



Lookery Targeting API (TAPI v2) Implementation Guide

Document Updated: 30th January 2009

© 2009 Lookery, Inc.

The **Lookery Targeting API (TAPI)** lets 3rd parties query Lookery for anonymous user data for demographic retargeting (age, sex, and location), search keyword retargeting (user's last recorded search) and other custom user attribute retargeting for real-time ad and content targeting.

API interface:

TAPI uses a REST-like interface. This means that the client or advertiser sends requests over the internet to TAPI servers in the form of a HTTP GET request.

TAPI Flow Diagrams:

These example flow diagrams show how Lookery user data is accessed.

Diagram 1: Using Lookery TAPI via a HTTP GET request for real time ad targeting

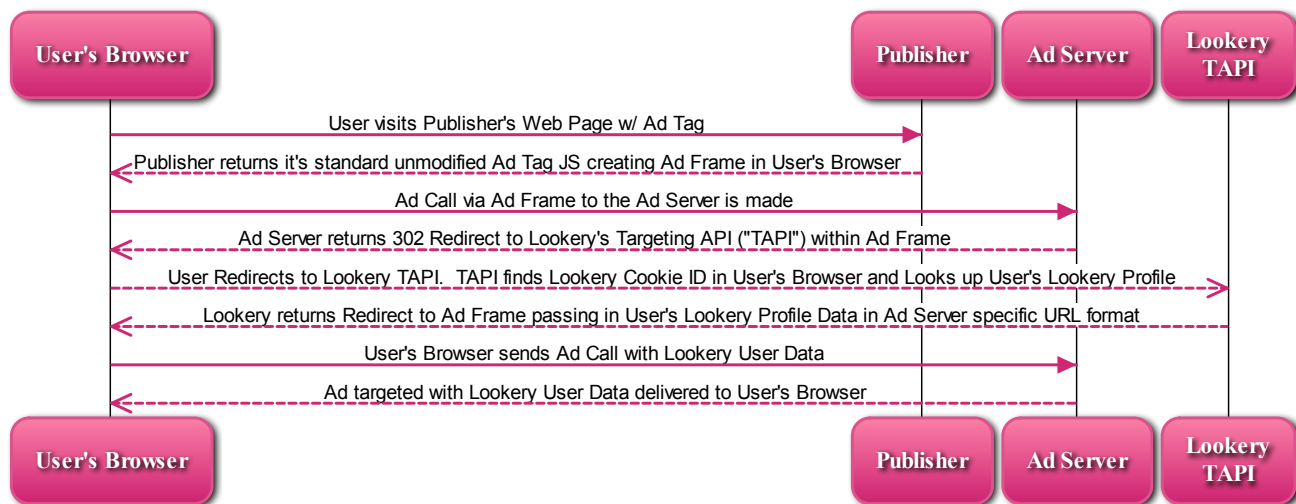
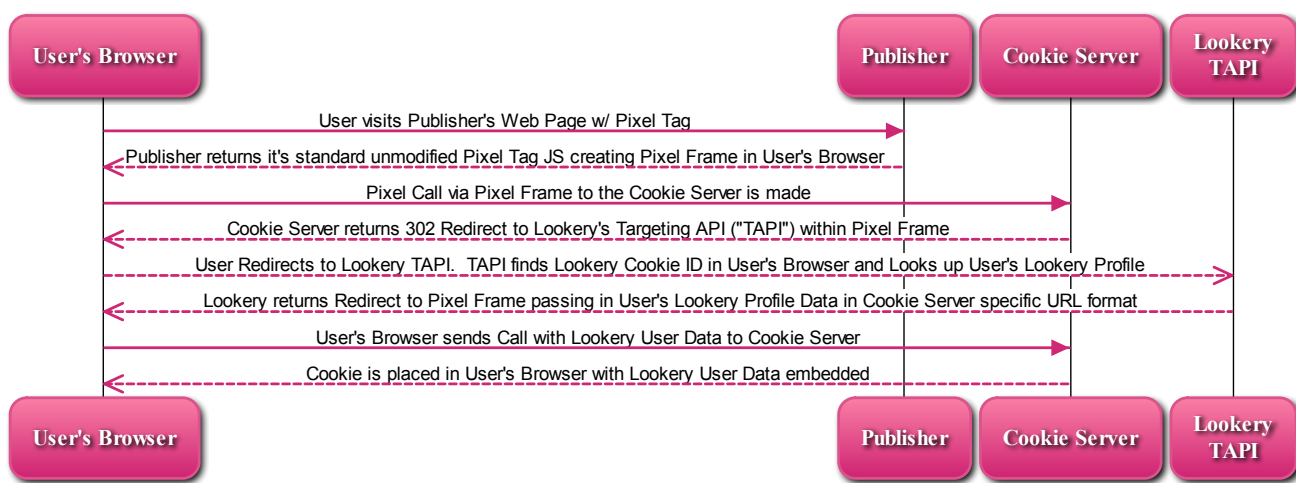


Diagram 2: Using Lookery TAPI for adding Lookery user data to your Cookie via a HTTP GET request





The Web Service is located at:

<http://services.lookery.com/targeting>

Supported API parameters:

Parameter	Type	Required	Description/Values
v	integer	Yes	API version identifier: must be set to 2 to use this version of TAPI.
api_key	string	Yes	API key: all requests to TAPI must reference the unique api_key issued to you.
r_url	string	No	URL for TAPI to redirect back to. This is where you specify what data you want Lookery to return back to you. See the table below for the list of supported data tokens. <u>Important:</u> this parameter must be URLEncoded to prevent errors.
signature	string	No	Each request to a web service that requires authenticated requests must contain a valid request signature, or the request is rejected. See the Authenticating Requests section of this document for details on how to sign your requests.
timestamp	string	No	The date and time of when the request is created, represented as a string of the number of seconds elapsed since midnight Coordinated Universal Time (UTC) of January 1, 1970 , not counting leap seconds .

List of data tokens supported by r_url:

Token	Type	Value Returned
{profile_id}	Lookery ID	User's Lookery Cookie ID
{profile_yob}	Demographic Profile	Year of Birth: expressed in int(4)format: YYYY
{profile_age}	Demographic Profile	Age
{profile_gender}	Demographic Profile	Gender: 1 (male) or 2 (female)
{profile_zip}	Demographic Profile	Postal Code
{profile_city}	Demographic Profile	City
{profile_state}	Demographic Profile	State: USPS abbreviation standard
{profile_country}	Demographic Profile	Country: Two-letter Country code using the ISO 3166-1-alpha-2 standard
{profile_search_last}	Search Profile	User's last search phrase
{profile_search_has}	Search Profile	1 (search phrase available for user) or 0 (if no search phrase available)
{geoip_zip}	Runtime Environment	Postal Code
{geoip_city}	Runtime Environment	City
{geoip_state}	Runtime Environment	State: USPS abbreviation standard
{geoip_country}	Runtime Environment	Country: Two-letter Country code using the ISO 3166-1-alpha-2 standard
{ip}	Runtime Environment	IP Address
{useragent}	Runtime Environment	Url-encoded User-Agent sent by the user's browser. For example: Mozilla/5.0%20%28Macintosh%3B%20U%3B%20Intel%20Mac%20OS%20X%3B%20en-US%3B%20rv%3A1.8.1.4%29%20Gecko/20070515%20Firefox/2.0.0.4
{referrer}	Runtime Environment	Referring URL For example: http%3A%2F%2Ffinance.yahoo.com%2Fq%3Fs%3Dgoog
{referrer_subdomain}	Runtime Environment	Referring Sub-domain For example: finance.yahoo.com
{q_<X>}	Runtime Environment	Query string parameter from the referring URL where <X> is the key name. For example: To get the query string parameter "s" from referring URL - http://finance.yahoo.com/q?s=goog - one would use the token {q_s}

Note: Future versions of TAPI will support additional tokens.

Example:

API Request:

This example requests TAPI for the user's age, gender, state (location), and ip address

```
http://services.lookery.com/targeting/  
?api_key=abcdefg1234567890  
&v=2  
&r_url=http%3A//ads.redirecttothisdomain.com/page/  
%3Fage%3D%7Bprofile_age%7D  
%26gender%3D%7Bprofile_gender%7D  
%26state%3D%7Bprofile_state%7D  
%26ipaddress%3D%7Bip%7D
```

Non-URLEncoded version of r_url from above example: (this URL must be URLEncoded when used with TAPI)

`http://ads.redirecttothisdomain.com/page/?age={profile_age}&gender={profile_gender}&state={profile_state}&ipaddress={ip}`

API Response:

TAPI will automatically lookup the user's Lookery cookie ID, replace requested tokens values, and re-redirect to the r_url URL

```
http://ads.redirecttothisdomain.com/page/  
?age=24  
&gender=2  
&state=CA  
&ipaddress=215.210.190.174
```

Error codes:

If there are any errors, or no information is available, an additional query string parameter (lk_err) is appended to the redirect URL.

Error codes returned by lk_err:

lk_err=	Description
invalid_api_version	Invalid API version
access_denied	API access denied
unknown_user	No information available for requested user
invalid_sig	Invalid signature (for authenticated TAPI requests)

In case r_url is not specified in the API request TAPI will return the following message:

```
No redirect URL was found.
```

Making TAPI requests:

Lookery supports two types of request methods:

1. Non-authenticated requests

Requests can be made anonymously. Though a valid API Key must be included in all requests to TAPI, no attempt is made to confirm that the request originated from the party responsible for the Lookery account associated with the TAPI Key. In other words, no authentication is necessary for the request to succeed.

Note: If you want to disable non-authenticated requests for your TAPI key, please contact your Lookery representative.

2. Authenticated requests

The identity of the sender is verified by confirming that the Secret Key used in the request signature is the Secret Key associated with the API Key included in the request.

To use a service that requires authenticated requests, a signature for each request must be calculated and included as the value of the **signature** parameter in requests to those services.

Authenticating Requests:

Requests to TAPI are authenticated by verifying information contained within the request. This verification is performed using the following information included in three URL parameters:

Parameter	Type	Required for Authenticated Requests	Description/Values
v	integer	Yes	API version identifier: must be set to 2 to use this version of TAPI.
api_key	string	Yes	The sender's TAPI account is identified by the API Key. The API Key is used to look up the Secret Key.
signature	string	Yes	Each request to a web service that requires authenticated requests must contain a valid request signature, or the request is rejected. A request signature is calculated using the Secret Key assigned to the developer's account by Lookery, which is a shared secret known only to Lookery and the developer.
timestamp	string	Yes	The date and time of when the request is created, represented as a string of the number of seconds elapsed since midnight Coordinated Universal Time (UTC) of January 1, 1970 , not counting leap seconds .

Calculating Request Signatures:

A request signature, an HMAC with an SHA-1 hash code, is calculated by concatenating the values of the "**LookeryTargeting2**" and **timestamp** parameters, in that order, and then calculating an RFC 2104-compliant HMAC, using the Secret Key as the "key." The computed HMAC value should be base64 encoded, and is passed as the value of the **signature** request parameter. For more information, please see <http://www.faqs.org/rfcs/rfc2104.html>.

Lookery

When a request is received, Lookery verifies the request signature by computing an HMAC value for the request and comparing the value of that HMAC with the value in the request. If the computed HMAC value matches the HMAC value in the request, the identity of the sender is verified and the request is accepted. If the values do not match, the request is rejected, and an error is returned.

URL Encoding

The result of the SHA-1 hash is binary data, therefore in order to send that as part of an API request, it should be Base64 encoded.

However, as the results of Base64 encoding can contain characters that are not legal in a URL, such as plus signs (+), slashes (/), and equal signs (=), results for REST requests should be URL encoded, as specified in RFC 1738, section 2.2.

Language Libraries

Lookery has made available custom language libraries to generate signed request URLs for TAPI requests:

Language	Library
JAVA	http://github.com/eliast/lookery-targeting-java/
Python	http://github.com/eliast/lookery-targeting-python/
PHP	http://github.com/eliast/lookery-targeting-php/

For example, if you would like to generate a signed request URL for TAPI in PHP all you have to do is the following:

```
<?php
require_once("LookeryTargeting.php");
$targeting = new LookeryTargeting("API_KEY", "SECRET_KEY");
$redirect = $targeting->redirect(
    "http://www.example.com/?a={profile\_yob}&g={profile\_gender}"
);
print($redirect . "\n");
?>
```

Alternative Method (JSON output):

If for example you are using a Flash client and would like to retrieve gender, age, yob, and profile location data directly versus following a redirect, you may use our JSON output by using the format=json parameter in the request URL.

Supported API parameters:

Parameter	Type	Required	Description/Values
v	integer	Yes	API version identifier: must be set to 2 to use this version of TAPI.
api_key	string	Yes	API key: all requests to TAPI must reference the unique api_key issued to you.
format	string	Yes	"format=json" tells the API to return profile data in JSON format vs. a URL re-direct
profile_id	string	No	To retrieve the profile for a specific user, specify the user's Lookery profile ID in the request.
signature	string	No	Each request to a web service that requires authenticated requests must contain a valid request signature, or the request is rejected. See the Authenticating Requests section of this document for details on how to sign your requests.
timestamp	string	No	The date and time of when the request is created, represented as a string of the number of seconds elapsed since midnight Coordinated Universal Time (UTC) of January 1, 1970 , not counting leap seconds .

Example 1: Retrieve profile for current user

API Request:

```
http://services.lookery.com/targeting
?api_key=abcdefg1234567890
&v=2
&format=json
```

API Response:

```
{
  "profile_id": "00000000000000000000000000000000",
  "created": "2008-10-14 03:01:42",
  "updated": "2009-01-13 22:07:06",
  "demographics": {
    "gender": 1,
    "age": 32,
    "yob": 1976,
    "location": {
      "zip": "02116",
      "city": "Boston",
      "state": "MA",
      "country": "US"
    }
  }
}
```



Example 2: Retrieve profile for specific user

API Request:

```
http://services.lookery.com/targeting
?api_key=abcdefg1234567890
&v=2
&format=json
&profile_id=fcb1237c011b1000b694e39eb45a1577
```

API Response:

```
{
  "profile_id": "fcb1237c011b1000b694e39eb45a1577",
  "created": "2008-10-14 03:01:42",
  "updated": "2009-01-13 22:07:06",
  "demographics": {
    "gender": 1,
    "age": 32,
    "yob": 1976,
    "location": {
      "zip": "02116",
      "city": "Boston",
      "state": "MA",
      "country": "US"
    }
  }
}
```

Note: If a profile is not found the response will be an empty JSON object.

If you have questions, please feel free to contact your main Lookery contact or email us at help@lookery.com