

RESTful API

REST means a Representational State Transfer. REST is a way of communication between two systems used in web services.

RESTful API is an Application Programming Interface(API).It uses HTTP methods. An API is a code that allows two software programs to communicate with each other. RESTful API is also referred to as RESTful web service or REST API –based on REST technology .RESTful API is an Architectural style and approach to communications often used in web services development.

- REST applications can use SOAP (Simple Object Access Protocol).
- RESTful web services are stateless.
- REST based application is simple.
- REST services are easy to integrate with existing websites.

Today, REST API's are considered as "Backbone of the Internet"

RESTful Api Design and Architectural constraints

There are six REST architectural constraints.

1. Use of a Uniform Interface
2. Client Server based
3. Stateless operation
4. Layered system
5. RESTful resource caching
6. Code on demand

Creating a RESTful web service

A RESTful web service contains:

1. **An Endpoint URL:** It consists of domain,port and path.

Ex: <https://mydomain/user/port>

2. HTTP method: It can be used in any endpoint which maps to application CRUD (Create,Read,Update and Delete) operations.

- GET - returns the requested data
- POST - used to create a record
- PUT - updates an existing record
- PATCH - used to update the record partially
- DELETE - deletes an existing record

3.HTTP headers: Information such as cookies can be contained in the HTTP request header.

4.Body Data: Data is normally transmitted in HTTP format and the information is received in JSON format.

The Response

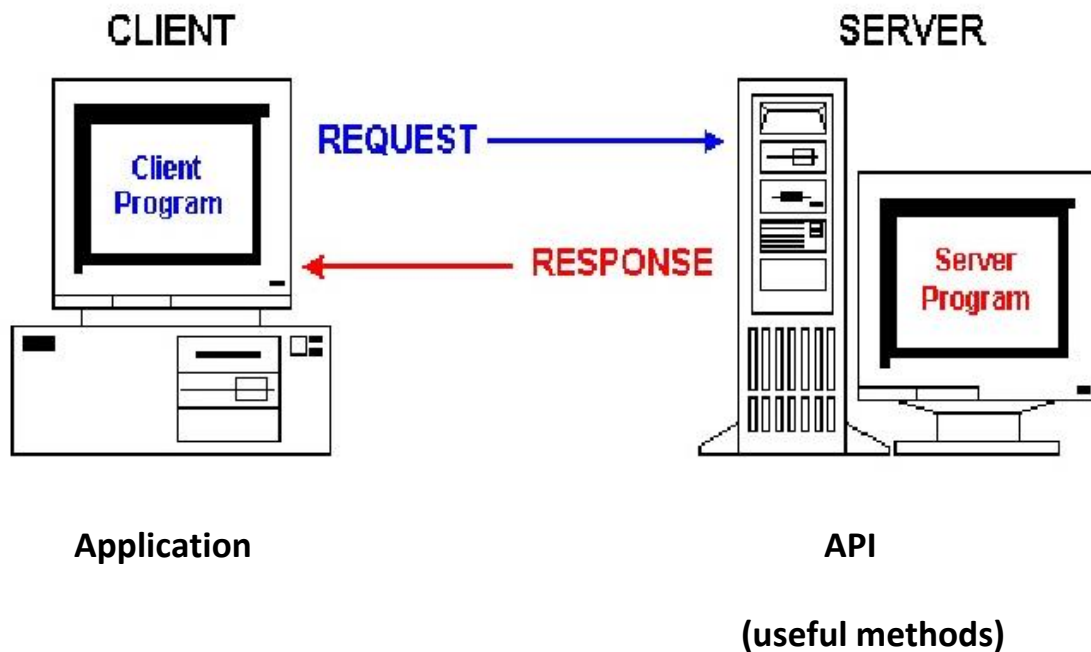
The response can be in anything such as a data, an image, an audio file, a video etc as requested by the client. The data responses are usually in JSON format. An appropriate status code must also be set in the response header.

HTTP Status Code

- 200 - OK (i.e) shows when the request is successful
- 201 - Created (i.e) shows when the record is created
- 400 - Bad Request (i.e) shows when there is a error
- 404 - Not Found
- 401 – Unauthorized

REST API example

Web Server and Browser Interaction



REQUEST

REST API + API method + parameters

Ex: <https://api.flowershop.com/services/rest/?method=flowershop.images.getinfo&id=25874>

REST API endpoint URL

API method

Parameters

RESPONSE

Representation of a resource.

It can be in XML, SOAP, REST, JSON, serialized PHP