



90%

De los developers usan APIs

19th Developer Economics Survey - Slashdata

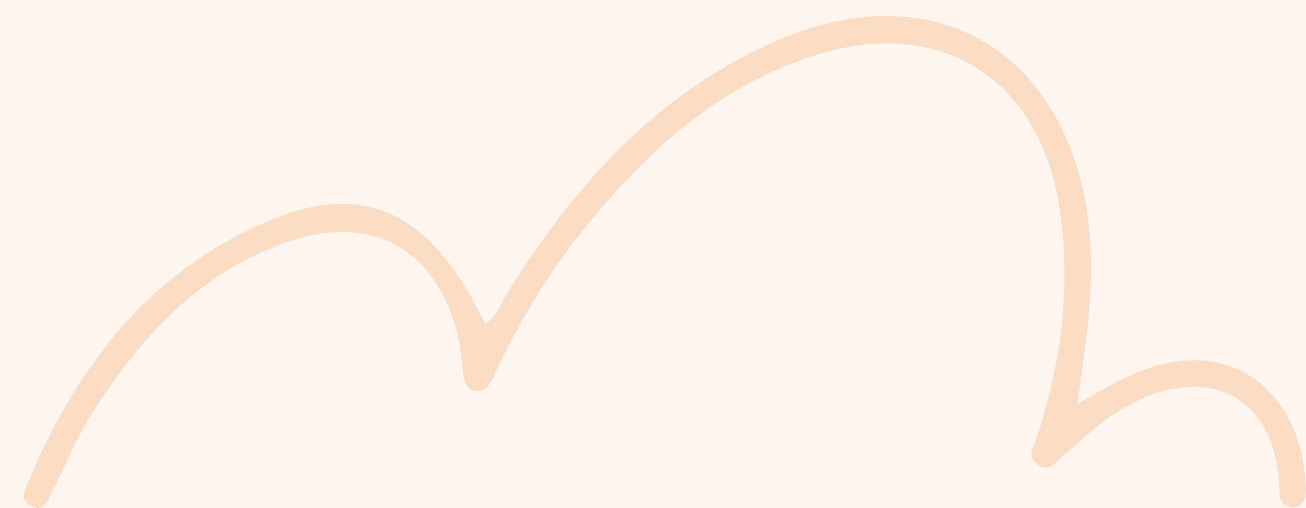
La magia de OpenAPI Specification



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@benjagm



**Las APIs hacen la
vida más fácil a los
developers**

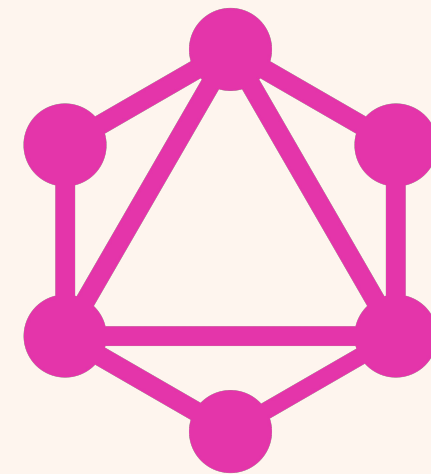
API Styles

{REST API}

REST



Async

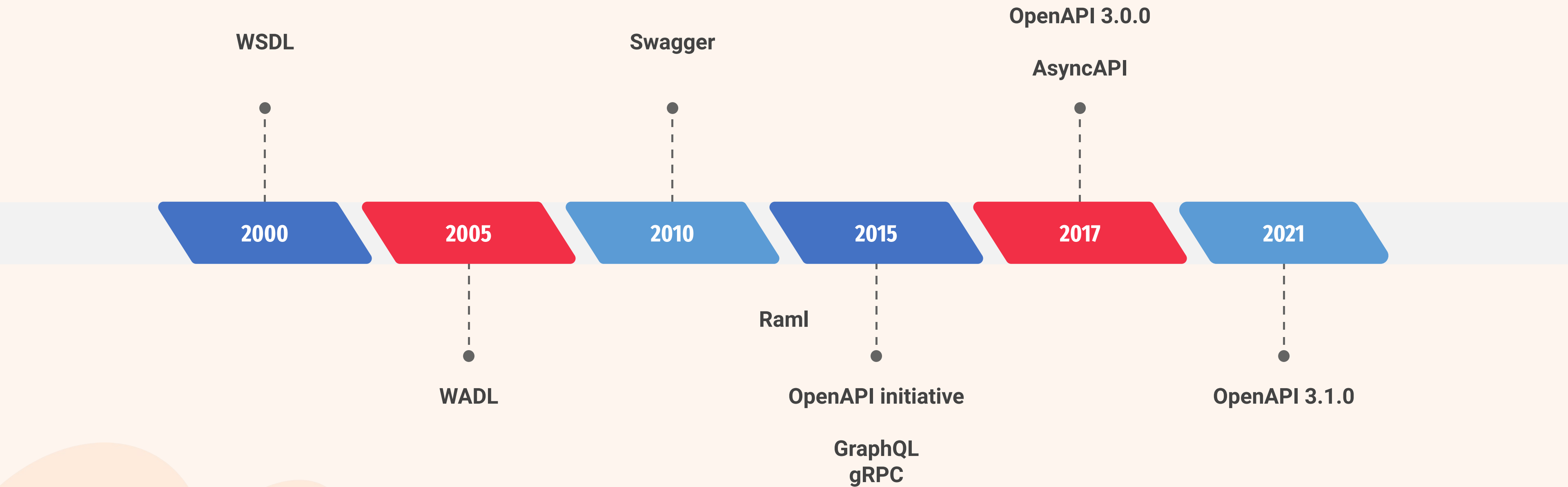


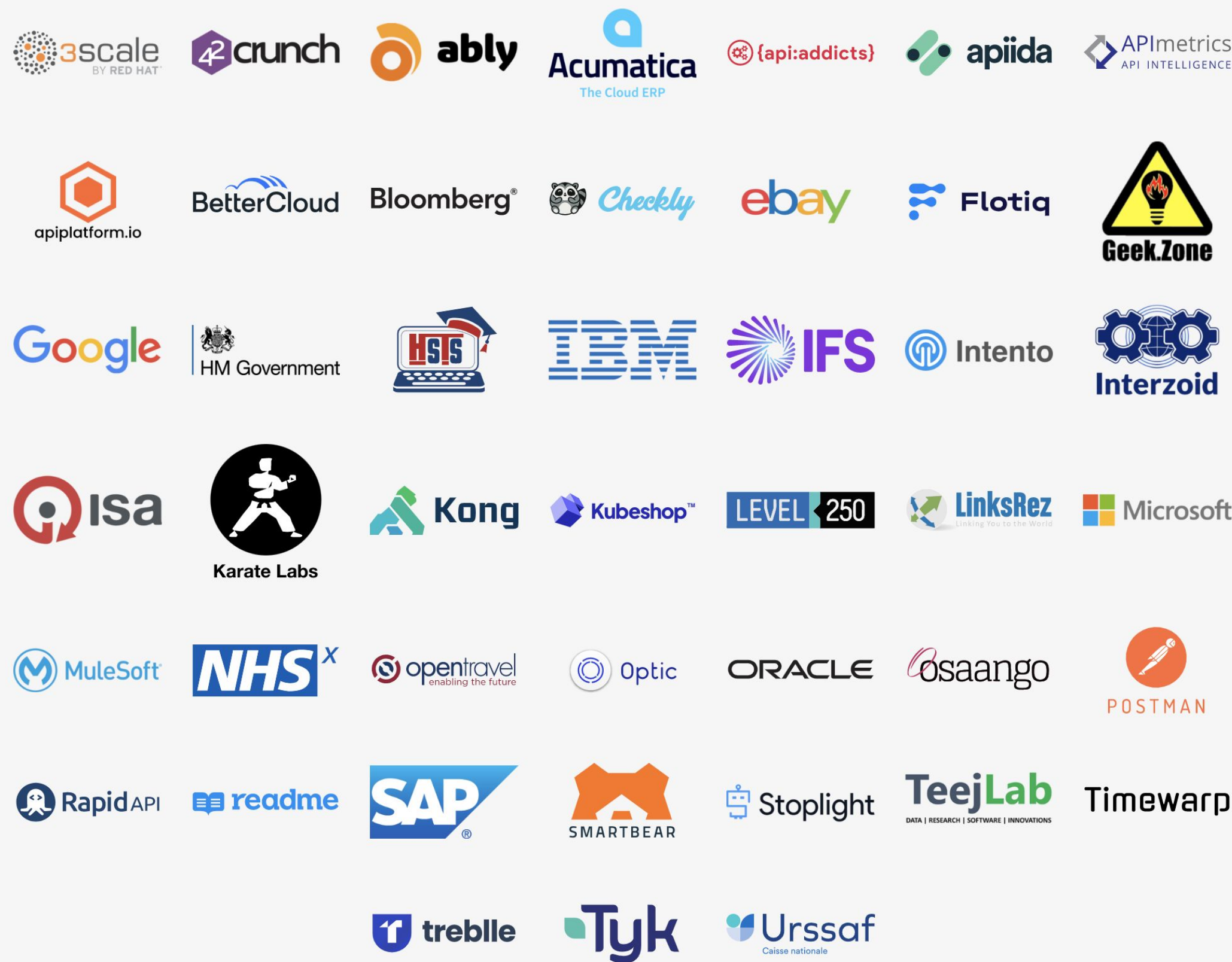
graphql

gRPC

gRPC

Un poco de historia





OpenAPI Specification

OpenAPI v3.0

info

servers

security

paths

tags

externalDocs

components

YAML

```
openapi: 3.0.0
info:
  title: Sample API
  description: Multiline/single-line description in Common Mark or HTML.
  version: 0.1.9

servers:
- url: http://api.example.com/v1
  description: Optional description, e.g. Main (production) server
- url: http://staging-api.example.com
  description: Optional description, e.g. Internal staging server

paths:
  /users:
    get:
      summary: Returns a list of users.
      description: Optional extended description (Common Mark/HTML).
      responses:
        '200': # status code
          description: A JSON array of user names
          content:
            application/json:
              schema:
                type: array
                items:
                  type: string
```

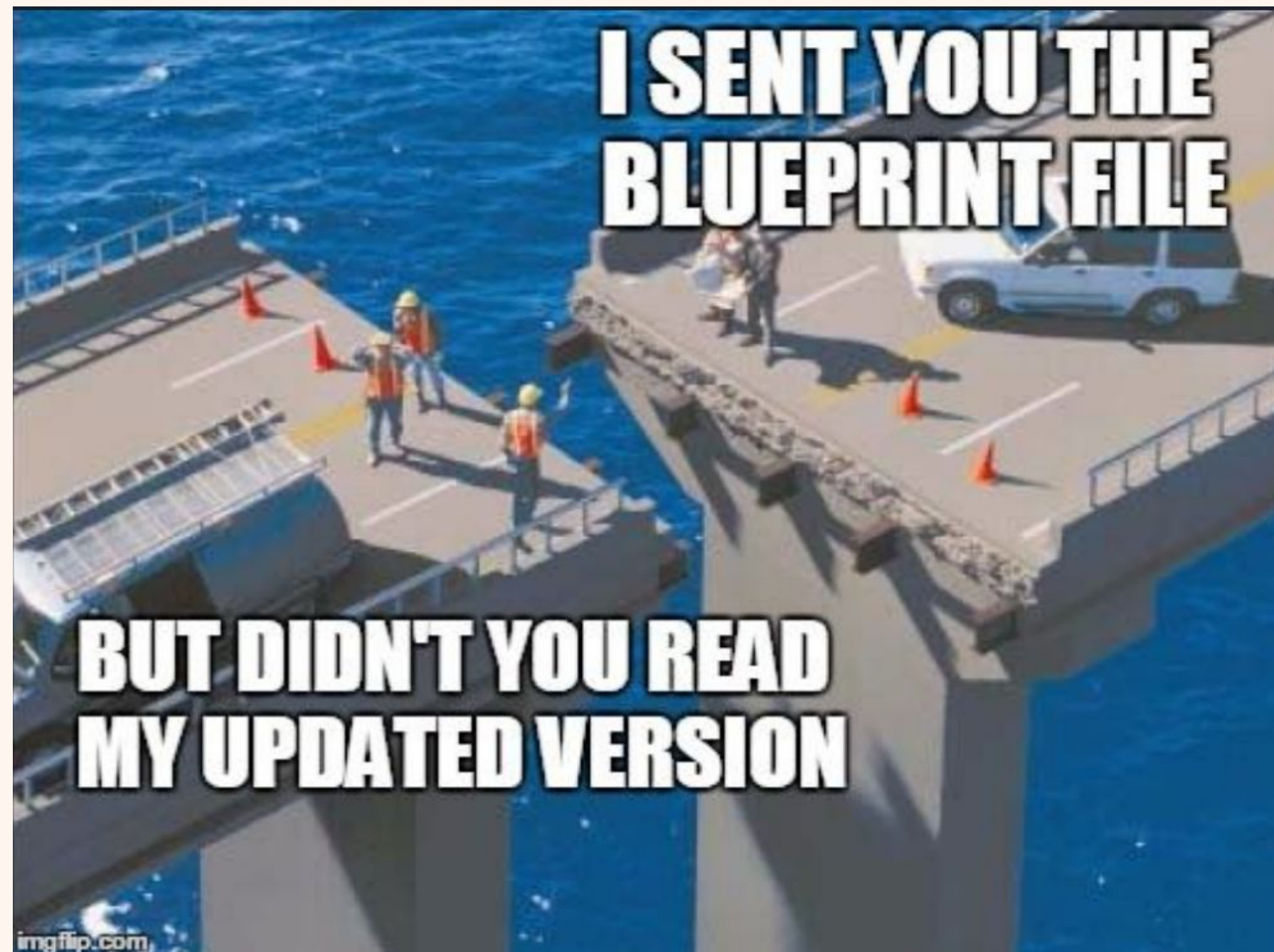
¿Por qué OpenAPI es tan importante?

- ✓ **Confiable: Estabilidad + Base de usuarios enorme**
- ✓ **Mejor Developer Experience**
- ✓ **Facilita el gobierno y la colaboración**

Spec-Driven Dev 👍

VS

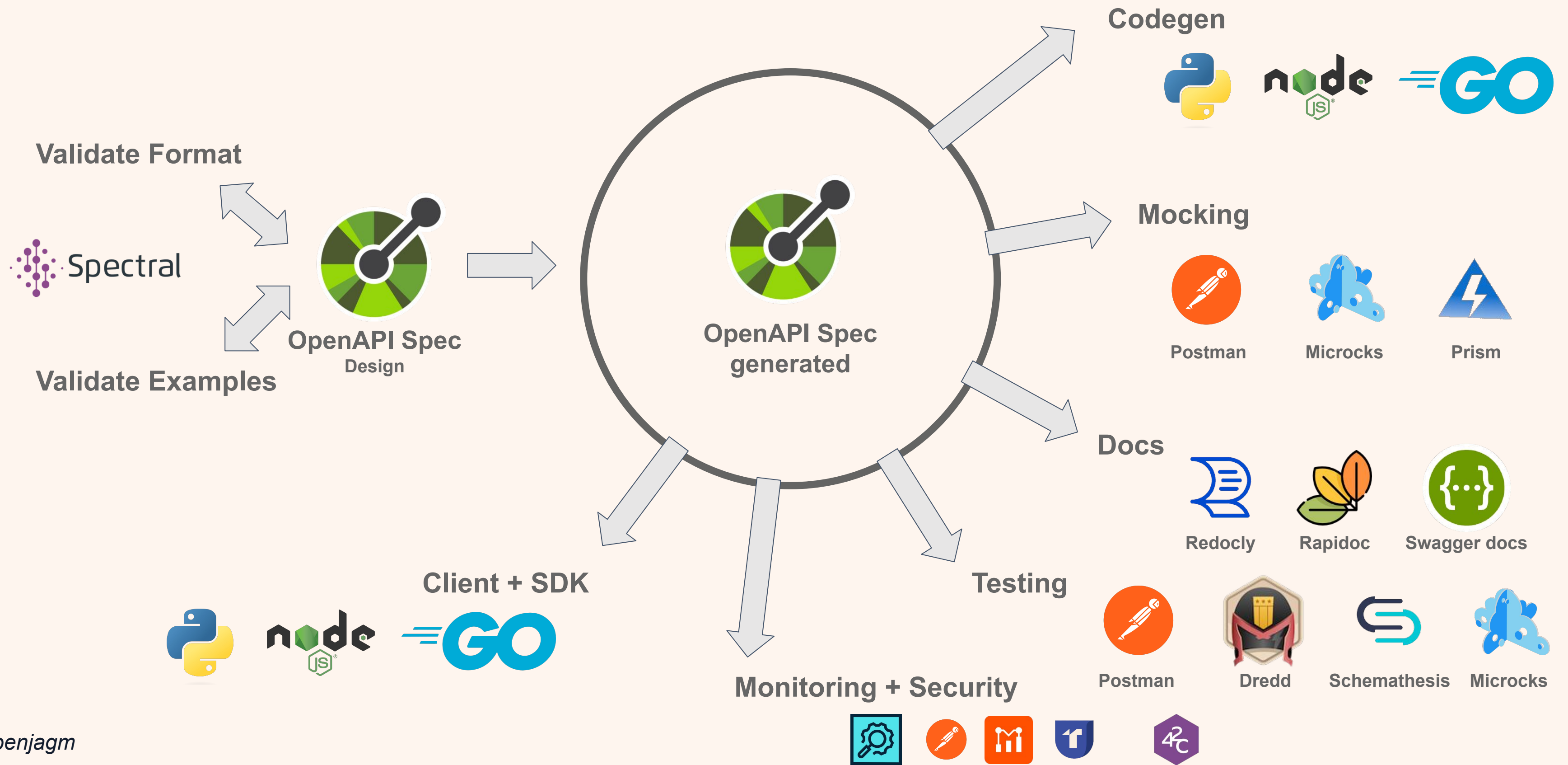
Implementation first ✌️



OpenAPI Specification alimenta el ciclo de vida de las APIs



OpenAPI Specification alimenta el ciclo de vida de las APIs



API Ops

**Diseñar, desarrollar, probar
y desplegar APIs más
rápido, más veces y mejor.**

Encontrando las herramientas adecuadas

<https://openapi.tools/>

Tool Types

- **Auto Generators:** Tools that will take your code and turn it into an OpenAPI Specification document.
- **Converters:** Various tools to convert to and from OpenAPI and other API description formats.
- **Data Validators:** Check to see if API requests and responses are lining up with the API description.
- **Description Validators:** Check your API description to see if it is valid OpenAPI.
- **Documentation:** Render API Description as HTML (or maybe a PDF) so slightly less technical people can figure out how to work with the API.
- **DSL:** Domain Specific Language to write OpenAPI in your language of choice.
- **GUI Editors:** Visual editors help you design APIs without needing to memorize the entire OpenAPI specification.
- **Miscellaneous:** Anything else that does stuff with OpenAPI but hasn't quite got enough to warrant its own category.
- **Mock Servers:** Fake servers that take description document as input, then route incoming HTTP requests to example responses.
- **Parsers:** Loads and read OpenAPI descriptions, so you can work with them programmatically.
- **SDK Generators:** Generate code to give to consumers, to help them avoid interacting at a HTTP level.
- **Security:** By poking around your OpenAPI description, some tools can look out for attack vectors you might not have noticed.
- **Server Implementations:** Easily create and implement resources and routes for your APIs.
- **Testing:** Quickly execute API requests and validate responses on the fly through command line or GUI interfaces.
- **Text Editors:** Text editors give you visual feedback whilst you write OpenAPI, so you can see what docs might look like.
- **Learning:** Whether you're trying to get documentation for a third party API based on traffic, or are trying to switch to design-first at an organization with no OpenAPI at all, learning can help you move your API spec forward and keep it up to date

Linting con Spectral

```
jakub@MacBook-Pro Developer % spectral lint hello-world.yaml
```

```
/Users/jakub/Developer/hello-world.yaml
```

<u>1:1</u>	<u>warning</u>	asynccapi-servers	AsyncAPI object must have non-empty "servers" object.	
<u>1:1</u>	<u>warning</u>	asynccapi-tags	AsyncAPI object must have non-empty "tags" array.	
<u>2:6</u>	<u>warning</u>	asynccapi-info-contact	Info object must have "contact" object.	info
<u>2:6</u>	<u>warning</u>	asynccapi-info-description	Info "description" must be present and non-empty string.	info
<u>2:6</u>	<u>warning</u>	asynccapi-info-license	Info object must have "license" object.	info
<u>4:12</u>	<u>error</u>	valid-document-version	Version must match 1.x.x	info.version
<u>7:13</u>	<u>warning</u>	asynccapi-operation-description	Operation "description" must be present and non-empty string.	channels.hello.publish
<u>7:13</u>	<u>error</u>	asynccapi-operation-operationId	Operation must have "operationId".	channels.hello.publish

```
✖ 8 problems (2 errors, 6 warnings, 0 infos, 0 hints)
```

<https://github.com/stoplighio/spectral>

Mocking con Prims

```
→ Stoplight prism mock petstore.yml
[CLI] ... awaiting Starting Prism...
[HTTP SERVER] i info Server listening at http://127.0.0.1:4010
[CLI] • note GET http://127.0.0.1:4010/pets
[CLI] • note POST http://127.0.0.1:4010/pets
[CLI] • note GET http://127.0.0.1:4010/pets/{petId}
[CLI] ► start Prism is listening on http://127.0.0.1:4010
[HTTP SERVER] get /pets i info Request received
[NEGOTIATOR] i info Request contains an accept header: */*
[VALIDATOR] ⚠ warning Request did not pass the validation rules
[NEGOTIATOR] • note Unable to find a 422 response definition
[NEGOTIATOR] • note Unable to find a 400 response definition.
[NEGOTIATOR] ✓ success Created a 422 from a default response
[NEGOTIATOR] • note Unable to find a content with an example defined for the response 422
[NEGOTIATOR] ✓ success The response 422 has a schema. I'll keep going with this one
[NEGOTIATOR] ✓ success Responding with the requested status code 422
```

<https://github.com/stoplightio/prism>

Presente de OpenAPI (Version 3.1)

- ✓ **Compatibilidad completa con JSON Schema**
- ✓ **Mejor especificación de Webhooks**
- ✓ **Reusabilidad**

Presente de OpenAPI (Version 3.1)

```
openapi: 3.1.0
info:
  title: My Demo API
  version: 1.0.0
  summary: An API with examples of features in 3.1
webhooks:
  $ref: '#/components/pathItems/newThingAlert'
components:
  pathItems:
    newThingAlert:
      summary: Notification that a new thing has been created
      post:
        requestBody:
          content:
            applicaton/json:
              schema:
                type: object
                properties:
                  thingName: null
                  type: string
```

Agenda OpenAPI para futuras versiones

- ✓ Terminar la especificación de Overlay
- ✓ Soporte para RPC sobre HTTP

Que retos enfrenta OpenAPI

- ✓ **Completar la migración de Swagger a OpenAPI**
- ✓ **Transición a un modelo de gobierno más democrático**

Claves

- ✓ **OpenAPI 3.1 es una buena versión**
- ✓ **Importancia de apoyarse en el tooling del ecosistema**
- ✓ **Completar la migración de Swagger a OpenAPI**

Recursos

<https://github.com/benjagm/pycones22-openapi-pow>

Introduction to OpenAPI Initiative [here](#)

What is OpenAPI Specification [here](#)

Benefits of OpenAPI Specification [here](#)

Standardized API Lifecycle [here](#)

Changelog OAS 3.1.0 [here](#)

Introduction to OAS 3.1.0 [here](#)

Swagger vs OpenAPI [here](#)

Introduction to Specification Driven development [here](#)

Documentation-driven development for Python web APIs v2 [here](#)

OpenAPI Specification as Mentos & Coke video [here](#)



Thank you