System Administration

Bulk Import API Instructions

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Basics

This application programming interface (API) allows developers at member organizations to send data that is needed by System Administration directly from their local systems. The data will be used to add user accounts, manage data such as courses and enrollments, and bring in user profile information. The API can save time by removing the need to log in to System Administration in order to import core data, thus decreasing manual tasks. It also provides a basic status response of `In Progress`, `Completed` or `Failed`. Once an API Import status has moved to either Completed or Failed, additional details are provided within System Administration's Data Transaction section, which include details on import and integration status as well downloadable CSV error reports.

An organization's API Developers can write applications to request that System Admin make a change to the data (such as add, edit, or delete) using defined methods and parameters listed in this document. The changes that are allowed and use cases for why an organization may want to use the API to make those changes are also included in this document.

The developer can choose whatever programming language they want to use to connect with System Admin. We will provide samples of various programming languages on request.

Things a System Admin API Developer Should Know

The System Admin API developer must be familiar with authenticating API requests using OAuth2 and Bearer Token (examples of obtaining and using access_tokens or bearer tokens). This developer must also be able to create a mechanism for extracting data from the local system (e.g. their institution's Student Information System (SIS)), transform it to the required, pre-defined format, and transmit it using the API information in this document. If your IT team doesn't have someone who can do this, you will use our manual CSV or ZIP data import to feed information into System Admin.

The intended use of this Import API is automation, to be run on a regular basis, so the developer will need to consider how they will access local resources capable of connecting to the System Admin API. This may involve scheduling the task or responding to local user operations and generating the API request, depending on the use case.

Getting Started

To help you get started, your Implementation Team will:

- Discuss the planned usages by the colleges, departments and programs and present recommendations on the information to be included in the API integration.
- It is suggested that system administrators first are comfortable using CSV imports, so that their core data files are properly formatted according to CSV Import Guidelines. This covers CSV Import Details and Dependencies, which covers the required and optional fields, acceptable data types and character limits, and contains examples of the data System Admin can process. The requirements for the API are the same as when using the CSV import tool in the admin account or creating the items manually in the admin interface.
- The next step will be to become familiar with bulk imports by aggregating all of their data CSV files into one ZIP, according to the reference article on bulk ZIP Imports.

Input file requirements

- Any and only expected fields outlined in the CSV Import Guidelines above may be provided via the API.
- It is not possible to create additional fields of data either manually or via API at this time.

- One may use any or all of the following import CSVs that are available in System Admin in the ZIP API. The import CSVs are listed below in the order they will be processed:
  - Organizations
  - Programs
  - Terms
  - Courses
  - Course Sections
  - People
  - Roles
  - Enrollments
  - Cohort Enrollments
  - Person Basic Attributes
  - Student Term Attributes
  - Program Curriculum

Endpoints Overview

The System Admin API offers two endpoints to allow administrators to send data into Watermark's System Administration platform from a variety of sources. These endpoints allow system administrators to manage its institution's data, such as organizations, courses, enrollments, people, and much more.

There are five basic steps split into two parts as outlined below:

API Setup

1. Activation – enabling your institution's account
2. Obtaining Client Credentials

API Usage

3. Authorization – use credentials to obtain an access_token
4. Import Data – send data to System Administration
5. Import Status – check status of sent data

Once an access_token is obtained (step 3), there are only two relevant endpoints, one to import your data, and another to obtain import status. Both are controlled by an authorization server.

- `POST /v1/import/data`
- `GET /v1/import/{import-id}/status`

API Setup

Activation

Before getting started, your institution's account must be enabled. This can be done by contacting your support representative. This is an important step, as credentials cannot be created until this feature is enabled.

Obtaining Client Credentials

After Activation has been completed, login to System Administration and navigate to Data Transactions (step 1 in the image below). Once activated, an API Management tab will be visible for you to obtain your client credentials (step 2 in the image below).

After navigating into the API Management tab, you can create a new set of client credentials by clicking on the "Create API Connection" button. Up to two sets of credentials can be created, names can be edited, and

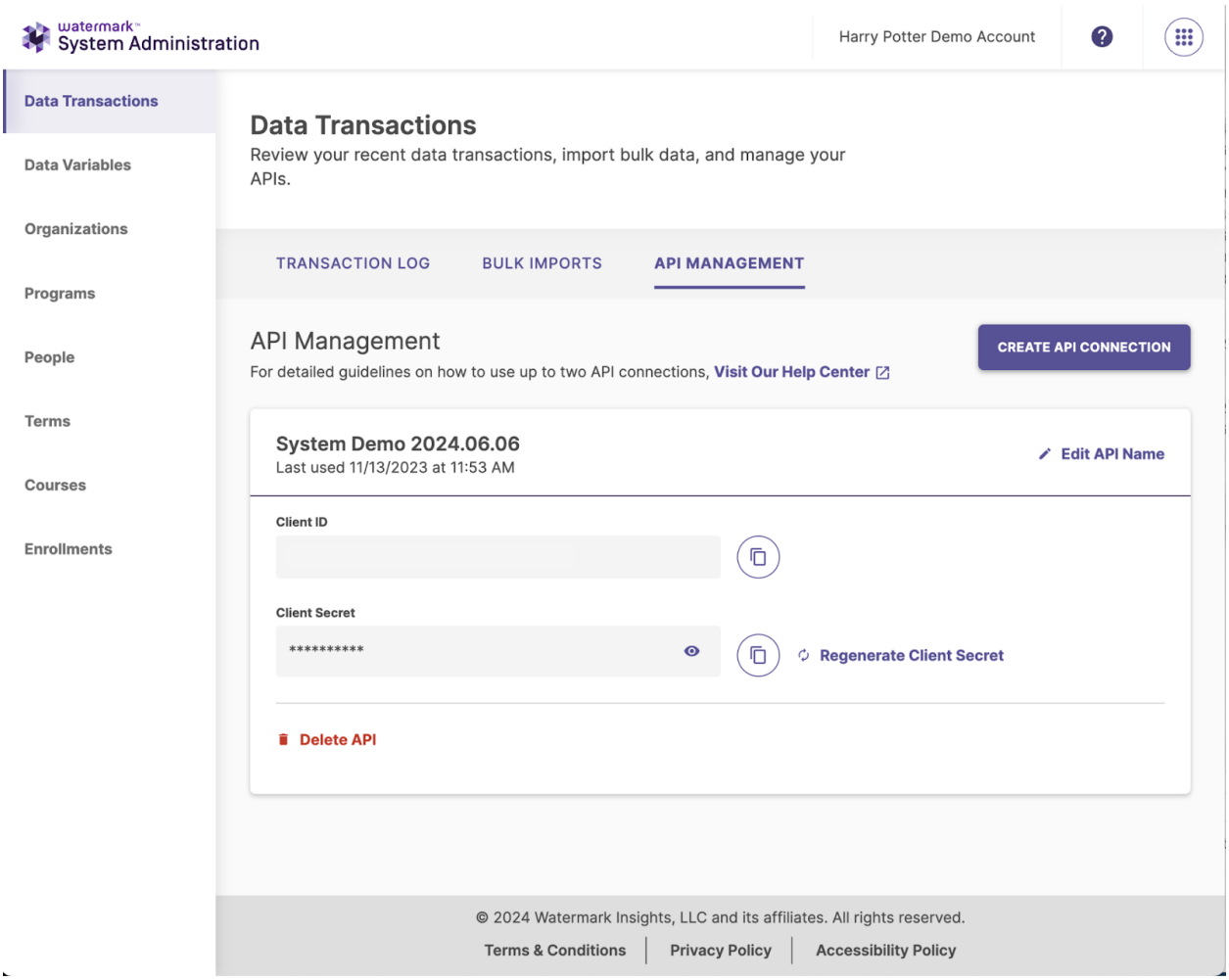

Figure 1: API Management Tab is visible once activated.

unused credentials can be removed at any time. The name of the credential does not impact authorization, and is only used as a recognizable name.

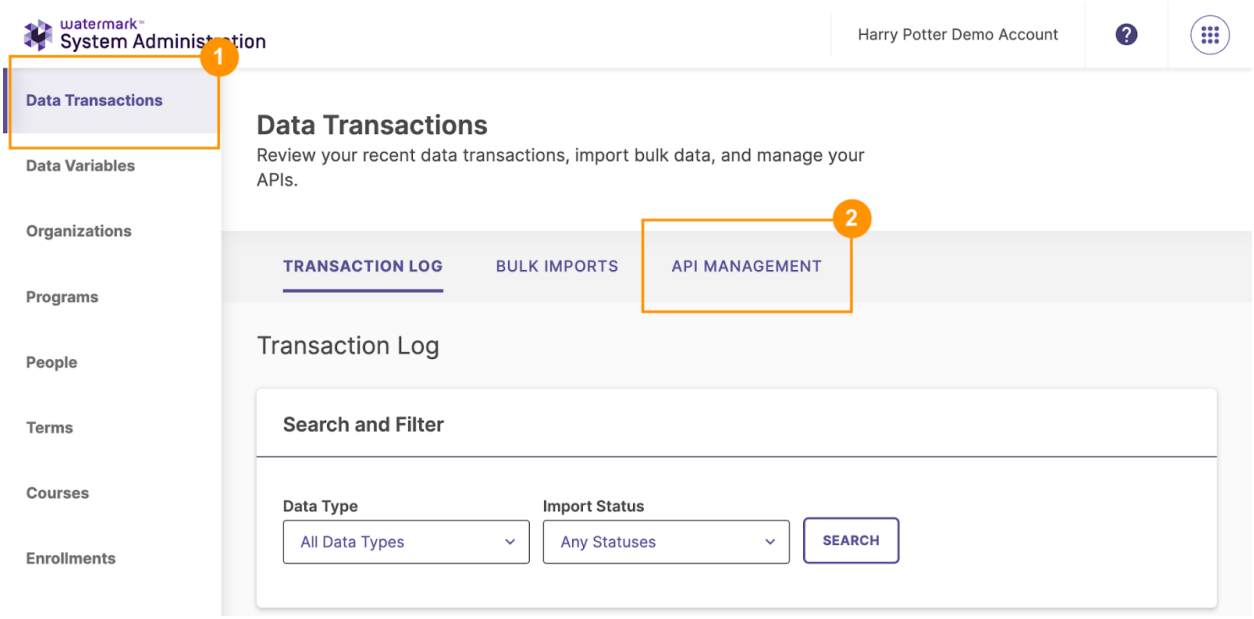

Figure 2: Obtain new credentials by clicking on the “Create API Connection” button.

Once a connection is created, you can use the client_id and client_secret in the next step - Authorization. Client credentials are considered secret information and should be treated as such.

API Usage

Authorization

The APIs are authorized by utilizing the OAuth2.0 Client Credentials grant type. Clients will retrieve an access token from the authorization server, and use that request to POST data to the API endpoints.

To generate an access token, use the `client_id` and `client_secret` that is created in System Administration.

Generate the access token (example shown via curl):

```
curl
  --request POST
  --url 'https://auth.watermarkinsights.com/oauth/token'
  --header 'content-type: application/x-www-form-urlencoded'
  --data "grant_type=client_credentials"
  --data "client_id=YOUR_CLIENT_ID"
  --data "client_secret=YOUR_CLIENT_SECRET"
  --data "audience=https://api.platform.watermarkinsights.com"
```

The request should be a `POST` request and have a `content-type` of `application/x-www-form-urlencoded`. Four parameters are also required: `grant_type`, `client_id`, `client_secret`, and `audience`, and should be placed in the body of the `POST` request (not as URL parameters). The values of `grant_type` should be `client_credentials` and `audience` should be `https://api.platform.watermarkinsights.com`.

Response:

```
{
  "access_token": "{access_token}",
  "scope": "access",
  "expires_in": 86400,
  "token_type": "Bearer"
}
```

Once you have obtained an access token, you can use it to make authorized requests to the APIs by including it in the Authorization header of the form `Bearer {access_token}`.

```
curl
  --request GET
  --url 'https://api.platform.watermarkinsights.com/v1/import/{import_id}/status'
  --header 'Authorization: Bearer {access_token}'
```

Important: An `access_token` is valid for a given amount of time. Once expired, a new one will need to be generated from the `client_id` and `client_secret`.

Import Data

The import data endpoint will receive CSV data in a ZIP compressed format. This endpoint takes multipart/form-data as the request body and returns an ID of the imported data.

Endpoint: `/v1/import/data`

Description: Imports zip file into System Administration

HTTP Method: POST

Request Body: The request body is specified with `Content-Type: multipart/form-data` with `filename` as the name of the zip file.

Response: The response is returned in a JSON format, with a single field, `import-id`, specifying a UUID that uniquely identifies the import.

```
{
  "import_id": <UUID that uniquely identifies this import>
}
```

For example:

```
{
   "import_id": "c2de0995-2143-468b-bd11-d88797755575"
}
```

Example

Request

```
curl
  --request POST
  --url 'https://api.platform.watermarkinsights.com/v1/import/data'
  --header 'Authorization: Bearer {access-token}'
  --form filename='@sample.zip'
```

Response

Status code 200

Body

```
{
   "import_id": "c2de0995-2143-468b-bd11-d88797755575"
}
```

Import Status

The status endpoint will return the imported data's status in a JSON format for the given import-id. The import-id is returned by the import data endpoint.

The import status is either In Progress, Completed or Failed. Once an API Import status has moved to either Completed or Failed, additional details are provided within System Administration's Data Transaction section, which include details on import and integration status as well downloadable CSV error reports.

Endpoint: `/v1/import/{import-id}/status`

Description: Get the status of the import using import-id.

HTTP Method: GET

Request Path: The request contains a path variable import-id. This import-id is the UUID returned from the /v1/import/data endpoints.

For example, requesting status of the UUID in the data import example:

`/v1/import/c2de0995-2143-468b-bd11-d88797755575/status`

Response: The response is returned in a JSON format and is described below:

```
{
  "import_id": <UUID received from import data endpoint>,
  "status": <status of the import>,
  "file_name": <name of the zip file that was imported>,
  "time_received": <time the zip file was received by system admin>,
  "status_message": <status message of import including error messages>
}
```

The status field can take the following values: In Progress, Completed, or Failed.

For example:

```
{
  "import_id": "c2de0995-2143-468b-bd11-d88797755575",
  "status": "In Progress",
  "file_name": "terms-courses.zip",
  "time_received": "2024-03-22 17:19:09.46142",
  "status_message": ""
}
```

Example

Request

```
curl
  --request GET
  --url 'https://api.platform.watermarkinsights.com/v1/import/{import-id}/status
  --header 'Authorization: Bearer {access_token}'
```

Response

Status code 200

Body

```
{
  "import_id": "c2de0995-2143-468b-bd11-d88797755575",
  "status": "In Progress",
  "file_name": "terms-courses.zip",
  "time_received": "2024-03-22 17:19:09.46142",
  "status_message": ""
}
```


Server Responses, Errors and Result Logs

Requests will have an immediate response within your institution's System Administration application in Data Transactions > Bulk Imports that has basic information about if the request was fulfilled, in addition to further information, like the details of the changes made as a result of the request.

Successful Requests

A successful POST request will return an HTTP (status code 200 OK) and response information in JSON format. This is a response from the API that the connection was established, the request was received, and that it was processed as expected. The request above would result in an HTTP status 200 OK and the response body in JSON.

Error Responses and Likely Causes

While not exhaustive, some common error responses and possible causes are listed below.

- HTTP 400 response - Bad Request.
- HTTP 401 response - Unauthorized
- HTTP Response - 1xx, 5xx - Contact support.

Troubleshooting

I cannot see the API Management tab in Data Transactions.

Make sure you have requested access to this feature. This can be done by requesting access from your support representative.

I have a problem with Authorization.

Common problems include copying the `client_id` or `client_secret` incorrectly, swapping them, or misspelling the Audience parameter. All parameters need to be exact, and capitalization matters.

I have a problem with the POST /v1/import/data endpoint.

Depending on the status code, you may have issues with authorization or the parameters sent in.

Authorization issues normally result in 401 HTTP status codes, make sure only the `access_token` was provided (not the entire result of the Authorization call), it was copied properly, or has not expired.

Invalid parameters normally result in 400 HTTP status codes. Please check the parameters provided or that the file exists.

I have a problem with GET /v1/import/{import_id}/status endpoint.

Depending on the status code, you may have issues with authorization or an invalid `import_id`.

Authorization issues normally result in 401 HTTP status codes, make sure only the `access_token` was provided (not the entire result of the Authorization call), it was copied properly, or has not expired.

An invalid `import_id` could be the result of a UUID not coming from the POST /v1/import/data endpoint.

My data import succeeded, where can I see my statuses?

Once data has been imported, it needs to be sent to all integrated products. You can see the status of product integration in System Administration by going to Data Transactions | Bulk Imports. The `import_id` received from the `POST /v1/import/data` call is the same as the values in Bulk Import.

My call to /v1/import/data succeeded, but the status endpoint returned "Failed". What do I do next?

This means that one of the files in the supplied ZIP file has an issue. This could be that no files were recognized, one file has a validation error, or other standard CSV file issue. Please log in to System Administration, navigate to Data Transactions | Bulk Imports, and find your data import. Once found, please download the error report associated with the specific file that had issues.

My zip file had multiple CSV files of the same type, why weren't both imported?

There should not be more than one valid and one invalid filetype.csv in a ZIP.

A CSV file was missed or skipped during import of my ZIP, what happened? Or why wasn't a CSV file processed?

CSV files are matched based on their CSV header (or first line of the file). If any of the column headers are misspelled or columns are missing from the file, System Administration cannot identify the type of file, and thus will not process it. The names of the CSV files do not matter, only the headers.

If you see that one of the CSV files was missed or skipped during import. Please take that individual CSV file and import it directly into System Administration via the UI. An error report should be produced detailing what issues are present and preventing import inside a ZIP file.

I cannot connect to your APIs.

If you are noticing connection timeouts, *i.e.* no responses or status codes that are 0. You can try to connect to the authentication server and/or the API server from the host that runs the scripts. Attempting to load the following URLs will give an indiciation if something is blocking your requests.

- https://auth.watermarkinsights.com/unknown –> should return 404 / Not found, but it will tell you if the host is reachable
- https://api.platform.watermarkinsights.com/unknown –> should be 404 / Not found, again. this tells you if the host is reachable

You can load these from a web browser or via curl, but the important part is to load them ideally from the same server that the scripts are being run, or from a similar system in the same network. You should see a 404 response if connections can be made.

I am having trouble, what information do you need to help?

- What language are you using?
- What endpoint are you calling?
- What does the request look like?

  - What are the request headers, parameters, request body, etc.?
  - What http status code are you receiving?
  - What response are you receiving?
  - Do you have a log of the request?
- When was the request made (date and time or just date)?

Sample Code

Sample code is available to help with getting started.

- curl
- java
- groovy
- php
- postman
- powershell
- python

Please connect with your Watermark representative to obtain sample code.

Next Steps

Connect with your Watermark Customer Success Manager to discuss using this API Import. Then, Watermark will work with you to test the API connection in either your Production account or a test account.

Document Version History

Date	Description
2025.07.25	Adjusted order processing and added a FAQ question
2025.05.23	Added to the Authorization request description
2025.04.17	Added questions to FAQ, updated status variables
2025.02.13	Added additional input file requirements
2024.11.20	Added groovy sample code
2024.11.08	Added updates to /status endpoint
2024.11.01	Added php and powershell sample code
2024.09.20	Formatting Updates
2024.06.06	Initial Version