DEVELOPMENT: DIGITAL

MAY 16–19, 2016
MGM GRAND, LAS VEGAS

API Management: Designing Adaptable APIs that Delight Developers

Rob Zazueta, Director of Digital Strategy, TIBCO
May 18, 2016

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Well Designed, Well Managed APIs Are the Keys to Successful Developer Adoption
What is REST?

• REST = “REpresentational State Transfer”

• No standards – a set of accepted best practices based on HTTP

• Lighter weight than SOAP; Native to HTTP
What Does It Mean to Be RESTful?

• Resource-focused – NOT a series of remote procedural calls
• HTTP inspired – Use the protocol’s affordances to communicate
• Self-documenting – Responses include everything necessary to fulfill the given request plus links to related resources
• “Stateless” resources – Each resource is responsible for and only knows its own state, not those of its related resources
Find “Rob Zazueta” in the employee database.

GET /countries
[
    "/countries/usa/states",
    "/countries/can/provinces",
    ...
]

GET /countries/usa/states
[
    "/countries/usa/states/al",
    "/countries/usa/states/ak",
    ...
]

GET /countries/usa/states/ca
[
    "/countries/usa/states/ca/divisions",
    "/countries/usa/states/ca/employees",
    ...
]

GET /countries/usa/states/ca/employees/alan_akk
bar",
"/countries/usa/states/ca/employees/bill_alle
n" ...

Focus on the Three Rs:

• Resources
• Relationships
• Representations
Resources
Use Cases Uncover Resources

• A customer wants to browse for products by category.

• A customer wants to add a product to their shopping cart.

• A store admin wants to list all customers who bought a given product.
Use Cases Uncover Resources

• A **customer** wants to browse for **products** by category.

• A **customer** wants to add a **product** to their shopping cart.

• A **store admin** wants to list all **customers** who bought a given **product**.
Use Cases Uncover Resources

• Customers
• Products
• Categories
• Shopping Cart
• Store Admin
Relationships
Uncovering Relationships

• A **customer** wants to browse for **products** by category.

• A **customer** wants to add a **product** to their shopping cart.

• A **store admin** wants to list all **customers** who bought a given **product**.
Uncovering Relationships

- **Products** belong to **Categories**
- **Products** belong to **Shopping Carts**
- **Categories** have **Products**
- **Customers** have **Shopping Carts**
- **Shopping Carts** have **Products**
- **Customers** have **Products** through **Shopping Carts**
Common Relationship Types

• Has one or many
• Belongs to one or many
• Has and belongs to one or many (as)
• ... through ...
http://api.example.com/products?id=3276
http://api.example.com/products?id=3276&color=red
http://api.example.com/products?id=3276&offset=10&limit=10
http://api.example.com/products/3276/
http://api.example.com/categories/6/products/3276/
http://api.example.com/categories/6/products/3276/

302 Link: http://www.example.com/products/3276

Or

http://www.example.com/products/3276 rel=“canonical”
Representations
Accept: application/xml;profile=vnd.iata.ndc.BaggageChargesRQ

Vs.

Accept: application/json;profile=vnd.airline.baggageCharges
Developer Support
The Importance of the Developer Portal

Your Portal Provides All the Functionality a Partner/Developer Needs to Use Your APIs

For the developer
- Registration and key credentialing
- Documentation (including interactive docs such as IO Docs)
- Blogs and forums
- SDKs and other resources
- App gallery for inspiration
- Value proposition and terms of service
Sample Code Is Helpful to Educate Developers

```php
<?php
    $apikey = 'insert_your_api_key_here';
    $q = urlencode('Toy Story'); // make sure to url encode an query parameters
    $endpoint = 'http://api.rottentomatoes.com/api/public/v1.0/movies.json?apikey=' . $apikey . '&q=' . $q;
    // setup curl to make a call to the endpoint
    $session = curl_init($endpoint);
    // indicates that we want the response back
    curl_setopt($session, CURLOPT_RETURNTRANSFER, true);
    // exec curl and get the data back
    $data = curl_exec($session);
```

https://developer.rottentomatoes.com
SDKs Can Accelerate and Ease Development*

* But there is a lot to consider before providing an SDK.

https://developer.under armour.com/sdk

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Communicating Changes to Developers

• Social media (Twitter especially)
• Email newsletters
• Developer blogs
• Communicating through the API

ex.

```json
{
    "rel": "urn:deprecated",
    "href": "http://www.example.com/blog/2016-04-30/changelog",
    "method": "GET"
}
```
Thank You!

Questions?
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