

openSAP SAP Cloud Platform API Management Additional Download

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TABLE OF CONTENTS

SYSTEM PREREQUISITES	3
API GUIDELINES AND BEST PRACTICES	3
API DESIGN.....	3
Open API Specification.....	3
Code Generation	5
FURTHER READS	6

In this exercise, you'll explore the use of API first design and show how OpenAPI and the SAP API Designer can help develop your first micro service. The microservice you'll create would be for product catalog and product details like stock availability and price information.

SYSTEM PREREQUISITES

- Account on the [SAP Cloud Platform](#)
- Node JS version 6.12.3 or later installed (<http://www.nodejs.org>)
- Node Package Manager (NPM) 3.10 or later installed (should be automatically installed when you install Node JS)
- Visual Studio Code (<https://code.visualstudio.com/>) or another code editor


API GUIDELINES AND BEST PRACTICES

SAP-defined API harmonization guidelines enable customers and partners to build APIs to offer to other consumers. Gain practical guidance by putting the consumer experience at the center of design decisions.

For more details, you can go through the [SAP Guidelines for REST API Harmonization](#).

API DESIGN

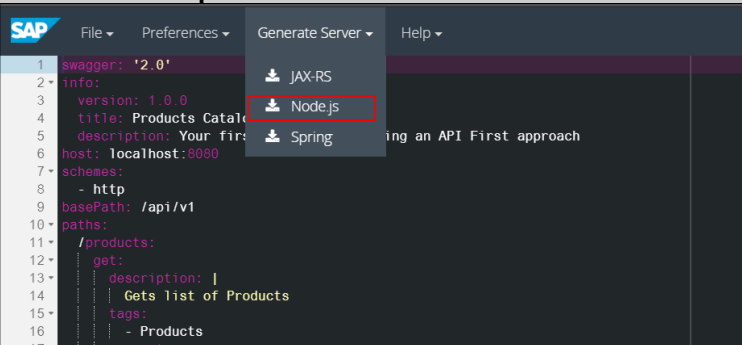
Open API Specification

Step	Screenshot/ Sample
Product catalog OpenAPI sample  productcatalog.yaml	<pre> swagger: '2.0' info: version: 1.0.0 title: Products Catalog API description: Your first microservice using an API First approach host: localhost:8080 schemes: - http basePath: /api/v1 paths: /products: get: description: Gets list of Products tags: - Products parameters: - \$ref: '#/parameters/limitParam' - \$ref: '#/parameters/offsetParam' responses: '200': description: List of Products schema: type: array items: \$ref: '#/definitions/product' '500': description: Server error schema: \$ref: '#/definitions/error' post: description: Create Product tags: - Products parameters: - in: body name: payload description: Product payload schema: \$ref: '#/definitions/product' </pre>

	<pre> required: true responses: '201': description: Product created Successfully schema: \$ref: '#/definitions/product' '500': description: Server error schema: \$ref: '#/definitions/error' '/products/{id}': delete: description: Delete the selected product tags: - Products parameters: - name: id type: string in: path required: true responses: '204': description: Product deleted Successfully '404': description: Item not found schema: \$ref: '#/definitions/error' '500': description: Server error schema: \$ref: '#/definitions/error' get: description: Get the product by id tags: - Products parameters: - name: id type: string in: path required: true responses: '200': description: Product for given product id schema: \$ref: '#/definitions/product' '404': description: Item not found schema: \$ref: '#/definitions/error' '500': description: Server error schema: \$ref: '#/definitions/error' parameters: limitParam: name: \$top in: query description: Limits the number of returned results required: false type: number format: int32 offsetParam: name: \$skip in: query description: Offset to the no of parameters to skip required: false type: number format: int32 definitions: error: type: object properties: code: type: string description: Error code message: type: string description: Error message description: type: string description: Detailed Error Description price: </pre>
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	<p>type: object</p> <p>properties:</p> <p>value:</p> <p>type: number</p> <p>format: double</p> <p>example: 33.99</p> <p>title: Product price</p> <p>currency:</p> <p>type: string</p> <p>title: Currency unit</p> <p>example: EUR</p> <p>enum:</p> <ul style="list-style-type: none"> - USD - EUR <p>availability:</p> <p>type: object</p> <p>properties:</p> <p>availableAmount:</p> <p>type: integer</p> <p>example: 530</p> <p>title: Available product quantity</p> <p>warehouseId:</p> <p>type: string</p> <p>example: 890</p> <p>title: Warehouse Identifier</p> <p>product:</p> <p>type: object</p> <p>properties:</p> <p>id:</p> <p>type: string</p> <p>description: Product Id</p> <p>example: 123</p> <p>name:</p> <p>type: string</p> <p>description: Product name</p> <p>example: KittyFood</p> <p>description:</p> <p>type: string</p> <p>description: Product description</p> <p>example: Tasty Kitty food</p> <p>price:</p> <p>\$ref: '#/definitions/price'</p> <p>availability:</p> <p>\$ref: '#/definitions/availability'</p>
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Code Generation

Step	Screenshot/ Sample
<p>Generate code from your API to node.js</p> <p>Go to Generate Server – Node.js</p>	 <p>The screenshot shows the SAP Studio interface. The 'Generate Server' dropdown menu is open, displaying three options: 'JAX-RS', 'Node.js' (which is highlighted with a red box), and 'Spring'. The background shows a Swagger API definition for a 'Products Catalog' with endpoints like '/products' and '/products/get'.</p>

<p>You can now generate your project.</p> <p>You can specify the Artifact and Artifact version.</p>	<div><h3>Project Metadata</h3><p>Artifacts coordinates</p><div><p>Artifact: <input type="text" value="user-application"/></p><p>Artifact Version: <input type="text" value="1.0.0"/></p><div><div>Generate Project</div><div>Cancel</div></div></div></div>																																																												
<p>That will download a zip file containing your project, which can be unzipped to your local system.</p>	<div><div>nodejs-server.zip - WinRAR</div><div><div>File Commands Tools Favorites Options Help</div><div><div><div>Add</div><div>Extract To</div><div>Test</div><div>View</div><div>Delete</div><div>Find</div><div>Wizard</div><div>Info</div><div>VirusScan</div><div>Comment</div></div></div><div><div>nodejs-server.zip\user-application - ZIP archive, unpacked size 26.707 bytes</div><table><thead><tr><th>Name</th><th>Size</th><th>Packed</th><th>Type</th><th>Modified</th><th>CRC32</th></tr></thead><tbody><tr><td>..</td><td></td><td></td><td>Local Disk</td><td></td><td></td></tr><tr><td>api</td><td></td><td></td><td>File folder</td><td></td><td></td></tr><tr><td>controllers</td><td></td><td></td><td>File folder</td><td></td><td></td></tr><tr><td>.swagger-codeg...</td><td>1.030</td><td>489</td><td>SWAGGER-CODEG...</td><td>25-05-18 09:47</td><td>5D47894C</td></tr><tr><td>index.js</td><td>1.412</td><td>655</td><td>JavaScript File</td><td>25-05-18 09:47</td><td>47DEFAA1</td></tr><tr><td>manifest.yml</td><td>85</td><td>70</td><td>Yaml Source File</td><td>25-05-18 09:47</td><td>83C25742</td></tr><tr><td>mta.yml</td><td>283</td><td>173</td><td>Yaml Source File</td><td>25-05-18 09:47</td><td>A8517BF9</td></tr><tr><td>package.json</td><td>590</td><td>353</td><td>JSON Source File</td><td>25-05-18 09:47</td><td>3DD35AEC</td></tr><tr><td>README.md</td><td>2.081</td><td>706</td><td>Markdown Source ...</td><td>25-05-18 09:47</td><td>5BE4B31D</td></tr></tbody></table></div></div></div>	Name	Size	Packed	Type	Modified	CRC32	..			Local Disk			api			File folder			controllers			File folder			.swagger-codeg...	1.030	489	SWAGGER-CODEG...	25-05-18 09:47	5D47894C	index.js	1.412	655	JavaScript File	25-05-18 09:47	47DEFAA1	manifest.yml	85	70	Yaml Source File	25-05-18 09:47	83C25742	mta.yml	283	173	Yaml Source File	25-05-18 09:47	A8517BF9	package.json	590	353	JSON Source File	25-05-18 09:47	3DD35AEC	README.md	2.081	706	Markdown Source ...	25-05-18 09:47	5BE4B31D
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<p>Open Command Line tool and then navigate to root folder of the downloaded project.</p> <p>Use command npm install to install all the dependent libraries</p> <p>Use command npm start to run the application</p>	<div><pre>C:\Users\... \openSAP\user-application>npm install up to date in 1.21s C:\Users\... \openSAP\user-application>npm start > products-catalog-api@1.0.0 prestart C:\Users\i... \openSA P\user-application > npm install up to date in 0.983s > products-catalog-api@1.0.0 start C:\Users\... \openSAP\u ser-application > node index.js Your server is listening on port 8080 (http://localhost:8080) Swagger-ui is available on http://localhost:8080/docs</pre></div>																																																												
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FURTHER READS

- [SAP Guidelines for REST API Harmonization](#)
- [OpenAPI Specification 2.0](#)
- [Accessing API Designer](#) from SAP Cloud Platform Trial Account
- Documenting APIs with [OpenAPI Specification](#) in API Designer
- [Video Tutorial](#) for Creating and Documenting APIs in API Designer
- [Blog](#) on Develop and manage API first enterprise microservices with SAP Cloud Platform and API Management

Coding Samples

Any software coding or code lines/strings ("Code") provided in this documentation are only examples and are not intended for use in a production system environment. The Code is only intended to better explain and visualize the syntax and phrasing rules for certain SAP coding. SAP does not warrant the correctness or completeness of the Code provided herein and SAP shall not be liable for errors or damages caused by use of the Code, except where such damages were caused by SAP with intent or with gross negligence.

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