REST APIs

Some Examples

Typical functionality

- CRUD
- Variants of listing
- Specialized functions:
 - create a new virtual machine
 - reboot an existing virtual machine
 - Turn off street lights on a given street
- Formal specifications help others to use

Example: Wikipedia

- Open API
- Search for pages
- History of page
- JSON output



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API:REST API

Other languages: English ■・polski ■・日本語 ■

This page is part of the MediaWiki REST API documentation.

The MediaWiki Core REST API lets you interact with MediaWiki by sending HTTP requests to unique URLs. You can use the API to build apps and scripts that search and display wiki pages, get media files, and explore page history.

Quickstart

Search English Wikipedia for an article about Earth
\$ curl "https://en.wikipedia.org/w/rest.php/v1/search/page?
q=earth&limit=1"

curl "https://en.wikipedia.org/w/rest.php/v1/search/page?q=earth&limit=1"

```
{"pages":[
{"id":9228,"key":"Earth","title":"Earth",
 "excerpt":"<span class=\"searchmatch\">Earth</span> is the third
planet from the Sun and the only astronomical object known to
harbor and support life. About 29.2% of <span
class=\"searchmatch\">Earth</span>'s surface is land consisting",
 "description": "Third planet from the Sun in the Solar System",
 "thumbnail": { "mimetype": "image/jpeg", "size": null, "width": 200,
"height": 200, "duration": null, "url": "//upload.wikimedia.org/wikipe
dia/commons/thumb/9/97/The_Earth_seen_from_Apollo_17.jpg/200px-Th
e_Earth_seen_from_Apollo_17.jpg"}
```

```
{"revisions":[
{"id":1004593520,"timestamp":"2021-02-03T11:11:30Z","minor":
false.
  "size":3508, "comment": "cut",
  "user":{"id":2927383,"name":"Izno"},"delta":28},
{"id":1004592788,"timestamp":"2021-02-03T11:03:39Z","minor":
false.
"size":3480, "comment": "cut"
```

Documentation

Schema [edit]

id required linteger	Page identifier
key required I string	Page title in URL-friendly format
title required string	Page title in reading-friendly format
excerpt required string	For search pages endpoint: A few lines giving a sample of page content with search terms highlighted with tags For autocomplete page title endpoint: Page title in reading-friendly format
description required string	Short summary of the page topic based on the corresponding entry on Wikidata or null if no entry exists

Detailed documentation

Search pages [edit]

Route/search/page?q=search termsContent typeapplication/jsonMethodGETReturnspages object containing array of search results

Searches wiki page titles and contents for the provided search terms, and returns matching pages.



When using this endpoint on your wiki

This endpoint uses the search engine configured in the \$wgSearchType configuration setting and returns results in the namespaces configured by \$wgNamespacesToBeSearchedDefault.

Examples [edit]

curl Python PHP JavaScript

Search English Wikipedia for up to 20 pages containing information about Jupiter \$ curl https://en.wikipedia.org/w/rest.php/v1/search/page?q=jupiter&limit=20

Parameters and Response Codes

Parameters [edit]

q required I query	Search terms
limit optional I query	Maximum number of search results to return, between 1 and 100. Default: 50

Responses [edit]

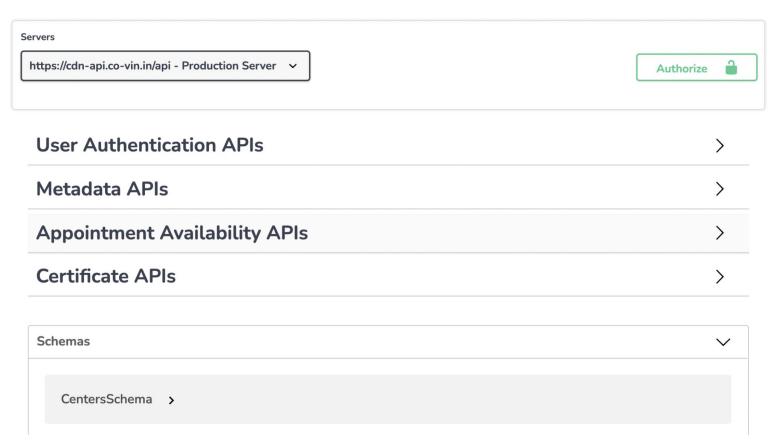
200	Success: Results found. Returns a pages object containing an array of search results.
200	Success: No results found. Returns a pages object containing an empty array.
400	Query parameter not set. Add q parameter.
400	Invalid limit requested. Set limit parameter to between 1 and 100.
500	Search error

Example: CoWin public APIs

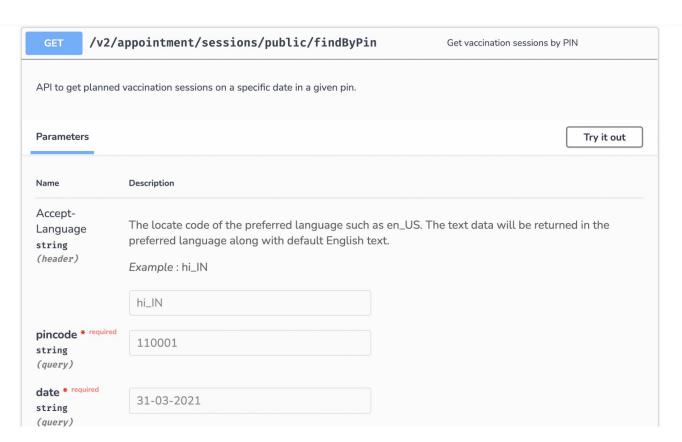
- For Co-Win app: vaccine registration and information
- Unauthenticated APIs:
 - o statewise search, districts etc.
- Authenticated APIs:
 - Book appointment

https://apisetu.gov.in/public/marketplace/api/cowin#/

General Information



Example: Availability API



```
curl -X GET
"https://cdn-api.co-vin.in/api/v2/appointment/sessions/public/findByPin" -H
"accept: application/json" -H "Accept-Language: en_US"
```

```
curl -X GET
"https://cdn-api.co-vin.in/api/v2/appointment/sessions/public/findByPin" -H
"accept: application/json" -H "Accept-Language: en_US"

{"errorCode":"USRRES0001", "error":"Input parameter missing"}
```

```
curl -X GET
"https://cdn-api.co-vin.in/api/v2/appointment/sessions/public/findByPin?pincod
e=600020&date=04-08-2021" -H "accept: application/json" -H "Accept-Language:
en_US"
```

```
curl -X GET
"https://cdn-api.co-vin.in/api/v2/appointment/sessions/public/findByPin?pincod
e=600020&date=04-08-2021" -H "accept: application/json" -H "Accept-Language:
en US"
           {"sessions":[
{"center_id":604384,
"name":"Fortis Malar Hospital",
"address":"Fortis Malar HospitalChennai TN.",
"state_name":"Tamil Nadu",
"district_name":"Chennai",
"block_name":"Adyar",
"pincode":600020,
"from":"13:30:00", "to":"15:30:00", "lat":12, "long":80, "fee_type":"Paid",
"session_id":"d40bd2c9-0f42-4948-b794-e3c31fa7c3cc",
"date":"04-08-2021"
            "date":"04-08-2021",
"available_capacity":85,
            "available_capacity_dose1":40,
"available_capacity_dose2":45,
"fee":"1250", . . .
```

```
curl -X GET
"https://cdn-api.co-vin.in/api/v2/registration/certificate/public/download?ben
eficiary_reference_id=1234567890123" -H "accept: application/json" -H
"Accept-Language: en_US" -H "User-Agent: Mozilla/5.0"
```

```
curl -X GET
"https://cdn-api.co-vin.in/api/v2/registration/certificate/public/download?ben
eficiary_reference_id=1234567890123" -H "accept: application/json" -H
"Accept-Language: en_US" -H "User-Agent: Mozilla/5.0"
```

Unauthenticated access!

Authentication

- Many APIs must be protected:
 - only meant for specific users
 - avoid abuse by overloading servers

How?

Authentication

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 - o only meant for specific users
 - avoid abuse by overloading servers

How?

Require a "token" that only a valid user can have

- Securely give token only when user logs in Google OAuth, Facebook etc.
- API Key: one time token that user downloads can be copied, so potentially less secure unless combined with other methods

Summary

- API examples: CoWin, Google cloud, Twitter, github, ...
- Authentication may be enforced or optional on some parts
- Allows third-party integrations
- Equivalent of a "remote procedure call" call a function on a remote system