University of California, Riverside
Computing and Communications

Banner Student Implementation
Banner Common Data Dissemination
February 21, 2017

This document provides an overview of the of the new Banner Common Data dissemination process to be implemented and deployed as part of the greater Banner implementation.   It consists of the following sections:

1. Background
2. Disposition of Current Feeds and Web Services
3. Future State of Data Transmission from Banner
4. Policy for Authorization for Data Access
5. Common Files to be Provided Using Banner Data
6. Approach to Dissemination of Common Files
7. Key Differences between SIS and Banner Data
8. Process for Requesting Access to the Common Files
9. Important Dates

1. Background

A broad variety of data is provided from SIS to various consumers across campus. Over 200 files in various formats are distributed daily or more often.   Most of these files contain the same basic information with minor differences from file to file. Often the same information is distributed on several files, even within the same campus entity. Additionally, prior to SDQS (student data warehouse) custom reports and extracts were developed and provided via email.

Data from SIS is currently distributed as follows:

- Email files to individuals – text reports and csv files containing SIS data
- Data feeds to servers – Secure FTP of CSV, fixed length and other file formats SIS data
- Web Services – access to SISDW data

2. Disposition of Current Feeds and Web Services

Emailed Files

It is expected that files (word, pdf, excel, database, etc.) produced by Cognos will replace most of the files currently distributed from SIS through email.   Where Cognos cannot meet the requirement, it is anticipated that extracts from the new Common File will be sufficient.   If the needs cannot be met through Cognos and the Common File, then extracts from ODS or Banner will be considered.

Data Feeds

The Common Files (see next section) will replace the current data feeds provided through FTP. Systems will have to be remediated to access the common file and replicating the feed that is currently being provided from SIS. In rare cases, where the Common File is not able to provide the data required, a custom feed may be created. Differences in data structures between SIS and Banner may mean the replacement custom feed is not structured identically to the one it is replacing and that some remediation of the destination system may be required. Some current data feeds may be replaced by web services at the request of the consuming organization.

Web Services

Current web services accessing SISDW will be converted to access Banner and ODS. Differences in data structures between SIS and Banner and SISDW and ODS may mean that some web services operate slightly different and the downstream systems may require remediation.

NOTE: C&C will work directly with BCOE to determine if this process will satisfy the needs of the A Plus system.

3. Future State of Data Transmission from Banner

As part of the Banner implementation, C&C will be moving to a standardized, secure, and robust way of distributing data to campus entities. Data being distributed will be organized into logical groupings (i.e. class schedule data, academic history data, etc.), and published for consumption by campus entities.

Data will be accessible to other systems and end-users from Banner using the following approaches

- Cognos Reporting
- Web Services
- Custom Feeds for 3rd Party Consumption
- Common Files for Broad Consumption

Cognos Reporting

Cognos is a reporting tool that will be used to create reports and spreadsheets from the Banner Operational Data Store (ODS). Cognos will be used to provide additional spreadsheets, reports, queries and dashboards. It is expected that Cognos will replace many of the current feeds from SIS. Further discussion of the use of Cognos Reporting is beyond the scope of this paper.

Web Services

Web services currently in place for SISDW will be converted to provide data from either Banner or Banner ODS. As data distribution discussions with entities receiving data proceed, it may be determined that enhanced web services may be a preferred method. Further discussion of Web Services is beyond the scope of this paper. A mechanism will be provided for testing them.

Custom Feeds for 3rd Party Consumption

It may be in some cases (i.e. 3rd party software) that current custom feeds from SIS cannot be replicated through use of the Common File (see next section), Cognos or ODS. In this case, custom feeds from Banner replicating the feeds from SIS will be created by C&C. Differences in data structures between SIS and Banner may mean the replacement custom feed is not structured identically to the one it is replacing and that some remediation of the destination system may be required. C&C has an inventory of all extracts from SIS provided to 3rd parties which is available upon request. Further discussion of Custom Feeds for 3rd Party Consumption is beyond the scope of this paper.

Common Files for Broad Consumption

The primary way data from Banner will be disseminated for UCR internal consumption is through five common files:

- Student File
- Enrollment File
- Class Schedule File
- Academic History File
- Admissions File

Sections 5 through 8 of this paper discuss access to, the content of, and the use of these files and provide key dates and milestones in the process.

4. *Policy for Authorization for Data Access*

As part of the Banner conversion project, authorization to receive Banner data will be re-evaluated and approved before moving to the new distribution model. Access to Common Data, Cognos, Web Services and/or custom data feeds will be provided in accordance with UCR policy. Requests for access should be made through established data request procedures.

5. *Common Files to be Provided Using Banner Data*

Overview

The following files will be provided (please see Attachment A – Common File Definitions for more information)

Student File– Demo/bio and academic information (including programs and holds) for students registered in the current term. Two versions of the Student file will be produced, one that has some sensitive data withheld.

Enrollment File– Courses for which a student is enrolled or waitlisted for in the current term. One version of this file will be produced.

Class Schedule File– For the current term, course and section information including enrollment and waitlist information as well as meeting times and instructor information. One version of this file will be produced.

Academic History – Courses which a student has previously taken including transfer course information for a selected term. One version of this file will be produced.

Admissions—The admissions analysis process for Recruiter and Banner is still underway and the definitions for this files are in progress. An update will be provided when these definitions are available. It has not been decided if a desensitized version of this file will be produced. Please contact C&C if you need information before the general update is made available.

Please note: The common files will be comma delimited. They will likely be expanded over time by having additional fields added on the end. Please accommodate this expansion in current remediation efforts.

6. *Approach to Dissemination of Common Files*

Source/Timing

The files will be extracted from live Banner data. This will be done daily during the relevant periods of the term with multiple updates/day available when needed.

Production/Location/Access

The common files will be pushed from Banner to secure directories – one for files with complete data, and one for files desensitized by having sensitive information removed. Consumers will access the files using the Secure File Transfer Protocol (SFTP) from one of the two secure directories depending on which version of the files they are authorized to access. Each consumer will get a unique account on the directory they are authorized to access created based on the public encryption key and the IP address they provide.

Each directory will also contain the validation tables that contain the codes and values for coded fields in the common files.

At times, when change are being tested, test versions of the files may be placed in the same directories and have a prefix "TEST_".

Versions

In general, there will only be one current version of each file in each directory. In some cases "as of date" versions of the files may be kept for key current milestones in the academic calendar.

Using the Files

In many cases, Banner has data structures, formats and definitions that differ from SIS, sometimes quite significantly:

- Not all data currently provided from SIS is available from Banner.
- Some of the data from Banner will be in a different format or have different values than that provided from SIS
- There are fields in these Banner files that are not in the current SIS feeds.

- All coded fields have "CODE" in the field name. Most are followed by a "DESC" field where the prefix is the table in Banner that contains all the code values.   For example SSBSECT_SUBJ_CODE is the Subject Area Code and STVSUBJ_DESC is the description of the code value. STVSUBJ is the table in Banner that has all the code values for subject area description.

Banner Data Consumer Analysis Process

The following is a high level process that characterizes steps to analyze and remediate applications impacted by the Banner implementation:

- Consumers to request and obtain access to test data on secured directories
- C&C to provide test data for each file type for the consumers to examine and analyze
- Consumers to create a preliminary map the data they currently receive to the Banner data using the test versions of the common files and the code tables provided,
- Optional, if needed: Consumers create a list of questions, issues and concerns.
- Optional, if needed: Consumers to meet with C&C to go through questions and determine approach to resolving mapping issues and concerns.
- Consumers to remediate their systems and test using common file test data.
- Optional, if needed: C&C to provide answers to question in support of remediation and testing efforts

7. *Key Differences between SIS and Banner Data*

A. *Term Code Format - Character YYYYTT* while term is character format, the values are currently all numeric. Terms will sort chronologically.

    a.   YYYY is the actual calendar year in which the term falls.
    b.   TT – 10, 20, 30, 40 for Winter, Spring, Summer, Fall

    Examples – 201610 - Winter, 2016; 201640 - Fall, 2016

B. *College Codes*
    a.   GD **-** Students currently listed with GD college will now be listed in their actual college (NA, HS, etc.). Graduate students will be identified by student level G.
    b.   New college codes are being added
        i.   School of Public Policy – PP
        ii.   School of Medicine – MD
        iii.   Graduate School of Education – ED
        iv.   Summer Session – SS
        v.   Administrative use - ZZ

C. *Exit Term* – The concept of exit term as it existed in SIS does not exist in Banner. The closest data element would be Anticipated Graduation Date. There is no equivalent to an exit when the major changes.

D. ***Faculty and Advisors IDs*** – Faculty and Advisor identification records will exist in the same 'Person' file as students. When a faculty or advisor record is created in Banner, the ID numbers will be in the same sequence as student IDs. Student IDs will be converted as is, but the go-forward ID scheme is still to be determined.

E. ***Special Programs*** - Special programs could be in several places - rate codes (mostly), attributes, cohorts, etc.

F. ***Inter-Campus Students -*** For inter campus students, their campus is in site code.

G. ***Concentrations*** - Those concentrations that were previously in the minor field are now actually in a concentration field.

H. ***Residency*** - Residency codes changing to only N -Non-Resident, R - Resident, U -Undetermined

I. ***Visa*** – Visa Code will contain only true visa types. Non-visa codes in SIS (AR, AM, OT, etc.) will now be in the Citizenship Code. Visa type applied for will be stored in visa type.

J. ***Placement Flags*** – Placement values (ELWR,CHEM,Language, etc.) will be stored as test scores.

K. ***Data Not Available in Banner***

    a. Non-Academic Room Utilization is not in Banner
    b. Management of prerequisites and co-requisites is very different, and distributed to various places.
    c. Tuition Calculation option 1 and 2. Tuition calculation uses rate codes and various other student coding.
    d. Degree plans are not housed in Banner. They may be extractable from Degreeworks, but that has not yet been mapped.

8. ***Process for Requesting Access to the Common Files***

A formal process is being developed for requesting access to the common files. This process will not be available before Banner goes live. During the development of this process, an interim process will be used.

<u>Formal Request Process</u>

C&C will be building a secure web page to support a formal process for requesting access. The process for gaining access will be as follows:

| Review Options | → | Create Request | → | Student Affairs Approval | → | C&C Setup and Notification |
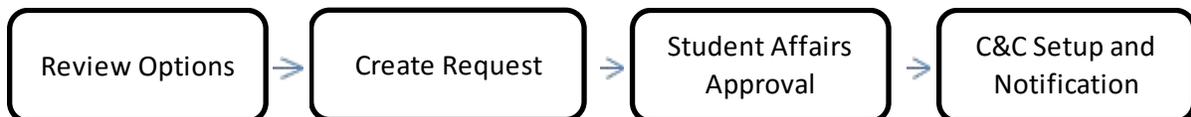
a. Consumer reviews available offerings on web page:
- Description of files
- Description of fields available in each file
- Listing of data excised from desensitized file version

b. Consumer fills out request on web page:
- Contact information
- Indication of whether this is a request for all data or desensitized data
- Justification for access to the data
- How the data will be used
- Measures that will be taken to secure the data once received
- Public Encryption Key
- IP address

c. Student Affairs reviews and approves the request and notifies C&C and requester

d. C&C enables access and notifies requester and Student Affairs.

Notification will be provided when this process is enabled and implemented.

Interim Request Process

Interim access to the test version of the common files and the code tables can be obtained by sending a request to bannerdatarequest@ucr.edu containing:
- Contact information
- Indication of whether this is a request for all data or desensitized data
- Justification for access to the data
- How the data will be used
- Measures that will be taken to secure the data once received
- Public Encryption Key
- IP address

This requested will be reviewed and approved by Student Affairs and processed by C&C.

9. *Important Dates*

The common file definitions, code tables and common files are currently available in the secure directories.

Test versions of web services are in final testing and we be available in the by the end of October.