



<https://tinyurl.com/bdczn474>
TIO

Open API Services

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Agenda EKON

- Get GET or POST calls
- What's important in REST Calls?
- The Cloud API
- Test Cases
- Tutorials and API Design

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Get a get first

- You can use the same access with all interactive mapping libraries, Python, Pascal, PHP and JavaScript SDKs, and even directly against the REST APIs.

```
procedure getAstronautAPI;  
  
var res: string; i:integer;  
  
begin  
  
with TWinApiDownload.create do begin  
  
Useragent:= 'Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 5.1');  
  
Url:= 'http://api.open-notify.org/astros.json';  
  
Download1(res);  
  
with TJSONObject.create4(res) do begin  
  
if getstring('message') = 'success' then  
  
for i:= 0 to getJSONArray('people').length-1 do  
  
writeln(itoa(i)+':'+getJSONArray('people').getJSONObject(i).getString('name'));
```

<http://www.softwareschule.ch/examples/translator.txt>

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Get a Post second..

```
function getPostDetectLang(feedstream: string): string;  
  
var Url,aAPI_KEY, source: string;  
  
jo, locate: TJSONObject;  
  
httpReq,hr: Olevariant;  
  
strm: TStringStream;  
  
begin  
  
httpReq:= CreateOleObject ('WinHttp.WinHttpRequest.5.1');  
  
// Open HTTPS POST connection optional API-Key as request.  
  
try  
  
hr:= httpReq.Open ('POST','https://libretranslate.pussthecat.org/detect', false);  
  
httpReq.setRequestheader ('user-agent', CUSERAGENT);  
  
httpReq.setRequestheader ('content-type', 'application/x-www-form-urlencoded');  
  
//httpReq.setRequestheader ('X-RapidAPI-Host', 'nlp-translation.p.rapidapi.com');  
  
if hr= S_OK then HttpReq.Send ('q='+HTTPEncode (feedstream));
```

Thread: Indy https post returns HTTP/1.0 500 Error - help
<https://forums.embarcadero.com/thread.jspa?threadID=112596>

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Important for API Calls

- Check HTTPS with `HttpGet()`
- String Stream or Memory Stream ?
- `UTF8ToString();` versus `HTTPEncode()`
- Check Null, empty Values, `HttpReq.Status`
- JSON Object as String
- Try except / finally pattern

demo: 1121_sentiment_api3_bbc_newsfeed4rec21.txt



API Checklist

Entity	Result	Explain
documentation	Examples in code	Documentation is important, if not essential.
simplicity	Url demo, snippet	without having to constantly dive in the docs
consistency	Better learning	similar functions have similar parameters
completeness	Less workarounds	open issues to ask for missing features.
flexibility	encodings	read and write binary and textual content
WSDL	Extract Interface	WSDL, XML is out - JSON is in
language	User Interface	Curl, JS, Webhook, -> https://api.geocod.io/
Marketplace	RapidAPI	API tools for testing: https://www.geocod.io
Types of API	Public API	type of API combines different data and service

Demo: <https://rapidapi.com/collection/popular-apis>

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Intro: Cloud API

- Static Open API (classic)
- An open API, also called public API, is an application programming interface made publicly available to software developers. Open APIs are published on the internet and shared freely, allowing the owner of a network-accessible service to give a universal access to consumers. <https://www.techtarget.com/searchapparchitecture/definition/open-API-public-API>

→ Demo:

<https://www.onworks.net/software/windows/app-maxbox>

It has been hosted in OnWorks in order to be run online in an easiest way from one of our free Operative Systems.

- 692_GEO_fservermain33_EKON20.pas
- 692_GEOimageserv_fClient33_EKON20.pas

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Use Case to Develop

```
Function GetSentimentStream7 (const S_API, pData: string): string;
var strm: TStringStream;
begin
  //Function HttpPostURL(const URL, URLData: string; const
  Data:TStream) :Boolean;
  strm:= TStringStream.create('');
  sr:='text='+HTTPEncode (pData)+CRLF;
  sr:= sr+'language=english';
  if HttpPostURL (S_API, sr, strm) then begin
    strm.Position:= 0;
    result:= strm.dataString;
  End;
  // todo try finally
  strm.free;
end;
```

http://www.softwareschule.ch/examples/1121_sentiment_api3_bbc_newsfeed4rec21.txt



Combine with Weather/Music

- Check Services as Backup (ex. Geolocation)
- Call Contracts in an account (Access tokens)
- Call Services First CSF (map comp or service)

```
MyPublicIP:= GetHTML('http://ipinfo.io/ip');

function GetGeoWeather(const location: string;
const UrlRestAPI: string): string;
```

Demo: 640_rest_weather_report2.txt /1151_rapid_api_proto.txt

<https://rapidapi.com/apidojo/api/shazam/>



Finally you can test with

- <https://rapidapi.com/collection/popular-apis>
- <https://rapidapi.com/blog/api-testing/>
- Check GET, POST or DELETE
- The OpenAPI (OAI) Specification
- Subspace Sampling of comparable data
- Test APIs return as response in JSON

<https://www.techtarget.com/searchapparchitecture/definition/OpenAPI-Specification>

demo: 393_QRCode3.TXT

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API Developer Links

- API Tutorial:

http://www.softwareschule.ch/download/maxbox_starter93.pdf

http://www.softwareschule.ch/download/maxbox_starter94.pdf

http://www.softwareschule.ch/download/maxbox_starter95.pdf

<https://github.com/maxkleiner/maXbox4/releases>

- Demos:

http://www.softwareschule.ch/examples/1121_sentiment_api3_bbc_newsfeed4rec21.txt

<http://www.softwareschule.ch/examples/translator.txt>

- Open Weather Map Tutor:

http://www.softwareschule.ch/download/maxbox_starter40.pdf

Guideline → <https://www.mapbox.com/api-documentation/>



the source is you!

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