




Designing Hypermedia APIs and Implementing one in Rails

by Sean Hagstrom

```
[
  {
    "id": "1",
    "author": "This Is My Post!",
    "title": "I'm a Title!",
    "content": "This be the content..."
  },
  {
    "id": "2",
    "author": "Stephen King",
    "title": "Stand By Me",
    "content": "..."
  },
  {
    "id": "3",
    "author": "Sean Hagstrom",
    "title": "Designing Hypermedia APIs",
    "content": "You're doing it all wrong.."
  }
]
```



What are Hypermedia APIs

Hypermedia APIs are RESTFUL

Hypermedia APIs embody the REST architecture.

Hypermedia APIs are a re-branding approach of the important principles of REST.

REST is



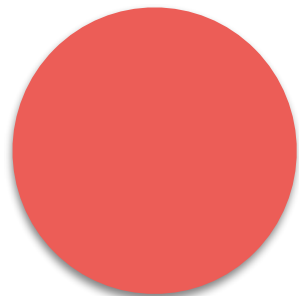
Hypermedia APIs are Scalable



Hypermedia APIs are naturally extendable, and easy to change.

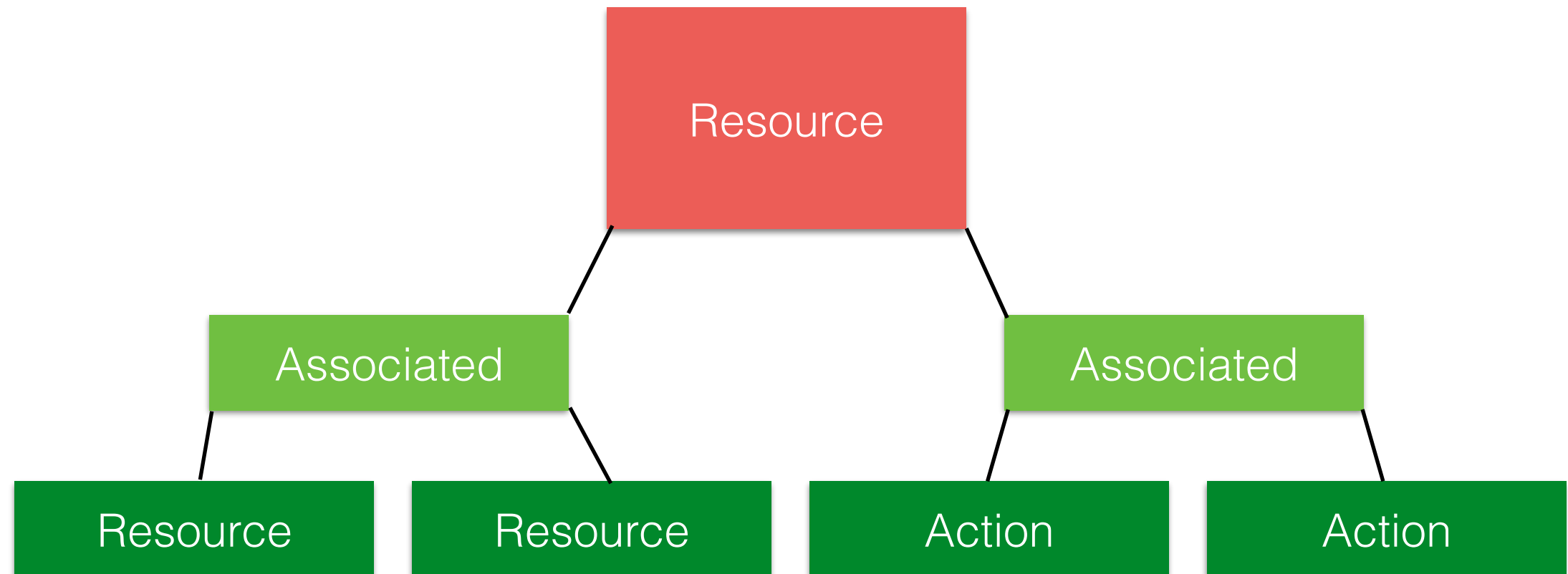


Hypermedia APIs try to eliminate the need for versioning.



Encapsulation between the client and server is increased.

Hypermedia APIs are Discoverable





How do they work?

Media Type Specifications

Documentation on how to lay out your service request object, for example JSON.

Documentation on how to interact with service request object through the client app.

Example Of: application/maze+xml

```
<maze version="1.0">
  <cell href="/cells/M" rel="current">

    <title>Entrance Hallway</title>

    <link rel="east" href="/cells/N"/>

    <link rel="west" href="/cells/L"/>

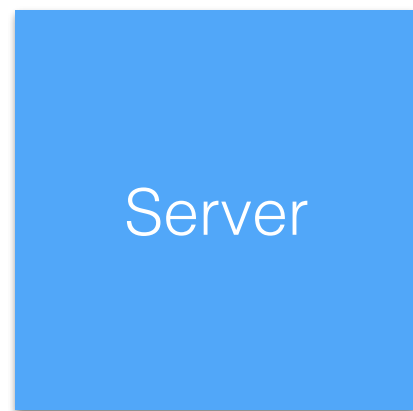
  </cell>
</maze>
```


Meaningful Descriptions



Client

POST /posts HTTP/1.1
Host: www.mikrobrug.com
Accepted: application/hal+son



Server

HTTP/1.1 201 CREATED
Location: <http://www.mikrobrug.com/posts/4>
Content-Type: application/hal+json

```
{
  "post": {
    "id": "4",
    "title": "I'm not wrong your wrong",
    "author": "snjedi",
    "content": "This be the content...",

    "links": [
      {
        "rel": "self",
        "href": "/posts/4"
      },
      {
        "rel": "author",
        "href": "/authors/snjedi"
      },
      {
        "rel": "posts",
        "href": "/posts"
      }
    ]
  }
}
```



An implementation?

Gemfile

```
gem 'roar'  
gem 'roar-rails'
```

Command Line

```
rails g representer Post
```


PostRepresenter

```
module PostRepresenter
  include Roar::Representer::JSON

  property :id
  property :title
  property :author
  property :content

  link :self do
    post_url(self)
  end

  link :author do
    author_url(self.author_id)
  end

  link :posts do
    posts_url
  end
end
```


PostsController

```
class PostsController < ApplicationController
  include Roar::Rails::ControllerAdditions
  respond_to :json

  def show
    post = Post.find_by_id(params[:id])
    respond_with post
  end
end
```


Results

```
{
  "post": {
    "id": "4",
    "title": "I'm not wrong your wrong",
    "author": "snjedi",
    "content": "This be the content...",

    "links": [
      {
        "rel": "self",
        "href": "/posts/4"
      },
      {
        "rel": "author",
        "href": "/authors/snjedi"
      },
      {
        "rel": "posts",
        "href": "/posts"
      }
    ]
  }
}
```



Any Questions?