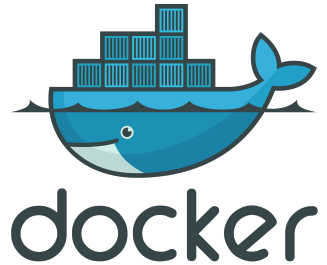


2. AWS TECHNOLOGY

Technical Challenges - Dependency Generation

Problem: How can generate dependencies with no command line interface?

Solution: EC2 linux instance with docker and a LOT of trial and error



2. AWS TECHNOLOGY

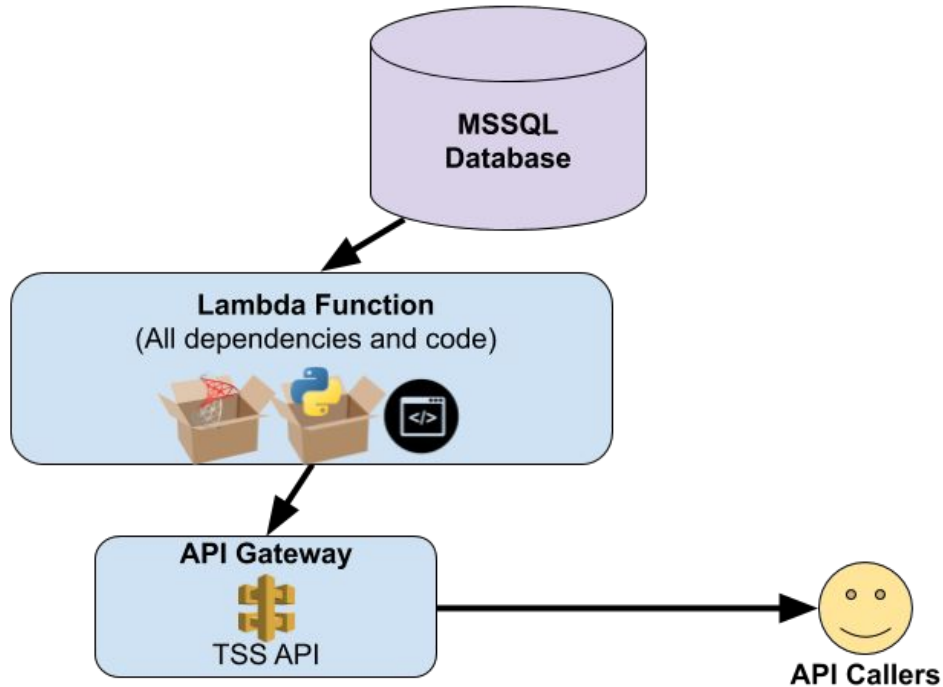
Technical Challenges - Dependency Inclusion

Problem: How can we include dependencies in a modular way?

Solution: Lambda Layers!

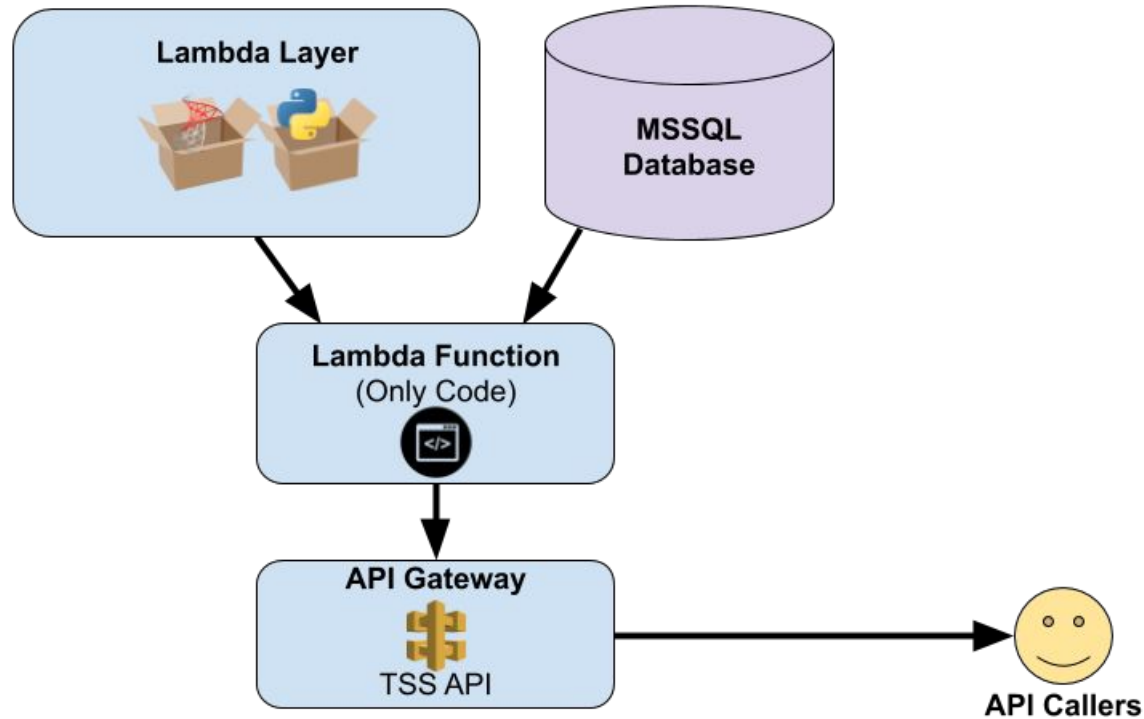
2. AWS TECHNOLOGY

Technical Challenges - Dependency Inclusion



2. AWS TECHNOLOGY

Technical Challenges - Dependency Inclusion



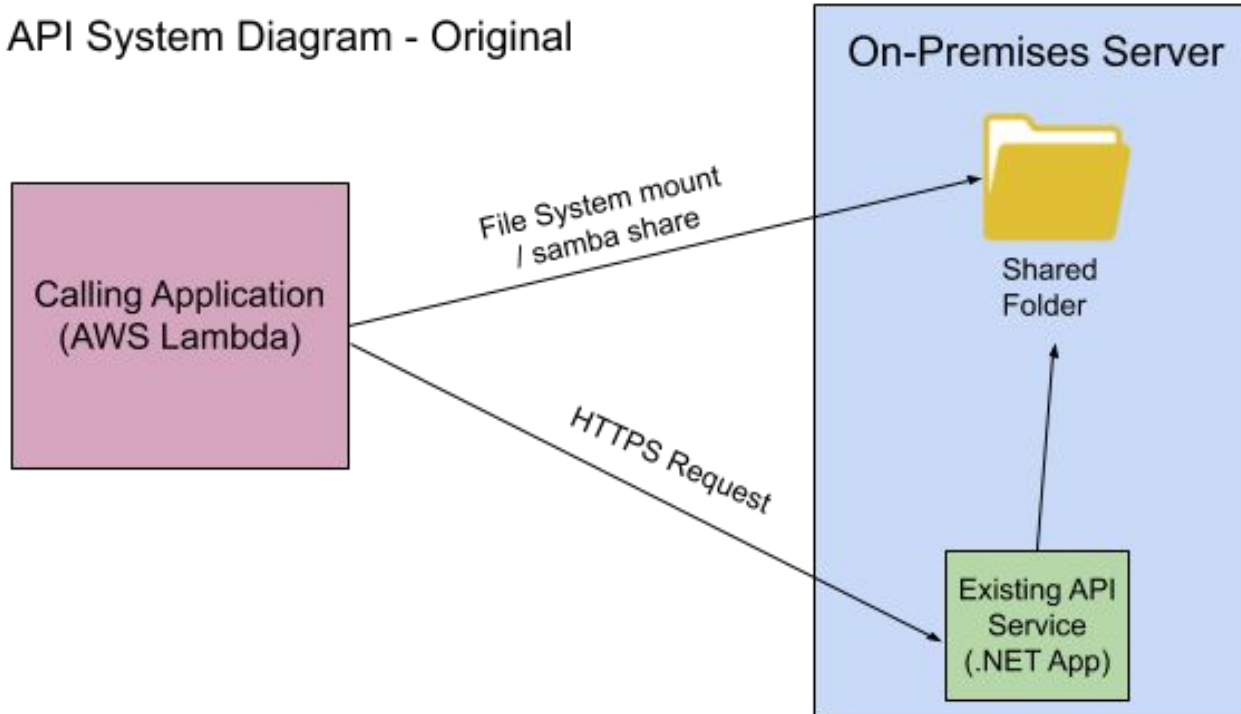
3. MODULARITY FOR EXISTING APIS

Problem: Existing GSA APIs we wanted to work with required file system access

Solution: Build wrapper to conceal internal complexity, create a more modular API

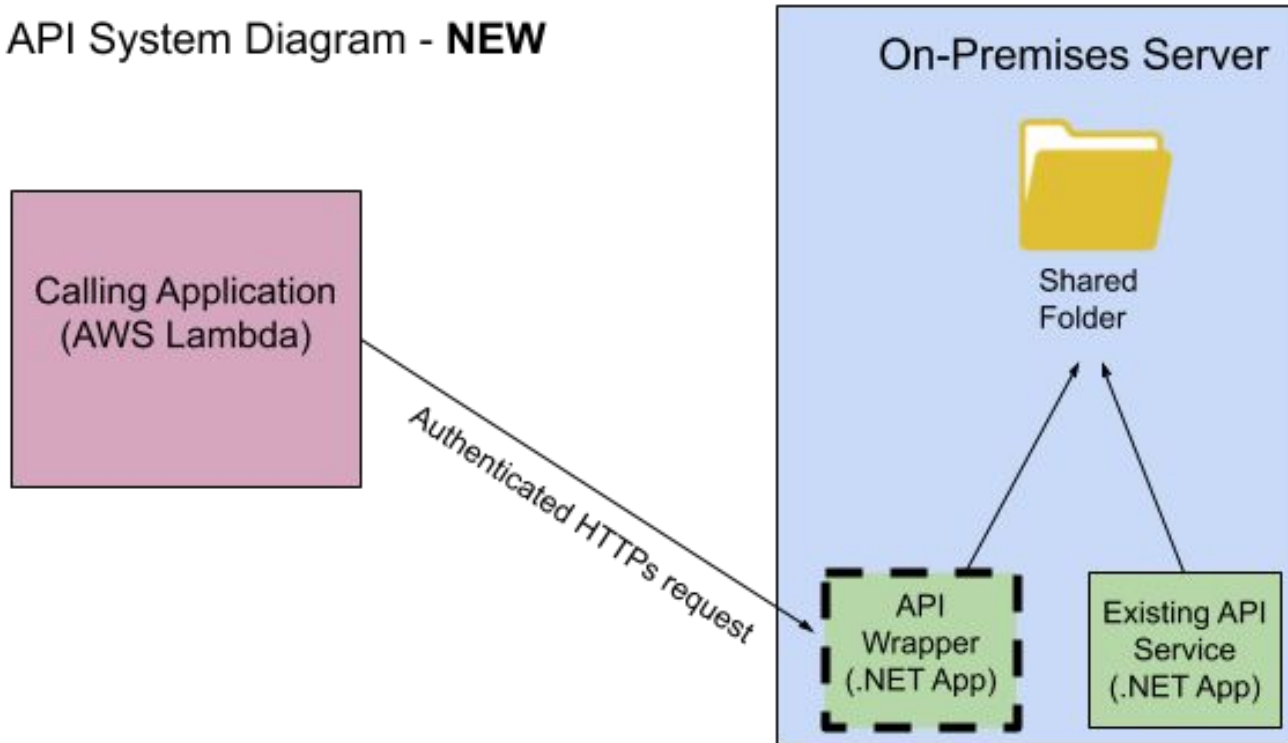
3. MODULARITY FOR EXISTING APIS

API System Diagram - Original



3. MODULARITY FOR EXISTING APIS

API System Diagram - **NEW**



CONCLUSIONS

- Security and auth - not just for public APIs!
- Working within existing limitations (existing API services, development environment)
- Document everything!
 - **For API developers:** development environment, detailed CLI instructions, etc.
 - **For API users:** query parameters, invalid input, etc.

THANKS!

```
{
```

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```

```
    "D2D": ["Rose Lanzano", "Jonah Hatfield", "Ryan Day"],
```

```
    "Acuity": ["Alex Shutoy", "Dmitriy Volodin",  
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```

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           "Austin Peel"],
```

```
    "FMIS" ["Leo Yang", "Will Dinkel", "Billy Wales"]
```

```
  },
```

```
  "contactInfo": "alberta.devor@gmail.com"
```