

# 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 🍺)



create-character.spec.js - Mocha-Chai - [~/Code/Personal/Training/super-powered-api-testing/Mocha-Chai]

```
describe('POST /characters', function () {
  it('should create a single character', function () {
    return Promise.resolve()
      .then(function () {
        // Create a character
        return chai.request(API_ROOT)
          .post('/characters')
          .set('X-API-Key', API_KEY)
          .send({ name: 'Super Coder', powers: ['10x-ing'] });
      })
      .then(function () {
        // Fetch the character
        return chai.request(API_ROOT)
          .get('/characters/supercoder')
          .set('X-API-Key', API_KEY);
      })
      .then(function (response) {
        // The response should be Super Coder
        response.should.be.successful(200);
        response.body.should.be.a.character({
          name: 'Super Coder',
          type: 'hero',
          powers: ['10x-ing'],
          links: {
            self: API_ROOT + '/characters/supercoder'
          }
        });
      })
  });
});
```

File:///Users/james/Code/Personal/Training/super-powered-api-testing/Mocha-Chai

passes: 19 failures: 0 duration: 4.73s 100%

Test Results

- POST /characters
- GET /characters
  - should return an empty array when there are no characters
  - should return a single character
  - should return multiple characters
  - should return heroes, sidekicks, and villains
- GET /characters/{slug}
  - should return the correct character
  - should return links to the character's sidekick and villain
  - should return a 404 if the character doesn't exist
- GET /characters/(with query params)
  - should return an empty array when there are no characters
  - should find characters by type
  - should find characters by name
  - should find characters by name and type
- PUT /characters/{slug}
  - should update the character's properties
  - should clear any properties that aren't updated
  - should change the character's sidekick and nemesis
  - should not allow setting sidekick or nemesis to characters with the wrong type
  - should not allow setting sidekick or nemesis to characters that don't exist
  - should change the character's URL if its name changes
- GET /characters/(with query params)
  - should return an empty array when there are no characters
  - should find characters by type (104ms)
  - should find characters by name (337ms)
  - should find characters by name and type (252ms)
- PUT /characters/{slug}
  - should update the character's properties (116ms)
  - should clear any properties that aren't updated (119ms)
  - should change the character's sidekick and nemesis (334ms)
  - should not allow setting sidekick or nemesis to characters with the wrong type (165ms)
  - should not allow setting sidekick or nemesis to characters that don't exist (71ms)
  - should change the character's URL if its name changes (138ms)

Tests Passed: 19 passed (2 minutes ago)

19 passing (5s)



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



- ▶ Lots of moving parts
- ▶ No GUI
- ▶ Requires JS skills
- ▶ No fourth bullet point

# 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
- ▶ Can't chain requests
- ▶ No conditional requests
- ▶ Limited reusability
- ▶ Limited integrations

# DEMO TIME!





# POSTMAN

The screenshot displays the Postman application interface against a background of a superhero flying over a city skyline.

**Collection Runner Tab:**

- Summary:** 23 PASSED, 0 FAILED.
- API Name:** Super Tech Heroes API (Super Tech Heroes (localhost))
- Last Run:** just now
- Iteration 1:** Contains a list of test cases and their results.

Test Case	Status	Details
GET Find characters	PASS	Response time is less than 200ms
POST Creates a new character	PASS	Status code is 201
POST Deletes all characters	PASS	12 characters were returned
POST Updates a character	PASS	Response time is less than 200ms
GET Get API definition schema	PASS	Schema is valid
GET Get API info	PASS	Version number is correct

**Run Results Tab:**

- Summary:** 23 PASSED, 0 FAILED.
- API Name:** Super Tech Heroes API (Super Tech Heroes (localhost))
- Last Run:** just now
- Iterations:** 1
- Test Cases:** 23 total, 0 failed.
- Test Case Details:** A detailed list of 23 test cases with their status (PASS or FAIL), descriptions, and response times.



# POSTMAN

- ▶ Native app
- ▶ Request chaining
- ▶ Intuitive GUI
- ▶ Flow control via script
- ▶ JavaScript tests
- ▶ Easily automated
- ▶ Freemium SaaS features

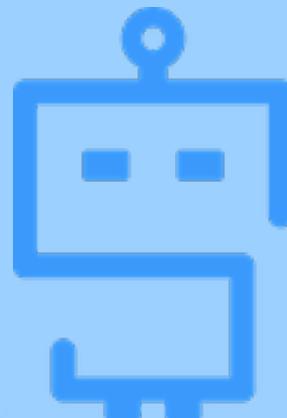


# POSTMAN

- ▶ Requires JS skills
- ▶ Limited reusability
- ▶ 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	▶	✎	🔗	✖

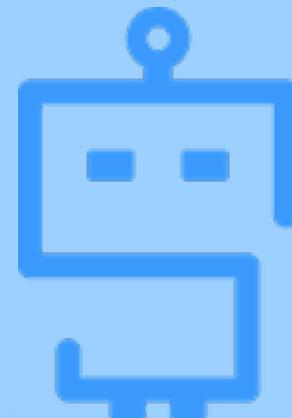
Visual </> Code ✓ Valid

[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
```

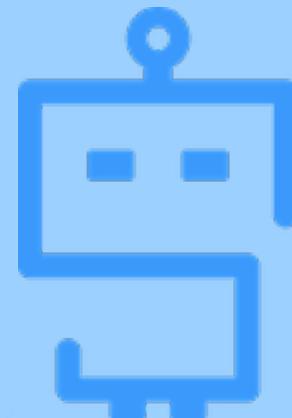
✓ 11 tests passed

Stoplight: []



# StopLight

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



# StopLight

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



# DEMO TIME!



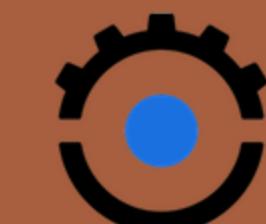
# OTHER SUPERHEROES...



**API**FORTRESS



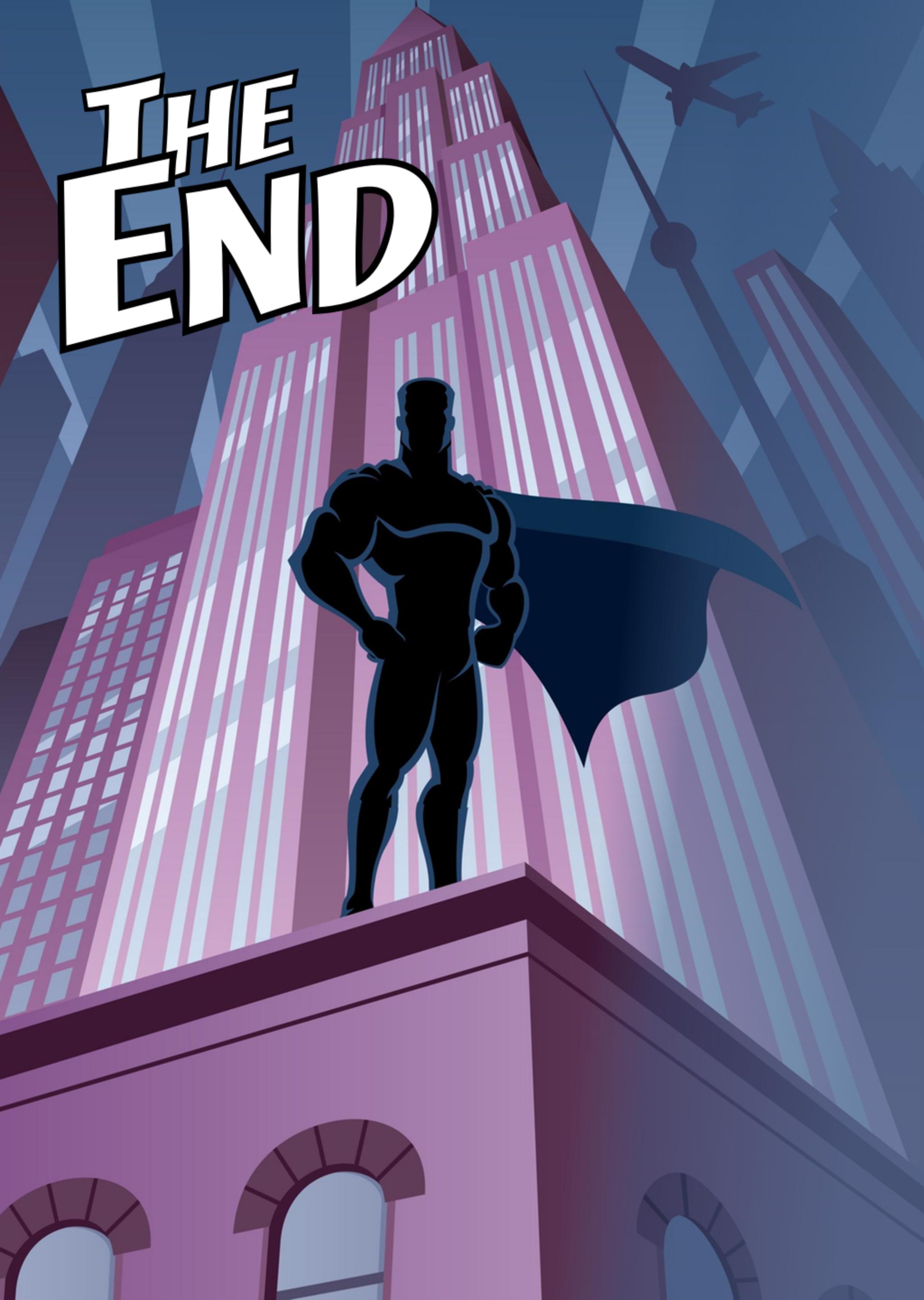
Insomnia



Runscope

Ping-API

# THE END

A stylized illustration of a muscular man in a black tank top and shorts standing on the edge of a building. He is looking towards the right. In the background, there are several tall buildings with blue and purple facades, and a small airplane is flying in the sky.

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