blackbaud®

Getting Started with Blackbaud Award Management™ Student Record Imports

Introduction

One of the key features of Blackbaud Award Management is the ability to mass-import student records from your campus or institution, which allows our system to streamline the process of checking students' eligibility for awards.

What we call an import file is probably an extract for you – you will be extracting student records from your SIS database and assembling that information into a table. Each row stands for one student, and each column stands for one field. See below for an example:

A Simple Example Import File:

UID	EMAIL_ADDRESS	CLASSIFICATION	HOURS_ENROLLED	GPA	SAT	ACT	GENDER
900100101	jsmith@university.edu	Freshman	12	3	1000	22	F
900210201	kevin.bresser@university.edu	Sophomore	15	3.2	1150	24	M
900320010	brandon.phipps@university.edu	Junior	12	3.1	1050	21	M
900430014	joe.price@university.edu	Senior	9	2.5	900	18	M

Please note: this information must be sent in the form of a comma-separated value file (CSV). So, while the extract can be conceptualized as a table like the above, and Excel will parse it as such, the actual contents of this extract would look like this:

```
uid,email_address,classification,hours_enrolled,gpa,sat,act,gender
900100101,jsmith@university.edu,Freshman,12,3,1000,22,F
900210201,kevin.bresser@university.edu,Sophomore,15,3.2,1150,24,M
900320010,brandon.phipps@university.edu,Junior,12,3.1,1050,21,M
900430014,joe.price@university.edu,Senior,9,2.5,900,18,M
```

This should give a rough idea of what needs to be generated in order to import student records into Blackbaud Award Management. The rest of this document will get into the technical details of what our system needs.

What Should My Import Look Like?

(formatting, layout, etc.)

General requirements:

- Must be a comma-separated values file (CSV)

- Must be encoded in UTF-8

- Actual file extension can be .csv or .txt (or compressed – see last bullet below)

- A maximum of 150 columns

- File name can be anything you like

- One student per row: students should not appear more than once in the file

- The first row must contain column headers, as in the example given on the

- first page [note: column order is not important, but your column headers need to remain consistent]

- If larger than 20mb, please compress file in .gzip format (do not pre-archive as .tar)

Two columns are always required:

Your file *must* contain at least two specific columns: one for a student's email address, and one for their permanent unique identifier (UID). Usually a UID will be some form of an ID number or campus username*. It is critical that the UID be permanent, unique, and immutable*. Emails, on the other hand, can change over time if they need to.

For more specifics on file format and structure, please **see Other Formatting Considerations** below.

Note: if you are planning to use SSO authentication with Blackbaud Award Management, your chosen UID in the import file must match the UID being passed via SSO authentication. This is how we properly identify students and match them to their imported records.

What Should My Import Contain?
(fields, population, etc.)

Determining what exactly the file will contain is a three-part question. Your Blackbaud Award Management project manager and the scholarship or financial aid staff on your campus will help answer each of these concerns:

1. **Which fields should be extracted?**

   This question maps to: *what columns should go in the file?* Usually the project lead(s) at your institution will determine which fields are desired. You can also use our Samples section as a starting point. If you have any issue, or a desired field is inaccessible, please notify the team, including your Blackbaud contact. *Also note:* more columns can always be added later

2. **Which students should be extracted?**

   Your project lead(s) will need to determine which enrollment or registration status(es) are required for a student to "make it" into the import file. A simple and helpful question to ask here is: *which students are eligible to be considered for scholarships?* Ultimately the answer to this question will determine which and how many rows show up in your file.

3. **Which term should be extracted?**

   Many campuses and institutions store values for multiple years or terms within their SIS - e.g. *current term vs next term,* etc. Your team will need to determine which term values are needed for scholarship eligibility purposes. Ultimately this will determine what values show up in the cells of your extract. Note: you *can* import multiple column "pairs" to show current and next term values.

Other Formatting Considerations

Multi-Value Fields

Your database may have certain field groups that account for double- or triple-values – for instance, you might have separate fields for *Major1, Major 2, Major 3*, and so on. **In these cases, we recommend merging these groups into a single column.** To do this, simply set up your extract to concatenate multiple values together into a single cell, delimited by a separator. Usually this separator is a pipe (|) but you can also use a colon (:) or semicolon (;). Note you must notify Blackbaud of the separator that you choose to use.

Here's an example of how this comes out in the CSV:

```
UID,email,FirstName,LastName,Major,GPA
MT123,mt123@college.edu,Matthew,Thomas,Engineering|Biology,3.5
```

Merging fields in this way will make setup within Blackbaud Award Management much easier for your administrative team.

Date Fields

Our default date format is: MM/DD/YYYY

However, if desired we can switch the default pattern to any of the following. You <u>must</u> notify us if you want to use one of these alternate patterns: MM/DD/YYYY, MM-DD-YYYY, DD/MM/YYYY, DDMM/YYYY, YYYY/MM/DD, YYYY/DD/MM

Alternative Delimiters

By definition a CSV is a comma-separated value file. If this is a problem for any reason, you can specify an alternative delimiter – your other options are a pipe (|), a colon (:), or a semicolon (;). You must notify us if you intend to use an alternative delimiter.

Use Double Quotes to Avoid Common Errors with Quotes and Commas

Note: for complete details on formatting, we use <u>this CSV spec</u> for parsing your files.

If it's possible that your cell values will contain quotes or commas, we strongly recommend setting up your extract as a double-quote CSV. This means wrapping all cell values inside sets of double quotes (") to avoid parsing errors. For more detail, consider the following examples:

1. Cell value contains a comma

   Consider the value for this student's last name and suffix – this is a single value, but it will be parsed incorrectly because the comma is understood as a cell delimiter:

   ```
   FirstName,LastName,Major,GPA,Street,City,State
   Matthew,Thomas, Jr.,Mechanical Engineering,3.8
   ```

   We can solve this by changing the file to a double-quotes CSV. The corrected version:

   ```
   FirstName,LastName,Major,GPA,Street,City,State
   "Matthew","Thomas, Jr.","Mechanical Engineering","3.8"
   ```

2. Cell value contains double quotes

   A different error can arise when your cell values themselves contain double quotes, like so:

   ```
   FirstName,LastName,Street,City,State
   "Matthew","Thomas Jr.","1609 Shoal Creek Apt. "D"","Austin,TX"
   ```

Normally a pair of quotes delimits a whole cell's value, but not here, thus the error. This gets fixed by either escaping the double quotes with more double quotes, or simply dis-allowing double quotes and converting them to apostrophes:

Escaping with another pair of double quotes:

```
"Matthew","Thomas, Jr.","1609 Shoal Creek Apt. ""D""","Austin","TX"
```

Or, converting to apostrophes:

```
"Matthew","Thomas, Jr.","1609 Shoal Creek Apt. 'D'","Austin","TX"
```

How to Load Your First Import

When your first completed extract file is ready for import into Blackbaud Award Management, you can go ahead and submit the file! If you are set up as an IT Administrator in Blackbaud Award Management, then you will arrive at the **User Import Manual Upload** page as soon as you sign in. Just use the file selector at the top of the page to submit your CSV. (note: If you are a System Administrator navigate to Site >> Settings >> User Imports, which is the same screen.)

If you need any more detail on this step, see [documentation here.](#)

Note: Please do not email your file to your Blackbaud contact – student records are sensitive, and email is not a secure medium.

Also note: your first file will appear to fail due to the two critical columns being not yet mapped. We need this first load for Blackbaud to be "aware" of your columns in the first place. Simply contact your Blackbaud project manager; he/she will take care of processing your first file and will get back to you with feedback or any issues requiring amendment.

Once your file is processed for the first time, subsequent uploads can be submitted at your discretion through the same User Imports page within Blackbaud Award Management. There is no need to confirm readiness from your project manager for subsequent uploads. Great work!

After Your First Import – Sending via the Blackbaud Award Management User Import API

Once your first file is loaded and your Blackbaud contact gives you the thumbs up, you can move on to loading files via a command-line or terminal app, instead of using the Blackbaud Award Management UI. Once you get the basics down, we usually recommend a recurring load that runs every night through our API.

Using the Blackbaud Award Management User Import API

Sending your extract file via CURL or other terminal apps

Introduction

This guide is intended as the next step after you've created your first extract file and uploaded it manually into Blackbaud Award Management. If you haven't done that yet, please refer to the companion document Creating Your First User Import File. Once you've produced a user import file that loads correctly into Blackbaud via manual upload, you can move on to submitting the file via our web API. This method can then be easily scripted to run on a recurring basis, enabling Blackbaud Award Management to always have up-to-date records.

User Import API – Basic Info

Your Blackbaud Award Management site has a permanent URL which can accept your import file using an HTTPS POST request. If the request is well-formed, and your supporting components are up to date (see below) your import file will be sent over to the Blackbaud Award Management site and processed immediately.

Speaking broadly, the terminal command to run your transfer can look as simple as this: [your app + arguments] [local path to import file] [AcademicWorks URL + token]

For running this transfer, we recommend using cURL, which is a cross-platform terminal utility that is open source and widely used. Using cURL will also make the process easy because all our instructions and support resources are geared around it. However, if cURL is not suitable for your scenario, you may utilize a different scripting or programming language, at your discretion.

Setting Up Your First Transfer With cURL

As noted, our recommended utility for performing the transfer is cURL, and we have our resources set up to make using cURL quite easy. If you're planning to use another utility or language for your transfer, you can still make use of the concepts outlined below.

Before You Begin

Please be sure the following conditions are met on your machine:

1. We require TLS 1.2 for our transfer, so you must have cURL version 7.34 or higher

2. Also for TLS 1.2 support, you must have OpenSSL version 1.0.1 or higher

3. You **must** have administrative access to the User Imports page in your Blackbaud Award Management site

4. You should have your user import CSV on hand (although you can use blank TXT file for testing).

Running your transfer is a simple two-step process:

> #1 Enter details into our command builder tool

> #2 Get your ready-made command and run it

Step 1: Enter Config Details Into cURL Command Builder

We have a simple "wizard" in Blackbaud Award Management, which simplifies the process of writing a well-formed command that can be run directly through cURL.

To access the "wizard" and get your command to run, follow these steps:

1. Log into your Blackbaud Award Management site

2. Navigate to the Import / Export Tools page under the Settings menu [Note: if you are a System Administrator, this is found under the Site >> Settings menu]

3. Scroll down to Import cURL Command Builder

4. Enter your specific details into the fields highlighted below:

Step 2: Get and Run Your Command

Once you've entered your details, scroll down to Your cURL Commands – you'll see that we have automatically produced several terminal commands which already incorporate your configuration details.

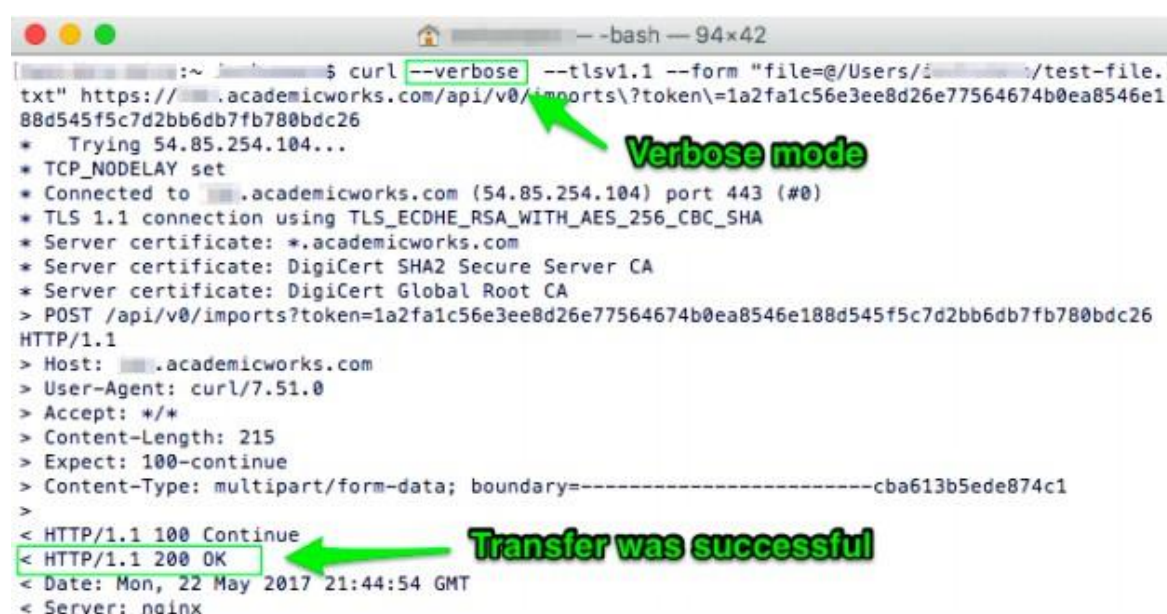From here, all you need to do is select the full contents of the first box:

This command can be pasted directly into your terminal app, and then run immediately!

Recommendations and Troubleshooting

Use Verbose Mode

The first time you run your transfer through cURL, we recommend enabling verbose mode. This can be done by simply adding the --verbose argument or checking the box for Use Verbose on the command builder page.

Enabling verbose mode gives you a full look at the connection, transfer, and results. Here's an example of what you want to see:
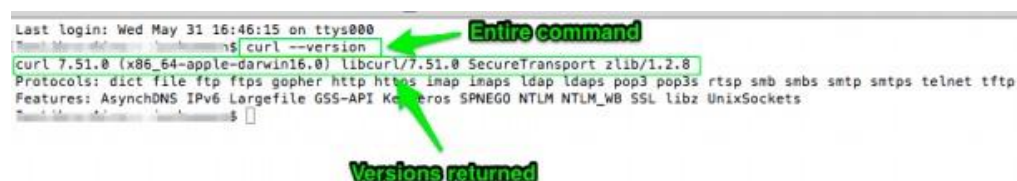

Use --version to Check Components

If you're unsure about the versions of cURL or any underlying components, simply run curl with – version to check:

Troubleshooting and Common Problems

1. OpenSSL or cURL are out of date

   The most common problems we see are a result of out-of-date components. Please confirm all components support TLS 1.2. For reference, see the version requirements under Before You Begin, on page 2 of this document.

2. Transfer is successful, but file did not load (or did not show yet)

   If you receive the HTTP 200 OK response from cURL, then your transfer was successful. However, if your file is large then Blackbaud may still be parsing the data in it. It's also possible the parsing will fail for some reason, but this will be due to the file itself, not to cURL. If you have any questions here, reach out to your Blackbaud contact for assistance.

3. Do you need to whitelist our IPs?

   Some institutions may require a specific set of IPs be added to your firewall's whitelist for outbound traffic. If that is the case for you, here are the IPs to add: 54.85.254.104, 54.88.71.228, 54.173.102.180, 54.174.140.185, 54.175.197.190, 54.175.217.111, 65.36.85.58

   If your institution is located in Canada then you should use these IPs instead: 52.60.89.218, 52.60.115.26, 52.60.116.105, 52.60.48.38, 52.60.76.141, 52.60.152.112, 52.60.115.227, 52.60.68.223, 65.36.85.58

4. Certificate issues Please note that if you are running cURL on a Windows machine then you must install a certificate file. Get one from the cURL website here. On any machine (Unix, Linux, Windows) you must have appropriate access privileges in order to utilize your SSL components (e.g. OpenSSL).

5. Other problems? Let us know! The issues above account for >90% of issues we see, but occasionally outliers do pop up.

Final Steps

Once your cURL transfer is successful, you can set it up to run on a nightly basis. This is not strictly required in all cases, but we usually recommend it. Setting up a nightly load will ensure Blackbaud Award Management has the most up-to-date information at all times.

We don't assist with this step of the setup process, but you can use whatever script or programming language you wish. Please set up your transfers to run at night between the hours of 10pm and 4am Central Time.

Technical Addendum – Blackbaud Award Management User Imports
Further technical details and background information.

Introduction

The prior two documents in this package are written in a "how-to" style, and therefore certain precise details were omitted. This document is available for further context and detail on all aspects of the Blackbaud Award Management user import process.

General Description of Blackbaud Award Management User Imports

Each customer has its own dedicated storage location within the Blackbaud Award Management infrastructure. This location is analogous to a dedicated FTP or file folder in traditional server configurations. Customers are provided a permanent URL that accepts a CSV (comma-separated values) file. The Blackbaud Award Management import process is implemented as an HTTPS REST API. The file is transmitted over HTTPS with TLS encryption using a POST request. Application layer security is ensured with basic authentication. Our customers' basic authentication credentials are secure because they are transmitted over the same TLS connection as the file.

Processing Upon Upload

Once a customer's file has been successfully persisted to its dedicated location, it is processed by background jobs, which only accept external access via secure shell (SSH) using public/private key encryption to a non-root Linux user. These keys are also stored in redundant encrypted repositories to which only Blackbaud management and senior staff have access.

Long-term Storage and Recovery

For archival and disaster recovery purposes, these files will be saved for a period of time. Upon termination of your contract, these files will be destroyed. As with all data in our system, an export of this data will be made available to our customers.