



OpenAPI (f.k.a Swagger) Specification, Tools, and Frameworks

Software Working Group Round Table

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Outline

- Brief Background on OpenAPI Specification
 - Definition
 - History
- Open API Documentation (Specification and Examples)
- Questions and Open Discussion



OpenAPI Specification (OAS)

- Defines a **standard**, programming **language-agnostic** interface description for HTTP APIs, which allows both **humans and computers** to discover and understand the capabilities of a service **without requiring** access to source code, additional documentation, or inspection of network traffic.
- Originally based on the Swagger 2.0 Specification, donated by SmartBear Software in 2015
- OpenAPI Initiative (OAI) – a consortium of companies under the Linux Foundation with a focus on standardizing API descriptions – currently supports specifications like the OAS
- <https://spec.openapis.org/oas/latest.html>



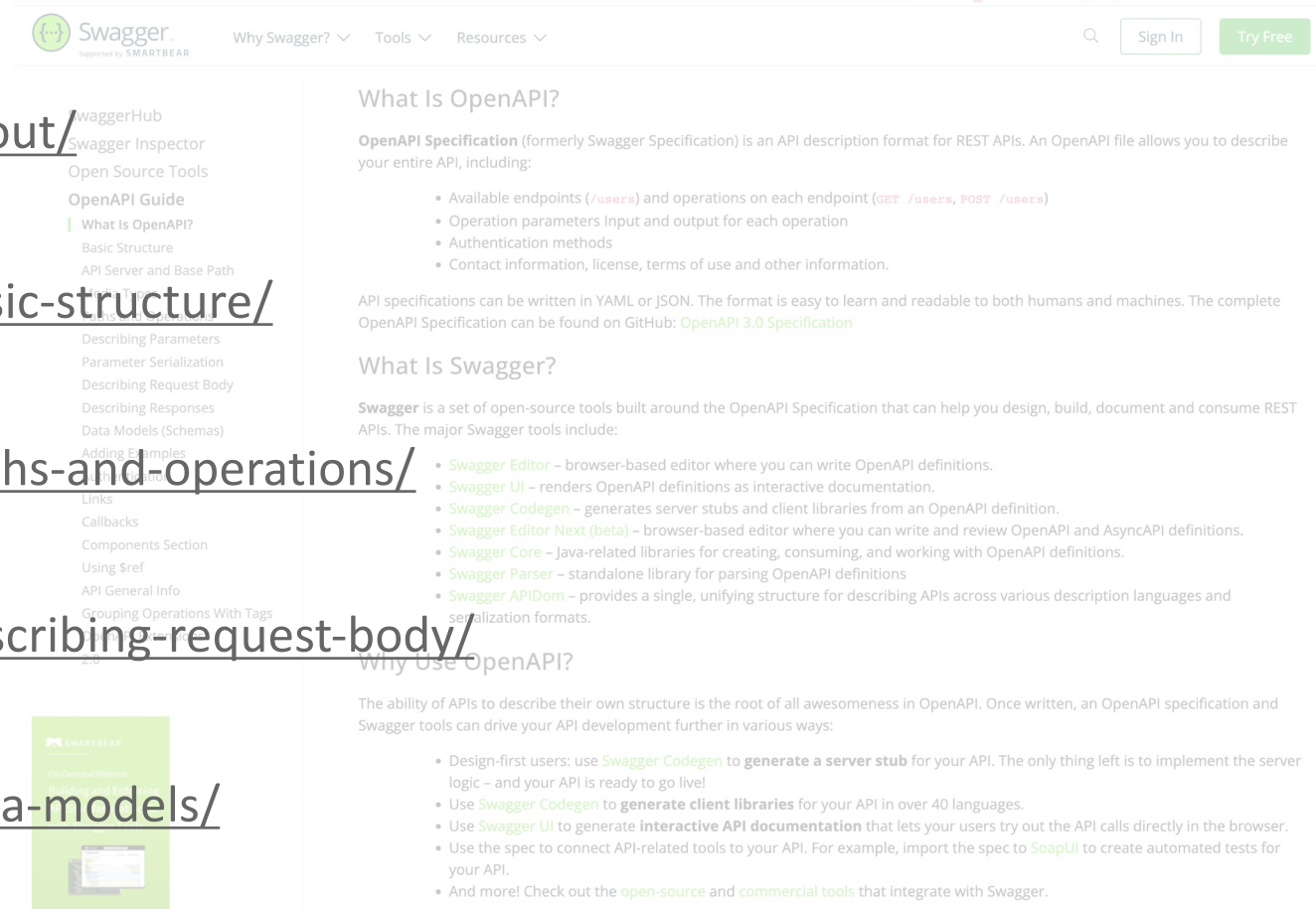
A Brief History of OAS

- **Early 2010:** Initially developed at Wordnik (an online dictionary company)
- **Early 2015:** SmartBear Software acquired Swagger Spec. from Wordnik's parent company
- **Late 2015:** OAI (OpenAPI Initiative) was formed under the Linux Foundation
- **Early 2016:** Swagger Spec. was renamed to OpenAPI
- **Mid 2017:** OpenAPI Specification 3.0.0 got released
- More detailed (unofficial) history can be found here: *Bridging Systems and Subcultures: A Swagger Origin Story* (https://www.youtube.com/watch?v=_G9dlv66-xw)



OAS Documentation

- Landing Page
 - <https://swagger.io/docs/specification/about/>
- Basic Structure
 - <https://swagger.io/docs/specification/basic-structure/>
- Paths and Operations
 - <https://swagger.io/docs/specification/paths-and-operations/>
- Request Body
 - <https://swagger.io/docs/specification/describing-request-body/>
- Schemas
 - <https://swagger.io/docs/specification/data-models/>
- Adding Examples
 - <https://swagger.io/docs/specification/adding-examples/>



The screenshot shows the Swagger.io website. At the top, there is a navigation bar with the Swagger logo (Supported by SMARTBEAR), a search icon, and buttons for 'Sign In' and 'Try Free'. Below the navigation bar is a sidebar menu with the following items: SwaggerHub, Swagger Inspector, Open Source Tools, OpenAPI Guide, What Is OpenAPI?, Basic Structure, API Server and Base Path, Paths and Operations, Describing Parameters, Parameter Serialization, Describing Request Body, Describing Responses, Data Models (Schemas), Adding Examples, Links, Callbacks, Components Section, Using \$ref, API General Info, and Grouping Operations With Tags. The main content area is divided into two columns. The left column contains the following sections: 'What Is OpenAPI?' (with a sub-section 'OpenAPI Specification'), 'What Is Swagger?' (with a sub-section 'Swagger'), and 'Why Use OpenAPI?'. The right column contains a list of links for various Swagger tools and libraries, including Swagger Editor, Swagger UI, Swagger Codegen, Swagger Editor Next (beta), Swagger Core, Swagger Parser, and Swagger API Dom.



Question 1

- What OpenAPI supported tools are you using for designing APIs? What are your experiences using these?
 - Swagger Editor (<https://editor.swagger.io/>)
 - Postman (<https://www.postman.com/api-design/>)
 - SwaggerHub (<https://app.swaggerhub.com/>)
 - ...



Question 2

- What OpenAPI frameworks/tools are you using for developing APIs?
What are your experiences using these?
 - Python Connexion (<https://connexion.readthedocs.io/en/stable/>)
 - FastAPI (<https://fastapi.tiangolo.com/>)
 - Swagger Codegen (autogenerates boilerplate code - <https://swagger.io/tools/swagger-codegen/>)
 - ...



Question 3

- What OpenAPI supported tools are you using for documenting APIs?
What are your experiences using these?
 - Swagger UI (<https://swagger.io/tools/swagger-ui/>)
 - Redoc (<https://github.com/Redocly/redoc>)
 - Apiary (<https://apiary.io/>)
 - ...



Question 4

- What tools that can help with end-to-end API designing, development, and testing?
 - Postman
 - Newman (command line version of Postman)
 - SwaggerHub
 - ...



References

- <https://www.openapis.org/>
- https://en.wikipedia.org/wiki/OpenAPI_Specification
- <https://swagger.io/docs/specification/>
- <https://oai.github.io/Documentation/>
- <https://github.com/OAI/OpenAPI-Specification/blob/main/IMPLEMENTATIONS.md>

