

Creating & Consuming APIs



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- I. API Design
- II. Basic Tools
- III. Requesterlude
- IV. Consuming APIs
- V. Customizing WP APIs
- VI. Building with APIs

CHAPTER I

API Design

API

JSON

“Programmatic access to
content/services in a universal format
via simple HTTP requests”

REST

SOAP
XML-RPC
REST

A red oval is drawn around the word "REST", highlighting it as the primary or preferred method among the three listed.

Request / Response
Client / Server

HTTP Methods



<http://the.internet>

GET	Request one or many resources.
PUT	Modify an existing resource.
POST	Create a new resource.
DELETE	Delete an existing resource.

Idempotency

“

*clients can make that same call repeatedly
while producing the same result*

<http://www.restapitutorial.com/lessons/idempotency.html>

”

GET	Idempotent
PUT	Idempotent
POST	NOT idempotent
DELETE	Idempotent...ish

Data Formats

JSON

Standards where possible

Use strict formats

Content Negotiation *VS* File Extensions

Accept: application/json

VS

https://.../something.json

Naming

example.com/api

VS

api.example.com

/collection/instance[...]

/users/

GET, POST

/sites/123

GET, PUT, DELETE

/sites/123/comments/123

Pagination / Filtering / Ordering

?offset=100&number=10

?filter[page]=10&filter[posts_per_page]=10

?page=10&posts_per_page=10

?search=

?filter[search]=

?s=

?order_by=title&order=ASC

?filter[orderby]=title&filter[order]=ASC

?orderby=title&order=ASC

HTTP Status Codes

200 OK

201 Created

204 No Content

304 Not Modified

400 Bad Request

401 Unauthorized

403 Forbidden

404 Not Found

429 Too Many Requests

500 Internal Server Error

Authentication

HTTP Basic

OAuth

Token/Secret

Send it as a header,
not in the querystring

HTTPS Everywhere

Versioning

/v2.1/posts/123

VS

/posts/123?version=2.1

VS

Accept: application/json; version=2.1

Testing

Documentation

Example Requests/Responses

Standardized
Consistent
Guessable

CHAPTER II

Basic Tools

curl

```
beaurrito:~ beaulebens$ curl https://public-api.wordpress.com/rest/v1.1/sites/33534099?pretty=true
{
  "ID": 33534099,
  "name": "Developer Resources",
  "description": "Create cool applications that integrate with WordPress.com",
  "URL": "https://developer.wordpress.com",
  "jetpack": false,
  "subscribers_count": 4435,
  "icon": {
    "img": "https://secure.gravatar.com/avatar/2b9f802603565d131ae7d2ba65746574",
    "ico": "https://secure.gravatar.com/avatar/0bdbd6e98d83ad51d1d19663ec48f4b5"
  },
  "logo": {
    "id": 0,
    "sizes": {},
    "url": ""
  },
  "is_private": false,
  "is_following": false,
  "meta": {
    "links": {
      "self": "https://public-api.wordpress.com/rest/v1.1/sites/33534099",
      "help": "https://public-api.wordpress.com/rest/v1.1/sites/33534099/help",
      "posts": "https://public-api.wordpress.com/rest/v1.1/sites/33534099/posts",
      "comments": "https://public-api.wordpress.com/rest/v1.1/sites/33534099/comments",
      "xmlrpc": "https://developer.wordpress.com/xmlrpc.php"
    }
  }
}
beaurrito:~ beaulebens$
```

/usr/bin/curl

HTTPIe

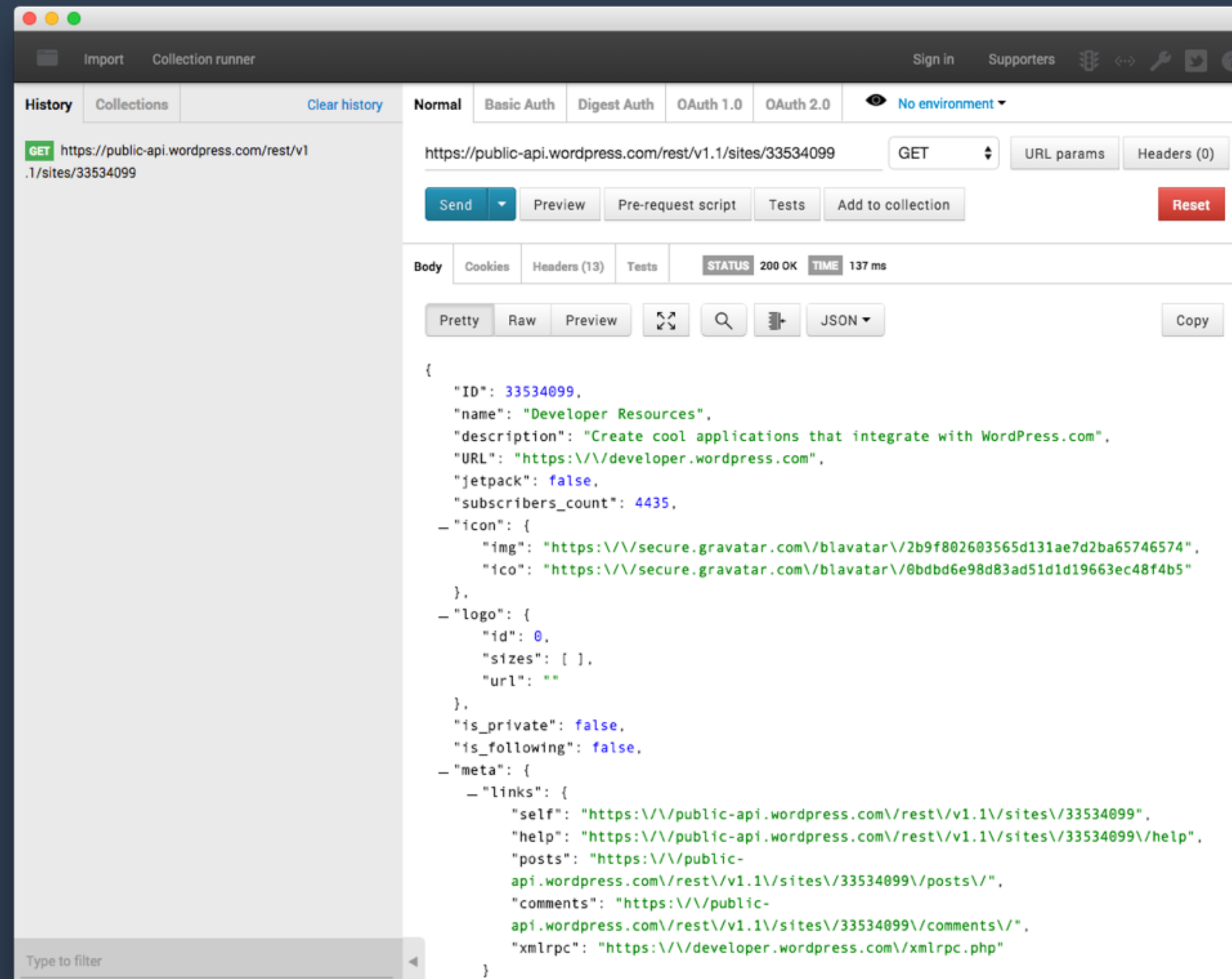
```
beaurrito:~ beaulebens$ http GET https://public-api.wordpress.com/rest/v1.1/sites/33534099
HTTP/1.1 200 OK
Cache-Control: no-cache, must-revalidate, max-age=0
Connection: keep-alive
Content-Encoding: gzip
Content-Type: application/json
Date: Wed, 08 Apr 2015 22:20:30 GMT
Expires: Wed, 11 Jan 1984 05:00:00 GMT
Pragma: no-cache
Server: nginx
Transfer-Encoding: chunked
Vary: Accept-Encoding
X-Prefork: 1
X-ac: 2.dfw _dfw
X-hacker: Oh, Awesome: Opossum

{
  "ID": 33534099,
  "URL": "https://developer.wordpress.com",
  "description": "Create cool applications that integrate with WordPress.com",
  "icon": {
    "ico": "https://secure.gravatar.com/blavatar/0bdbd6e98d83ad51d1d19663ec48f4b5",
    "img": "https://secure.gravatar.com/blavatar/2b9f802603565d131ae7d2ba65746574"
  },
  "is_following": false,
  "is_private": false,
  "jetpack": false,
  "logo": {
    "id": 0,
    "sizes": {},
    "url": ""
  },
  "meta": {
    "links": {
      "comments": "https://public-api.wordpress.com/rest/v1.1/sites/33534099/comments/",
      "help": "https://public-api.wordpress.com/rest/v1.1/sites/33534099/help",
      "posts": "https://public-api.wordpress.com/rest/v1.1/sites/33534099/posts/",
      "self": "https://public-api.wordpress.com/rest/v1.1/sites/33534099",
      "xmlrpc": "https://developer.wordpress.com/xmlrpc.php"
    }
  },
  "name": "Developer Resources",
  "subscribers_count": 4435
}
```

beaurrito:~ beaulebens\$

<http://httpie.org>

Postman



<https://www.getpostman.com/>

Paw

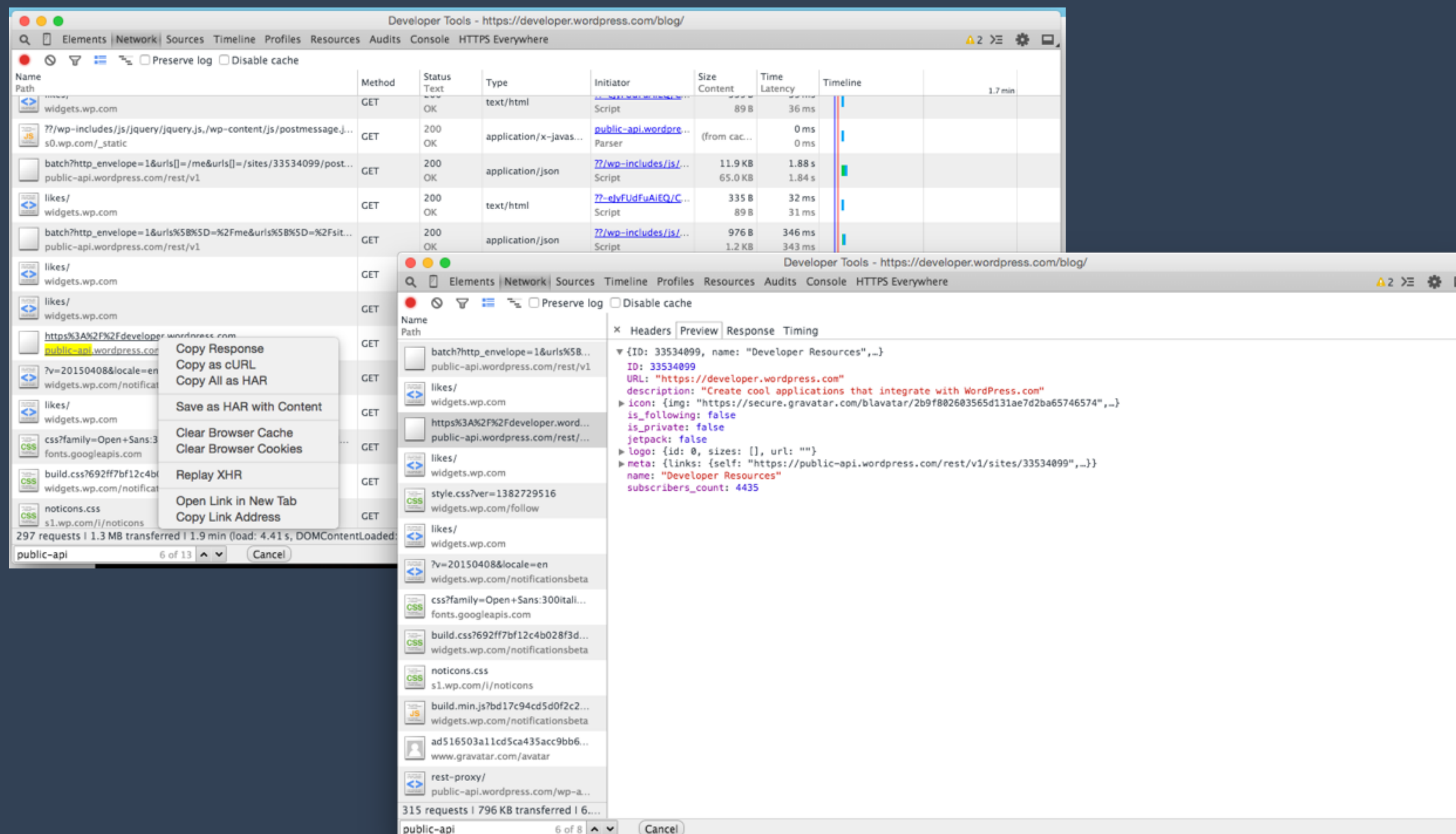
The screenshot displays the Paw API client interface. At the top, a status bar indicates the request was sent successfully with a 200 OK status and a response time of 388 ms. The main interface is divided into three panels. The left panel, titled 'My API', shows the request details: GET https://public-api.wordpress.com/rest/v1.1/sites/33534099. The middle panel, titled 'Headers', shows a table with two columns: 'Header Name' and 'Header Value'. The right panel, titled 'Response', shows the response details: 200 OK. Below the response status, there are tabs for 'Info', 'Request', 'Response', 'Headers', 'JSON', and 'Raw'. The 'JSON' tab is selected, showing a JSON response with 11 items. The response structure is as follows:

Key or Index	Type	Value
Root	11 items	
ID	42	33534099
name	A	Developer Resources
description	A	Create cool applications that integrate...
URL	A	https://developer.wordpress.com
jetpack	01	false
subscribers_count	42	4435
icon	2 items	
img	A	https://secure.gravatar.com/blavatar/2b...
ico	A	https://secure.gravatar.com/blavatar/0b...
logo	3 items	
id	42	0
sizes	0 items	
url	A	
is_private	01	false
is_following	01	false
meta	1 item	
links	5 items	
self	A	https://public-api.wordpress.com/rest/v...
help	A	https://public-api.wordpress.com/rest/v...
posts	A	https://public-api.wordpress.com/rest/v...
comments	A	https://public-api.wordpress.com/rest/v...
xmlrpc	A	https://developer.wordpress.com/xmlrp...

The bottom panel shows the raw HTTP request details, including the method (GET), URL (/rest/v1.1/sites/33534099), and headers (Host: public-api.wordpress.com, Connection: close, User-Agent: Paw/2.1.1 (Macintosh; OS X/10.10.2) GCDHTTPRequest).

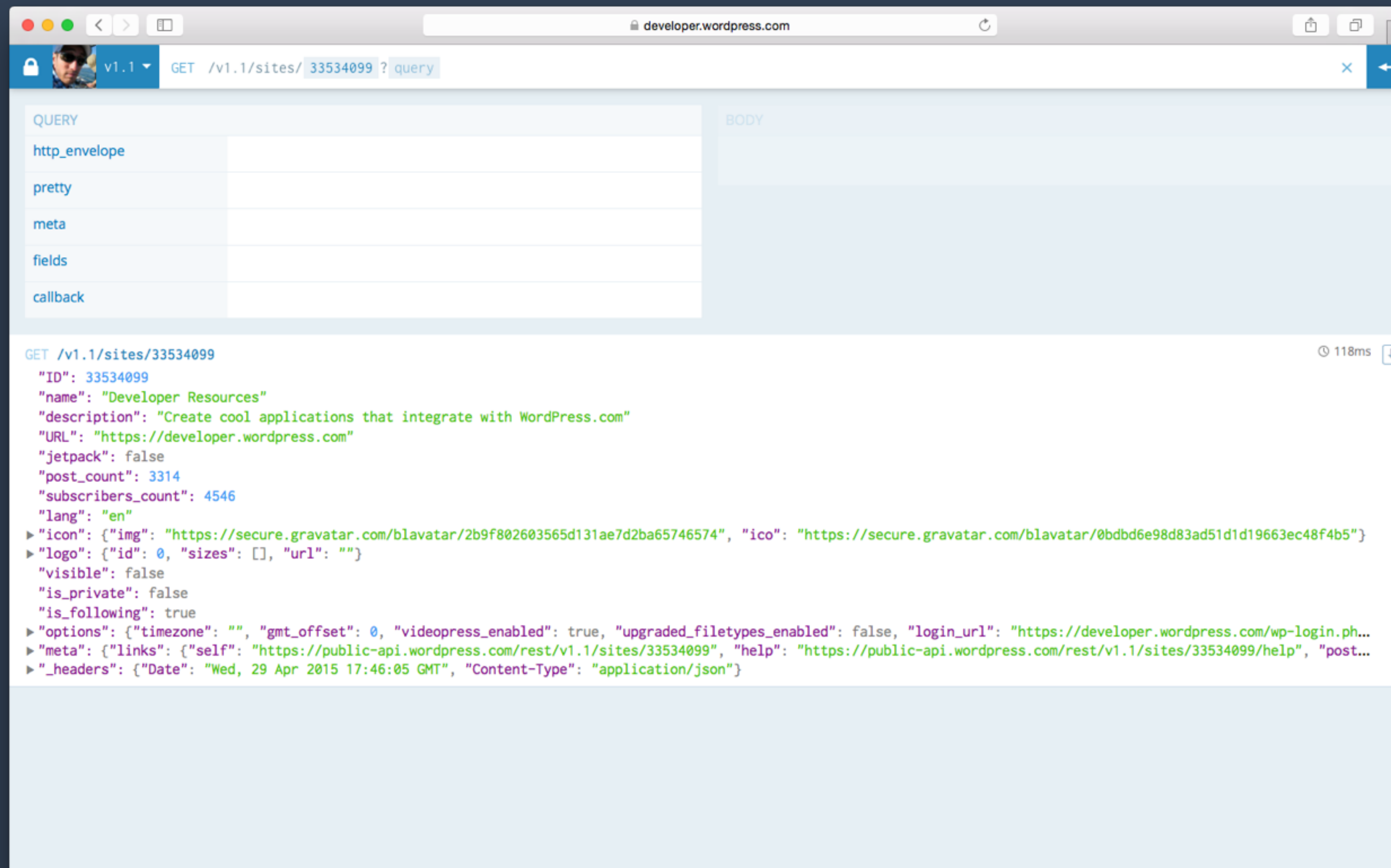
<https://luckymarmot.com/paw>

Chrome DevTools



<https://google.com/chrome>

WP.com Developer Console



The screenshot shows the WP.com Developer Console interface. At the top, the browser address bar displays `developer.wordpress.com`. Below the address bar, the console shows a GET request to `/v1.1/sites/33534099?query`. The console is divided into two main sections: **QUERY** and **BODY**.

QUERY

Parameter	Value
<code>http_envelope</code>	
<code>pretty</code>	
<code>meta</code>	
<code>fields</code>	
<code>callback</code>	

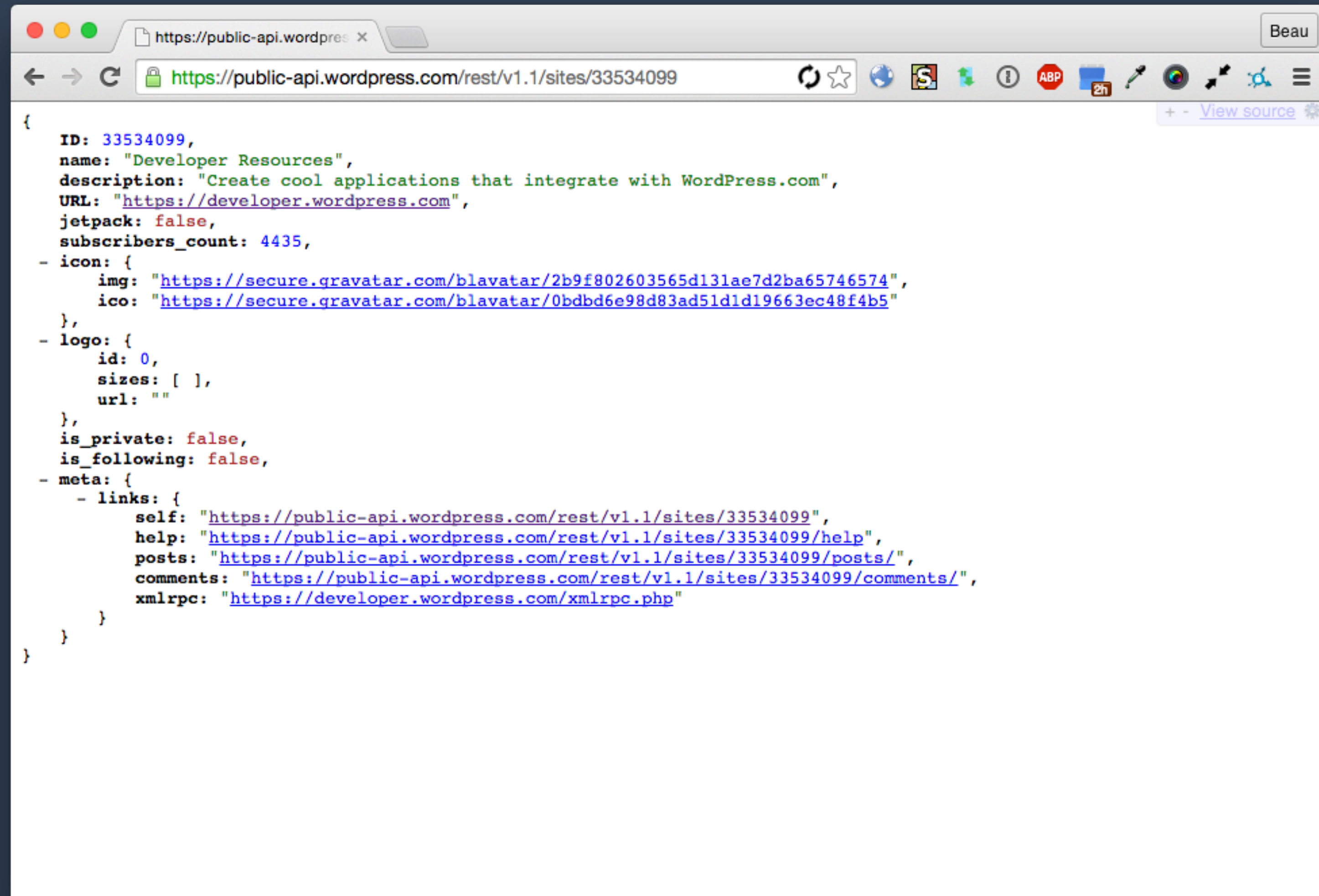
BODY

The response body is a JSON object representing a site. The console shows the following JSON structure:

```
GET /v1.1/sites/33534099
{"ID": 33534099, "name": "Developer Resources", "description": "Create cool applications that integrate with WordPress.com", "URL": "https://developer.wordpress.com", "jetpack": false, "post_count": 3314, "subscribers_count": 4546, "lang": "en", "icon": {"img": "https://secure.gravatar.com/blavatar/2b9f802603565d131ae7d2ba65746574", "ico": "https://secure.gravatar.com/blavatar/0bdbd6e98d83ad51d1d19663ec48f4b5"}, "logo": {"id": 0, "sizes": [], "url": ""}, "visible": false, "is_private": false, "is_following": true, "options": {"timezone": "", "gmt_offset": 0, "videopress_enabled": true, "upgraded_filetypes_enabled": false, "login_url": "https://developer.wordpress.com/wp-login.ph...", "meta": {"links": {"self": "https://public-api.wordpress.com/rest/v1.1/sites/33534099", "help": "https://public-api.wordpress.com/rest/v1.1/sites/33534099/help", "post..."}, "headers": {"Date": "Wed, 29 Apr 2015 17:46:05 GMT", "Content-Type": "application/json"}}
```

<https://developer.wordpress.com/docs/api/console/>

JSONView



<http://jsonview.com/>

CHAPTER III

Requesterlude

Use the tool of your choice

<https://developer.wordpress.com>

<http://wp-api.org>

What is the “description”
for TechCrunch?

How many comments does the
second most-commented post on
The WordPress.com Developer
Blog have?

Who is the author of the first comment returned for post ID 44 on the “fishing” WP install on your VM?

<http://vip-workshop.dev/rest-api/fishing/>

CHAPTER IV

Consuming APIs

Application Registration

developer.wordpress.com

My SitesReaderFollowing

DevelopersDocumentationBlogMy AppsContactSearch ...

[My Applications](#) → [Create New](#)

Create an application

This feature is available for developers. Most WordPress.com users will not find this useful.


Are you moving from WordPress.com to a self-hosted blog? You don't need to create an application for that, just [export your content](#) and then [import it to your new blog](#).

Name

The name of your application. This is used in the authorization dialogs.

Description

The description of your application.

 [Developer Resources](#)

[Follow](#)

...

+



Create an application

Application Details

Name *

Your application name. This is used to attribute the source of a tweet and in user-facing authorization screens. 32 characters max.

Description *

Your application description, which will be shown in user-facing authorization screens. Between 10 and 200 characters max.

Website *

Your application's publicly accessible home page, where users can go to download, make use of, or find out more information about your application. This fully-qualified URL is used in the source attribution for tweets created by your application and will be shown in user-facing authorization screens.
(If you don't have a URL yet, just put a placeholder here but remember to change it later.)

Callback URL

Where should we return after successfully authenticating? [OAuth 1.0a](#) applications should explicitly specify their `oauth_callback` URL on the request token step, regardless of the value given here. To restrict your application from using callbacks, leave this field blank.

Developer Agreement

New! We revised our Developer Agreement, effective as of May 18, 2015. Please read the [updated Developer Agreement](#). By continuing

Instagram

Manage Clients

beaulebens

Search Documentation

Overview

Authentication

Secure API Requests

Real-time

Mobile Sharing

API Console

Endpoints

Limits

Embedding

Libraries

Support

Platform Developers

Register new Client ID

Basic

Security

Application Name

Do not use **Instagram**, **IG**, **insta** or **gram** in your app name. Make sure to adhere to the [API Terms of Use](#) and [Brand Guidelines](#).

Description

Website URL

Redirect URI(s)

The `redirect_uri` specifies where we redirect users after they have chosen whether or not to authenticate your application.

Type the text

Privacy & Terms

reCAPTCHA™

Register

Cancel

wp_remote_(get|post|request)

Parallel / *Asynchronous*

Conditional Requests + Caching

ETag / If-None-Match

localStorage / memcache / DB / FS

Client Libraries

Authentication-only

~~Native PHP (OAuth 1.0a)~~

<https://github.com/adoy/PHP-OAuth2>

wordpress.org

WordPress.ORG

Search WordPress.org

ShowcaseThemesPluginsMobileSupportGet InvolvedAboutBlogHosting

Download WordPress

Plugin Directory

Developer Center

Search Plugins

Search

Popular Tags

More »

widget (5,152)

Post (3,225)

plugin (3,156)

admin (2,683)

posts (2,467)

sidebar (1,979)

shortcode (1,858)

google (1,818)

twitter (1,763)

images (1,743)

page (1,705)

comments (1,699)

image (1,589)

An authentication framework for your plugins

Keyring

An authentication framework that handles authorization with external web services.

Download Version 1.6.1

Description

Installation

FAQ

Changelog

Stats

Support

Reviews

Developers

See the [Keyring Developer's Guide](#) for more details.

Keyring provides a very hookable, completely customizable framework for connecting your WordPress to an external service. It takes care of all the heavy lifting when making authenticated requests, so all you need to do is implement cool features and not worry about these tricky bits.

Out of the box, Keyring currently comes with base Service definitions for webservice

Requires: 3.3 or higher

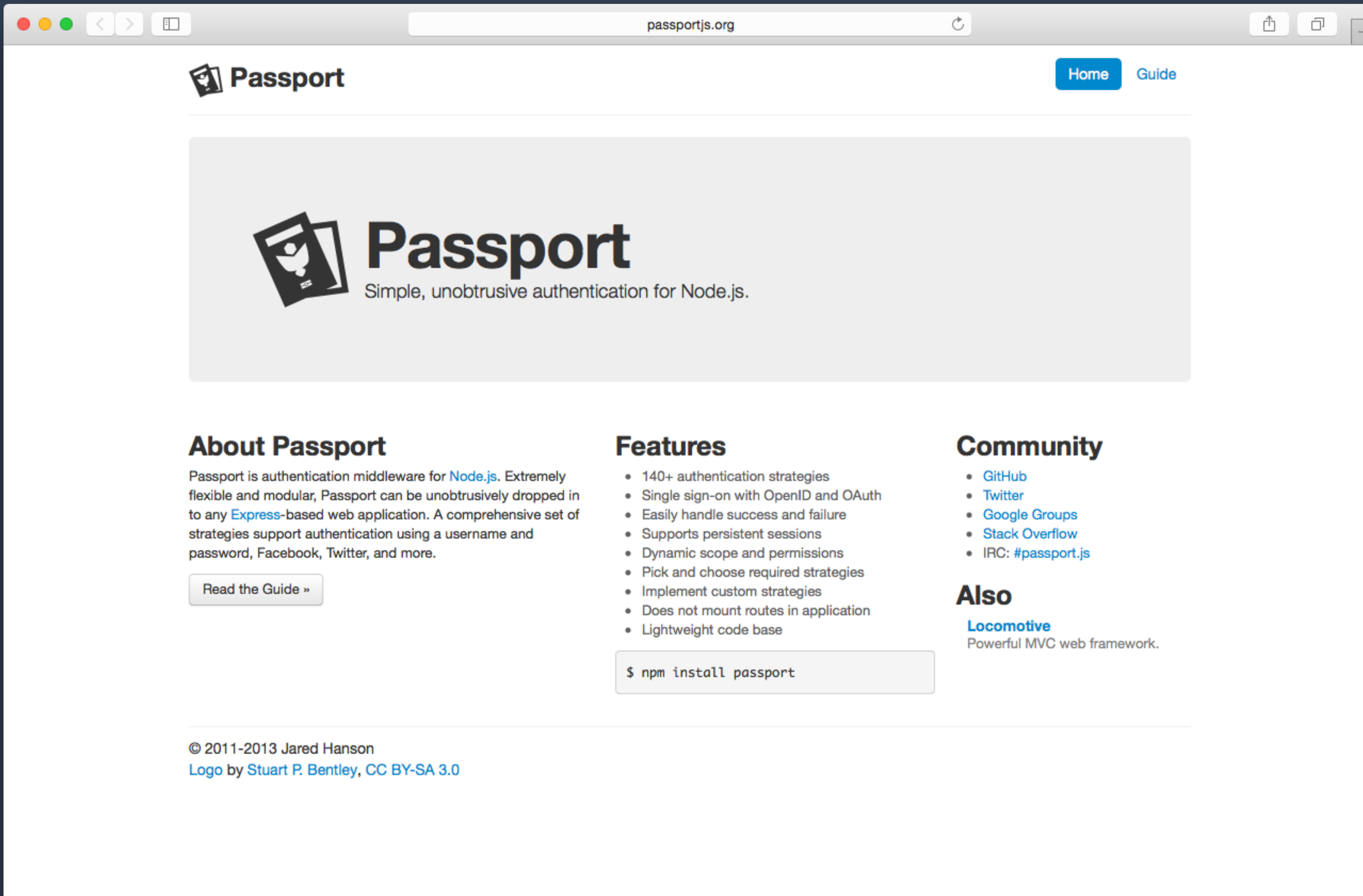
Compatible up to: 4.1.4

Last Updated: 2015-1-6

Active Installs: 1,000+

Ratings

★★★★★



Passport

Simple, unobtrusive authentication for Node.js.

About Passport

Passport is authentication middleware for [Node.js](#). Extremely flexible and modular, Passport can be unobtrusively dropped in to any [Express](#)-based web application. A comprehensive set of strategies support authentication using a username and password, Facebook, Twitter, and more.

[Read the Guide »](#)

Features

- 140+ authentication strategies
- Single sign-on with OpenID and OAuth
- Easily handle success and failure
- Supports persistent sessions
- Dynamic scope and permissions
- Pick and choose required strategies
- Implement custom strategies
- Does not mount routes in application
- Lightweight code base

```
$ npm install passport
```

Community

- [GitHub](#)
- [Twitter](#)
- [Google Groups](#)
- [Stack Overflow](#)
- IRC: [#passport.js](#)

Also

[Locomotive](#)

Powerful MVC web framework.

API-specific

CHAPTER V

Customizing WP APIs

<http://vip-workshop.dev/rest-api/mma/>

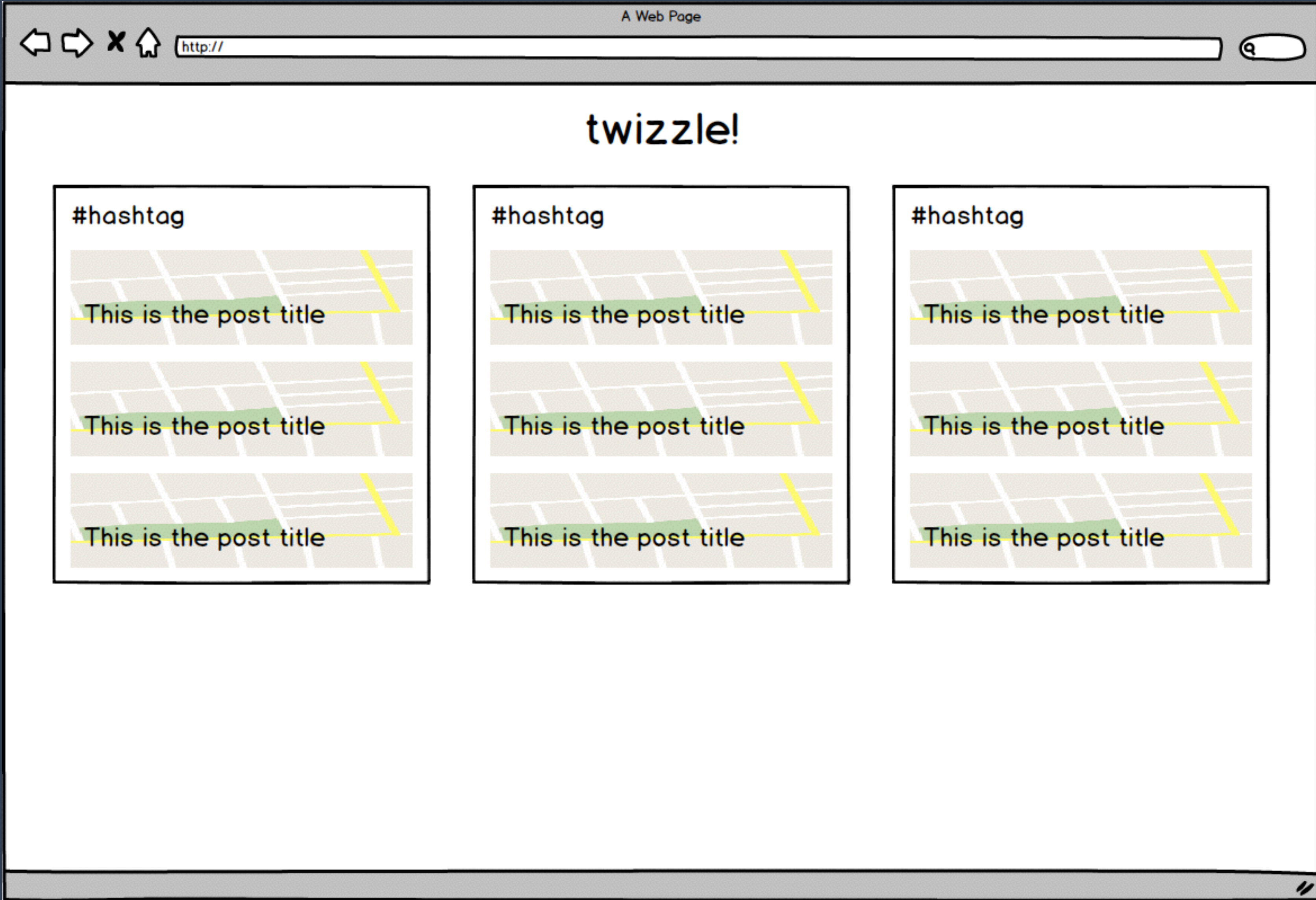
Custom Post Type
Custom Taxonomy
User Properties

CHAPTER VI

Building with APIs

twizzle

A card-based, visual UI for viewing posts according to their tags.



```
git checkout tags/1.0
```

(from the host machine, in www/rest-api/twizzle/)

<http://vip-workshop.dev:3030/>

Request 10 posts from
<http://vip-workshop.dev/rest-api/fishing/>
and console.log()


```
git checkout tags/1.1
```

Get a list of unique tag slugs from
the retrieved posts and `console.log()`

```
git checkout tags/1.2
```

Sort posts according to their tags
and `console.log()`

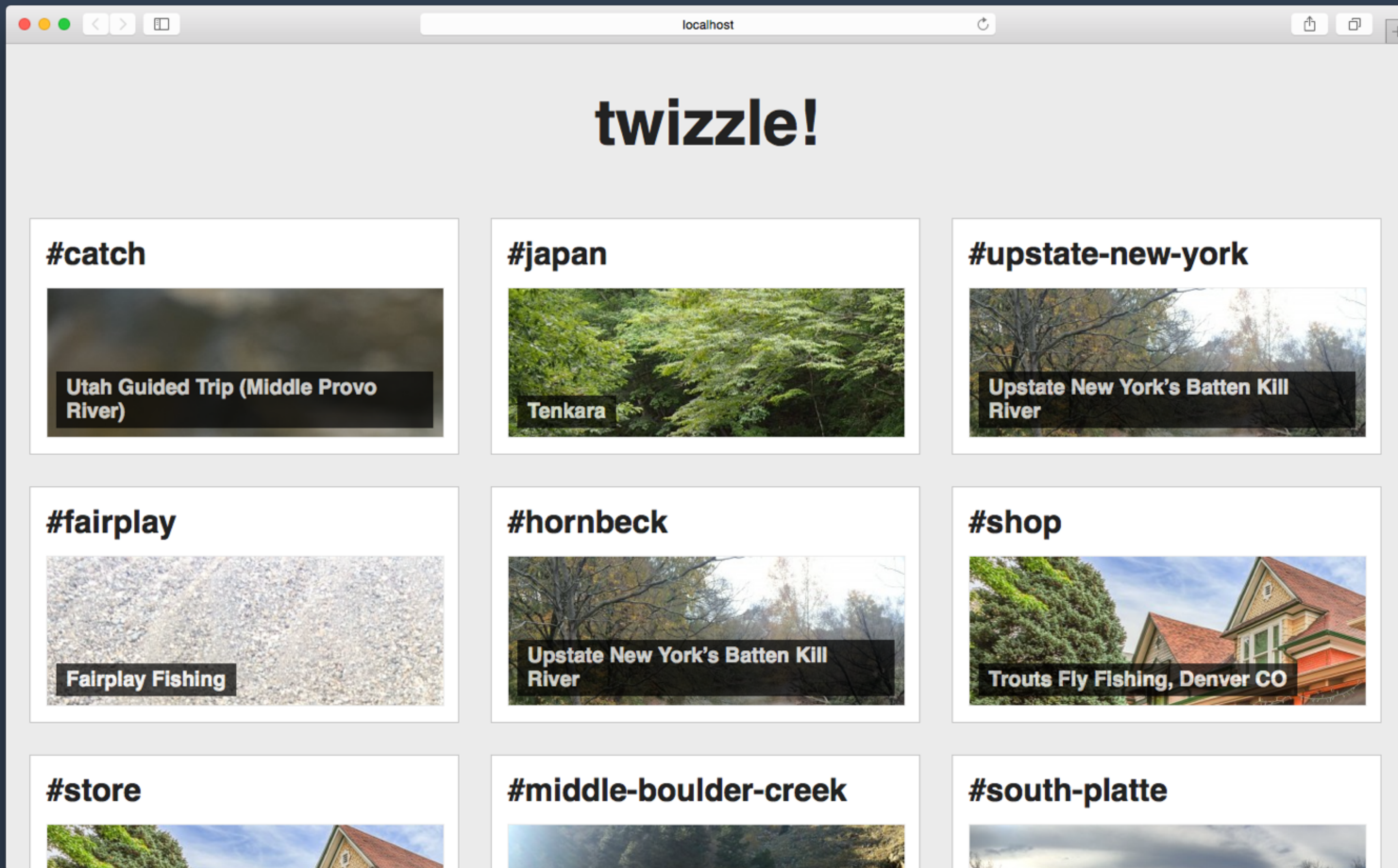
```
git checkout tags/1.3
```

Render a card per tag,
with #tag as the title

```
git checkout tags/1.4
```

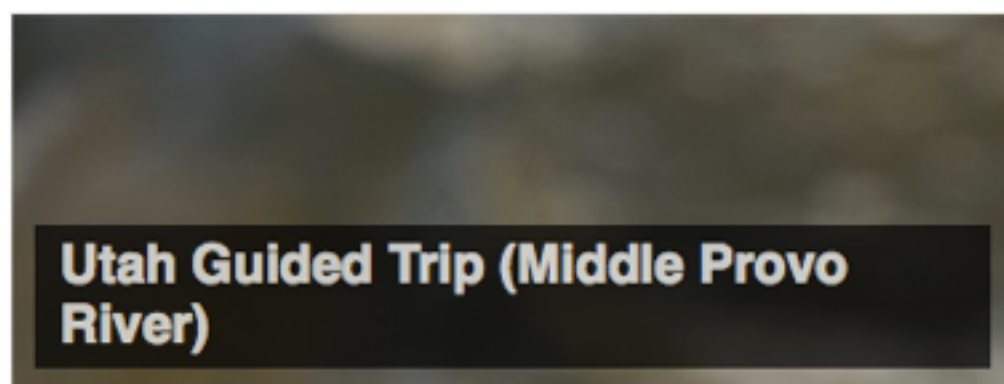
Render posts into each tag card


```
git checkout tags/1.5
```



twizzle!

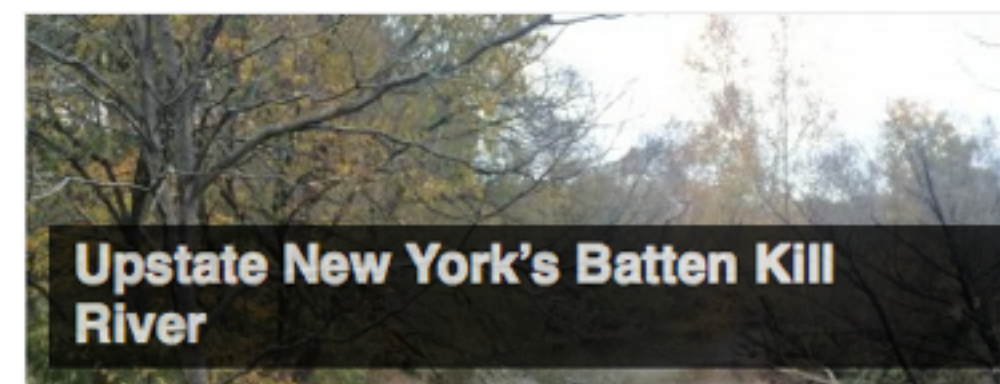
#catch



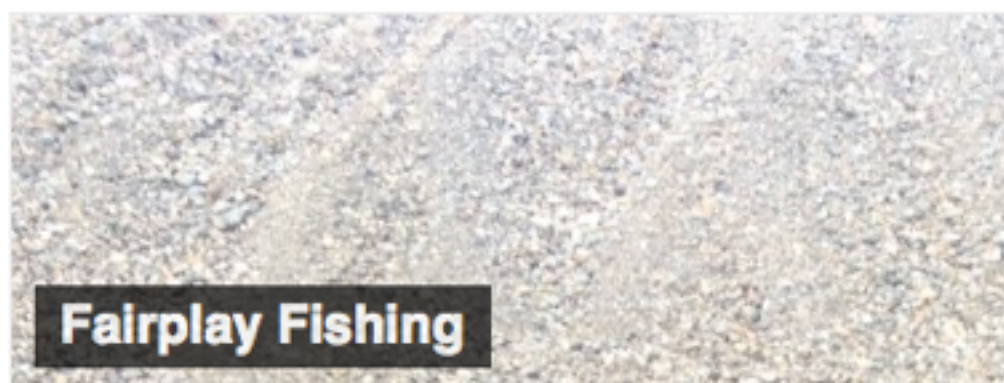
#japan



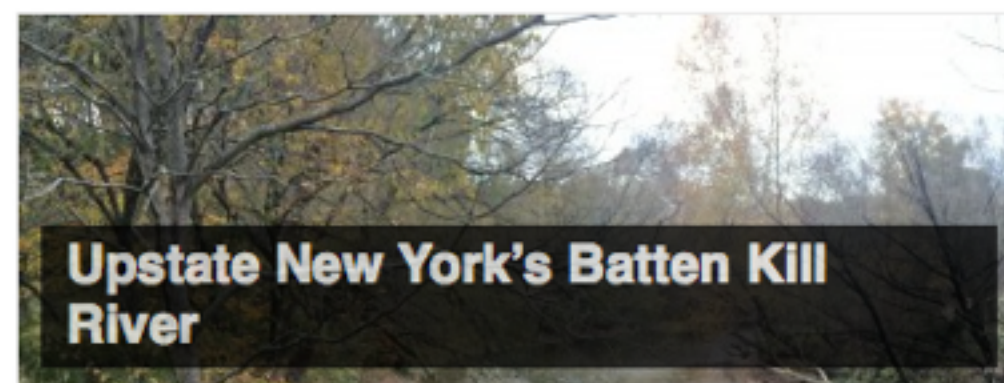
#upstate-new-york



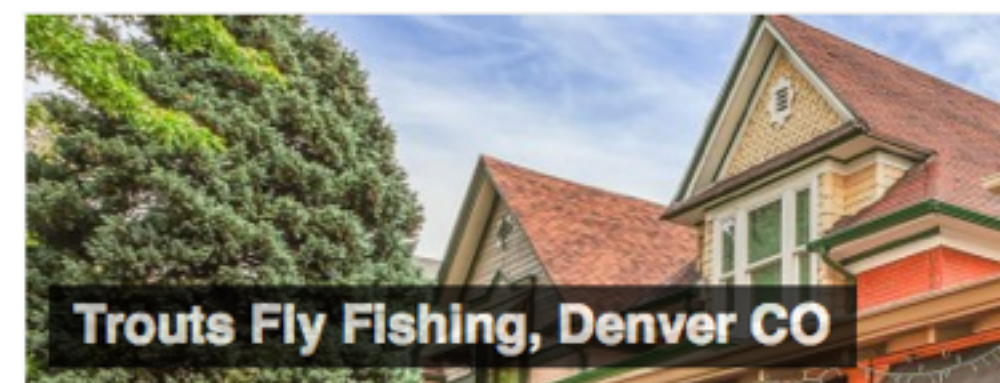
#fairplay



#hornbeck



#shop



#store



#middle-boulder-creek



#south-platte



Data Layer?
localStorage Caching?
Query WP.com instead?
Get author/Gravatar of posts?
Parallel requests?

Modify tags via drag/drop?
Create post within card?



Beau Lebens

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