

PBISApps DataLink Technical Guidance

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, staff, and referral data 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, student and behavior incident (referral) data from any information system to the SWIS Suite.

DataLink Accounts

There are two types of organizations that may use DataLink – Districts or agencies working on behalf of districts. To have access to individual school accounts through DataLink, districts must authorize its use for integrating SIS data for schools with current SWIS Suite subscriptions. You will be notified of next steps when your account has been activated.

District Accounts

If you are a district and will work only with your district’s schools to integrate SIS data with the SWIS Suite, you will complete a District Permission Form and Profile (See Appendix A). The person to sign the form must be someone with the authority to enter into a legal agreement on behalf of all schools in your district. The signature authorizes the integration of SIS data for current SWIS Suite subscribers in your district. The form should be submitted to support@pbisapps.org.

Agency Accounts

If you are an agency working on behalf of one or more districts to integrate SIS data with the SWIS Suite, you will complete an Agency Profile (See Appendix B). In addition to your Agency Profile, each district(s) you work with will need to sign and complete a District Permission Form and Profile to authorize your access (See Appendix C). The person to sign the District Permission Form must be someone with the authority to enter into a legal agreement on behalf of all schools in the district. The signature authorizes

the integration of SIS data for current SWIS Suite subscribers in the district. Both documents should be submitted to support@pbisapps.org.

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

Each request must be accompanied by a unique 32-byte security key assigned to your organization and provided to your technical contact during the setup process. For example, a student dataset request would use the student endpoint URL plus a querystring with the key (where the bracketed content would be replaced with the actual key):

```
https://datalink.pbisapps.org/api/Students/File?Key=<your security key>
```

Data are submitted using the HTTP POST method.

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...”

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> <endpoint URL>?Key=<your security key>"
```

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”.

The **security key** is the 32-byte key provided to you during the DataLink setup process.

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())
    {
        formDataContent.Add(
            new StringContent("<your security key>"), "key");

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

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

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

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 that your organization determine a preferred schedule or schedules for uploading data, bearing in mind each type of data you upload (student, staff, or referral) 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, all referrals from the time SWIS data entry stopped, etc.). After the startup phase **only** change data should be uploaded during the school year. This is not a requirement - DataLink will correctly update records whose identifiers match those already in the PBISApps database. However, repeatedly uploading all data will adversely impact 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.

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, staff, and referrals 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. Methods for doing so are 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 user interface.

Entering Missing Identifiers at DataLink Startup

Prior to starting ongoing DataLink usage, there may be cases where student, staff, or referral identifiers are missing from the PBISApps database. Updating student and staff identifiers can occur manually through the SWIS Suite interface, or automatically using DataLink. Referral identifiers are handled differently.

Students and Staff

To use DataLink to update all student and staff rosters, you will provide two complete datasets: one including all students for each participating school, and another including all staff for participating

school. All records in each dataset must have at least one identifier from a supported identification system (see Supported Identifiers for more information).

At startup, DataLink uses the following logic to merge identifiers included in the dataset with the existing person records in the PBISApps database. *At the end of this initial upload, all active student and staff records associated with schools in the datasets will have identifiers:*

		Dataset	
		Record w/ Identifier	No Record
PBISApps Database	Record w/ Identifier	Update from file	Mark record in PBISApps database: Inactive
	Record w/o Identifier	Update from file if match is found*	Mark record in PBISApps database: Inactive
	No Record or Match	Insert record from file	Do nothing

* match based on first name, last name, gender (for student records)

1. Scenario 1: An existing Person Record in the PBISApps database contains an identifier.

Handling:

If the dataset contains the same identifier, the record in the PBISApps database will be updated with the information from the dataset.

If the identifier from the PBISApps database is not found in the dataset, but the record can be fuzzy matched to a record in the dataset, the PBISApps database record will be updated with the information from the dataset.

If the identifier from the PBISApps database is not found and cannot be fuzzy matched to a record in the dataset, the PBISApps database record will be marked as Inactive.

2. Scenario 2: An existing Person Record in the PBISApps database does not contain an identifier

Handling:

The PBISApps database record will be updated with information from the dataset if it can be fuzzy matched to a record in the dataset.

If the PBISApps database record cannot be fuzzy matched to a record in the dataset, it will be marked as Inactive.

3. Scenario 3: Records in the dataset have no match in the PBISApps database.

Handling:

Records in the dataset left unmatched to any person in the PBISApps database will be added to the database as new, active records.

Once all current student and staff records in the PBISApps database have an id number, the logic for inserting and updating person records is as follows:

		Dataset	
		Record w/ Identifier	Record w/o Identifier
PBISApps Database	Record w/ Identifier	Update from file	Not allowed*
	No Record	Insert record from file	Not allowed*

*data file must have value

Referrals

All referrals provided through DataLink must have an identifier. At DataLink startup, existing referrals in the SWIS Suite will not contain an identifier common to your SIS. **For this reason, DataLink will only accept referrals dated after the most recent referral in the PBISApps database entered by a SWIS user.** This ensures all referral identifiers managed through DataLink match with those in the PBISApps database.

Ongoing referral updates: Due to this rule (only accepting referrals after the most recently hand-entered referral), referrals entered by SWIS users cannot be updated via DataLink. All referrals imported through DataLink can be updated in subsequent dataset uploads.

The Data File: Record Structures and Definitions

Record structures are provided for three record types:

- Staff
- Students
- Referrals

All possible data to be included for student, staff, and referral 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, staff and referrals 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

Referral column headers:

VendorReferralId, DistrictAssignedStudentId, StateAssignedStudentId, DistrictAssignedStaffId, DistrictAssignedSchoolId, StateAssignedSchoolId, SchoolNCESId, DistrictNCESId, StateFIPSIId, GradeId, Date, Time, LocationId, ProblemBehaviorId, MotivationId, OthersInvolvedId, AdminDecisionId, OtherInfo, IEP, Duration, SeclusionRestrainingId, RecordDeleted

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., "Tommy said, ""you dummy!"" to Johnny").

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>

Property	Definition
Options Map Required	If yes (Y), DataLink accepts optional values for the field as they exist in the SIS. <i>A completed mapping form documenting how these values map to the SWIS application values is required.</i> If no (N), optional values are not allowed for the field.
Multiple Values Accepted (Referral file only)	If yes (Y), the field accepts multiple values delimited by the pipe symbol (“ ”). If no (N), only one value is accepted for the field.

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.
DistrictNCESId*	District identifiers issued by the National Center for Education Statistics.
StateFIPSIId	State identifier issued by the Federal Information Processing Standards Publication 5-2 .
VendorReferralId	Referral identifiers issued and managed by your SIS.
Note: <i>* 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.</i>	

Mapping Option Values

Some columns accept values directly from your SIS. To correctly integrate data containing values from your SIS, a data map must be completed for the column. The map specifies to which corresponding

SWIS value the SIS value should be converted in the PBISApps database. DataLink uses the mappings to automatically convert the data.

Staff Record

Column Name	Type	Required	Options Map Required	Option Values	Default Value
DistrictAssignedStaffId	string (100)	Y	N		
DistrictAssignedSchoolId	string (100)	One is required	N		
StateAssignedSchoolId	string (100)		N		
SchoolNCESId	string (12)		N		
DistrictNCESId	string (7)	Y	N		
StateFIPSIId	integer	Y	N		
LastName	string (200)	Y	N		
FirstName	string (200)	Y	N		
HispanicLatino	Y/N	N	N		
Races ¹	string(100)	N	Y		
GenderId	string (100)	N	Y		
OtherInfo	string (750)	N	N		
Status	integer	N	N	1 = Active 2 = Inactive 3 = Archived	1

NOTES:

- Use | to delimit multiple values

Staff Status Values

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

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

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.**

Student Record

Column Name	Type	Required	Options Map Required	Option Values	Default Value
DistrictAssignedStudentId	string (100)	One is required	N		
StateAssignedStudentId	string (100)		N		
DistrictAssignedSchoolId	string (100)	One is required	N		
StateAssignedSchoolId	string (100)		N		
SchoolNCESId	string (12)		N		
DistrictNCESId	string (7)	Y	N		
StateFIPSIId	integer	Y	N		

LastName	string (200)	Y	N		
FirstName	string (200)	Y	N		
GenderId	string (100)	Y	Y		
Gradeld	string (100)	Y	Y		
OtherStudentInfo	string (750)	N	N		
IEP¹	Y/N	N	N		N
Has504	Y/N	N	N		N
DisabilityCategories³	string(50)	Y ²	Y		
HispanicLatino	Y/N	Y	N		
Races³	string(100)	Y	Y		
Status	integer	N	N	1 = Active 2 = Inactive 3 = Archived	1
EnrollmentDate	date	Y	N		

NOTES:

1. This field indicates whether the student is currently on an individualized education plan. Those students on an IEP will be inserted into the PBISApps database with a Disability Category of “To Be Obtained” by default.
2. This field is required only if student is on an IEP.
3. Use | to delimit multiple values

Student Status Values

Student records can include an optional status indicator. The three possible status values are:

Status	Definition
Active	The student is currently enrolled at the school.
Inactive	The student is not currently enrolled at the school, but may return.
Archived	The student is not currently enrolled at the school and will not return (e.g. graduated students).

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.**

Student Race and Ethnicity

By 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.*

Referrals Record

Column Name	Type	Required	Options Map Required	Multiple Values	Default Value
-------------	------	----------	----------------------	-----------------	---------------

				Accepted	
VendorReferralId	string (100)	Y	N	N	
DistrictAssignedStudentId	string (100)	One is required	N	N	
StateAssignedStudentId	string (100)		N	N	
DistrictAssignedStaffId	string (100)	Y	N	N	
DistrictAssignedSchoolId	string (100)	One is required	N	N	
StateAssignedSchoolId	string (100)		N	N	
SchoolNCESId	string (12)		N	N	
DistrictNCESId	string (7)	Y	N	N	
StateFIPsId	integer	Y	N	N	
GradeId	string (100)	Y ¹	Y	N	
Date	date	Y	N	N	
Time	HH:MM	Y	N	N	
LocationId	string (100)	Y	Y	N	
ProblemBehaviorId	string (100)	Y	Y	Y ²	
MotivationId	string (100)	Y	Y	N	
OthersInvolvedId	string (100)	Y	Y	N	
AdminDecisionId	string (100)	Y	Y	Y ²	
OtherInfo	string(2500)	N	N	N	
IEP	Y/N	Y	N	N	
Duration⁵	real	Y	N	Y ³	
SeclusionRestraintId	string (100)	Y	Y	N	
RecordDeleted	Y/N	N ⁴	N	N	

NOTES:

1. Grade the student was in when the referral occurred.
2. Use | to delimit
3. Use | to delimit. The number of durations must exactly match the number of administrative decisions. If the administrative decision does not involve time away from instruction, enter "0".
4. 1 = referral record has been deleted from the SIS and should be deleted from the PBISApps database.
5. Duration should be in days.

Referrals with Multiple Students Referred

If a referral results in more than one referred student, separate referral rows must be provided for each student. The SWIS application requires only a single student can be referred per incident. If your SIS allows for multiple students to be referred in a single incident, the data must be sent as separate referrals – one for each student – in the dataset. The referrals will appear in the SWIS application as multiple referrals occurring at the same time and location.

Columns Accepting Multiple Values

Some columns allow multiple values to be sent for a single referral. For these columns, data must be submitted as pipe delimited lists.

Referrals with Multiple Students and Multiple Values per Column

In cases where each referred student has a distinct set of problem behaviors and/or administrative decisions, special care must be taken to include those values only on the referral row for the student to whom they apply.

Appendix A: DataLink District Permission Form

The purpose of this form is to authorize the use of the DataLink to integrate your student information system with School-wide Information System (SWIS™). **(INSERT DISTRICT NAME)** hereby agrees to provide data stored in the district's account on the **(INSERT STUDENT INFORMATION SYSTEM)**, for schools with active SWIS accounts, to Educational and Community Supports. The following information is granted through this agreement:

- Staff and Student data needed by SWIS on behalf of subscribing schools
- Referral data needed by SWIS on behalf of subscribing schools

The information granted through this agreement will be uploaded into school SWIS accounts, and files will be transferred through a secure file transfer process. The District will be responsible for the accuracy of the information provided to SWIS and responsible for validating the integration process before use. SWIS and the University of Oregon assume no liability or responsibility in the integration process other than to provide the service.

The District hereby represents and warrants that it has complied with all applicable provisions of the Family Educational Rights and Privacy Act of 1974 and 34 CFR Part 99 and any other applicable privacy regulation.

The undersigned represents that he or she is authorized to execute this instrument on behalf of **(INSERT DISTRICT NAME)**.

Signature: _____

Printed Name: _____

Date: _____

Email: _____

District Profile

District Name		
Mailing Address		
City	State	Zip
Phone		
Organizational Account Email	Password	

Contacts

Integration Admin Contact Name	Email
District Technical Contact Name	Email
SWIS Facilitator Name	Email

Appendix B: DataLink Agency Profile

Agency Profile

Organization Name		
Mailing Address		
City	State	Zip
Phone		
Organizational Account Email	Password	

Contacts

Integration Admin Contact Name	Email
Technical Contact Name	Email

Districts to Include in Account

(A permission form must be signed for each district listed here.)

District Name	Signed Authorization?

Appendix C: DataLink District Permission Form (Agency Authorization)

The purpose of this form is to authorize the use of the DataLink to integrate your student information system with School-wide Information System (SWIS™). **(INSERT DISTRICT NAME)** hereby grants permission to **(INSERT AGENCY NAME)** to access data stored in the district’s account on the **(INSERT STUDENT INFORMATION SYSTEM)** and provide information, for schools with active SWIS accounts, to Educational and Community Supports. The following information is granted through this agreement (circle Y or N):

- Staff and Student data needed by SWIS on behalf of subscribing schools
- Referral data needed by SWIS on behalf of subscribing schools

The information granted through this agreement will be uploaded into school SWIS accounts, and files will be transferred through a secure file transfer process. The District and **(INSERT AGENCY NAME)** will be responsible for the accuracy of the information provided to SWIS and responsible for validating the integration process before use. SWIS and the University of Oregon assume no liability or responsibility in the integration process other than to provide the service.

(INSERT DISTRICT NAME) hereby represents and warrants that it has complied with all applicable provisions of the Family Educational Rights and Privacy Act of 1974 and 34 CFR Part 99 and any other applicable privacy regulations necessary for it to authorize **(INSERT AGENCY NAME)** to provide the aforementioned information.

The undersigned represents that he or she is authorized to execute this instrument on behalf of **(INSERT DISTRICT NAME)**.

Signature: _____
 Printed Name: _____
 Date: _____
 Email: _____

District Profile

District Name		
Mailing Address		
City	State	Zip
Phone		

Contacts

Integration Admin Contact Name	Email
District Technical Contact Name	Email
SWIS Facilitator Name	Email