

Building Brilliant APIs

that bloody work

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Our Inspiration?

- Working with a terrible API

Our Inspiration?

```
<xml>  
  <head>  
  </head>  
  <body>  
    <response>Random Useless Text</response>  
  </body>  
</xml>
```

Why Build APIs?

- Mobile Applications
- Rich Web Applications

Mobile Applications

- Enables your app to talk to your service
- Don't just open database connections

Websites

- Optimisation
- Caching

Websites

- Twitter
 - <http://engineering.twitter.com>
- Facebook

But...

“I’m not planning on building an API yet so
why should I care?”

What Makes a Brilliant API?

Naming

- Use descriptive meaningful names
- Don't be afraid to use really long names

[http://ws.audioscrobbler.com/2.0/?
method=**user.gettopalbums**&user=rj](http://ws.audioscrobbler.com/2.0/?method=user.gettopalbums&user=rj)

Building URLs

- Base URI
 - e.g. api.twitter.com/v2/
- Method
 - e.g. statuses/user_timeline.xml

Responses

- XML / JSON
- Clear structure

Responses

```
<topalbums user="RJ" type="overall">
  <album rank="1">
    <name>Images and Words</name>
    <playcount>174</playcount>
    <mbid>f20971f2-c8ad-4d26-91ab-730f6dedafb2</mbid>
    <url>
      http://www.last.fm/music/Dream+Theater/Images+and+Words
    </url>
    <artist>
      <name>Dream Theater</name>
      <mbid>28503ab7-8bf2-4666-a7bd-2644bfc7cb1d</mbid>
      <url>http://www.last.fm/music/Dream+Theater</url>
    </artist>
    <image size="small">...</image>
    <image size="medium">...</image>
    <image size="large">...</image>
  </album>
</topalbums>
```

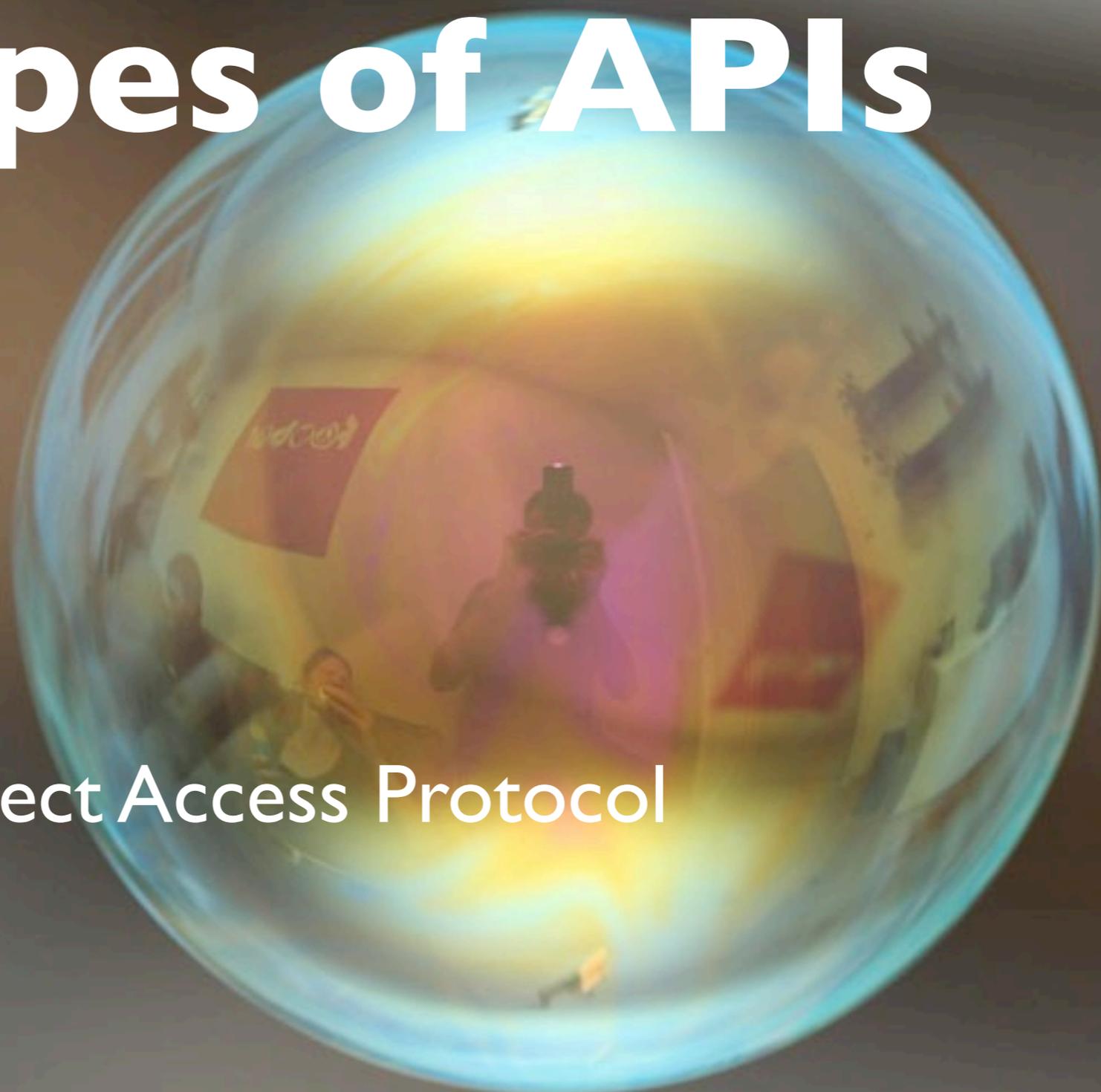
Error Codes

- Numbers which mean something
- Success, error
 - Missing parameter x
 - Parameter x must be 3 characters long
 - etc etc

Types of APIs

- SOAP
- RESTful

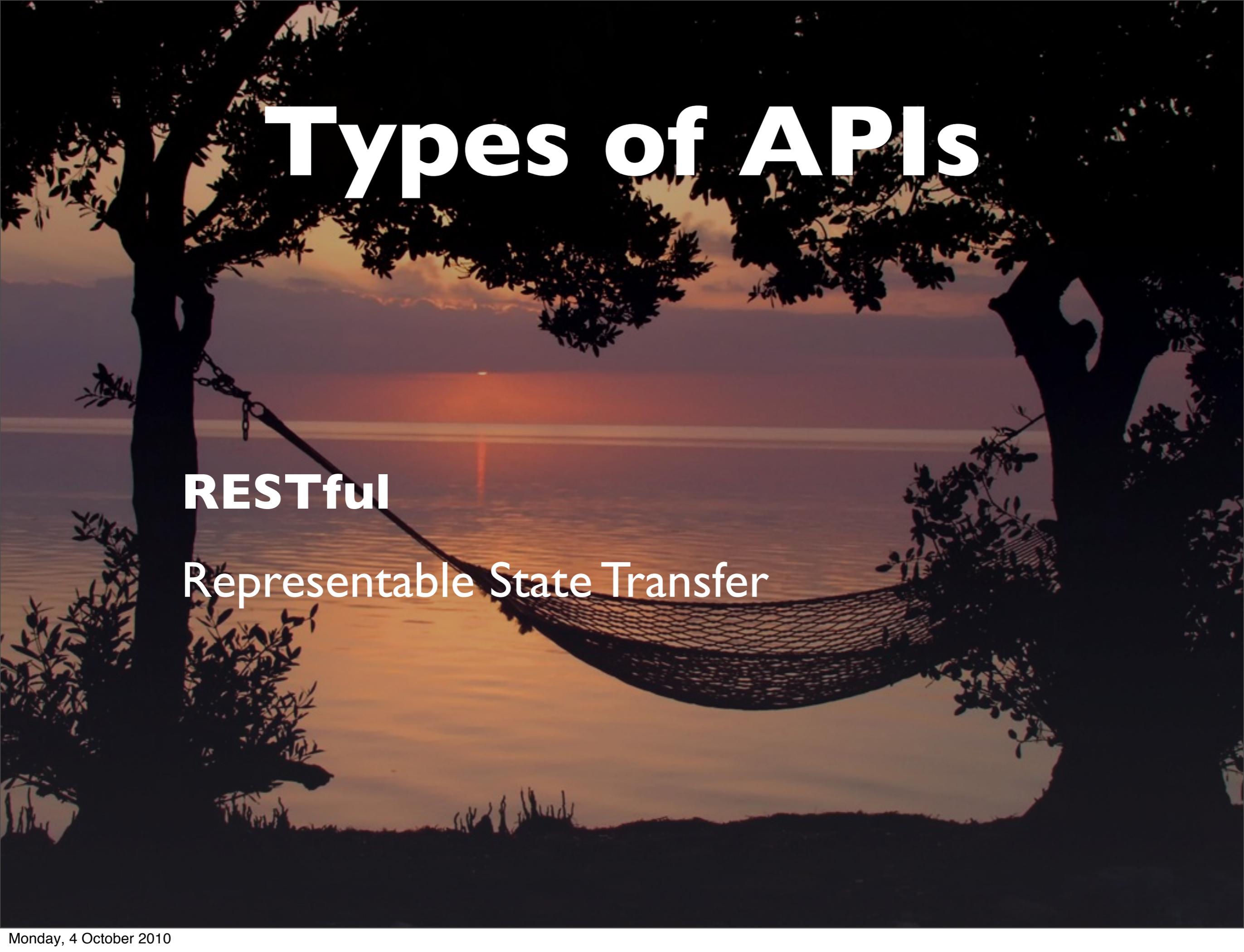
Types of APIs

A large, glowing blue sphere with a yellow and orange light source inside, reflecting a scene of people in a room. The sphere is positioned on the right side of the slide, and its reflection is visible on the dark background.

SOAP

Simple Object Access Protocol

Types of APIs

A serene sunset scene with a hammock strung between two trees over a body of water. The sky is a mix of orange, purple, and blue, with the sun low on the horizon. The water is calm, reflecting the colors of the sky. The trees are silhouetted against the bright sky, and the hammock is a dark mesh structure hanging between them.

RESTful

Representable State Transfer

RESTful

Based on HTTP Request protocol

RESTful

Based on HTTP Request protocol

PUT

DELETE

GET

POST

RESTful

Based on HTTP Request protocol

GET

POST

DELETE

RESTful

Based on HTTP Request protocol

GET

POST

Versioning

- API version in URL
- eg <http://locationtextvideoapi.com/2.0/>
- Allows backwackwards compatibility without sacrificing future versions

Authentication

- Two choices
 - OAuth
 - Basic (http / session)

Basic Authentication

Basic Authentication

Username

Password

Basic Authentication

Username

Password

**5f4dcc3b5aa765d6
1d8327deb882cf99**

Basic Authentication

Username

Password

**5f4dcc3b5aa765d6
1d8327deb882cf99**



OAuth



Open Standard

Greater Control

User Safety

Responses

Responses

XML

JSON

.plist

Responses

Objects

XML

JSON

.plist

XML

- PHP DomDocument
- PEAR Library for exporting straight from MySQL

JSON

JSON

```
$arr =  
array ( 'a'=>1, 'b'=>2, 'c'=>3, 'd'=>4, 'e'=>5 );
```

JSON

```
                $arr =  
array ( 'a'=>1, 'b'=>2, 'c'=>3, 'd'=>4, 'e'=>5 );
```

```
echo json_encode($arr);
```

JSON

```
                $arr =  
array ( 'a'=>1, 'b'=>2, 'c'=>3, 'd'=>4, 'e'=>5 );
```

```
echo json_encode($arr);
```

```
{"a":1,"b":2,"c":3,"d":4,"e":5}
```

UGC

Images

Audio /
Video

FFMpeg

Encoding.com

Vzaar.com

Media Links

- Link in a logical way
- Eg: <http://apisrock.com/64x64/23456.jpg>

Location Aware

Location based searching can be a bitch

Documentation

Documentation

- Do it

Documentation

- Do it
- Even if it's not public facing- do it!

Hosting

- Build in PHP / MySQL
 - Deployable on Amazon Web Services

Some Good Examples

- Last.fm
- Twitter
- Foursquare

Any questions?

- Good.

Thanks

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Thanks

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Bubble Image- <http://www.flickr.com/photos/philippbunge/>

Hammock- <http://www.flickr.com/photos/ironrodart/>

Padlock- <http://www.flickr.com/photos/sooperkuh/>

Binary Windows - <http://www.flickr.com/photos/9619972@N08/>

Boxing Lemur - http://www.flickr.com/photos/e_photos/

Earth from Space - NASA