API Security and Rate Limiting

- The compute resources to run these APIs are not “free”
- The data provided by these APIs is usually valuable
- The data providers might limit the number of requests per day, demand an API “key”, or even charge for usage
- They might change the rules as things progress...

Usage Limits

The Google Geocoding API has the following limits in place:

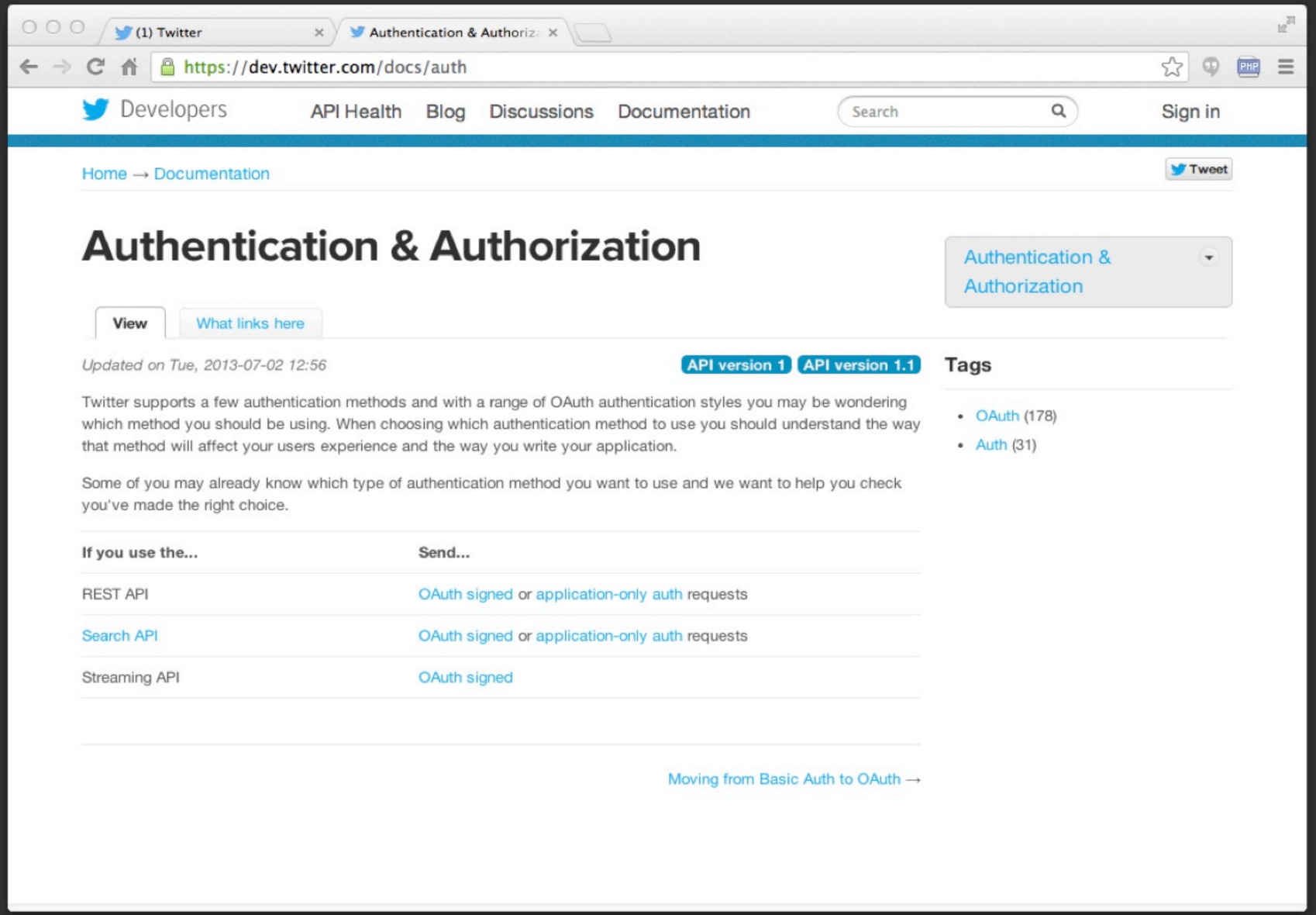
- 2,500 requests per day.

Google Maps API for Business customers have higher limits:

- 100,000 requests per day.

These limits are enforced to prevent abuse and/or repurposing of the Geocoding API, and may be changed in the future without notice. Additionally, we enforce a request rate limit to prevent abuse of the service. If you exceed the 24-hour limit or otherwise abuse the service, the Geocoding API may stop working for you temporarily. If you continue to exceed this limit, your access to the Geocoding API may be blocked.

The Geocoding API may only be used in conjunction with a Google map; geocoding results without displaying them on a map is prohibited. For complete details on allowed usage, consult the Maps API Terms of Service License Restrictions.


(1) Twitter
Authentication & Authoriz
https://dev.twitter.com/docs/auth
Developers
API Health
Blog
Discussions
Documentation
Search
Sign in
Home → Documentation
Tweet
Authentication & Authorization
Authentication & Authorization
View
What links here
Updated on Tue, 2013-07-02 12:56
API version 1
API version 1.1
Twitter supports a few authentication methods and with a range of OAuth authentication styles you may be wondering which method you should be using. When choosing which authentication method to use you should understand the way that method will affect your users experience and the way you write your application.
Some of you may already know which type of authentication method you want to use and we want to help you check you've made the right choice.
If you use the...
Send...
REST API
OAuth signed or application-only auth requests
Search API
OAuth signed or application-only auth requests
Streaming API
OAuth signed
Moving from Basic Auth to OAuth →
Tags
OAuth (178)
Auth (31)

Tweets | Twitter Developer

https://dev.twitter.com/docs/platform-objects/tweets

Developers API Health Blog Discussions Documentation Search Sign in

Home → Documentation → Platform Objects

Tweet

Tweets

View What links here

Updated on Tue, 2013-08-13 17:29

API version 1 API version 1.1

Tweets are the basic atomic building block of all things Twitter. Users tweet Tweets, also known more generically as "status updates." Tweets can be embedded, replied to, favorited, unfavorited and deleted.

Brian Sutorius
@bsuto

Follow

The "http://" at the beginning of URLs is a command to the browser. It stands for "head to this place:" followed by two laser-gun noises.

4:29 PM - 21 Feb 2012

4,218 RETWEETS **1,768** FAVORITES

Field Guide

Consumers of Tweets should tolerate the addition of new fields and variance in ordering of fields with ease. Not all fields appear in all contexts. It is generally safe to consider a nulled field, an empty set, and the absence of a field as the same thing. Please note that Tweets found in Search results vary somewhat in structure from this document.

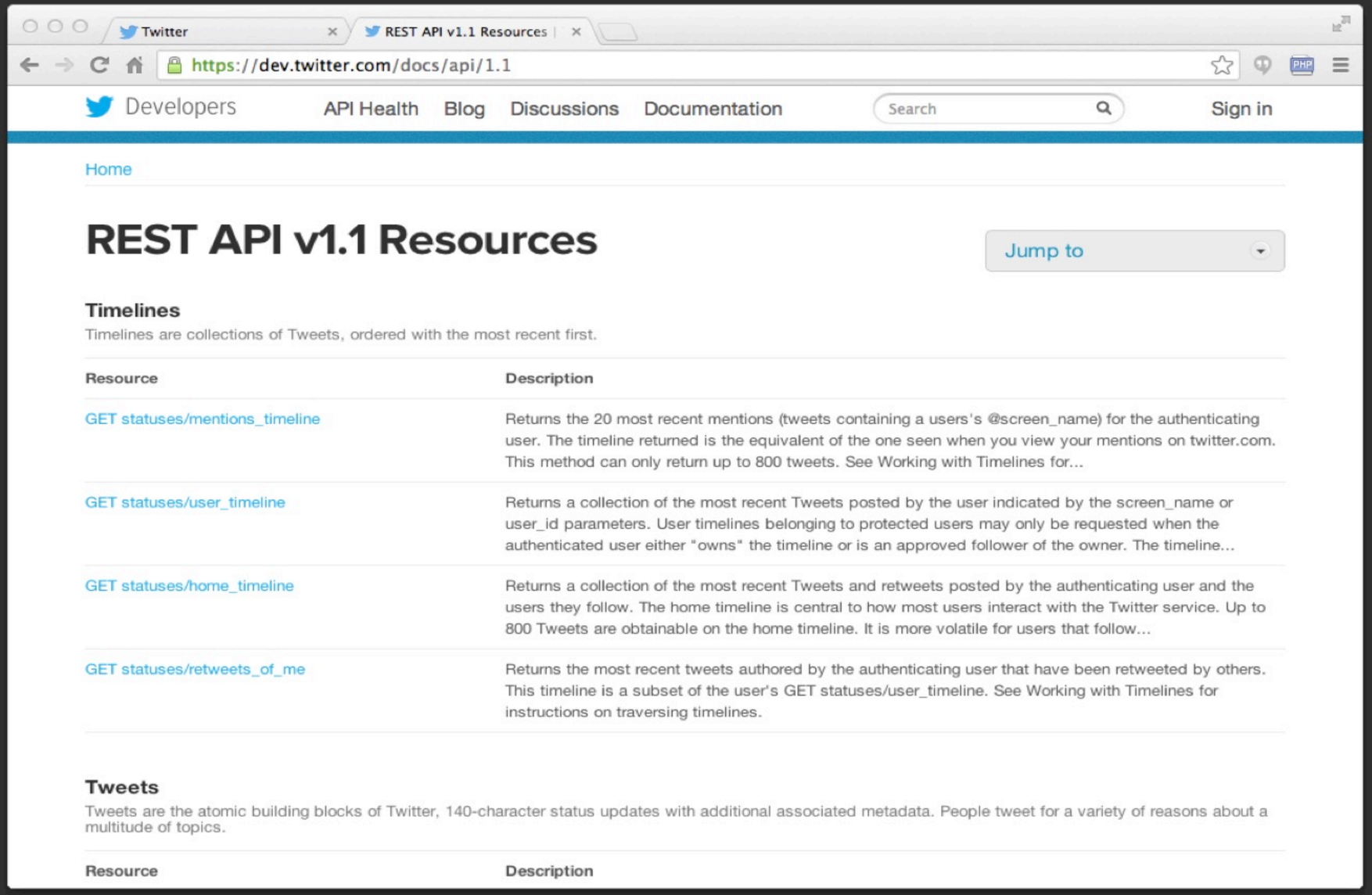
Field	Type	Description
annotations	Object	*Unused.* Future/beta home for status annotations.

Natural habitat

Tweets can be found alone, within user objects, but most often within timelines.

Related API Resources

- GET favorites

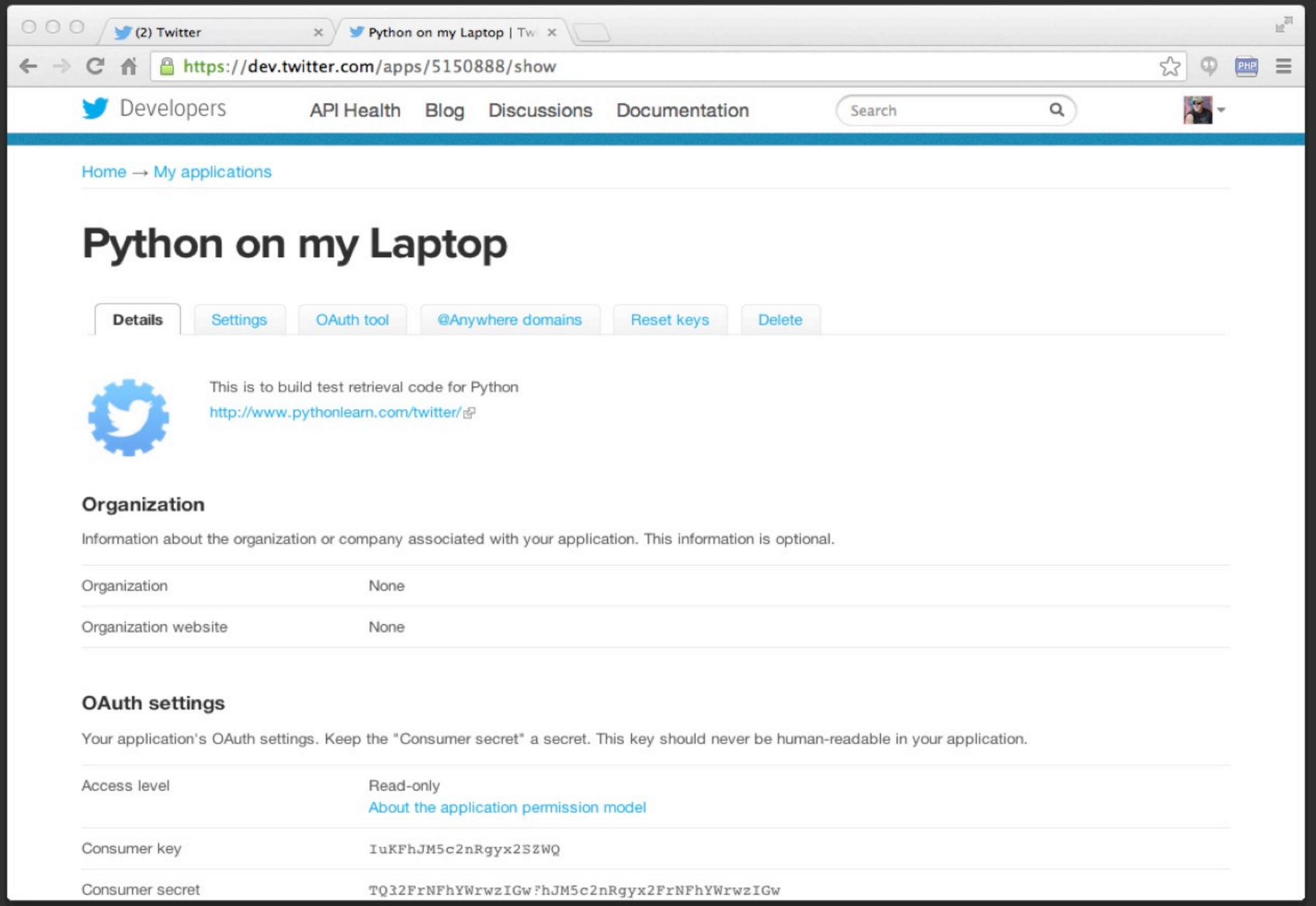

Twitter
REST API v1.1 Resources
https://dev.twitter.com/docs/api/1.1
Developers
API Health
Blog
Discussions
Documentation
Search
Sign in
Home
REST API v1.1 Resources
Jump to
Timelines
Timelines are collections of Tweets, ordered with the most recent first.
Resource
Description
GET statuses/mentions_timeline
Returns the 20 most recent mentions (tweets containing a users's @screen_name) for the authenticating user. The timeline returned is the equivalent of the one seen when you view your mentions on twitter.com. This method can only return up to 800 tweets. See Working with Timelines for...
GET statuses/user_timeline
Returns a collection of the most recent Tweets posted by the user indicated by the screen_name or user_id parameters. User timelines belonging to protected users may only be requested when the authenticated user either "owns" the timeline or is an approved follower of the owner. The timeline...
GET statuses/home_timeline
Returns a collection of the most recent Tweets and retweets posted by the authenticating user and the users they follow. The home timeline is central to how most users interact with the Twitter service. Up to 800 Tweets are obtainable on the home timeline. It is more volatile for users that follow...
GET statuses/retweets_of_me
Returns the most recent tweets authored by the authenticating user that have been retweeted by others. This timeline is a subset of the user's GET statuses/user_timeline. See Working with Timelines for instructions on traversing timelines.
Tweets
Tweets are the atomic building blocks of Twitter, 140-character status updates with additional associated metadata. People tweet for a variety of reasons about a multitude of topics.
Resource
Description

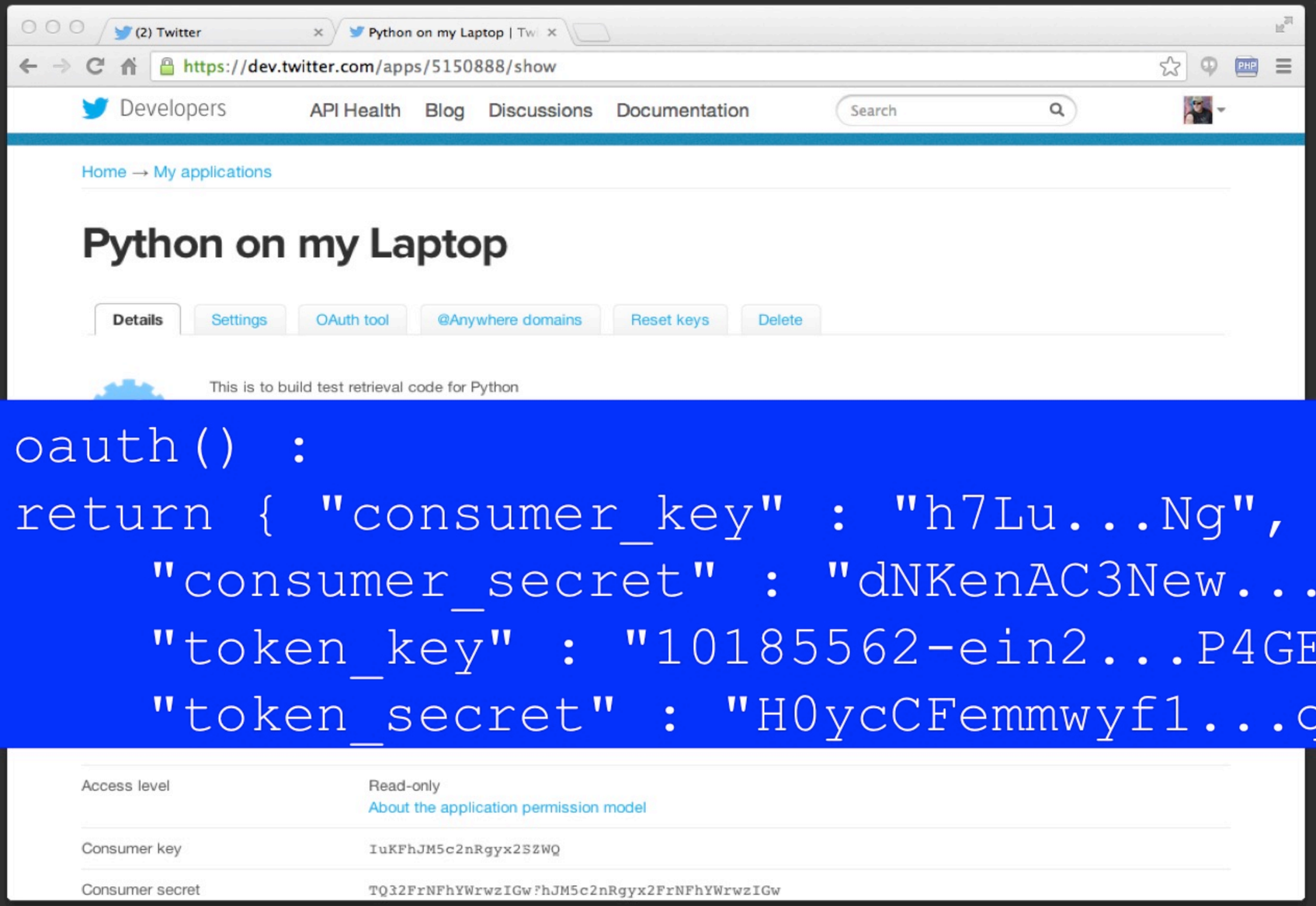
twitter2.py

```
import urllib.request, urllib.parse, urllib.error
import twurl
import json

TWITTER_URL = 'https://api.twitter.com/1.1/friends/list.json'

while True:
    print('')
    acct = input('Enter Twitter Account:')
    if (len(acct) < 1): break
    url = twurl.augment(TWITTER_URL,
                        {'screen_name': acct, 'count': '5'})
    print('Retrieving', url)
    connection = urllib.request.urlopen(url)
    data = connection.read().decode()
    headers = dict(connection.getheaders())
    print('Remaining', headers['x-rate-limit-remaining'])
    js = json.loads(data)
    print(json.dumps(js, indent=4))

    for u in js['users']:
        print(u['screen_name'])
        s = u['status']['text']
        print('  ', s[:50])
```

twitter2.py

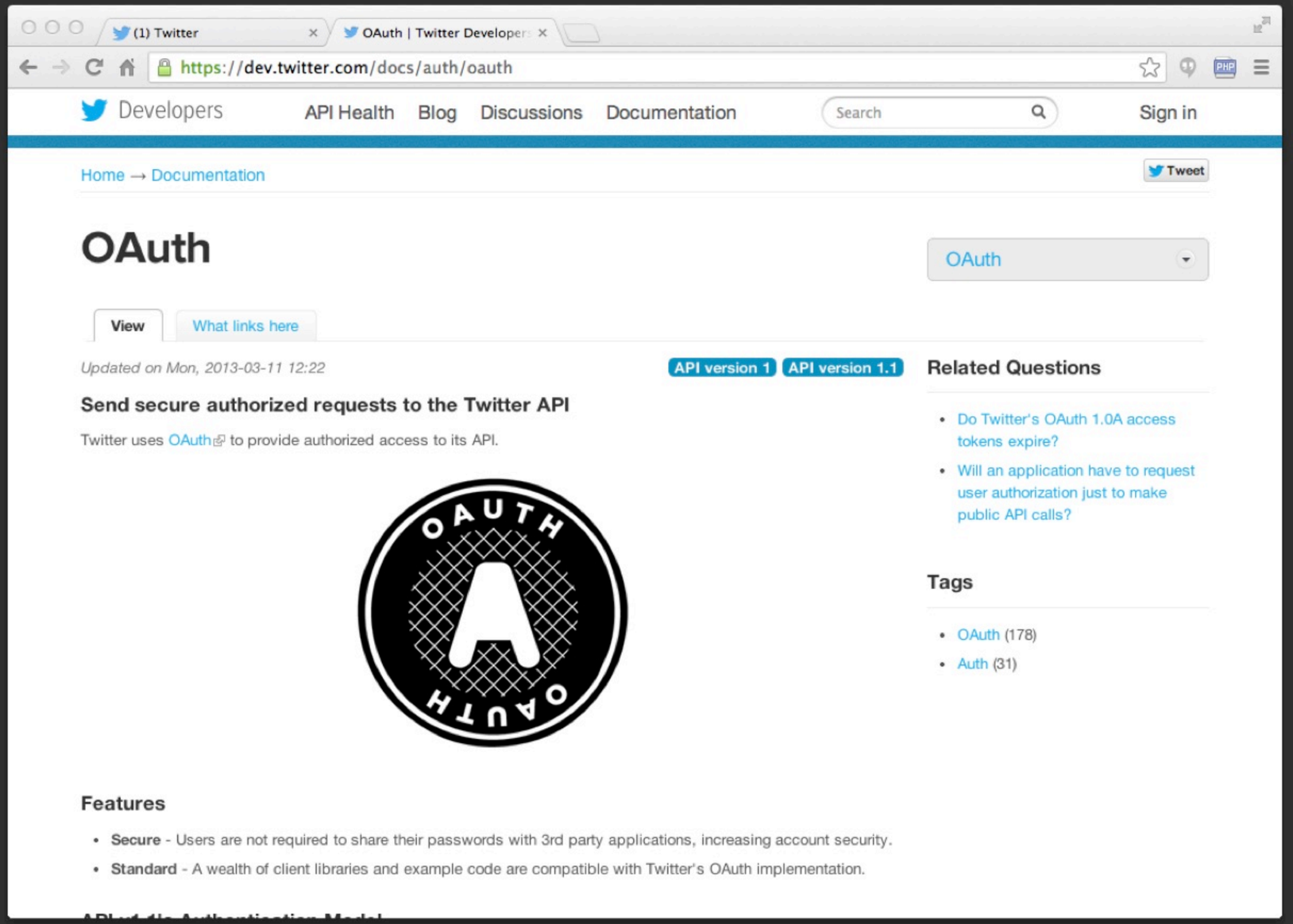
```
Enter Twitter Account:drchuck
Retrieving https://api.twitter.com/1.1/friends ...
Remaining 14
{
    "users": [
        {
            "status": {
                "text": "@jazzychad I just bought one .__.",
                 "created_at": "Fri Sep 20 08:36:34 +0000 2013",
             },
             "location": "San Francisco, California",
             "screen_name": "leahculver",
             "name": "Leah Culver",
         },
         {
            "status": {
                "text": "RT @WSJ: Big employers like Google ...",
                 "created_at": "Sat Sep 28 19:36:37 +0000 2013",
             },
             "location": "Victoria Canada",
             "screen_name": "_valeriei",
             "name": "Valerie Irvine",
     ],
}
Leahculver
   @jazzychad I just bought one .__._
Valeriei
   RT @WSJ: Big employers like Google, AT&amp;amp;T are h
Ericbollens
   RT @lukew: sneak peek: my LONG take on the good &a
halherzog
  Learning Objects is 10. We had a cake with the LO,
```


(2) Twitter
Python on my Laptop | Tw
https://dev.twitter.com/apps/5150888/show
Developers
API Health
Blog
Discussions
Documentation
Search
Home → My applications
Python on my Laptop
Details
Settings
OAuth tool
@Anywhere domains
Reset keys
Delete
This is to build test retrieval code for Python
http://www.pythonlearn.com/twitter/
Organization
Information about the organization or company associated with your application. This information is optional.
Organization
None
Organization website
None
OAuth settings
Your application's OAuth settings. Keep the "Consumer secret" a secret. This key should never be human-readable in your application.
Access level
Read-only
About the application permission model
Consumer key
IuKFhJM5c2nRgyx2SZWQ
Consumer secret
TQ32FrNFhYWrwzIGw?hJM5c2nRgyx2FrNFhYWrwzIGw



hidden.py

```
def oauth() :
    return { "consumer_key" : "h7Lu...Ng",
        "consumer_secret" : "dNKenAC3New...mmn7Q",
        "token_key" : "10185562-ein2...P4GEQQOSGI",
        "token_secret" : "H0ycCFemmwyf1...qoIpBo" }
```


(1) Twitter
OAuth | Twitter Developers
https://dev.twitter.com/docs/auth/oauth
Developers
API Health
Blog
Discussions
Documentation
Search
Sign in
Home → Documentation
Tweet
OAuth
OAuth
View
What links here
Updated on Mon, 2013-03-11 12:22
API version 1
API version 1.1
Send secure authorized requests to the Twitter API
Twitter uses OAuth to provide authorized access to its API.
OAUTH
OAUTH
Related Questions
Do Twitter's OAuth 1.0A access tokens expire?
Will an application have to request user authorization just to make public API calls?
Tags
OAuth (178)
Auth (31)
Features
Secure - Users are not required to share their passwords with 3rd party applications, increasing account security.
Standard - A wealth of client libraries and example code are compatible with Twitter's OAuth implementation.

twurl.py

```
import urllib
import oauth
import hidden

def augment(url, parameters) :
    secrets = hidden.oauth()
    consumer = oauth.OAuthConsumer(secrets['consumer_key'], secrets['consumer_secret'])
    token = oauth.OAuthToken(secrets['token_key'],secrets['token_secret'])
    oauth_request = oauth.OAuthRequest.from_consumer_and_token(consumer,
        token=token, http_method='GET', http_url=url, parameters=parameters)
    oauth_request.sign_request(oauth.OAuthSignatureMethod_HMAC_SHA1(), consumer, token)
    return oauth_request.to_url()
```

```
https://api.twitter.com/1.1/statuses/user_timeline.json?
count=2&oauth_version=1.0&oauth_token=101...SGI&screen_name=drc
huck&oauth_nonce=09239679&oauth_timestamp=1380395644&oauth_sign
ature=rLK...BoD&oauth_consumer_key=h7Lu...GNg&oauth_signature_m
ethod=HMAC-SHA1
```

Summary

- Service Oriented Architecture - allows an application to be broken into parts and distributed across a network
- An Application Program Interface (API) is a contract for interaction
- Web Services provide infrastructure for applications cooperating (an API) over a network - SOAP and REST are two styles of web services
- XML and JSON are serialization formats

Acknowledgements / Contributions

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Initial Development: Charles Severance, University of Michigan School of Information

… Insert new Contributors here

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