

Automatic testing of (RESTful) API documentation

API Days Paris, December 2016

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A content management developer platform with an API at its core.

Run your content as a service

A collection of APIs helps developers manage, integrate, and deliver digital content across all types of clients, devices, and platforms.



What do you do?

↓ **Download**
API Blueprint

INTRODUCTION

Authentication

Resource IDs

Updating resources

Updating and
version locking

API rate limits

Common Resource
Attributes

Collection resources
and pagination

Errors

Entry

Create/update an entry >

This endpoint can be used to create a new entry with an ID specified by the user, or to update a specific entry via its ID.

Note that when updating an existing entry, you always need to specify the last version you got of the entry you are updating with

`X-Contentful-Version`.

Before you can create an entry you need to create and activate a content type.

When creating a new entry you need to pass the ID of the entry's desired content type as the `X-Contentful-Content-Type` header.



Entries / Entry / Create/update an entry

PUT https://api.contentful.com/spaces/space_id/entries/entry_id

Parameters

space_id	● ID of the space in form of a string Example: <code>fp91oelsziea</code> .	String
entry_id	● ID of the entry in form of a string Example: <code>helloworld</code> .	String

Request

Powered by



apiary

Documentation will be wrong

error in documentation



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Users hate that



Johnno Nolan
@JohnnoNolan

16 Feb 15

incomplete or wrong documentation is the bane of my existence.



Lee Behrens
@leebehrens

.@JohnnoNolan I'd much rather have incomplete than wrong. Nothing breaks trust in another team's work like their incorrect API docs.

11:53 AM - 16 Feb 2015



Jesse 🍷 BATkinson
@jsatk

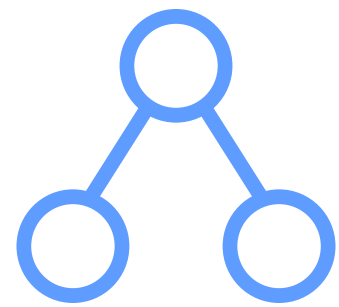
I'm working with an incredibly well presented and documented API who's documentation is deeply wrong.

I'd rather have no docs.

7:54 PM - 15 Sep 2016 · SoMa, San Francisco, United States



It's all in the spec



api blueprint

A powerful high-level API description language for web APIs.

Questions Collection [/questions]

Create a New Question [POST]

You may create your own question using this action. It takes a JSON object containing a question and a collection of answers in the form of choices.

+ Request (application/json)

```
{
  "question": "Favourite programming language?",
  "choices": [
    "Swift",
    "Python",
    "Objective-C",
    "Ruby"
  ]
}
```

+ Response 201 (application/json)

+ Headers

Location: /questions/2

+ Body

```
{
  "question": "Favourite programming language?",
  "published_at": "2015-08-05T08:40:51.620Z",
  "choices": [
    {
```

Let's get testing



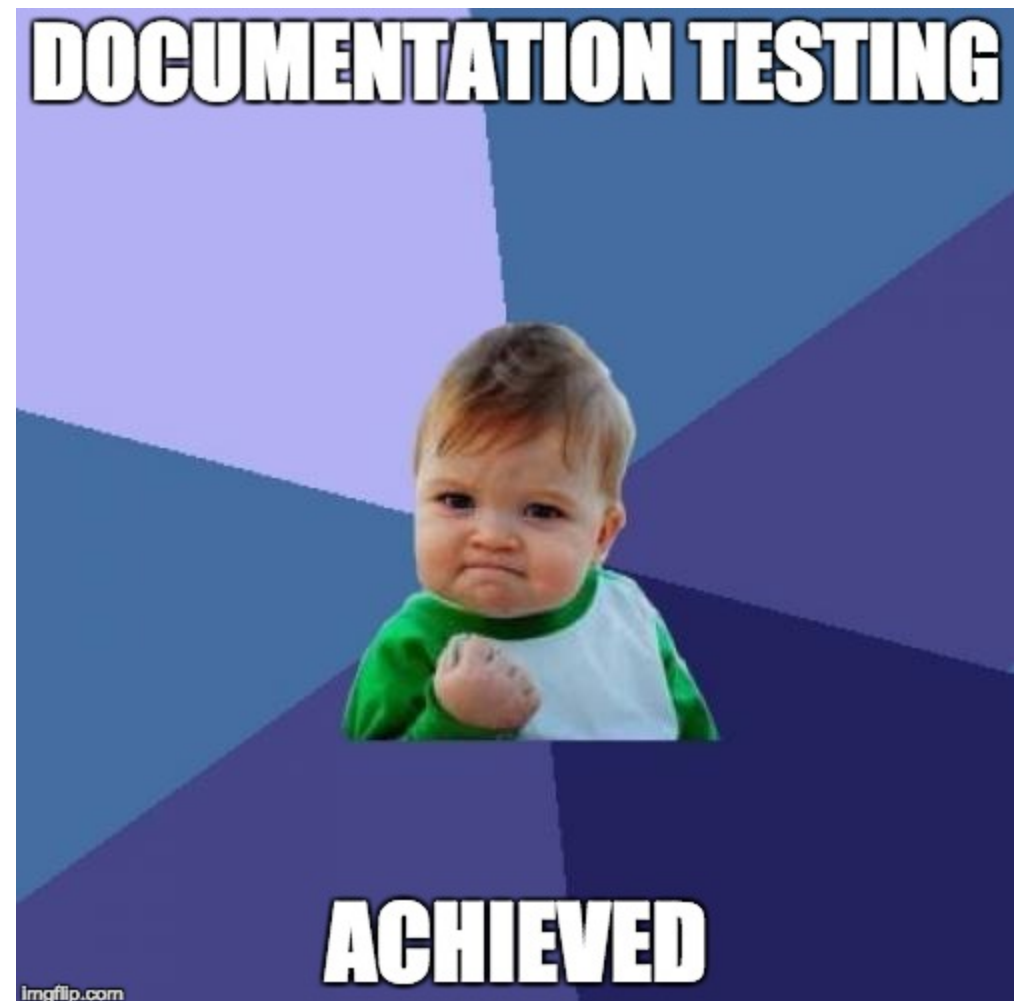
DREDD

No more outdated API documentation.

Testing read-only

```
node_modules/.bin/dredd cma.apib https://api.contentful.com \  
-m GET
```

```
info: Beginning Dredd testing...
info: Found Hookfiles: ./test-hooks-cma.js
skip: POST /spaces
pass: GET /spaces duration: 1377ms
skip: PUT /spaces/fp9loelsziewa
pass: GET /spaces/fp9loelsziewa duration: 972ms
skip: DELETE /spaces/fp9loelsziewa
pass: GET /spaces/fp9loelsziewa/content_types duration: 1649ms
skip: POST /spaces/fp9loelsziewa/content_types
skip: PUT /spaces/fp9loelsziewa/content_types/30RKIA0aJqQWWg86MWky0s
skip: PUT /spaces/fp9loelsziewa/content_types/30RKIA0aJqQWWg86MWky0s
skip: PUT /spaces/fp9loelsziewa/content_types/30RKIA0aJqQWWg86MWky0s
skip: PUT /spaces/fp9loelsziewa/content_types/30RKIA0aJqQWWg86MWky0s
pass: GET /spaces/fp9loelsziewa/content_types/30RKIA0aJqQWWg86MWky0s duration: 812ms
skip: DELETE /spaces/fp9loelsziewa/content_types/30RKIA0aJqQWWg86MWky0s
skip: PUT /spaces/fp9loelsziewa/content_types/30RKIA0aJqQWWg86MWky0s/published
skip: DELETE /spaces/fp9loelsziewa/content_types/30RKIA0aJqQWWg86MWky0s/published
pass: GET /spaces/fp9loelsziewa/public/content_types duration: 805ms
pass: GET /spaces/fp9loelsziewa/content_types/hfM9RCJik0wIm06WkEQY/editor_interface duration: 835ms
fail: GET /spaces/fp9loelsziewa/content_types/hfM9RCJik0wIm06WkEQY/editor_interface duration: 1392ms
skip: PUT /spaces/fp9loelsziewa/content_types/hfM9RCJik0wIm06WkEQY/editor_interface
pass: GET /spaces/fp9loelsziewa/entries duration: 2122ms
skip: POST /spaces/fp9loelsziewa/entries
skip: PUT /spaces/fp9loelsziewa/entries/helloworld
skip: PUT /spaces/fp9loelsziewa/entries/helloworld
pass: GET /spaces/fp9loelsziewa/entries/helloworld duration: 818ms
skip: DELETE /spaces/fp9loelsziewa/entries/helloworld
skip: PUT /spaces/fp9loelsziewa/entries/helloworld/published
skip: DELETE /spaces/fp9loelsziewa/entries/helloworld/published
skip: PUT /spaces/fp9loelsziewa/entries/helloworld/archived
skip: DELETE /spaces/fp9loelsziewa/entries/helloworld/archived
pass: GET /spaces/fp9loelsziewa/assets duration: 831ms
skip: POST /spaces/fp9loelsziewa/assets
pass: GET /spaces/fp9loelsziewa/public/assets duration: 781ms
```

Hooks

- `beforeAll` called at the beginning of the whole test run
- `beforeEach` called before each HTTP transaction
- `before` called before some specific HTTP transaction
- `beforeEachValidation` called before each HTTP transaction is validated
- `beforeValidation` called before some specific HTTP transaction is validated
- `after` called after some specific HTTP transaction regardless its result
- `afterEach` called after each HTTP transaction
- `afterAll` called after whole test run

Hooks

```
node_modules/.bin/dredd cma.apib https://api.contentful.com \  
                        --hookfiles=./test-hooks.js \  
                        -m GET
```

Skipping Tests

```
var hooks = require('hooks');  
  
hooks.before(  
  "Webhook calls > Webhook call details > Get the webhook call details",  
  function (transaction) {  
    transaction.skip = true;  
  });
```


Mutating data

```
var hooks = require('hooks');  
  
hooks.before(  
  "Entries > Delete an Entry",  
  function (transaction) {  
    client.createEntry(entry, "1234")  
  });
```

Rate limiting

```
var hooks = require('hooks');  
const DELAY = 1000/6.0;  
  
hooks.afterEach(function(transaction, done) {  
  setTimeout(done, DELAY);  
});
```

Changing request data

```
var hooks = require('hooks');

hooks.beforeEach(function (transaction, done) {
  transaction.fullPath = transaction.fullPath.replace('fp91oelsziea', 'gbkxklvmolc1');

  done();
});
```

Chai assertions

```
var hooks = require('hooks');
var assert = require('chai').assert;

hooks.afterEach(function(transaction, done) {
  if (!transaction.skip) {
    assert.match(transaction.real.headers['x-contentful-request-id'], /^content-api:[a-zA-Z
  }

  done();
});
```


Security

```
995 node_modules/.bin/dredd out/cma.apib https://api.contentful.com \  
996     --hookfiles=./test-hooks.js \  
997     -h "Authorization: Bearer 4a634d9b40467dd76f91607d07fc299e7d7fca8f699f73d1d3783f50c5167672" \  
998     -m GET #-m PUT -m POST #-m DELETE
```

Censor private data

```
var hooks = require('hooks');
const SECRET_HEADERS = ['Authorization'].map(header => header.toLowerCase());

hooks.afterEachValidation(function(transaction, done) {
  Object.keys(transaction.request.headers).forEach(function(key) {
    if (SECRET_HEADERS.indexOf(key.toLowerCase()) > -1) {
      transaction.request.headers[key] = "***HIDDEN SECRET DATA***";
    }
  });
});

done();
});
```

CI the beast



All checks have failed

2 failing checks

[Hide all checks](#)



continuous-integration/travis-ci/pr — The Travis C...

Required

[Details](#)



continuous-integration/travis-ci/push — The Travi...

Required

[Details](#)



Required statuses must pass before merging

All required [status checks](#) on this pull request must run successfully to enable automatic merging.

As an administrator, you may still merge this pull request.

Merge pull request

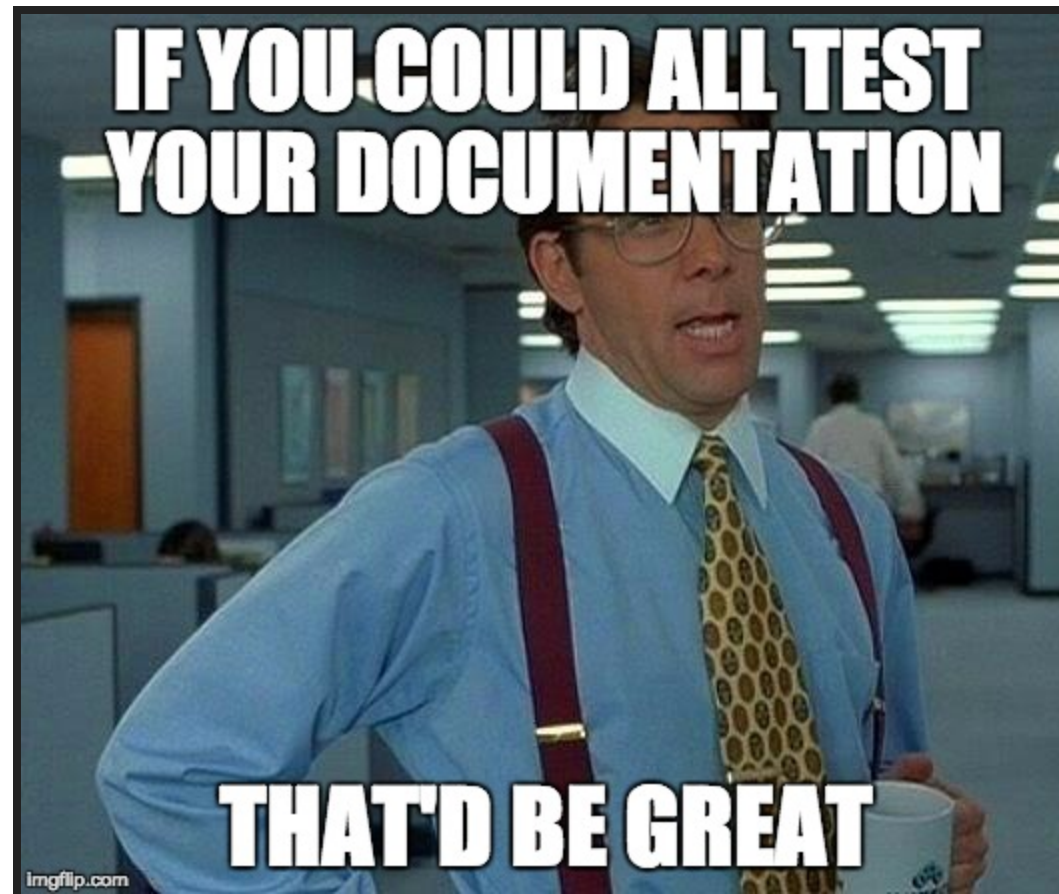


You can also [open this in GitHub Desktop](#) or view [command line instructions](#).

Local Development	Continuous Integration	Post-Deployment	Tutorial
<div>contentful/slash-developers</div> <div>↗ snapshots</div> <div>fa6f2bb87221ba6d60dc9...</div> <div>17794ms</div> <div>🕒 5 days ago</div>	<div>Apiary</div> <div>Details</div> <div><div>Status</div><div>❗ failed</div></div> <div><div>Hostname</div><div>testing-gce-b316cf68-306f-457c-a7a7-31f94d691f5f</div></div> <div><div>Host</div><div>https://api.contentful.com</div></div> <div><div>Duration</div><div>00:16.983</div></div> <div><div>Results</div><div>Passes: 22, Failures: 2, Skipped: 46</div></div> <div><div>📄</div><div>GET /spaces</div><div>200</div><div>Get all spaces an account has access to</div></div> <div><div>📄</div><div>Create a space</div></div> <div><div>📄</div><div>GET /spaces/cfexampleapi</div><div>200</div><div>Get a space</div></div> <div><div>📄</div><div>Update a space name</div></div>		
<div>🟢 @Travis CI</div> <div>contentful/slash-developers</div> <div>↗ master</div> <div>107c8cbbd3da4a155b96...</div> <div>17854ms</div> <div>🕒 5 days ago</div>			
<div>❗ @Travis CI</div> <div>contentful/slash-developers</div> <div>↗ master</div> <div>85246552b15a9cae75af...</div> <div>16983ms</div> <div>🕒 6 days ago</div>			
<div>❗ @Travis CI</div> <div>contentful/slash-developers</div> <div>↗ snapshots</div> <div>82a2e6c7e4cc3c5126eb...</div> <div>16547ms</div> <div>🕒 6 days ago</div>			
<div>❗ @Travis CI</div> <div>contentful/slash-developers</div>			

Conclusion

- Base your documentation on an API spec
- Test that spec
- Make it part of your CI
- Don't substitute your integration tests



Slides available on Slideshare: <http://www.slideshare.net/rwessling/api-days-paris-automatic-testing-of-restful-api-documentation>

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