Swagger

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Purpose

- Widely adopted API spec format
  - Migrate from RAML 0.8 to OpenAPI 3.0
- More readable and useful API document
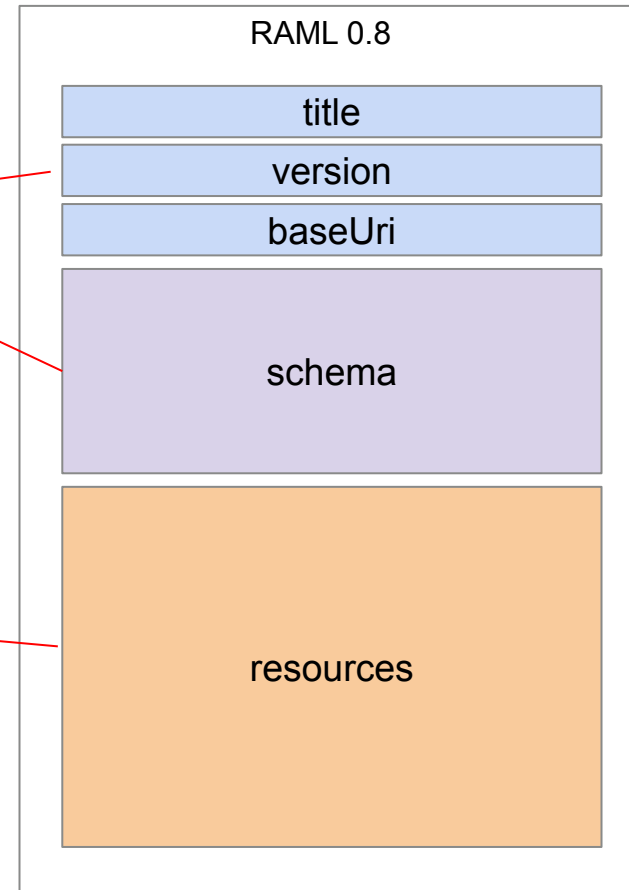 - Swagger

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About Swagger

Swagger is a powerful yet easy-to-use suite of API developer tools for teams and individuals, enabling development across the entire API lifecycle, from design and documentation, to test and deployment.

- Support OpenAPI Specification
  - https://github.com/OAI/OpenAPI-Specification
  - The OpenAPI Specification is a community-driven open specification within the OpenAPI Initiative, a Linux Foundation Collaborative Project.
- Open Source Tools
  - **Swagger Editor(Apache 2.0)**: Design APIs in a powerful editor which visually renders your OpenAPI definition and provides real-time error feedback.
  - **Swagger UI (Apache 2.0)**: Automatically generate documentation from your OpenAPI definition for visual interaction, and easier consumption.
  - **Swagger Codegen(Apache 2.0)**: Build and enable consumption of your API by generating server stubs and client SDKs with minimal plumbing.
- Cloud platform - SwaggerHub ($30/Month)
  - SwaggerHub brings together all of the open source Swagger tooling into one easy-to-use platform in the cloud.
  - SwaggerHub can synchronize with github.
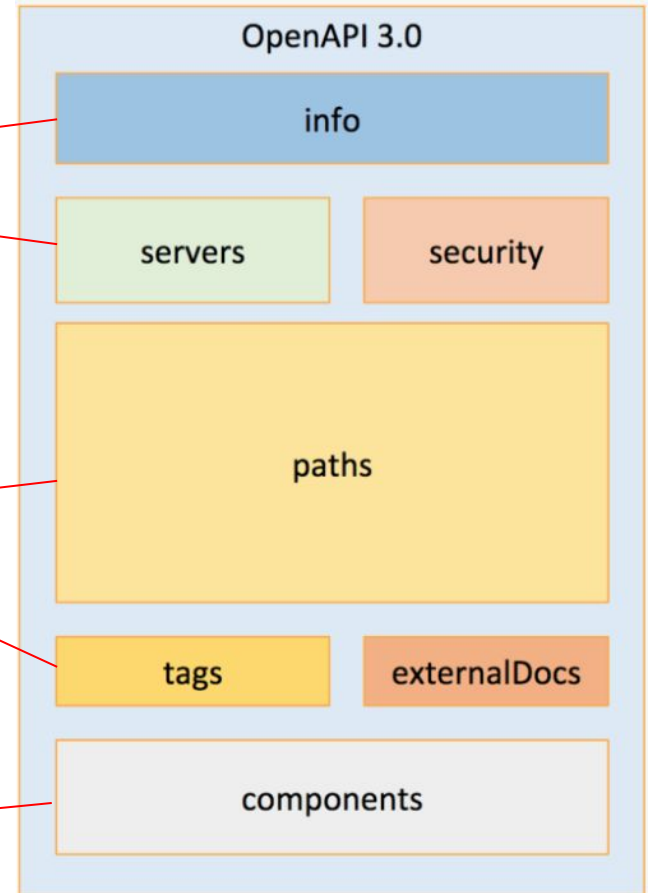 - Provide the **API Auto Mocking**.

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RAML o.8

RAML 0.8

title

version

baseUri

schema

resources

```
core-data.raml

1   #%RAML 0.8
2   title: core-data
3   version: "1.0.0"
4   baseUri: "http://localhost:48080/api/v1"
5   schemas:
6       -
7           event: '{"type":"object","$schema":"http://json-schema.org/draft-03/schema#","description":"Core device
8       -
9           reading: '{"type":"object","$schema":"http://json-schema.org/draft-03/schema#","description":"Core devi
10      -
11          valueDescriptor: '{"type":"object","$schema":"http://json-schema.org/draft-03/schema#","description":"C
12  /event:
13      displayName: Event Resource
14      description: example - http://localhost:48080/api/v1/event
15      post:
16          description: Add a new event (with its associated readings). Prefers the event device is a device name
17          displayName: add an event (and associated readings)
18          body:
19              application/json:
20                  schema: event
21                  example: '{"origin":1471806386919,"device":"livingroomthermostat","readings":[{"origin":1471806
22          responses:
23              "200":
24                  description: new event database generated id
25              "400":
26                  description: creation request is invalid
27              "404":
28                  description: if a reading is associated to a non-existent value descriptor, or if device ve
29              "500":
30                  description: for unknown or unanticipated issues.
31      put:
32          description: Update the event data (not including updating the readings). NotFoundException (HTTP 404)
33          displayName: update an event
34          body:
35              application/json:
36                  schema: event
37                  example: '{"id":"57ba04a1189b95b8afcdafd7","pushed":1471806399999}'
38          responses:
39              "200":
40                  description: boolean on success of update request
```
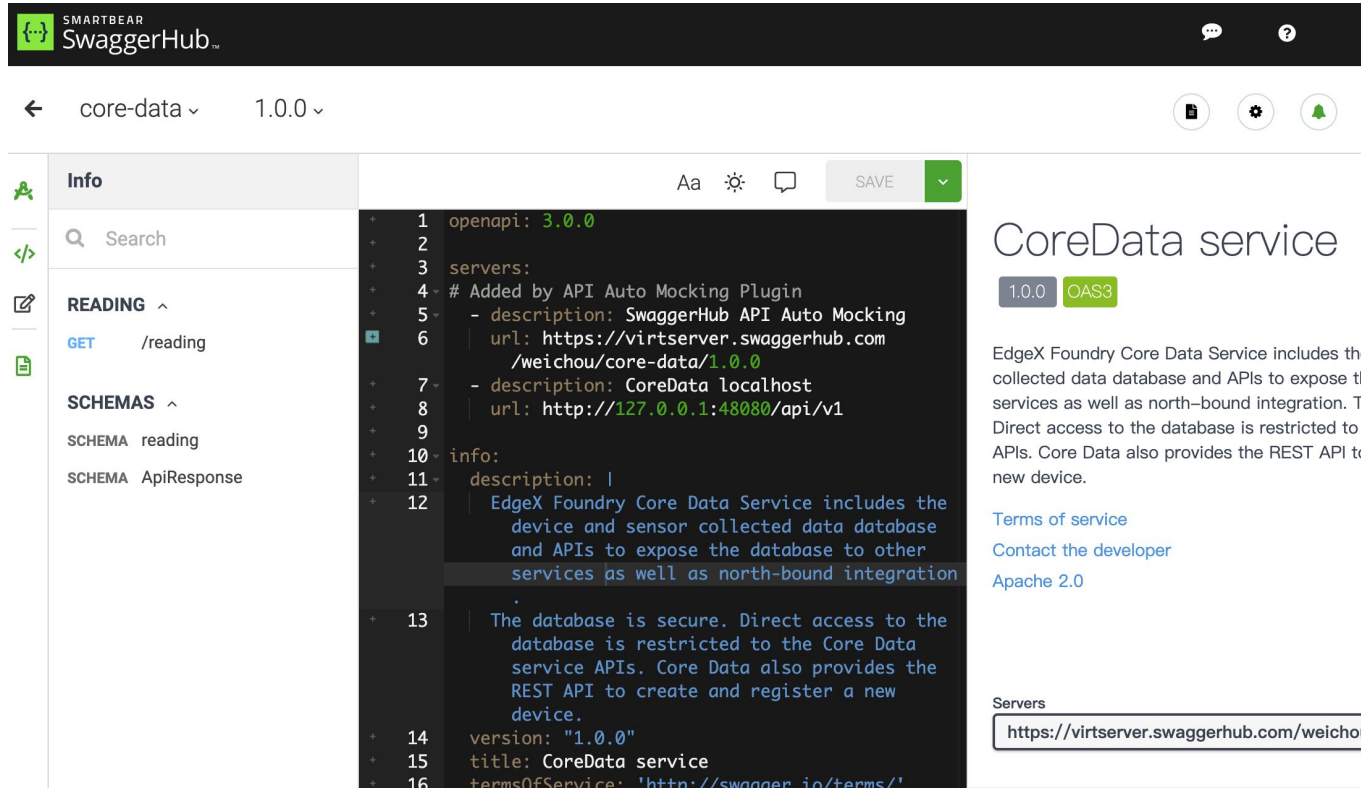
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OpenAPI 3.0

OpenAPI 3.0 - Security

```yaml
1  openapi: 3.0.0
2  # Added by API Auto Mocking Plugin
3  servers:
4    - description: SwaggerHub API Auto Mocking
5      url: https://virtserver.swaggerhub.com/weichou/oauth2/1.0.0
6  info:
7    version: "1.0.0"
8    title: Sample Access Code Flow OAuth2 Project
9    description: >-
10     This is an example of using OAuth2 Access Code Flow in a
          specification to
11     describe security to your API.
12  security:
13    - accessCode:
14       - read
15       - write
16  paths:
17    /example:
18      get:
```

```yaml
33            responses:
34              '200':
35                description: OK
36  components:
37    schemas: {}
38    securitySchemes:
39      accessCode:
40        type: oauth2
41        flows:
42          authorizationCode:
43            authorizationUrl: 'https://dev-396343.oktapreview.com
                /oauth2/default/v1/authorize'
44            tokenUrl: 'http://example.com/oauth/token'
45            scopes:
46              write: allows modifying resources
47              read: allows reading resources
```

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SwaggerHub - Online Document and API Auto Mucking for trying out the EdgeX feature

The End

UI - RAML

core-data API documentation version 1.0.0

http://localhost:48080/api/v1

Event Resource

example - http://localhost:48080/api/v1/event

/event   POST   PUT   GET

POST   Add a new event (with its associated readings). Prefers the event device is a device name but can also be a device id (database generated). DataValidationException (HTTP 409) if a reading is associated to a non-existent value descriptor. ServiceException (HTTP 500) for unknown or unanticipated issues.

PUT   Update the event data (not including updating the readings). NotFoundException (HTTP 404) if the event cannot be found by id. ServiceException (HTTP 500) for unknown or unanticipated issues.

GET   Fetch all events with their associated readings. LimitExceededException (HTTP 413) if the number of events exceeds the current max limit. ServiceException (HTTP 500) for unknown or unanticipated issues.

Event Resource

Event Resource (by id)

Event Resource Count

Event Resource Count for a given device

Event Resource (by id)

Event Resource (by device)

Event Resource (by device)

Event Resource (by creation time)

Reading Resource (filtered for device and value descriptor)

Event Resource (by age)

Scrub Event Resource

Reading Resource

Reading Resource Count

Reading Resource (by id)

UI - Swagger

Test API with Swagger - approach 1

It need to add **Access-Control-Allow-Origin** header at EdgeX services

```
w.Header().Set("Access-Control-Allow-Origin", "*")
w.Header().Set("Access-Control-Allow-Headers","Content-Type,access-control-allow-origin, access-control-allow-headers")
```

Or add a proxy

EdgeX

Swagger-ui

CoreData

...

Core MetaData

...

Core Command

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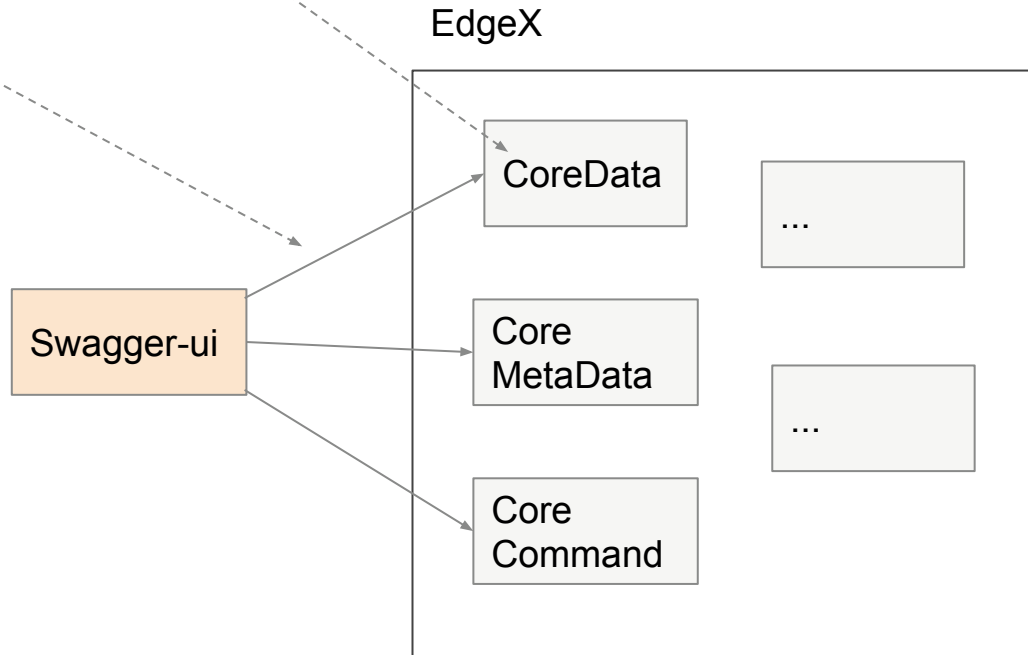
Test API with Swagger - approach 2

EdgeX