

REDCap API Help Page

This page may be used for obtaining information for constructing or modifying REDCap API requests. Click any of the categories in the table below to expand its section.

What is an API?

The acronym "API" stands for "Application Programming Interface". An API is just a defined way for a program to accomplish a task, usually retrieving or modifying data. In REDCap's case, we provide an API method for both exporting and importing data in and out of REDCap (more functionality will come in the future). Once we expand the REDCap API's abilities to a more comprehensive feature set in the future, programmers may then use the REDCap API to make applications, websites, widgets, and other projects that interact with REDCap. Programs talk to the REDCap API over HTTP, the same protocol that your browser uses to visit and interact with web pages.

Basic Info:

Obtaining Tokens for API Requests

In order to use the REDCap API for a given REDCap project, you must first be given a token that is specific to your username for that particular project. Rather than using username/passwords, the REDCap API uses tokens as a means of secure authentication, in which a token must be included in every API request. If a token has already been created for you, you may [obtain your token here](#). If not, you will need to contact your REDCap administrator to have them create an API token for you (or reset an existing one) for a specified REDCap project. Please note that each user will have a different token for each REDCap project to which they have access. Thus, multiple tokens will be required for making API requests to multiple projects.

[Obtain my tokens](#)

HTTP Response Codes and Errors

The REDCap API attempts to return appropriate [HTTP status codes](#) for every request.

- **200 OK:** Success!
- **201 Created:** Data imported successfully.
- **400 Bad Request:** The request was invalid. An accompanying message will explain why.
- **401 Unauthorized:** API token was missing or incorrect.
- **403 Forbidden:** You do not have permissions to use the API.
- **404 Not Found:** The URI you requested is invalid or the resource does not exist.
- **406 Not Acceptable:** The data being imported was formatted incorrectly.
- **500 Internal Server Error:** The server encountered an error processing your request.
- **501 Not Implemented:** The requested method is not implemented.

API Examples

Although the REDCap API can be called from a variety of clients using any popular client-side or web development language that you are able to implement (e.g .NET, Python, PHP), we are providing examples here of the API data import, data export, and metadata export, which are written in PHP and can be downloaded using the link below. You may use these files to test the REDCap API if you have a server running PHP.

NOTE: You must modify the example PHP files contained therein so they correspond to the REDCap server's API URL and other values that you wish to set for your API request. These example files require the PHP cURL library to be installed on the web server on which these files are hosted.

[Download example file \(.zip\)](#)

Supported Actions:

Export Records

NOTE: This does not currently work for Parent/Child projects

URL

<https://redcap.vanderbilt.edu/api/>

Supported Request Methods

POST

Parameters (case sensitive)

Required

- **token**
the API token specific to your REDCap project and username (each token is unique to each user for each project) - See the section above for obtaining a token for a given project
- **content**
record
- **format**
csv, json, xml [default]
- **type:**
 - flat - output as one record per row [default]
 - eav - output as one data point per row
 - Non-longitudinal: Will have the fields - record*, field_name, value
 - Longitudinal: Will have the fields - record*, field_name, value, redcap_event_name

* Record refers to the study id or whatever the primary key is for the project

Optional

- **records**
an array of record names specifying specific records you wish to pull (by default, all records are pulled)
- **fields**
an array of field names specifying specific fields you wish to pull (by default, all fields are pulled)
- **forms**
an array of form names you wish to pull records for. If the form name has a space in it, replace the space with an underscore (by default, all records are pulled)
- **events**
an array of [unique event names](#) that you wish to pull records for - only for longitudinal projects
- **rawOrLabel**
raw [default], label, both - export the raw coded values or labels for the options of multiple choice fields
- **eventName**
label [default], unique - export the unique event name or the event label

Returns:

Data from the project in the format and type specified ordered by the record (primary key of project) and then by event id

EAV XML:

```
<?xml version="1.0" encoding="UTF-8" ?>
<records>
  <item>
    <record></record>
    <field_name></field_name>
    <value></value>
    <redcap_event_name></redcap_event_name>
  </item>
</records>
```

Flat XML:

```
<?xml version="1.0" encoding="UTF-8" ?>
<records>
  <item>
    each data point as an element
    ...
  </item>
```

```
</records>
```

Import Records

NOTE: This does not currently work for Parent/Child projects

URL

<https://redcap.vanderbilt.edu/api/>

Supported Request Methods

POST

Parameters (case sensitive)

Required

- **token**
the API token specific to your REDCap project and username (each token is unique to each user for each project) - See the section above for obtaining a token for a given project
 - **content**
record
 - **format**
csv, json, xml [default]
 - **type**
 - flat - input as one record per row [default]
 - eav - input as one data point per row
 - Non-longitudinal: Must have the fields - record*, field_name, value
 - Longitudinal: Must have the fields - record*, field_name, value, redcap_event_name**
- * Record refers to the study id or whatever the primary key is for the project
- ** Event name is the [unique name](#) for an event, not the event label
- **overwriteBehavior**
 - normal - blank/empty values will be ignored [default]
 - overwrite - blank/empty values are valid and will overwrite data
 - **data**
the formatted data to be imported

EAV XML:

```
<?xml version="1.0" encoding="UTF-8" ?>
<records>
  <item>
    <record></record>
    <field_name></field_name>
    <value></value>
    <redcap_event_name></redcap_event_name>
  </item>
</records>
```

Flat XML:

```
<?xml version="1.0" encoding="UTF-8" ?>
<records>
  <item>
    each data point as an element
    ...
```

```
</item>
</records>
```

Returns:

the number of records processed

Export Metadata (i.e. Data Dictionary)

NOTE: This does not currently work for Parent/Child projects

URL

<https://redcap.vanderbilt.edu/api/>

Supported Request Methods

POST

Parameters (case sensitive)

Required

- **token**
the API token specific to your REDCap project and username (each token is unique to each user for each project) - See the section above for obtaining a token for a given project
- **content**
metadata
- **format**
csv, json, xml [default]

Optional

- **fields**
an array of field names specifying specific fields you wish to pull (by default, all metadata is pulled)
- **forms**
an array of form names you wish to pull metadata for. If the form name has a space in it, replace the space with an underscore (by default, all metadata is pulled)

Returns:

Metadata from the project (i.e. Data Dictionary values) in the format specified ordered by the field order

Export a File

URL

<https://redcap.vanderbilt.edu/api/>

Supported Request Methods

POST

Parameters (case sensitive)

Required

- **token**
the API token specific to your REDCap project and username (each token is unique to each user for each project) - See the section above for obtaining a token for a given project
- **content**
file
- **action**
export
- **record**
the subject ID
- **field**
the name of the field that contains the file
- **event**
the [unique event name](#) - only for longitudinal projects

Returns:

the contents of the file

Import a File

URL

<https://redcap.vanderbilt.edu/api/>

Supported Request Methods

POST

Parameters (case sensitive)

Required

- **token**
the API token specific to your REDCap project and username (each token is unique to each user for each project) - See the section above for obtaining a token for a given project
- **content**
file
- **action**
import
- **record**
the subject ID
- **field**
the name of the field that contains the file
- **event**
the [unique event name](#) - only for longitudinal projects
- **file**
the contents of the file

Returns:

If successful, returns HTTP Status Code 201 and "success", otherwise returns error message

Delete a File

URL

<https://redcap.vanderbilt.edu/api/>

Supported Request Methods

POST

Parameters (case sensitive)

Required

- **token**
the API token specific to your REDCap project and username (each token is unique to each user for each project) - See the section above for obtaining a token for a given project
- **content**
file
- **action**
delete
- **record**
the subject ID
- **field**
the name of the field that contains the file
- **event**
the [unique event name](#) - only for longitudinal projects

Returns:

If successful, returns HTTP Status Code 200 and "success", otherwise returns error message