

# SUPER- POWERED API Testing

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**SWAGGER**



**POSTMAN**

# apitesting.bigstickcarpet.com

- ▶ See the API that we'll be testing!
- ▶ Download sample tests!
- ▶ Links to **even more** exciting downloads!



# API Testing Tools

- ▶ Workflow testing vs Endpoint testing
- ▶ CI/CD Integrations
- ▶ Local-First
- ▶ Cross-Platform
- ▶ Free (as in beer 🍺)



A screenshot of a developer's workspace illustrating the integration of Mocha and Chai for API testing. The background is a vibrant illustration of a superhero flying over a city skyline under a blue sky with clouds and birds.

The workspace shows:

- Code Editor:** A file named `create-character.spec.js` is open in a code editor window. It contains Mocha test code for a character API. The code uses Chai assertions like `.should.be.successful(200)` and `.set('X-API-Key', API_KEY)`.
- Terminal:** Below the code editor is a terminal window showing the execution of the tests. It displays 19 passing tests in 5 seconds, with a total duration of 4.73s and 100% coverage.
- Test Results:** A sidebar titled "Run" shows a tree view of test results for various endpoints like POST /characters, GET /characters, and PUT /characters/{slug}.
- Browser:** A browser window shows the results of a GET /characters request, displaying a JSON response with a single character object: {name: 'Super Coder', type: 'hero', powers: ['10x-ing'], links: {self: API\_ROOT + '/characters/supercoder'}}.



- ▶ CLI + Browser
- ▶ IDE Integrations
- ▶ Flow control
- ▶ Reusability
- ▶ Easily automated
- ▶ Browser testing, FTW!



- ▶ Lots of moving parts
- ▶ Requires JS skills
- ▶ No GUI

# DEMO TIME!



# Restlet

The screenshot shows the Restlet Client interface for testing the Super Tech Heroes API. The left sidebar lists various API endpoints under 'MY DRIVE' and 'Super Tech Heroes API'. The selected endpoint is 'Creates a new character' under the '/characters' folder. The main panel displays the scenario details:

- SCENARIO:** Creates a new character
- DESCRIPTION:** This endpoint creates a new character. For heroes, you can also create the sidekick and/or nemesis at the same time by setting the `sidekick` and/or `nemesis` properties to objects rather than strings.
- METHOD:** POST
- SCHEME:** https://\${API\_ROOT}/characters
- HEADERS:** Content-Type: application/json, Accept: application/json
- BODY:**

```
1 {
2   "name": "Super Coder",
3   "powers": [
4     "10-xing",
5     "Caffeine"
6   ],
7   "weakness": "Imposter syndrome",
8   "nemesis": {
9     "name": "Space Bugs from Dimension Z"
10 }
11 }
```
- ASSERTIONS:**
  - Status code Equals 201
  - Header location Equals \${API\_ROOT}/characters/super-coder
  - JSON Body \$.name Equals Super Coder
  - JSON Body \$.powers[0] Equals 10-xing

# Restlet

- ▶ Chrome extension
- ▶ Intuitive GUI
- ▶ Jenkins & GitHub integrations
- ▶ Freemium SaaS features
- ▶ Simple test builder

# Restlet

- ▶ Limited test capabilities
- ▶ Limited reusability
- ▶ No flow control
- ▶ Automation requires Maven

# DEMO TIME!





# POSTMAN

```
Postman: newman run postman-collection.json -e postman-environment.json
newman

Super Tech Heroes API

characters
  Find characters
    GET http://localhost:8080/characters?name=((name))&type=((type)) [400 Bad Request, 6538, 23ms]
      ✓ Response time is less than 200ms
      ✓ Status code is 200
      ✓ 12 characters were returned

  Creates a new character
    POST http://localhost:8080/characters [201 Created, 8438, 119ms]
      ✓ Response time is less than 200ms
      ✓ Status code is 201
      ✓ The Location header is set
      ✓ The new character was returned

  Deletes all characters
    DELETE http://localhost:8080/characters [200 0]
      ✓ Response time is less than 200ms
      ✓ Status code is 204

  Get a specific character
    GET http://localhost:8080/characters/supercode
      ✓ Response time is less than 200ms
      ✓ Status code is 200
      ✓ The Location header is set
      ✓ The correct character was returned

  Updates a character
    PUT http://localhost:8080/characters/supercode
      ✓ Response time is less than 200ms
      ✓ Status code is 200
      ✓ The Location header is set
      ✓ The updated character was returned

schema
  Get API definition schema
    GET http://localhost:8080/schema?accept=((accept))
      ✓ Response time is less than 200ms
      ✓ Status code is 200
      ✓ The schema is valid

  Get API info
    GET http://localhost:8080/ [200 OK, 880B, 3ms]
      ✓ Response time is less than 200ms
      ✓ Status code is 200
      ✓ The version number is correct



|                    | executed | failed |
|--------------------|----------|--------|
| iterations         | 1        | 0      |
| requests           | 7        | 0      |
| test-scripts       | 7        | 0      |
| prerequest-scripts | 0        | 0      |
| assertions         | 23       | 0      |


total run duration: 532ms
total data received: 15.63KB (approx)
average response time: 40ms

Postman: ┌
```

Creates a new character

Creates a new character

This endpoint creates a new character with a `nemesis` property.

POST

Authorization

form-data

1 {  
2 "name":  
3 "powers":  
4 "weaknesses":  
5 "CaffeineSensitive":  
6 }  
7 "weaknesses":  
8 "nemesis":  
9 "name":  
10 }  
11 }

All Passed

PASS Response time

(name))&type={{type}} [400 Bad Request, 6538, 23ms]

Created, 843B, 119ms]

New Import Runner

Super Tech Heroes

History Collections

All Me Team

Super Tech Heroes API  
7 requests

characters

Find characters

Creates a new character

Deletes all characters

Get a specific character

Updates a character

schema

Get API definition schema

Get API Info

Creates a new character

This endpoint creates a new character object. It takes `nemesis` properties to objects.

POST {{API\_ROOT}}/characters

Authorization Headers (2)

form-data x-www-form-urlencoded

```
1: {  
2:   "name": "Super",  
3:   "powers": [  
4:     "10-xing",  
5:     "Caffeine"  
6:   ],  
7:   "weakness": "Imp",  
8:   "nemesis": {  
9:     "name": "Space"  
10:    }  
11: }
```

Body Cookies Header

All Passed Skipped

PASS Response time is less than 100ms

PASS Status code is 201

PASS The Location header is present

PASS The new character was created

The screenshot shows the Collection Runner interface with the following details:

- Collection Runner** tab is active.
- Run Results** tab is selected.
- Super Tech Heroes API** run was just now completed.
- 23 PASSED** and **0 FAILED**.
- Run Summary >** button.
- Export Results** button.
- Retry** button.
- New** button.

**Iteration 1** details:

Action	URL	Method	Assertion	Status	Time	Size
GET Find characters	http://localhost:8080/cha...	GET	...s API / characters / Find characters	400 Bad Request	30 ms	101 B
PASS			Response time is less than 200ms			
PASS			Status code is 200			
PASS			12 characters were returned			
POST Creates a new character	http://localhost:8080/cha...	POST	...racters / Creates a new character	201 Created	102 ms	240 B
PASS			Response time is less than 200ms			
PASS			Status code is 201			
PASS			The Location header is set			
PASS			The new character was returned			
DELETE Deletes all characters	http://localhost:8080/cha...	DELETE	... characters / Deletes all characters	200 OK	165 ms	49 B
PASS			Response time is less than 200ms			
PASS			Status code is 204			
GET Get a specific character	http://localhost:8080/cha...	GET	...haracters / Get a specific character	404 Not Found	13 ms	73 B
PASS			Response time is less than 200ms			
PASS			Status code is 200			



# POSTMAN

- ▶ Native app
- ▶ Intuitive GUI
- ▶ JavaScript tests
- ▶ Flow control
- ▶ Easily automated
- ▶ Freemium SaaS features



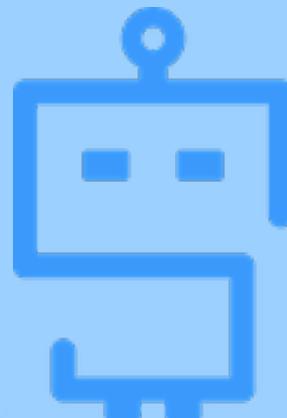


# POSTMAN

- ▶ Requires JS skills
- ▶ Reusability requires JS hackery
- ▶ Limited third-party libs

# DEMO TIME!





# StopLight

Super Tech Heroes · BigstickCarpet Collections

BigstickCarpet / Collections / Super Tech Heroes

Discussion

+ Save File

Run Scenario Run Collection + New Step

home

BEFORE + None.

SCENARIOS + Super Tech Heroes

settings

steps [6]

- GET Find characters 200
- POST Creates a new character 201
- GET Get a specific character 200
- PUT Updates a character 200
- DELETE Deletes all characters 200
- GET Get API info 200

AFTER + None.

UTILITIES + None.

Normal B

Optional scenario notes...

\$.env ✓

API_ROOT	http://localhost:8080
SLUG	supercoder

Steps + Add Step

	GET Find characters	200	▶	✎	🔗	✖
1	POST Creates a new character	201	▶	✎	🔗	✖
2	GET Get a specific character	200	▶	✎	🔗	✖
3	PUT Updates a character	200	▶	✎	🔗	✖
4	DELETE Deletes all characters	200	▶	✎	🔗	✖
5	GET Get API info	200	▶	✎	🔗	✖

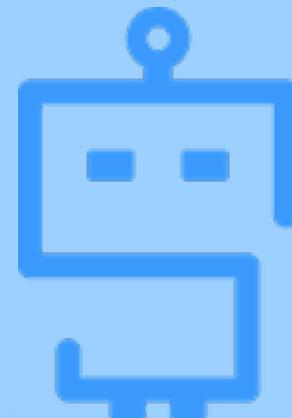
Visual </> Code ✓ Valid

[Conductor] Stoplight API Host is https://api-next.stoplight.io

```
Super Tech Heroes Scenario (1.208s)
  Find characters, GET http://localhost:8080/characters (0.5s)
    ✓ output.status (eq) 200
    ✓ output.body (validate.contract) against JSON Schema
  Creates a new character, POST http://localhost:8080/characters (0.104s)
    ✓ output.status (eq) 201
    ✓ output.body (validate.contract) against JSON Schema
  Get a specific character, GET http://localhost:8080/characters/supercoder (0.025s)
    ✓ output.status (eq) 200
    ✓ output.body (validate.contract) against JSON Schema
  Updates a character, PUT http://localhost:8080/characters/supercoder (0.076s)
    ✓ output.status (eq) 200
  Deletes all characters, DELETE http://localhost:8080/characters (0.495s)
    ✓ output.status (eq) 200
    ✓ output.body (validate.contract) against JSON Schema
  Get API info, GET http://localhost:8080/ (0.008s)
    ✓ output.status (eq) 200
    ✓ output.body (validate.contract) against JSON Schema
```

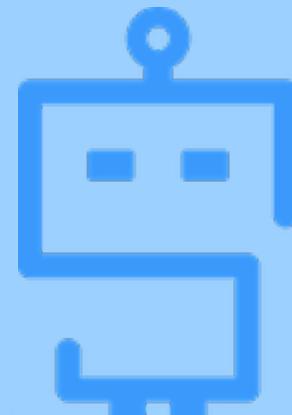
✓ 11 tests passed

Stoplight: []



# StopLight

- ▶ Native app
- ▶ Swagger integration
- ▶ GUI test builder
- ▶ Easy reusability
- ▶ JavaScript tests
- ▶ Easily automated
- ▶ Freemium SaaS features



# StopLight

- ▶ Complex UI
- ▶ Limited flow control
- ▶ Limited third-party libs

# DEMO TIME!



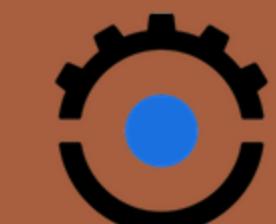
# OTHER SUPERHEROES...



**API**FORTRESS



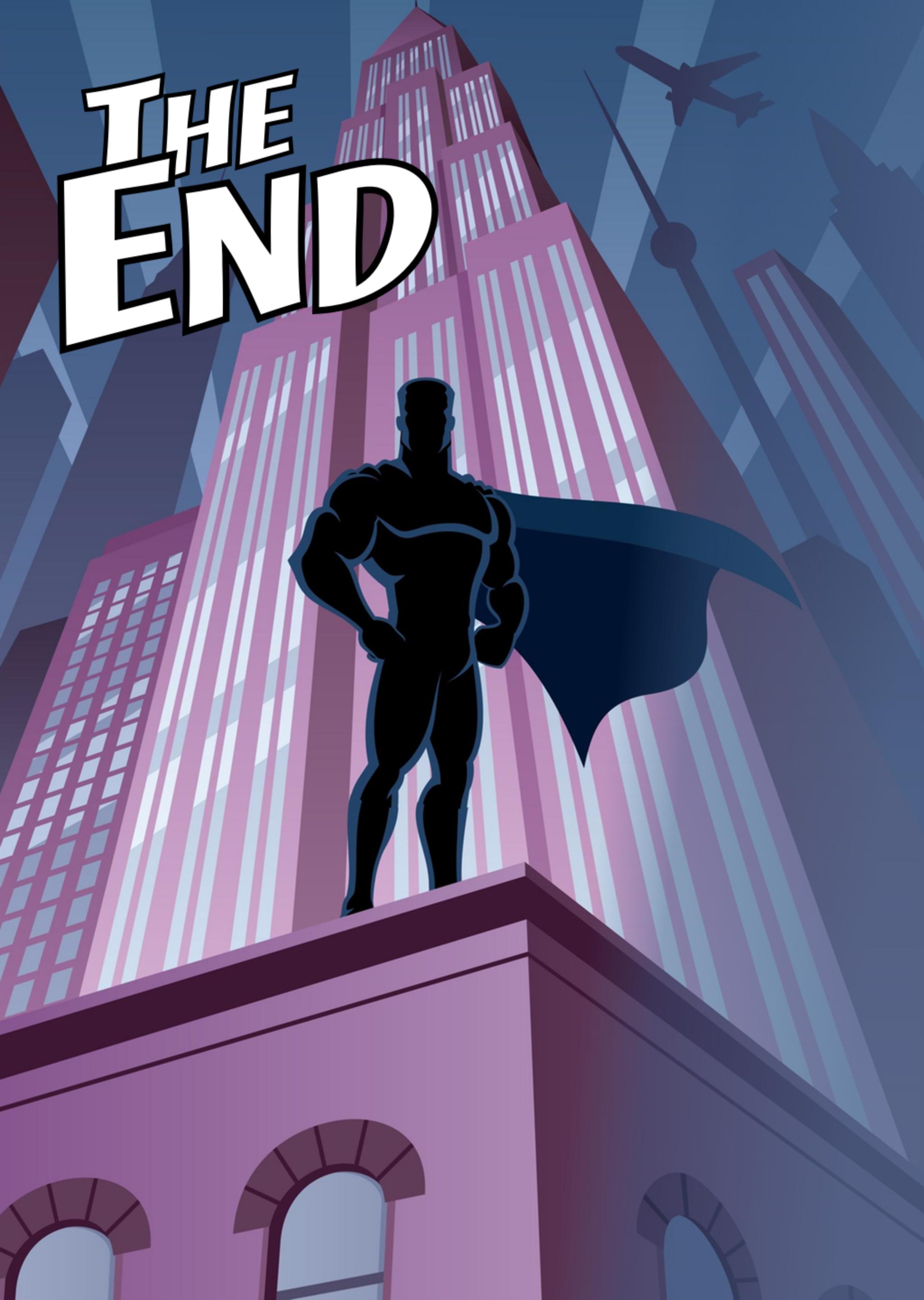
Insomnia



Runscope

Ping-API

# THE END

A stylized illustration of a muscular man standing on the edge of a building. He is shirtless, wearing dark pants, and has one hand on his hip. The background features a city skyline with various buildings, a bridge, and an airplane in the sky.

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