

Code(Her) Conference 2014

Building APIs for Web & Mobile

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Introductions

Your Turn

Workshop Organization

Workshop Organization

- ❖ Setup / Following Along (5-15 mins)
- ❖ The Value of APIs (15 mins)
- ❖ API Building Blocks (15 mins)
- ❖ Building our first API (30 mins)
- ❖ Deploying our first API (10-15 mins)
- ❖ Challenge: Build an API based on the Code(Her) Conference website (45 mins)

Setup / Following Along

[https://github.com/jboursiquot/codeherconf/
wiki/Setup](https://github.com/jboursiquot/codeherconf/wiki/Setup)

The Value of APIs

So, what's an *API*?

Let's look at some examples

[Twitter](#) / [Developers](#) / [Documentation](#) / [REST APIs](#)

API Console Tool

Public API

API Rate Limiting

API Rate Limits

Working with Timelines

Using the Twitter Search API

Uploading Media

Multiple Media Entities in Statuses

Finding Tweets about Places

GET statuses / mentions_timeline

GET statuses / user_timeline

Twitter REST API

The [REST APIs](#) provides programmatic access to read and write data. Author a new Tweet, read author profile and follow users. The REST API identifies Twitter applications and users using OAuth. All responses are available in JSON.

Overview

Below are the documents that will help you get going with the API as quickly as possible

- [API Rate Limiting](#)
- [API Rate Limits](#)
- [Working with Timelines](#)
- [Using the Twitter Search API](#)

Developers Apps Products Docs Tools Support

Search in docs

Graph API v2.x and the new Facebook Login

Upgrade your apps before December 25 to protect 90% of your users' experiences

Learn More

APR 30 2014 JUL 30 OCT 30 DEC 25 JAN 30 APR 30 2015

Share Image

Login

Sharing

Parse

Games

App Ads

Payments

amazon

FEEDBACK SIGN IN or CREATE FREE ACCOUNT ENGLISH

HOME GETTING STARTED **APIs** RESOURCES SUPPORT BLOG

Search...

Home > APIs

APIs Overview

Earn

Engage

Test & Manage

Amazon provides iOS, Android, and Kindle Fire APIs that help you have solutions for you and your customers.

GitHub Developer

API Developers Blog Support

Search

API Reference Webhooks Guides Libraries

Overview

This describes the resources that make up the official GitHub API v3. If you have any problems or requests please contact [support](#).

- [Current Version](#)
- [Schema](#)
- [Parameters](#)
- [Root Endpoint](#)
- [Client Errors](#)
- [HTTP Redirects](#)
- [HTTP Verbs](#)
- [Authentication](#)
- [Hypermedia](#)
- [Pagination](#)
- [Rate Limiting](#)
- [User Agent Required](#)
- [Conditional requests](#)
- [Cross Origin Resource Sharing](#)
- [JSON-P Callbacks](#)
- [Timezones](#)

Overview

Media Types

OAuth

OAuth Authorizations API

Other Authentication Methods

Troubleshooting

Versions

Activity

Gists

Git Data

Issues

Miscellaneous

Organizations

Pull Requests

Repositories

Search

Google

Search for services, methods, and recent requests...

APIs Explorer

Services All Versions Request History

Ad Exchange Buyer API	v1.3	Accesses your bidding-account information, submits creatives for validation, finds available direct reports.
Ad Exchange Seller API	v2.0	Gives Ad Exchange seller users access to their inventory and the ability to generate reports
Admin Reports API	reports_v1	Allows the administrators of Google Apps customers to fetch reports about the usage, collaboration, and other information.
AdSense Host API	v4.1	Limited Availability Gives AdSense Hosts access to report generation, ad code generation, and other information.
AdSense Management API	v1.4	Gives AdSense publishers access to their inventory and the ability to generate reports
APIs Discovery Service	v1	Lets you discover information about other Google APIs, such as what APIs are available, the resources they offer, and more.
BigQuery API	v2	A data platform for customers to create, manage, share and query data.
Blogger API	v3	Limited Availability API for access to the data within Blogger.
Books API	v1	Lets you search for books and manage your Google Books library.
Calendar API	v3	Lets you manipulate events and other calendar data.
Cloud Monitoring API	v2beta1	API for accessing Google Cloud and API monitoring data.
Cloud Pub/Sub API	v1beta1	Limited Availability Provides reliable, many-to-many, asynchronous messaging between applications.
Cloud SQL Administration API	v1beta3	API for Cloud SQL database instance management.
Cloud Storage API	v1	Lets you store and retrieve potentially-large, immutable data objects.
Compute Engine API	v1	API for the Google Compute Engine service.
Content API for Shopping	v2	Manage product items, inventory, and Merchant Center accounts for Google Shopping.

Let's explore GitHub's API

The Value of APIs

“APIs [have become] a primary customer interface for technology-driven products and services and a key channel for driving revenue and brand engagement.”

Forbes article

“APIs: building blocks for the future of digital marketing”

Headline from The Guardian

“If you want to get a glimpse into the future of banking, consider a simple acronym: API”

Information Week article



Why all the excitement?

Before APIs (an extremely brief look back)

- ❖ In the early 1990's, distributed computing is prolific
- ❖ Communication between heterogeneous systems is hard
- ❖ Technologies like CORBA, Java RMI and Microsoft's DCOM are created in an attempt to ease cross-network interaction between systems
- ❖ Each new “standard” created to replace the old simply adds to the fragmentation



So, what happened?

“Service Oriented Architecture”
aka SOA

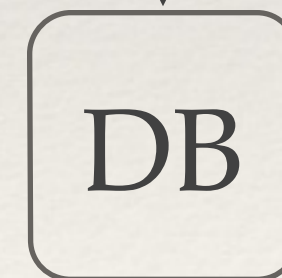
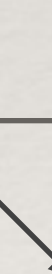
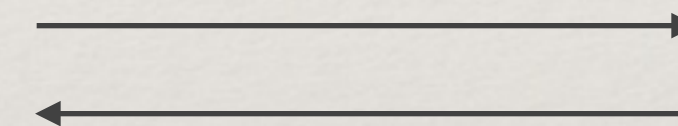
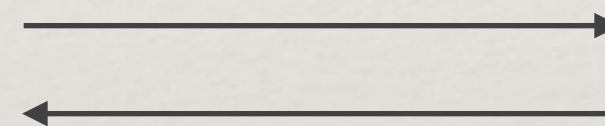
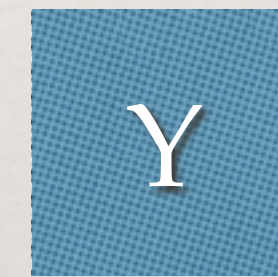
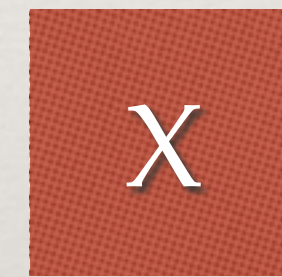
Service Consumers



Protocol



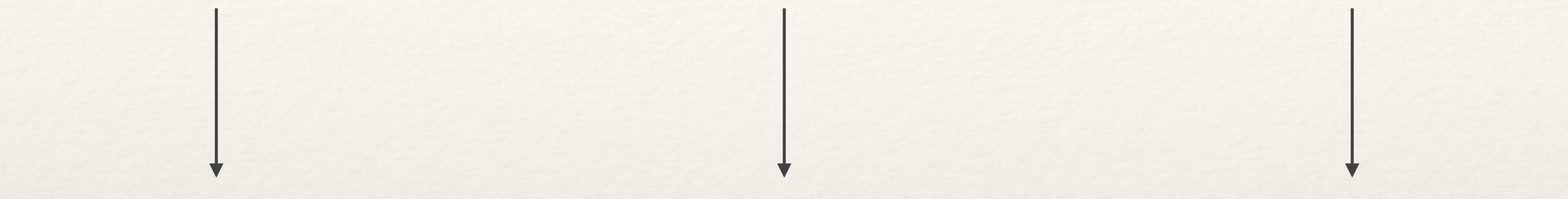
Service Providers



Fast Forward to 2008 App Store Release

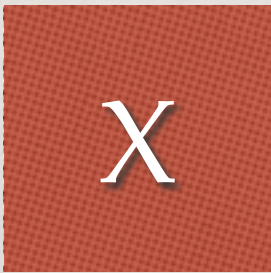
We take what we've learned from building
SOAs and apply/extend it to Web APIs

Service Consumers

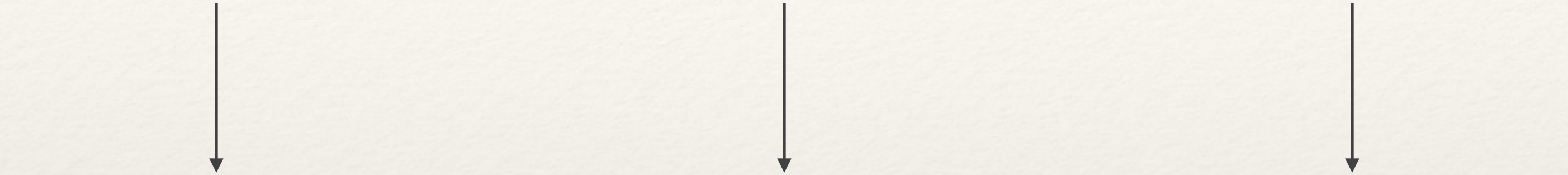


Protocol

Service Providers

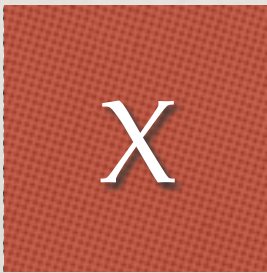


Service Consumers

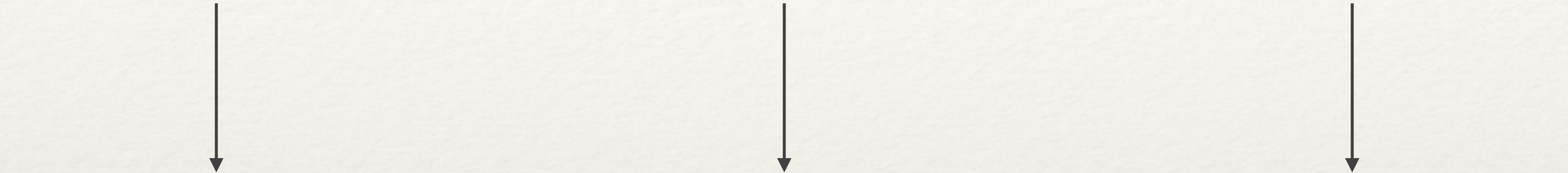


Protocol

Service Providers

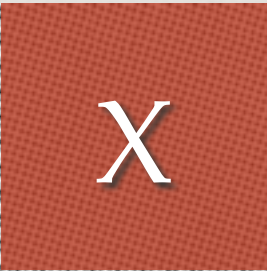


Service Consumers

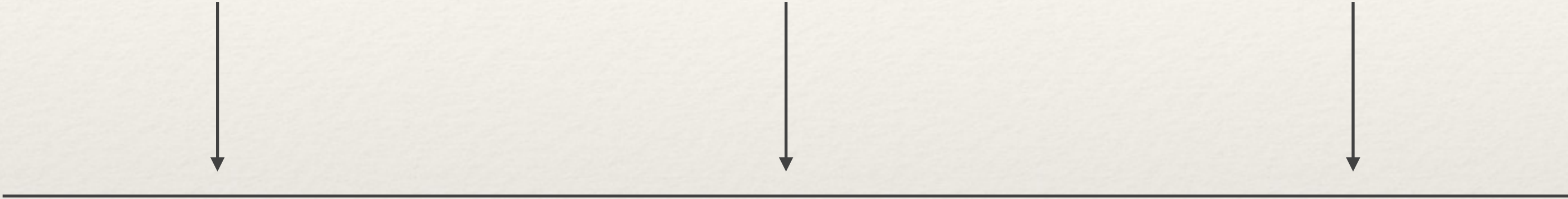


Protocol

Service Providers

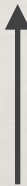


Service Consumers



HTTP | REST + JSON

Service Providers

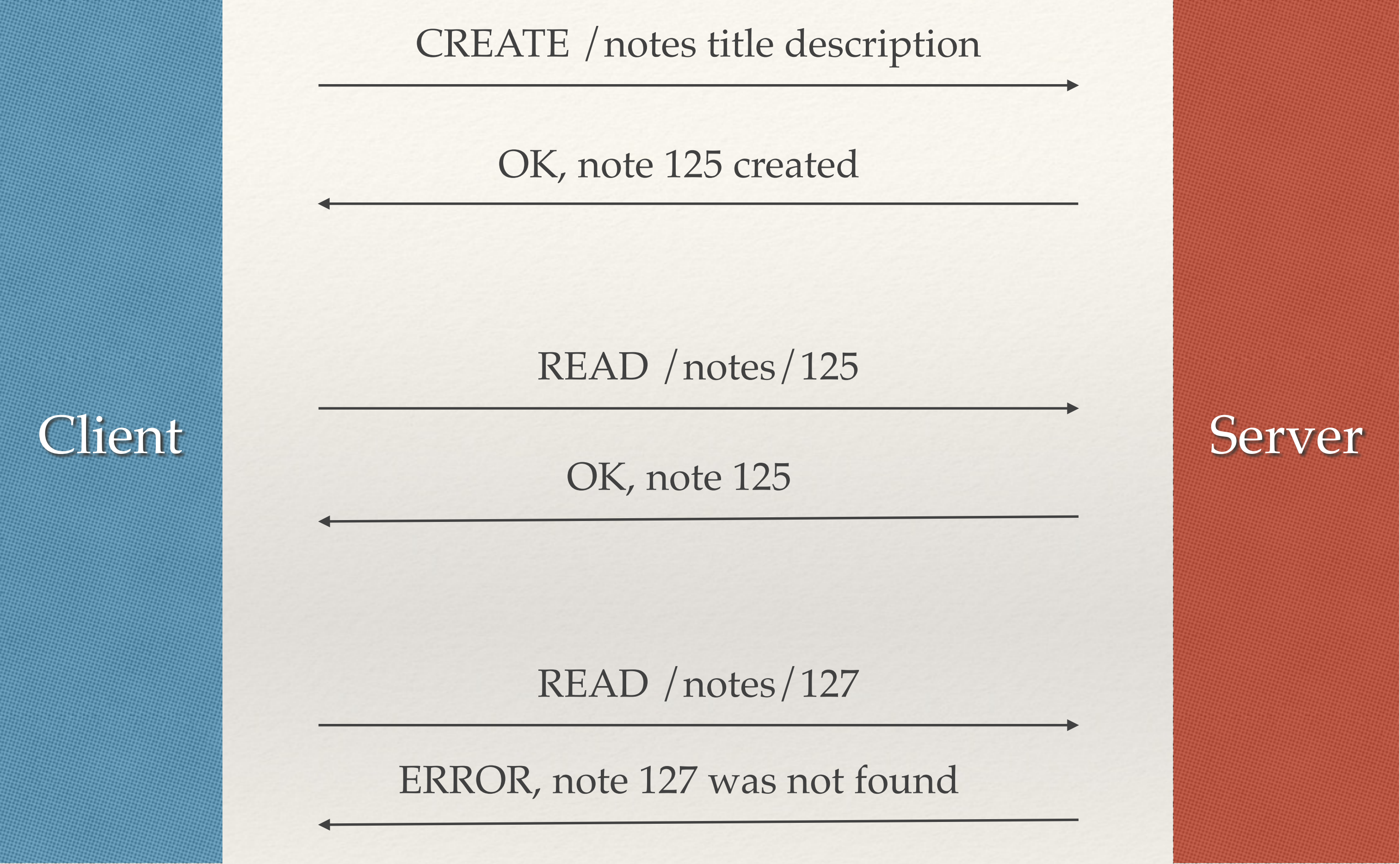


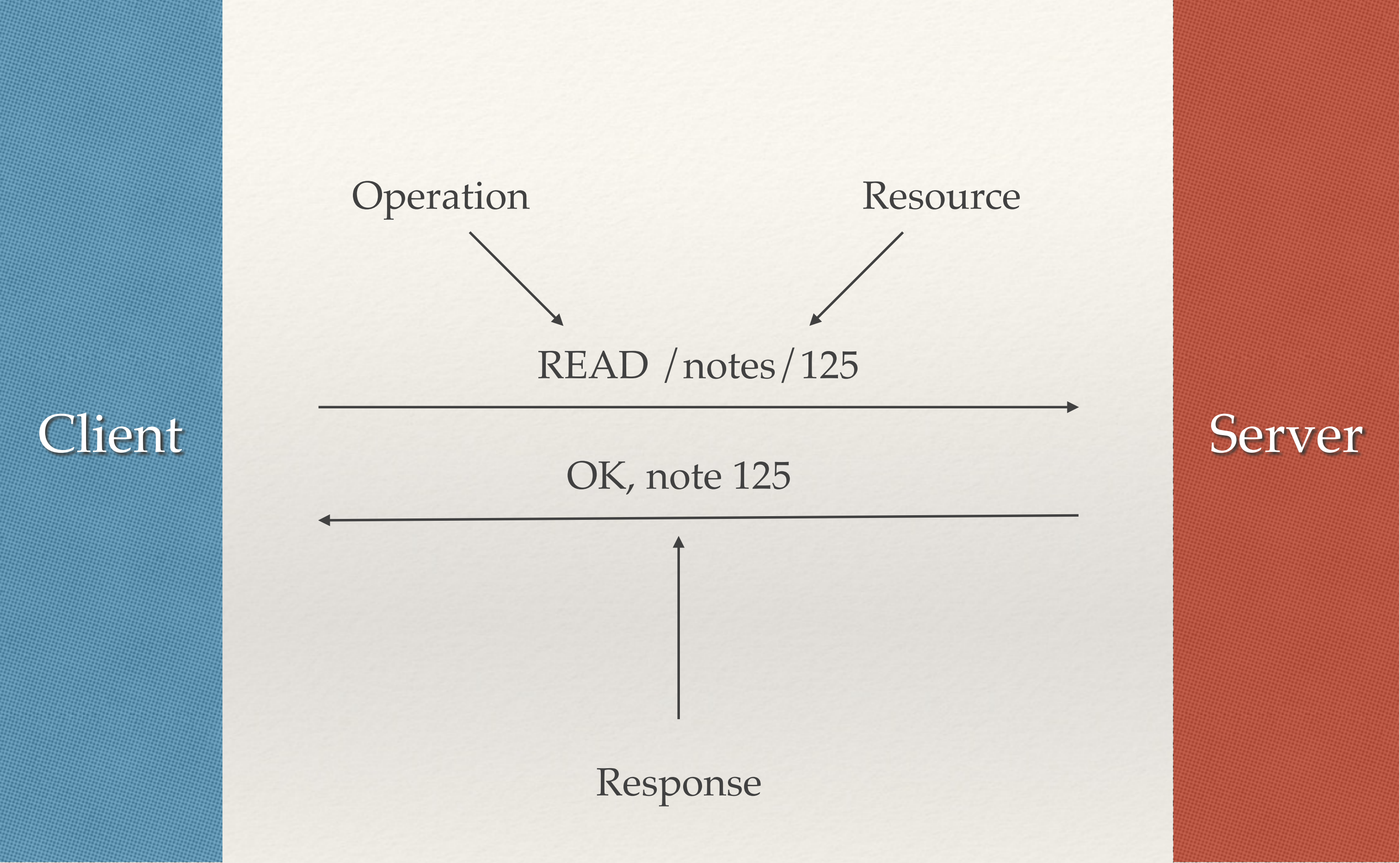
11,973 Public APIs

As of 9/13/14 - Source: Programmable Web

API Building Blocks

Client-Server Communication





REST

- ❖ REpresentational State Transfer allows us to build web apps (and APIs) that follow a strict set of **operations on resources**.
- ❖ REST is an architectural style of designing networked applications
- ❖ Uses HTTP protocol verbs: GET, PUT, PATCH, POST, DELETE
- ❖ In many ways, the Web itself can be viewed as a REST-based architecture

JSON

- ❖ JSON: JavaScript Object Notation
- ❖ Lightweight data-interchange format
- ❖ Easy for humans to read
- ❖ Efficient for machines to parse and generate
- ❖ Majority of APIs today support JSON for both input and output data

Let's Build One

Follow instructions on
[https://github.com/jboursiquot/
codeherconf/wiki/Walkthrough-1](https://github.com/jboursiquot/codeherconf/wiki/Walkthrough-1)

Reference

- ❖ <http://www.forbes.com/sites/ciocentral/2012/08/29/welcome-to-the-api-economy/>
- ❖ <http://www.banktech.com/channels/api-entry-point-to-the-new-open-world-of-banking/a/d-id/1296313?>
- ❖ <http://www.3scale.net/api-economy/>
- ❖ <http://www.sis.pitt.edu/~mbsclass/standards/fischer/corbaintro.html>
- ❖ <http://rest.elkstein.org/>

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