

True Knowledge[®]

API Guide

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1 Introduction

The True Knowledge API enables developers to utilize True Knowledge's functionality in third party applications.

True Knowledge provides the following API services: the *Direct Answer API* and the *Query API*.

The Direct Answer API exposes the natural language question answering feature of True Knowledge while the Query API allows users to bypass our natural language translation system and directly query the knowledge base using a simple query language.

API services are comprised of HTTP requests and XML responses.

2 Connecting to the API

This chapter details the syntax of the HTTP requests that are used to communicate with the True Knowledge API.

2.1 HTTP request syntax

The True Knowledge API is queried using HTTP GET requests. The syntax of these requests is:

```
https://<host>/<service_name>?<parameters>
```

- **<host>**
 - The IP address (or name) of the machine that hosts the service.
- **<service name>**
 - This is the name of the service. For example `direct_answer` or `query`.
- **<parameters>**
 - One or more of the HTTP request parameters. Note that individual parameters must be URL-encoded and separated with ampersands.

For example:

```
http://api.trueknowledge.com/direct_answer/?question=List+of+James+Bond+actors&api_account_id=[api_username]&api_password=[password]
```

2.2 API release versions

In the future we may release new versions of our API; we will always strive to make new versions backwards compatible with previous releases but in order to provide the option to our API users there is the following method of specifying which API version you want to use.

If you would like to use the most recent stable version then this is the syntax to use:

```
https://api.trueknowledge.com/<service_name>/stable?<parameters>
```

If no version is specified then 'stable' is the default option, so the above URL is the same as:

```
https://api.trueknowledge.com/<service_name>?<parameters>
```

If you want to use the latest (but not necessarily stable) version of the API this is the syntax to use:

```
https://api.trueknowledge.com/<service_name>/latest?<parameters>
```

If you want to use a specific version of the API this is the syntax to use:

```
https://api.trueknowledge.com/<service>/<version_number>?<parameters>
```

3 Direct Answer API

The Direct Answer API enables developers to utilize True Knowledge's natural language question answering technology in their own applications.

3.1 Required parameters

- `api_account_id=[api_username]`
- `password=[password]`
- `question=[url encoded question string]`
 - This is where you specify your question. Which should be URL encoded, e.g. `What%27s+the+time+in+Chicago%3F` is what you would set for the question "What's the time in Chicago?"

3.2 Optional parameters

- `timeout_ms=<milliseconds>`
 - If a response hasn't been returned within the number of milliseconds specified then the request will be halted and a timeout message returned.
- `structured_response=[1|0] (1 by default)`
 - If this is set to '0' only the 'text_result' and 'status' fields will be returned regardless of what parameters are set.
- `question_entities=[1|0] (1 by default)`
 - If we can identify an entity of interest in the question then we'll return that in addition to the answer.
 - E.g. the question "Who wrote the Da Vinci Code?" will return '[the da vinci code]' as well as the answer '[dan brown]'.
- `retranslate=[1|0] (0 by default)`
 - This will output True Knowledge's interpretation of what was asked and return it within the `<tk:retranslation>` tag.
- `object_metadata=wikipedia,official,image64,image128,image150,imageprofile (wikipedia, official and image150 set by default)`
 - This parameter gives the option of including useful metadata with your answer.
 - `wikipedia`
 - This will include the URL of the wikipedia page related to each result (if we know of one).
 - `official`
 - This will include the URL of the official website of each result (if we know of one), e.g. if the question is "Who wrote the Da Vinci Code?" then the response will include the URL: `http://www.danbrown.com/` associated with the [dan brown] entity.

- `image64`
 - Returns a thumbnail image associated with each result (if we have one) that is constrained to a bounding box of 64x64 pixels.
- `image128`
 - Returns a thumbnail image associated with each result (if we have one) that is constrained to a bounding box of 128x128 pixels.
- `image150`
 - Returns a thumbnail image associated with each result (if we have one) that is constrained to a bounding box of 150x150 pixels.
- `imageprofile`
 - Returns an image associated with each result (if we have one) that is constrained to a bounding box of 225 pixels wide x 600 pixels high.

3.3 Performance

For maximum performance set 'structured_response' to '0', this will only return the '<tk:status>' and '<tk:text_result>' fields. If you want your answer's entities but not your question's entities then set 'question_entities' to '0'. The fewer parameters you set the quicker you will receive your response. For example, setting 'object_metadata' to return the URL of every image size available will take slightly longer than just returning one image URL.

3.4 Direct Answer API 'hello world'

The Direct Answer API 'hello world' is sending a request for the time in Chicago and getting Chicago's current local time back along with a link to the Wikipedia page for Chicago and a thumbnail photo of the Chicago skyline.

3.4.1 HTTP request

```
https://api.trueknowledge.com/direct_answer?
question=What's+the+time+in+Chicago
&object_metadata=image128,wikipedia
&api_account_id=[username]
&api_password=[password]
```

3.4.2 XML response

```
<?xml version="1.0" encoding="UTF-8"?>
<tk:response
xmlns:tk=http://www.trueknowledge.com/ns/kengine
xmlns="http://www.w3.org/1999/xhtml" understood="true"
answered="true" type="direct_answer">
  <tk:status>completeness unknown</tk:status>
  <tk:text_result>March 16th 2009, 10:57:30
  CDT</tk:text_result>
  <tk:structured_result>
    <tk:result>
      <tk:object>
        <tk:id>[local timepoint: [timepoint:
        ["2009/3/16/10/57/30"]]; [central daylight
        time]]</tk:id>
      </tk:object>
    </tk:result>
    <tk:question_entities>
      <tk:object>
        <tk:id>[chicago]</tk:id>
        <tk:metadata
parameter="image128">http://www.truekn
nowledge.com/images/thumbs/128/128/2004
-07-
14_2600x1500_chicago_lake_skyline.jpg<
/tk:metadata>
        <tk:metadata
parameter="wikipedia">http://en.wikipe
dia.org/wiki/Chicago</tk:metadata>
      </tk:object>
    </tk:question_entities>
  </tk:structured_result>
  <tk:tk_question_url>http://www.trueknowledge.com/q/what
's_the_time_in_chicago</tk:tk_question_url>
</tk:response>
```

3.4.3 The XML explained

XML field	Description
<pre><tk:response xmlns:tk="http://www.trueknowledge .com/ns/kengine" xmlns="http://www.w3.org/1999/xhtm l" understood="true"</pre>	This is the container field for the entire direct answer API response. There are two attributes of interest in this XML tag and they are the 'understood' and 'answered' attributes. 'understood' means we have understood the question

<code>answered="true" type="direct_answer"></code>	and 'answered' means we have answered the question.
<code><tk:status></code>	This returns either 'yes', 'no', 'complete' or 'completeness unknown'. For 'yes/no' questions the response is self explanatory. If the question is not 'yes/no' the status field will return 'complete' if we know that we have the complete answer (e.g. "Who is a child of President Monroe" is status 'complete' because we know that we know about all of President Monroe's children), in most cases however the response will be 'completeness unknown' as the majority of the time we don't know if we have a 'complete' answer.
<code><tk:text_result></code>	This field contains the main text answer to the question.
<code><tk:structured_result></code>	This is the container field for the structured results (images, links, etc).
<code><tk:result></code>	This field contains the structured version of the answer.
<code><tk:question_entities></code>	This is the container field for question entities (entities that appeared in the question).
<code><tk:object></code>	This is a container field for each question entity.
<code><tk:id></code>	This field contains the True Knowledge ID of a question entity.
<code><tk:metadata parameter="image128"></code>	This field contains the URL of a thumbnail image of a question entity (in this case the thumbnail will have been scaled to fit in a 128x128 pixel bounding box).
<code><tk:metadata parameter="wikipedia"></code>	This field contains a question entity's Wikipedia page URL.
<code><tk:tk_question_url></code>	This is the permanent URL to the question and answer page on trueknowledge.com

4 Query API

The Query API allows automated systems to bypass our natural language translation system and directly query the knowledge base using a simple query language.

For more information on writing True Knowledge queries visit:

http://www.trueknowledge.com/docs/Query_language/

4.1 Required parameters

- `api_account_id=[api_username]`
- `password=[password]`
- `query_text=[url encoded true knowledge query]`
 - e.g.
`query+result%0A%5B%22+44+1223+323382%22%5D+%5Bcan+denote%5D+number%0Aresult+%5Bis+the+geographical+area+for+the+telephone+number%5D+number`

4.2 Optional parameters

- `mode=[establish|full]` (establish by default)
 - 'establish' responds with either 'yes' or 'no/unknown' for truth queries ('yes/no' questions), whereas 'full' responds with either 'yes', 'no', or 'unknown'. For most queries 'establish' will be sufficient.
- `translate_answers=[1|0]` (0 by default)
 - This will return the answer in a form that is easy for people to read as well as the machine readable format.

4.3 Query API 'hello world'

The QUERY API 'hello world' is sending a request for the geographical location that matches the telephone number "+44.1223.323382" and getting the response "[the cambridge telephone code area]".

4.3.1 HTTP request

```
https://api.trueknowledge.com/query?
query=query+obj%0A%5B%22+44+1223+323382%22%5D+%5Bcan+denote%5
D+number%0Aobj+%5Bis+the+geographical+area+for+the+telephone+
number%5D+number &api_account_id=[username]
&api_password=[password]
```

4.3.2 XML response

```
<?xml version="1.0" encoding="UTF-8"?>
<tk:response
xmlns:tk="http://www.trueknowledge.com/ns/kengine"
xmlns="http://www.w3.org/1999/xhtml" type="query">
  <tk:status>completeness unknown</tk:status>
  <tk:num_results>3</tk:num_results>
  <tk:result>
    <tk:variable name="obj">
      <tk:id>[the cambridge telephone code
area]</tk:id>
    </tk:variable>
  </tk:result>
  <tk:result>
    <tk:variable name="obj">
      <tk:id>[cambridgeshire]</tk:id>
    </tk:variable>
  </tk:result>
  <tk:result>
    <tk:variable name="obj">
      <tk:id>[the united kingdom and the channel
islands]</tk:id>
    </tk:variable>
  </tk:result>
</tk:response>
```

4.3.3 The XML explained

XML field	Description
<pre><tk:response xmlns:tk="http://www.trueknowledge .com/ns/kengine" xmlns="http://www.w3.org/1999/xhtm l" type="query"></pre>	tk:response is the container field for the entire query api response.
<pre><tk:status></pre>	<p>This returns either 'yes', 'no', 'complete' or 'completeness unknown'.</p> <p>For 'yes/no' questions the response is self explanatory.</p> <p>If the question is not 'yes/no' the status field will return 'complete' if we know that we have the complete answer (e.g. 'query x x [is a child of] [president james monroe]' is status 'complete' because we know that we know about all of President Monroe's children), in most cases however the response will be</p>

	'completeness unknown' as the majority of the time we don't know if we have a 'complete' answer.
<code><tk:num_results></code>	The number of results in the response.
<code><tk:result></code>	The container field for each result.
<code><tk:variable name="obj"></code>	This is the variable name that was queried for and contains the result for that variable.
<code><tk:id></code>	The True Knowledge ID of the entity.

5 Crediting True Knowledge

With a free API account, users of our API services must credit True Knowledge and place a prominent link back to our site: <http://www.trueknowledge.com/>. With the direct answer service the question URL returned in the `tk_question_url` tag should be used. If you wish to avoid this requirement, please contact us at partners@trueknowledge.com

If you want you can use this image as your credit link:



This image can be found here:

http://www.trueknowledge.com/downloads/powered_by_tk.png

For example your credit may look like this when using the direct answer service:

```
<a href="http://www.trueknowledge.com/q/what_is_the_capital_of_france" title="What
is the capital of France"></a>
```

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