

PBISApps DataLink Technical Guidance: Student and Staff Records Only

An Integration Solution for School Districts, Service Districts, Schools, and other Educational Organizations

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Introduction

PBISApps DataLink is an integration solution for exchanging data between the SWIS™ Suite and other data sources, primarily student information systems and district and state data management systems (SIS). Using DataLink eliminates the need for double entry while protecting data quality.

The SWIS Suite uses a single enterprise database, referred to in this document as the “PBISApps database”. **Organizations using DataLink will enter all student and staff in their SIS. Data will flow, at regularly scheduled times, from the SIS to the PBISApps database for use in SWIS Suite applications.**

This document provides technical guidance on the use of DataLink to import staff and students from any information system to the SWIS Suite.

DataLink Accounts

There are two types of organizations that typically use DataLink – districts or agencies working on behalf of districts. To set up your DataLink accounts, complete the Agency Profile Form (See Appendix A) and submit it to support@pbisapps.org. You will receive a notification email when your account has been activated.

Agency Profile Form

This form indicates contact information for the uploading organization – mailing address, phone number, and people to contact related to DataLink integration.

- **Organization Name:** The name of the organization who will upload data on behalf of SWIS schools.
- **Organizational Account Username:** The username credential used to upload data. Both organizational username and password are managed in Participation Manager.
- **Technical Contact Name:** This person completes the technical work to export data files and upload data to SWIS. The Technical Contact trouble-shoots errors and plays an active role in the integration.
- **Facilitator Contact:** The certified facilitator working with the SWIS schools. If there is more than one facilitator working with schools, provide the name of the facilitator taking the most active role in problem solving questions related to DataLink integration.
- **Districts to Include in Account:** The districts where the schools are located. If there is just one school, list the one. If there are many, list them each individually.

Participation Manager

Integrating SIS data with SWIS requires two authorizations. The district and each school must agree to send their data. These authorizations happen in an online application called Participation Manager. Once an uploader account is activated, the technical contact listed on the Agency Profile will receive an email notifying them of next steps to setting up their information in Participation Manager. For more information about that process, please see the DataLink Uploader Manual on the PBISApps homepage.

Accessing and Using DataLink

DataLink provides a web API interface for uploading data files. Each file type has its own secure **endpoint URL**:

- **Students:** “https://datalink.pbisapps.org/api/2/Students/File”
- **Staff:** “https://datalink.pbisapps.org/api/2/Educators/File”

We recommend using cURL, a free, widely-used open source utility, to post data files. Instructions for downloading and installing curl are available below. Once cURL is installed, posting data files to DataLink is simple:

How to Download and Install cURL

To download and setup cURL, follow these instructions:

1. Visit <http://bit.ly/DownloadCurl>.
2. Select the various options that pertain to your particular environment until you arrive at the download page titled “The Wizard recommends...”
3. Download the latest version labeled *SSL enabled*. **This is essential as DataLink uses SSL for secure transmission.**

To post a file to DataLink using cURL:

1. Open a command line prompt.
2. Change directory to the folder where the cURL executable is stored.
3. Run the following command (remove brackets and replace their content):
“curl -i -F filedata=@“**<file path and name>**” -u **<username>**:**<password>** **<endpoint URL>**”

The **file path and name** is the path to the data file that you want to upload to SWIS.

The **endpoint URL** is one of the endpoints listed above, beginning with “https”.

Extensive documentation about cURL is available from the cURL site’s documentation section:
<http://curl.haxx.se/docs/>.

To post a file to DataLink using .NET:

Below is an example code snippet of how to post a file to our API using .NET

```
const string RequestUri = "<endpoint URL>";
const string Filepath = "<file path>"; //(e.g. C://temp//)
const string Filename = "<file name>";

using (var client = new HttpClient())
{
    using (var formDataContent = new MultipartFormDataContent())
    {
        var byteArray = Encoding.ASCII.GetBytes("<username>:<password>");
        client.DefaultRequestHeaders.Authorization = new
            AuthenticationHeaderValue("Basic", Convert.ToBase64String(byteArray));

        formDataContent.Add(
            new ByteArrayContent(
                System.IO.File.ReadAllBytes(Filepath + Filename)),
            "filedata",
            Filename);

        var result = client.PostAsync(RequestUri, formDataContent).Result;

        Console.WriteLine(result);
    }
}
```

To retrieve batch errors using cURL:

1. Open a command line prompt.
2. Change directory to the folder where the cURL executable is stored.
3. Run the following command (remove brackets and replace their content):

```
"curl -i -u <username>:<password> http://datalink.pbisapps.org/api/2/Batch/<BatchId>/Errors"
```

Automating DataLink Usage

Commands used to post data files to DataLink can be embedded in scripts or code for automatic and scheduled execution. We recommend your organization determine a preferred data upload schedule, bearing in mind each type of data you upload (student or staff) may need its own schedule. Once these schedules have been adopted, automating DataLink usage ensures they are respected.

Upload Change Data, Not All Data

During DataLink startup, it may be necessary to upload all data, (i.e. all students currently enrolled). After the startup phase **only** change data should be uploaded during the school year. This is not a requirement - DataLink correctly updates records whose identifiers match those already in the PBISApps database. However, repeatedly uploading all data will slow down performance and is not a scalable approach to data integration.

Note: It is acceptable to resubmit a dataset with a mixture of originally correct rows alongside rows containing corrected values. Rows correct in the original dataset will, when resubmitted, result in no change; corrected rows will be processed.

Data File Maximum Size

The maximum size of a data file is 15 MB. This should be more than sufficient for even large data uploads. If you need to upload a larger file and partitioning the data is infeasible, please contact us.

Dataset processing and messaging

Datasets are automatically processed on a daily basis. DataLink performs extensive validation and verification actions on received datasets. Although a few types of errors, such as a missing field in the dataset, can result in an entire dataset failing, most errors affect individual rows or groups of rows. DataLink logs all errors as well as summary information about each dataset during processing and communicates this information to the technical point of contact via email. You may retrieve batch errors with cURL using the process outlined in the section “Retrieve Batch Errors Using cURL”.

There is no need to resubmit datasets already processed by DataLink; resubmitting individual rows or an entire dataset will produce the same result as when the original dataset or rows were processed. *[See Upload Change Data Not All Data for more information.]*

The Data File: Identifiers

DataLink depends on the use of identifiers to correctly match data exchanged between systems. If you need to use an identification system not mentioned in this document, please contact us.

There are several key requirements for the successful use of an identification system:

1. **Identifiers are required.** All students and staff must have identifiers.
2. **Identifiers are unique.** All identifiers, over the entire period during which integrated data management is in effect, must be unique.
3. **Missing identifiers must be entered.** All existing records within the PBISApps database must have an identifier assigned. Records without identifiers must be resolved. The method for doing so is described below.

While not required, it is strongly recommended to merge any duplicate student and staff records inside of the SWIS application prior to starting DataLink. Duplicates are identified in each SWIS account through the Data Integrity System. Users with access to individual school accounts can correct duplicates manually through the SWIS user interface.

Entering Missing Identifiers at DataLink Startup

Prior to starting ongoing DataLink usage, there may be cases where student or staff identifiers are missing from the PBISApps database. Updating existing student and staff identifiers must occur manually through the SWIS Suite interface before data files are uploaded for that school/facility.

Updating Existing Student and Staff Records Using DataLink

To use DataLink to update all student and staff rosters, provide two complete datasets: one including all students for each participating school, and another with all staff for participating schools. All records in each dataset must have at least one identifier from a supported identification system (see Supported Identifiers for more information). If a record is found with the same id from the dataset, the record in SWIS will be updated with the provided information. If no record is found with that identifier, a new record will be created.

The Data File: Record Structures and Definitions

Record structures are provided for two record types:

- Staff
- Students

All possible data to be included for student and staff records are defined in the tables below. Any data collected in your SIS not collected in the PBISApps database should be excluded from the dataset sent to DataLink (i.e. Free and Reduced Lunch, medical history, witness/victim information, etc).

Required Data File Format for Uploaded

DataLink requires datasets for students and staff to follow a specific structure and format.

- Files must be in .CSV format
- The delimiter must be a comma.
- All columns and column headers (column names) defined in this specification must be present in the file
- All datasets must follow the specific column order defined in this specification.
- The first line of each .CSV file must match the text strings below:

Student column headers:

```
DistrictAssignedStudentId,StateAssignedStudentId,DistrictAssignedSchoolId,StateAssignedSchoolId,SchoolNCESId,DistrictNCESId,StateFIPSIId,LastName,FirstName,GenderId,GradeId,OtherStudentInfo,IEP,Has504,DisabilityCategories,HispanicLatino,Races,Status,EnrollmentDate
```

Educator column headers:

```
DistrictAssignedStaffId,DistrictAssignedSchoolId,StateAssignedSchoolId,SchoolNCESId,DistrictNCESId,StateFIPSIId,LastName,FirstName,HispanicLatino,Races,GenderId,OtherInfo,Status,Email
```

Additional Considerations for data files:

If a specific value in an uploaded dataset contains an embedded comma the entire value must be surrounded by double quotes (e.g., "Jones, Jr.") in order for DataLink to treat the comma as text, and

not as a column delimiter. Additionally, any double-quotes *inside* the text-string must be replaced with **double double-quotes** (e.g., Joseph ""Joe"" Sparks).

In the tables below, a “required” column refers to a column that must have a value (i.e., cannot be null). However, all columns must be present in the file, whether those columns contain values or not.

It is acceptable either to provide the text “NULL” or leave the field blank for DataLink to consider the value as null. However, the proper number of comma delimiters must be present on each row of the dataset.

Record Properties

Each record structure consists of the following field properties:

Property	Definition
Column Name	Name of the field
Type	The accepted data type for the field
Required	Whether the field is required (Y) or not required (N) data
Option Values	A list of required values for the field
Default Value	The value inserted if a value is not provided with the dataset. <i>Required fields without a default value listed will cause the import to fail for that record if a value is missing.</i>

Supported Identifiers

Each structure includes a list of supported identifiers for managing records between the PBISApps database and your SIS. The intent of identity management for each record is to:

- Ensure accurate matching.
- Ensure records can be exchanged independently.
- Define a set of identifiers to uniquely identify each record within the school, district, and/or the United States.

The following identifiers are currently supported. Only one is required for each record type:

Identifier	Definition
DistrictAssignedStaffId	Staff identifiers issued by the district, expected to be unique across all district employees.
DistrictAssignedStudentId	Student identifiers issued by district, expected to be unique across all district students.
StateAssignedStudentId	Student identifiers issued by the state education agency, expected to be unique across all students in the state.
DistrictAssignedSchoolId	School identifier issued by its district expected to be unique across all schools in the district.
StateAssignedSchoolId	School identifier issued by a state education agency expected to be unique across all schools in the state.
SchoolNCESId*	School identifier issued by the National Center for Education Statistics via its Common Core of Data (CCD) datasets.

Identifier	Definition
DistrictNCESId*	District identifiers issued by the National Center for Education Statistics.
StateFIPSIId	State identifier issued by the Federal Information Processing Standards Publication 5-2 .
Note:	
* Due to delays and gaps in the issuance of NCES identifiers, they cannot be relied upon as an identifier all schools will be assigned at DataLink startup.	

Staff Record

Column Name	Type	Required	Default Value
DistrictAssignedStaffId	string (100)	Y	
DistrictAssignedSchoolId	string (100)	One is required	
StateAssignedSchoolId	string (100)		
SchoolNCESId	string (12)		
DistrictNCESId	string (7)	Y	
StateFIPSIId	Integer	Y	
LastName	string (200)	Y	
FirstName	string (200)	Y	
HispanicLatino	Y/N	N	
Races^{1,2}	string(100)	N	
GenderId¹	string (100)	N	
OtherInfo	string (750)	N	
Status¹	Integer	N	1
Email	String(254)	N	
NOTES:			
1 See Appendix C for values			
2 Use to delimit multiple values			

Student Record

Column Name	Type	Required	Default Value
DistrictAssignedStudentId	string (100)	One is required	
StateAssignedStudentId	string (100)		
DistrictAssignedSchoolId	string (100)	One is required	
StateAssignedSchoolId	string (100)		
SchoolNCESId	string (12)		
DistrictNCESId	string (7)	Y	
StateFIPSIId	Integer	Y	
LastName	string (200)	Y	
FirstName	string (200)	Y	
GenderId¹	string (100)	Y	
GradeId¹	string (100)	Y	
OtherStudentInfo	string (750)	N	

IEP^{3,4}	Y/N	N	N
Has504	Y/N	N	N
DisabilityCategories^{1,2}	string(50)	Y ²	
HispanicLatino	Y/N	Y	
Races^{1,2}	string(100)	Y	
Status¹	Integer	N	1
EnrollmentDate	Date	Y	
NOTES: <ol style="list-style-type: none"> 1 See Appendix C for values 2 Use to delimit multiple values 3 This field indicates whether the student is currently on an individualized education plan. Students on an IEP will be inserted into the PBISApps database with a Disability Category of “To Be Obtained” by default. 4 This field is required only if student is on an IEP. 			

Student Race and Ethnicity

By U.S. federal law, race and ethnicity must be provided for each student as follows:

- Ethnicity: Is the student Hispanic/Latino (Y/N)?
- Race: With which race(s) does the student identify? *Multi-racial is an available category in aggregate reporting only. Student records for multi-racial students should indicate each race with which the students identify.*

Appendix A: DataLink Agency Profile

Agency Profile

Organization Name		
Mailing Address		
City	State	Zip
Phone		
Organizational Account Username		

Contacts

Technical Contact Name	Email
SWIS Facilitator Contact Name	Email

Districts to Include in Account

District Name

Appendix B: Classification sets / Lookup definitions

Races

Race or Ethnicity	Code
American Indian/Alaskan Native	1
Asian	2
Black	4
White	5
Pacific Islander/Native Hawaiian	8

Grades

Grade	NCES Grade	Code
Pre K-A	PK	16
Pre K-B	PK	17
Pre K	PK	14
K	KG	15
1	01	1
2	02	2
3	03	3
4	04	4
5	05	5
6	06	6
7	07	7
8	08	8
9	09	9
10	10	10
11	11	11
12	12	12
Post 12	NULL	13

Genders

Gender	Code
Female	2
Male	1
Non-Binary/Transgender/Other	3

Note: Schools opting to include a third gender in SWIS may send the Non-Binary/Transgender/Other identifier in DataLink files. If the third gender option is disabled in SWIS, sending this value in DataLink files will result in an error.

Student Disabilities

Disability	Code
Autism	1
Deaf-Blindness	2
Deafness	3
Emotional Disturbance	4
Hearing Impairment	5
Intellectual Disability	6
Multiple Disabilities	7
Orthopedic Impairment	8
Other Health Impairment	9
Specific Learning Disability	10
Speech or Language Impairment	11
Traumatic Brain Injury	12
Visual Impairment	13
Developmental Delay	14
To Be Obtained	15
Non-Categorical	16

Staff and Student Status Values

Staff and student records can include an optional status indicator. The three possible status values are:

Status	Definition	Code
Active	The staff member is currently associated with the school.	1
Inactive	The staff member is not currently associated with the school, but may return.	2
Archived	The staff member is not currently associated with the school and will not return (e.g. retired staff).	3

Absent a provided status value, DataLink will set the person record status to active. **Only when the actual status is known to be other than active should a status value be provided.**