



BARCELONA

DRUPALCON 2015





BARCELONA
DRUPALCON 2015

Expose Drupal with RESTful

Mateu Aguiló - e0ipso

Coding and Development

<https://events.drupal.org/barcelona2015/sessions/expose-drupal-restful>

A comprehensive guide to build an HTTP API without hating yourself six months after release

DrupalCon 2015

GOALS OF THIS TALK

- REST is more than exporting entities
 - CRUD, Authentication, filtering, pagination, ...
 - Benefits of the RESTful module
 - Data providers (aka *not only entities*)
 - Resource composition
 - *URL query language*
-

VoyageConsellier[©]

A site that you can use to find restaurants.

1. You decide to use **Drupal**.
2. You decide to go **decoupled**.

Your HTTP API becomes the **contract** between the backend and the frontend.

AVOID DRUPAL LEAKING INTO YOUR DESIGN

Resource URLs, field labels, and other drupalisms

DRUPAL SPECIFIC DESIGN	GENERIC DESIGN
<code>/node/{nid}</code>	<code>/restaurant/{uuid}, /deal/{uuid}, ...</code>
<code>field_tags, field_restaurant_city</code>	<code>tags, city</code>
<code>description: { 'und' : [{'value': 'Blah', 'format': 'filtered_html' }]}</code>	<code>description: 'Blah'</code>

ALLOW YOUR API TO EVOLVE. VERSION IT!

Not versioning your API means that you assume that there will only be a single client (which you don't know)

<http://dgo.to/RESTful>

*This module achieves a **practical RESTful** for
Drupal following **best practices**.*

IT'S DEVELOPER ORIENTED

100% FEATURES MODULE FREE

1.x

2.x

NO MORE HOOKS

Everything is plugins: CTools
(1.x) or D8 (2.x)

1.x

2.x

**Show me the
code!**

```
/**
 * Class Articles__1_5
 * @package Drupal\restful\Plugin\resource
 *
 * @Resource(
 *   name = 'articles:1.5',
 *   dataProvider = {
 *     "entityType": "node",
 *     "bundles": {
 *       "article"
 *     },
 *   },
 * )
 */
```

URL: /articles/{id}

Version

```
class Articles__1_5 extends ResourceNode in
```

2.x

```
class Articles__1_5 extends ResourceNode imp
```

```
/**
```

```
 * Overrides ResourceNode::publicFields().
```

```
 */
```

```
protected function publicFields() {  
    $public_fields = parent::publicFields();
```

```
    $public_fields['coolText'] = array(  
        'property' => 'field_cool_text',  
    );
```

```
    return $public_fields;
```

```
}
```

NOT ONLY BASIC CRUD (1/2)

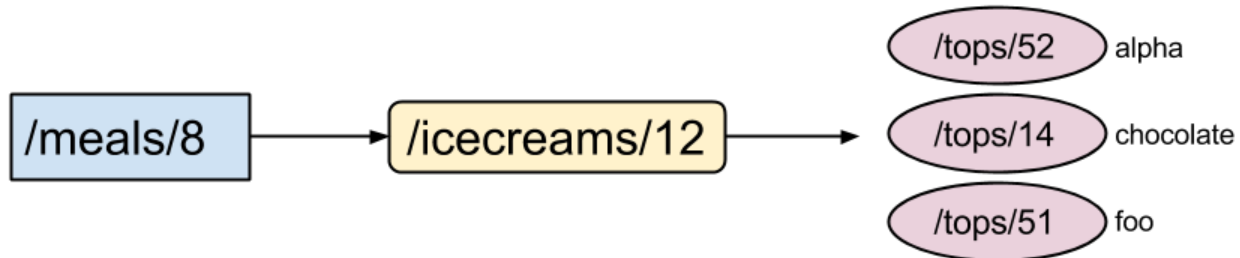
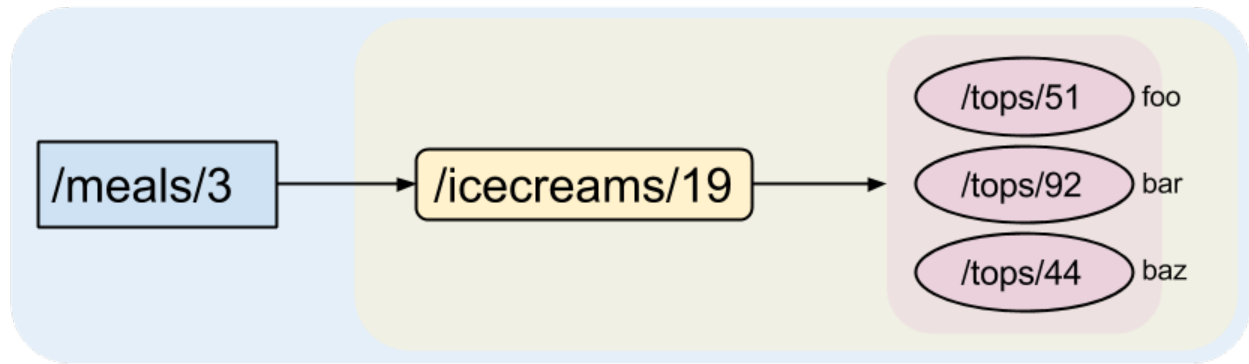
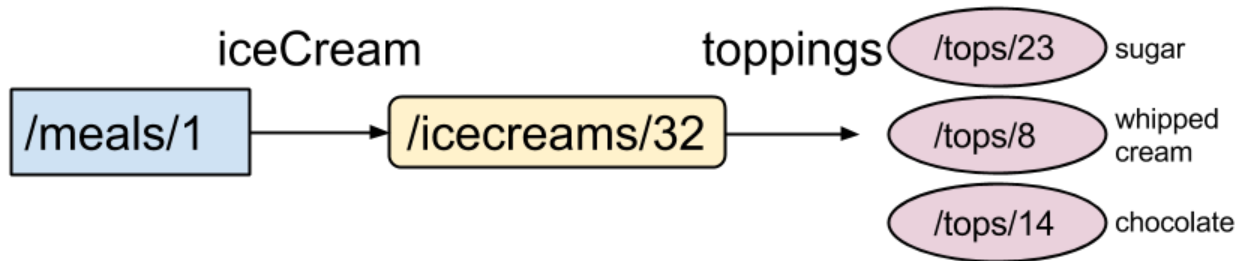
You get for free in **R**:

- Sort
- Filter
- Fields
- Range
- Resource nesting

NOT ONLY BASIC CRUD (2/2)

You get for free in **CU**:

- Resource nesting
- Entity validation




```
1 // GET /api/articles
2 // X-API-Version: 1.3
3 {
4   'data': [
5     1 { 'id': '1', 'label': 'Foo', 'body': 'Bar' },
6     2 { 'id': '2', 'label': 'Oof', 'body': 'Rab' },
7     3 {
8       'id': '5', 'label': 'Lorem',
9       'description': 'Ipsum', 'tags': [
10        1 { 'id': '2', 'label': 'alpha' },
11        2 { 'id': '8', 'label': 'beta' },
12      ]
13    },
14  ]
15 }
```

1.x

2.x

```
1 // GET /api/articles?filter[label]=Lorem&sort=id&
2 //                               fields=id,tags
3 // X-API-Version: 1.3
4 {
5   'data': [
6     1 {
7       'id': '5', 'tags': [
8         { 'id': '2', 'label': 'alpha' },
9         { 'id': '8', 'label': 'beta' },
10      ]
11     },
12     2 { 'id': '42' }
13   ]
14 }
```

Give me all of the articles with the label Lorem sorted by id and only display the fields id and tags

1.x

2.x

VERSIONED

VERSIONED AT THE
RESOURCE LEVEL

VERSION IN **URL**

IN HEADERS

1.x

2.x

AUTHENTICATION PROVIDERS

WHO CAN DO WHAT

1.x

2.x

RATE LIMITS

DON'T ABUSE MY API!

1.x

2.x

OUTPUT FORMAT

GOT THE INFO; SHOW IT!

1.x

2.x

DISCOVERABLE

DON'T WRITE DOCS

1.x

2.x

1.x

2.x

```
1 // /api?fields=description,label,self
2 {
3   "data": [
4     { "label": "CSRF Token",
5       "self": "http://restful.local/api/session/token",
6       "description": "Resource that provides CSRF Tokens when using cookie authentication"
7     },
8     { "label": "Users",
9       "self": "http://restful.local/api/v1.0/users",
10      "description": "Export the article content type with cookie authentication."
11    },
12    { "label": "Articles",
13      "self": "http://restful.local/api/v2.1/articles",
14      "description": "Export the article content type."
15    },
16    { "label": "Tags",
17      "self": "http://restful.local/api/v1.0/tags",
18      "description": "Export the tags taxonomy term."
19    },
20    { "label": "Refresh token authentication",
21      "self": "http://restful.local/api/refresh-token",
22      "description": "Export the refresh token authentication resource."
23    }
24  ],
25  "count": 5,
26  "self": {
27    "title": "Self",
28    "href": "http://restful.local/api"
29  }
30 }
```

- * [Your resource can opt-out of this list.](#)
- * [This is a regular resource: filters, fields, sorts, ...](#)
- * [Good example of non-entity resources.](#)


```
1 // OPTIONS /api/v1.5/articles/1-
2 { "data": [ {-
3   "label": {-
4     "info": {-
5       "label": "Label",-
6       "description": "The label of the resource."-
7     }-
8     "data": {-
9       "type": "string",-
10      "required": false,-
11      "read_only": false,-
12      "cardinality": 1,-
13      "size": 255-
14    }-
15    "form_element": {-
16      "type": "textfield",-
17      "default_value": "",-
18      "placeholder": "",-
19      "size": 255,-
20      "allowed_values": null,-
21      "title": "label",-
22      "description": "The label of the resource."-
23    }-
24  }-

```

For every public field of the API

You can have as many documentation sections as you want. RESTful comes with these 3 by default

1.x

2.x

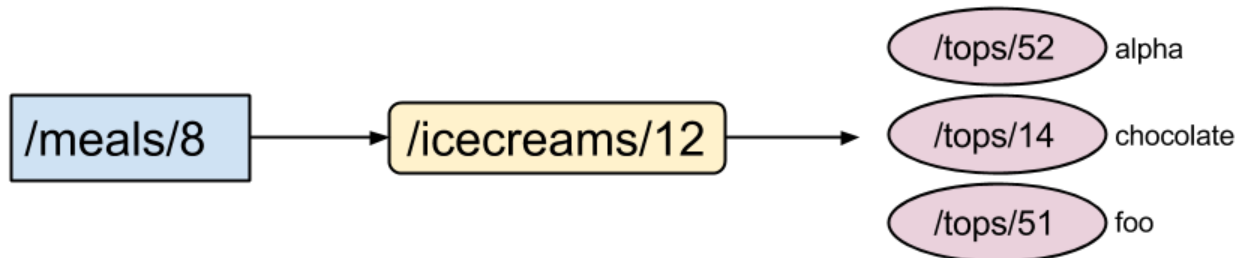
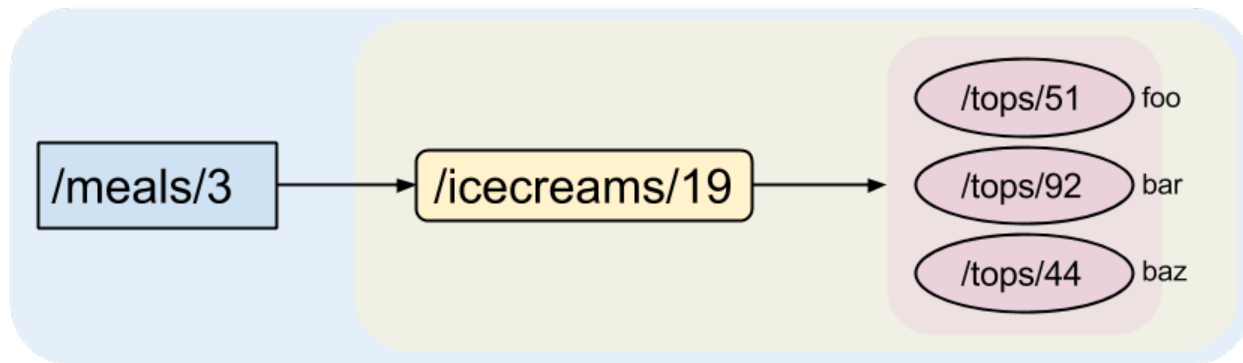
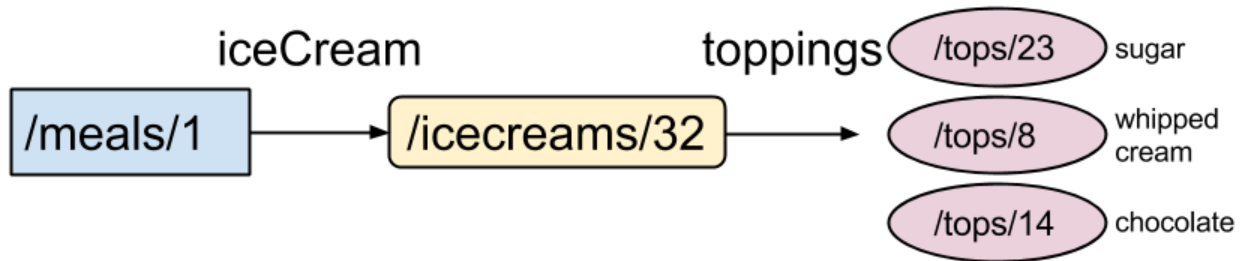
YOU WILL LIKE *JSON API*

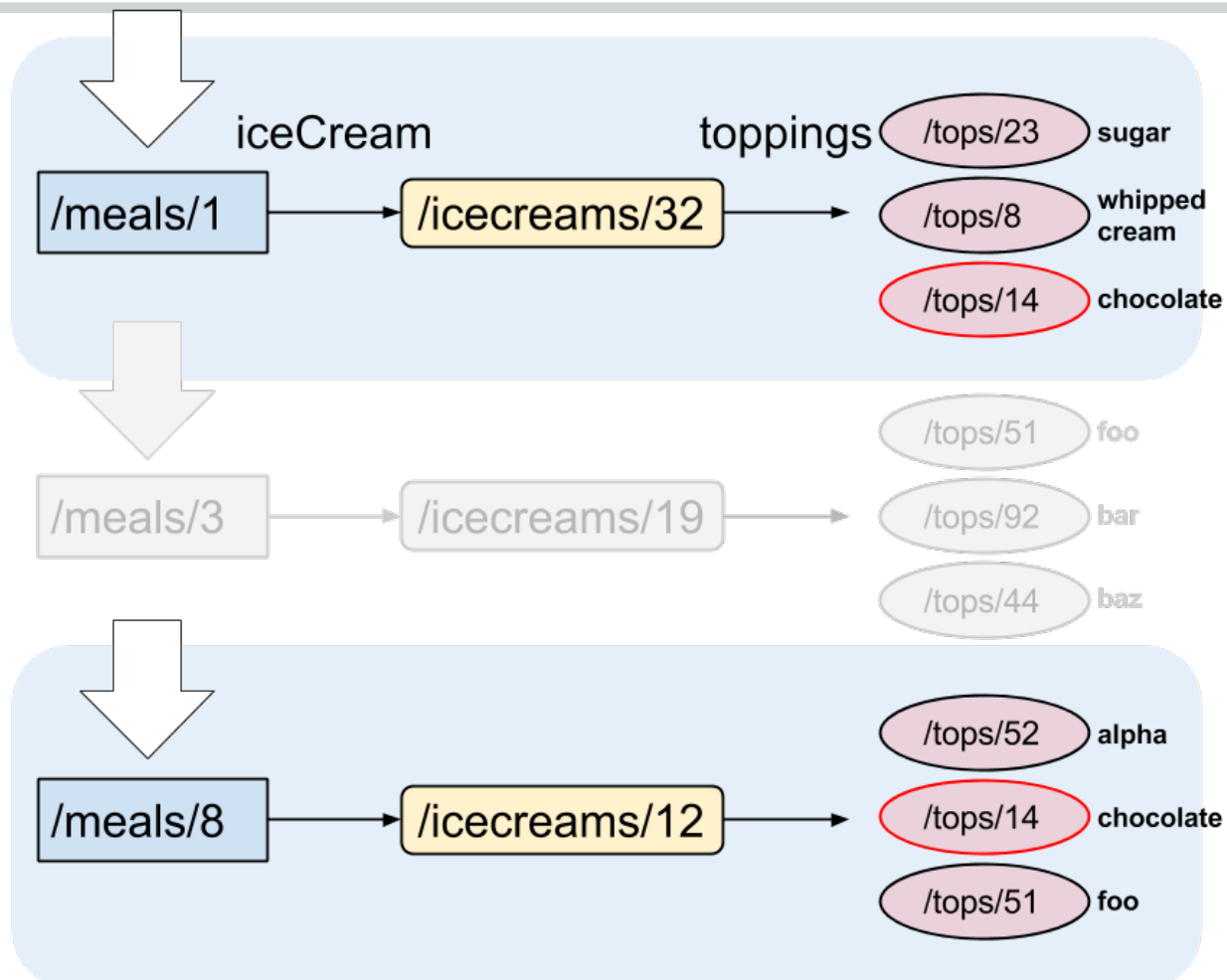
IF YOU LIKED THE GraphQL EXAMPLE

2.x

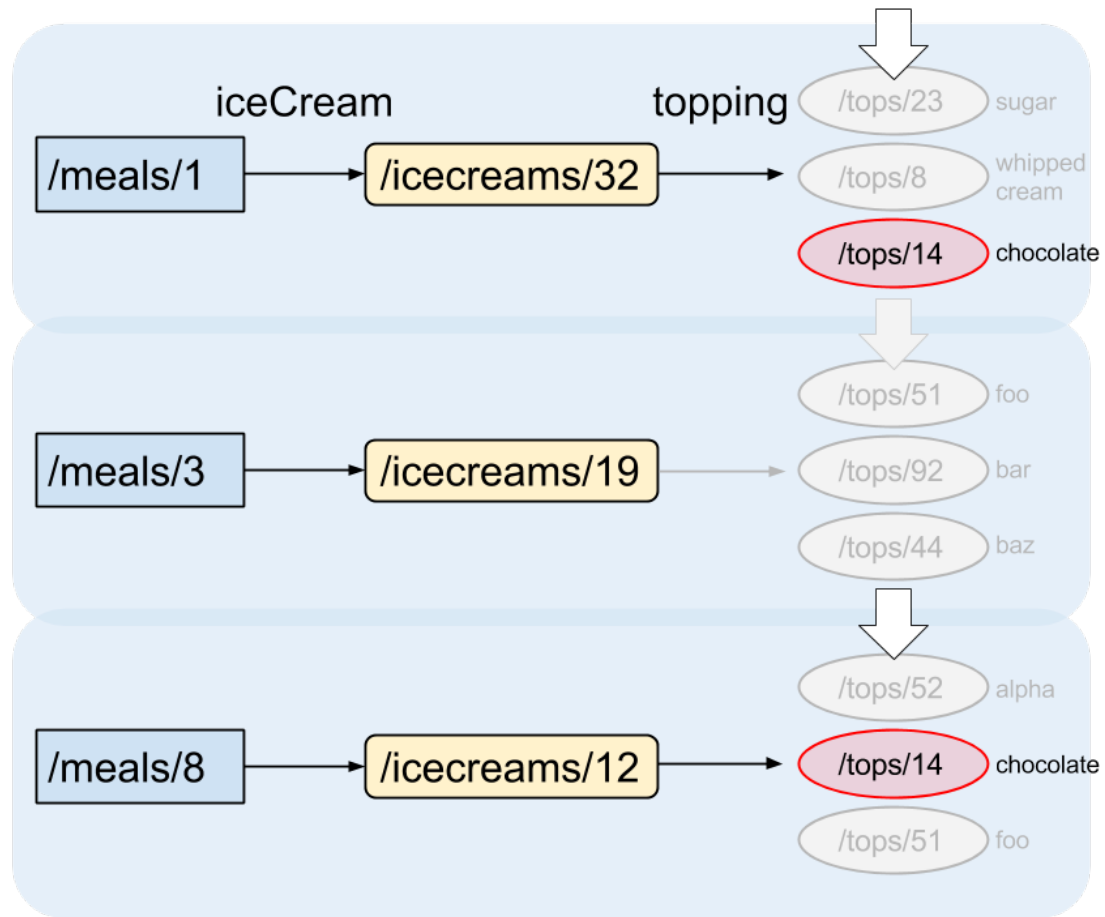
DEMO

<i>Videos</i>	<ul style="list-style-type: none">● https://youtu.be/1i5_ipl52wg● https://youtu.be/QV05I6-YsGg● https://youtu.be/7yVWasJXnZc
<i>Demo Code</i>	<u>http://lb.cm/restful-dcon</u>





`/meals?filter[iceCream.toppings][value]=chocolate`



```
/meals?filter[iceCream.toppings][value]=chocolate  
&filter[iceCream.toppings][target]=topping
```

THAT'S IT!

TIME FOR QUESTIONS

Hopefully, there will be clapping at this point.

Sprint: Friday

Sprint with the Community on Friday.

We have tasks for every skillset.

Mentors are available for new contributors.

An optional Friday morning workshop for first-time sprinters will help you get set up.

Follow @drupalmentoring.



<https://www.flickr.com/photos/amazeelabs/9965814443/in/favorites-38914559@N03/>



BARCELONA
DRUPALCON 2015

What Did You Think?

Evaluate This Session

barcelona2015.drupal.org/schedule

Thank you!

