

# OPENAPI DOES WHAT SWAGGER DON'T

## IMPROVED STRUCTURE:



Altered Specification



The Revenge of Consistency

## IMPROVED HOSTING:



Mortal Servers

## IMPROVED SECURITY:



Streets of Security II

## IMPROVED CONTRACT:



Data Force IV



After Event II

## IMPROVED DOCUMENTATION:



Phantasy Examples II



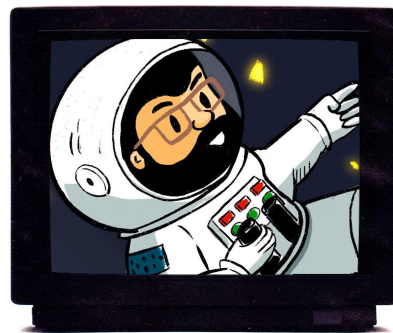
Shining Documentation

# API Handyman does what Arnaud Lauret does

ME:

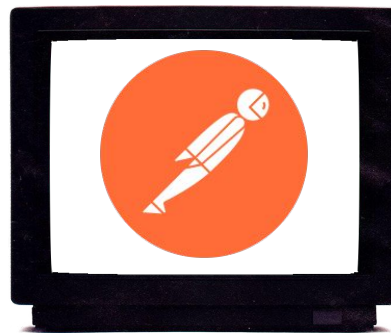


Arnaud Lauret



@apihandyman

MY COMPANY:

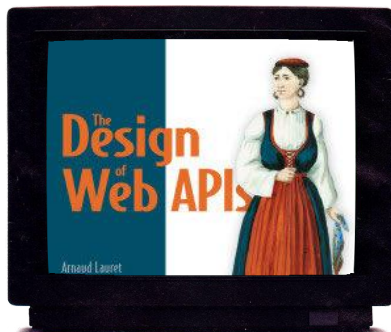


Postman



Open Technologies

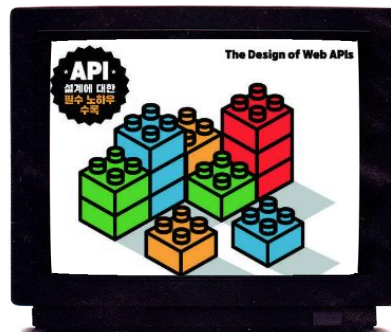
MY BOOK:



The Design of Web APIs



Web APIの設計



웹 API 디자인



ПРОЕКТИРОВАНИЕ ВЕБ-АР



# The reference: Sega vs Nintendo 90s rivalry

## GENESIS DOES WHAT NINTENDON'T.

### ARCADE GAMES:



Super Monaco GP™



Michael Jackson's Moonwalker™



E-SWAT™

### SPORTS GAMES:



Joe Montana Football™



Pat Riley Basketball™



James "Buster" Douglas Knockout Boxing™

### ADVENTURE GAMES:



The Sword of Vermilion™

### STRATEGY GAMES:



Columns™

### ACTION GAMES:



Dynamite Duke™

Get the hottest new video games going. Arcade, sports, adventure, strategy and action hits available only on the 16-bit Genesis System by Sega.\*

Today's latest blockbuster arcade hits like Super Monaco GP™. Climb into the cockpit of the world's fastest Grand Prix machines as you race wheel to wheel through the streets at over two-hundred miles per hour. Or take on the evil villain Mr. Big in Michael Jackson's Moonwalker™ as you use dance-kicks, hat-tricks and finally transform into a powerful robot that does it all. Or become a Cybercop in E-SWAT™ and clean up the city besieged by mad terrorists.

Get ready for the most action-packed sports games ever. In Joe Montana Football™, check out the defense, make the call, fake a pass and scramble for a touchdown. Or force your opponent to move inside your left hook and nail him with an uppercut that puts him on the mat in James "Buster" Douglas Knockout Boxing™. Or in Pat Riley Basketball™, get the ball with seven seconds left in the game, drive the length of the court, slam-dunk and draw the foul which you make to break the tie.

In The Sword of Vermilion™, make your way through 14 towns and 14 mazes in this adventure thriller where encounters with the evil demons are played in real time on the hand controller. And dazzle your friends with your skills on the puzzle game Columns™. Or become the ultimate commando warrior in Dynamite Duke™ as you blast the enemy from an over-your-shoulder first person view.

There's only one true 16-bit system and it's got the hottest video game hits going. You can only play these on Genesis by Sega. Genesis does what Nintendo™n't.



Sega and Genesis are registered trademarks of Sega of America, Inc. Michael Jackson's Moonwalker is a trademark of Universal Productions. Columns is a trademark of Tetlow Kalliope, Inc. All other game titles are trademarks of Sega of America, Inc. © 1995 Sega of America, Inc. P.O. Box 261, South San Francisco, CA 94080. Nintendo is a registered trademark of Nintendo of America, Inc.

## POWER OF CHOICE



**\$99.99\***



**SUPER NES CONTROL SET™**

## Puts you in control.

The new SUPER NES CONTROL SET™ gives you the ultimate power of choice. We've given Mario a break by taking the Game Pak out of the package and lowered the price to put the control where it belongs -- with you! So the question arises: Which game will you buy first? How about the arcade sensation Street Fighter II? It's a knock out! Are you into art?

Mario Paint (sold with the new Super NES Mouse) may be just the ticket. How about the new epic Legend of Zelda game? F-Zero? Final Fantasy II? Are your sights set on the amazing Super Scope 6? The choice is yours. And with a price tag of only \$99.99\* lookin' you in the face, how can you refuse? Exercise your power to choose. CHOOSE CONTROL!



Make your choice from over 125 Super NES games planned for release by the end of the year.



\* Suggested retail price.

# Previously in the APIverse

## Eureka! Swagger 2.0 #

Hopefully, it was at that time that Swagger 2.0 was released with the [YAML editor](#) and its [tools](#). Thanks to this new [tools](#) only generated Swagger UI.

## Starting a Swagger journey beyond generated Swagger UI

By Arnaud Lauret, October 7, 2015

Writing OpenAPI (Swagger) Specification Tutorial Series - Part I

## Introduction

By Arnaud Lauret, March 2, 2016

Previously in the APIverse...

Since I started my [Swagger journey](#), there have been some changes. The *Swagger Specification* has been [donated](#) to the newly created [OpenAPI Initiative](#) under the Linux foundation and is reborn as the [OpenAPI Specification](#). Therefore, my Swagger Journey will become an *OpenAPI Specification (fka Swagger Specification) Journey*.

```
180 description: 'Returns a user based on a single ID, if the user does not
181 have access to the pet'
182 operationId: getPetById
183 x-custom: a custom value
184 parameters:
185   - name: id
186     in: path
187     description: ID of pet to fetch
188     required: true
```

[tools](#) using it.

✓ Processed with no error

### GET /pets/{id}

**Description**

Returns a user based on a single ID, if the user does not have access to the pet

**Parameters**

Name	Located in	Description	Required	Schema
id	path	ID of pet to fetch	Yes	≠ integer (int64)

**Responses**

Code	Description	Schema
200	pet response	≠ Pet undefined all of: - NewPet { { } }
default	unexpected error	≠ Error { code: integer * message: string *

[Try this operation](#)

**It's not Swagger vs OpenAPI**

**Swagger**

**OPENAPI**

**It's Swagger then OpenAPI**

**SWAGGER 2**  
**OPENAPI 3**

# 2 versions of OpenAPI 3

3.0.3

3.1.0



# Bonus Level

## Big thoughts for 4.0 #2930

darrelmiller started this conversation in Enhancements



darrelmiller on May 5

Maintainer

edited by webron ▾ ⋮

We would like to take an opportunity to discuss what might be some big, radical changes that could be done in a 4.0 version that would address issues with OAS that we have not been able to address with past changes.

Let us know what major changes you think would make a significant improvement to the way you describe your APIs.

**Updated request:** Since we converted the issue to a discussion, it allows us for better threaded and voting capabilities for different ideas. If you have several suggestions, consider separating to separate replies so those could be considered individually.



3



1



# OPENAPI 3 IMPROVES SWAGGER 2

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Shining Documentation

# Altered Specification (version)



swagger: "2.0"



openapi: "3.0.3"

# Altered Specification (reusable components)



```
swagger: "2.0"
```

```
info: ...
```

```
paths: ...
```

```
definitions: ...
```

```
parameters: ...
```



```
openapi: "3.0.3"
```

```
info: ...
```

```
paths: ...
```

```
components:
```

```
  schemas: ...
```

```
  parameters: ...
```

# The Revenge of Consistency (all data defined the same way)

```
swagger: "2.0"
```

```
paths:
```

```
  /resources/{resourceId}:
```

```
    parameters:
```

```
      - name: resourceId
```

```
        type: string
```

```
definitions:
```

```
  # Only for bodies
```

```
openapi: "3.0.3"
```

```
paths:
```

```
  /resources/{resourceId}:
```

```
    parameters:
```

```
      - name: resourceId
```

```
        schema:
```

```
          $ref: ../schemas/id
```

```
components:
```

```
  schemas:
```

```
    # For all data
```



# The Revenge of Consistency (more reusable components)

```
swagger: "2.0"
```

```
definitions: ...
```

```
parameters: ...
```

```
responses: ...
```

```
securityDefinitions: ...
```

```
openapi: "3.0.3"
```

```
components:
```

```
  schemas: ...
```

```
  parameters: ...
```

```
  requestBodies: ...
```

```
  responses: ...
```

```
  securitySchemes: ...
```

```
  examples: ...
```

```
  headers: ...
```

# Mortal Servers (multiple servers)

```
swagger: "2.0"
```

```
schemes:
```

```
- https
```

```
host: server.com
```

```
basePath: /name/v1
```

```
openapi: "3.0.3"
```

```
servers:
```

```
- description: production
```

```
url:
```

```
https://server.com/name/v1
```

```
- description: mock
```

```
url:
```

```
https://mock.com/name/v1
```

# Mortal Servers (path level servers)



```
swagger: "2.0"
```

```
schemes:
```

```
- https
```

```
host: server.com
```

```
basePath: /name/v1
```



```
openapi: "3.0.3"
```

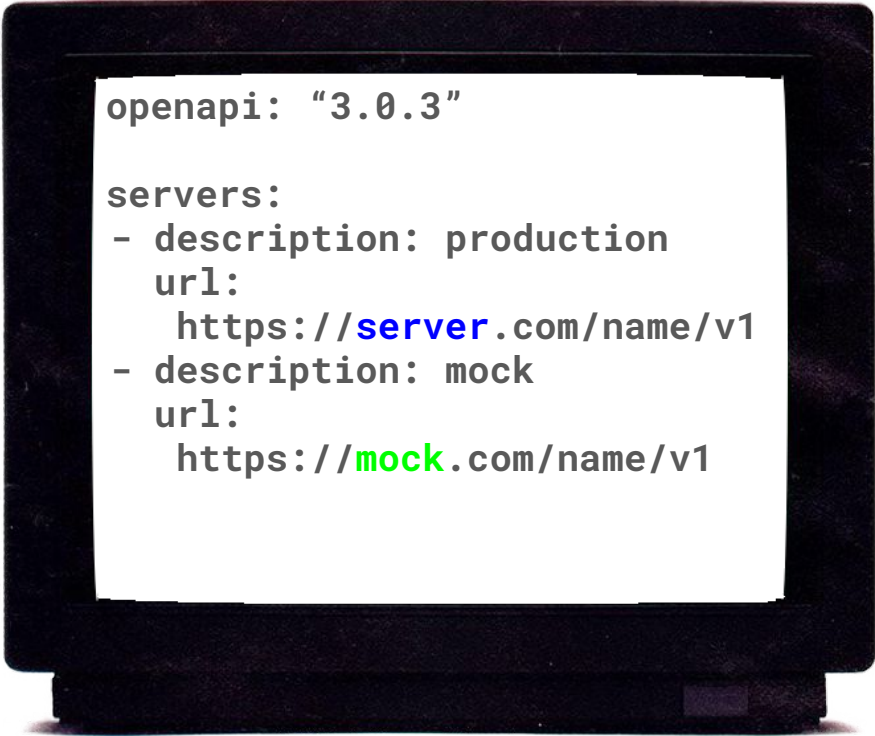
```
servers:
```

```
paths:
```

```
  /resources:
```

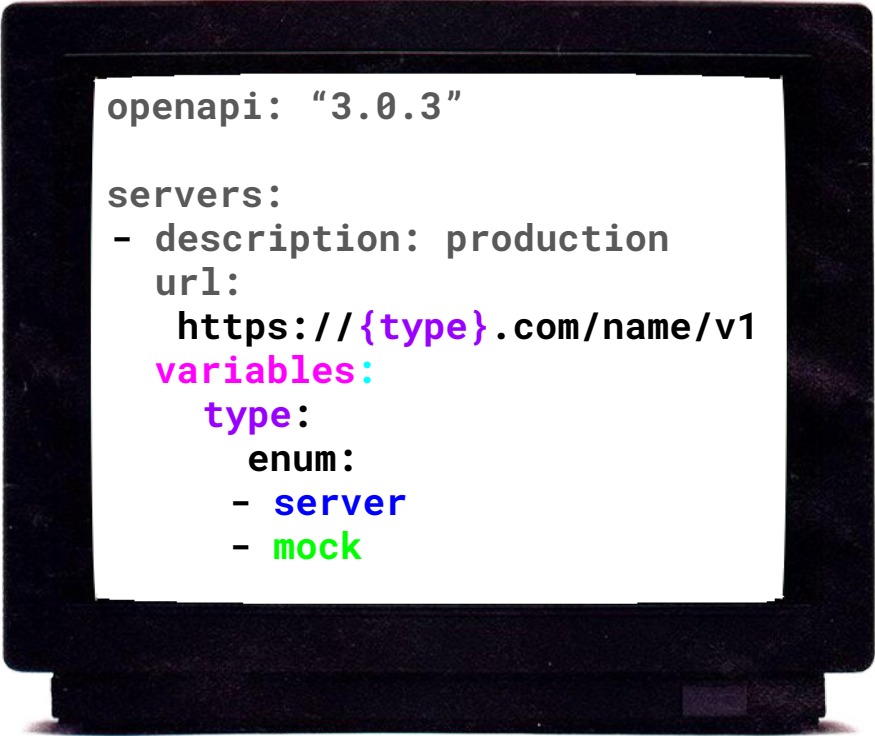
```
    servers:
```

# Mortal Servers (server variables)



```
openapi: "3.0.3"

servers:
  - description: production
    url:
      https://server.com/name/v1
  - description: mock
    url:
      https://mock.com/name/v1
```



```
openapi: "3.0.3"

servers:
  - description: production
    url:
      https://{type}.com/name/v1
  variables:
    type:
      enum:
        - server
        - mock
```



# Streets of Security II (enhanced and new security modes)

```
swagger: "2.0"
```

```
securityDefinitions:
```

```
# Basic Authentication  
# API Key (query, header)  
# OAuth2
```

```
openapi: "3.x.x"
```

```
components:
```

```
securitySchemes:
```

```
# HTTP (Basic, Bearer)  
# API Key (query, header,  
#           cookie)  
# OAuth 2 (fixed)  
# OpenId Connect  
# Mutual TLS (3.1)
```

# Data Force IV (more versatile schemas)

```
swagger: "2.0"
```

```
definitions:
```

```
# JSON Schema Draft 4 (mod)
```

```
openapi: "3.0.3"
```

```
components:
```

```
schemas:
```

```
# JSON Schema Draft 5 (mod)
```

```
# Notable enhancements
```

```
# oneOf, anyOf, not
```

```
# writeOnly
```

# Data Force IV (choose your JSON Schema)

```
swagger: "2.0"
```

```
definitions:
```

```
# JSON Schema Draft 4 (mod)
```

```
openapi: "3.1.0"
```

```
components:
```

```
  schemas:
```

```
    # Default: JSON Schema
```

```
    #           Draft 2020-12
```

```
    # Overridden by
```

```
    # jsonSchemaDialect
```

# Data Force IV (enhanced content negotiation)

```
swagger: "2.0"  
# 1 schema for all media types  
paths:  
  /resources:  
    get:  
      produces:  
        - application/json  
        - application/linkset+json  
      responses:  
        200:  
          schema:
```

```
openapi: "3.0.3"  
# Specific schemas for each  
paths:  
  /resources:  
    get:  
      responses:  
        200:  
          content:  
            application/json:  
              schema: ...  
            application/linkset+json:  
              schema: ...
```



# Data Force IV (enhanced parameter/header serialization)

```
swagger: "2.0"
```

```
parameters:
```

```
  aParameter:
```

```
    type: array
```

```
    collectionFormat: ...
```

```
openapi: "3.0.3"
```

```
components:
```

```
  parameters:
```

```
    aParameter:
```

```
      # array or object
```

```
      style: ...
```

```
      explode: ...
```

# After Event II (webhooks & callbacks)



```
swagger: "2.0"
```



```
openapi: "3.x.x"
```

```
paths:
```

```
  /resources:
```

```
    post:
```

```
      callbacks: # 3.0
```

```
webhooks: # 3.1
```

```
  /events:
```

```
    post: ...
```

# Phantasy Examples II (multiple examples)

```
swagger: "2.0"
```

```
# Example only on bodies
```

```
example:
```

```
# single undocumented
```

```
# example
```

```
openapi: "3.0.3"
```

```
# Examples on bodies,
```

```
# parameters, headers
```

```
examples:
```

```
  anExample:
```

```
    summary: ...
```

```
    description: ...
```

```
    value: ...
```

```
    # or
```

```
    externalValue: ...
```

# Shining Documentation (more summaries and descriptions)

```
swagger: "2.0"

info:
  description: ...

paths:
  /resources:
```

```
openapi: "3.1.0"

info:
  summary: ...
  description: ...

paths:
  /resources:
    summary: ...
    description: ...
```



**Thank you and goodbye Swagger 2**

**USE OPENAPI 3 NOW AND  
GET ALL OF ITS EXCLUSIVE  
NEW FEATURES **FREE.****

# The path to OpenAPI 3 upgrade

**USE OPENAPI 3 NOW AND  
GET ALL OF ITS EXCLUSIVE  
NEW FEATURES **FREE** (almost).**

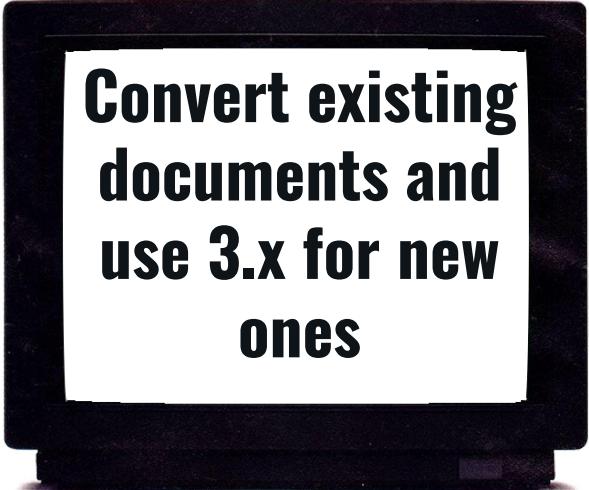
# The path to OpenAPI 3 upgrade



**Check third  
party tools  
compatibility**

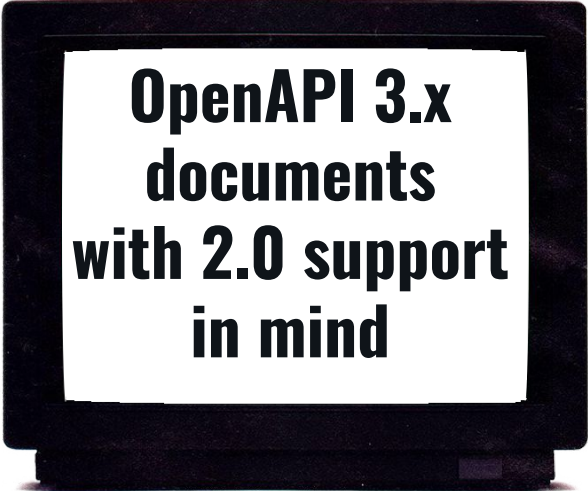


**Upgrade  
your tools**




**Convert existing  
documents and  
use 3.x for new  
ones**

# The (degraded) path to OpenAPI 3 upgrade



**OpenAPI 3.x  
documents  
with 2.0 support  
in mind**



**Use 3.x with  
compatible tools**



**Downgrade 3.x to  
2.0 for non  
compatible tools**

# How to speed-up adoption of new versions?

# How to speed-up adoption of new versions?

**SPECIFICATION SUPPORTED OPEN SOURCE TOOLS**  
**VENDOR SUPPORTED OPEN SOURCE TOOLS**



# How to speed-up adoption of new versions?

**NO/SLOW/BACKWARD COMPATIBLE  
NEW VERSIONS?**

# YOUR WORLD WILL NEVER BE THE SAME.

**Sega Arcade Classics**



Space Harrier II    Super Hang-On    Super Thunder Blade



**Unretouched Photo**  
Altered Beast, the Sega arcade hit, comes with the Genesis system, TeleGenesis Modem, Power Base Converter and other games sold separately.

Sega and Genesis are registered trademarks of Sega of America, Inc. Genesis, 16-bit, and Altered Beast are registered trademarks of Sega of America, Inc. Super Hang-On, Super Thunder Blade, and Space Harrier II are trademarks of Sega of America, Inc.

## Genesis' 16-bit. The ultimate dimension in game play.

For the first time, the powerful technology used in arcade games has come home to let you play games that look, sound and play exactly like they do in the arcade.

Genesis brings games alive with vivid high-definition graphics. Voices, sounds and music so true they turn the game into a reality you can feel. Plug in a pair of headphones for stereo sound that surrounds you. And soon, with the TeleGenesis™ modem, you'll be able to play against friends in other cities. Or across town.

The incredible reality of Genesis could only be brought to you by Sega, the master of arcade entertainment. Master of arcade blockbusters like Out Run, Altered Beast, Thunder Blade, Afterburner, Zaxxon, and Shinobi.

The power has been unleashed. The adventure begins. And this is just the beginning of the Genesis era.



And more to come.

# OPEN API