Banner Operational Data Store Handbook

Release 8.1 April 2009



SUNGARD HIGHER EDUCATION

What can we help you achieve?

SunGard Higher Education

4 Country View Road Malvern, Pennsylvania 19355 United States of America (800) 522 - 4827

Customer Support Center Website

http://connect.sungardhe.com

Documentation Feedback

http://education.sungardhe.com/survey/documentation.html

Distribution Services E-mail Address

distserv@sungardhe.com

Other Services

In preparing and providing this publication, SunGard Higher Education is not rendering legal, accounting, or other similar professional services. SunGard Higher Education makes no claims that an institution's use of this publication or the software for which it is provided will insure compliance with applicable federal or state laws, rules, or regulations. Each organization should seek legal, accounting and other similar professional services from competent providers of the organization's own choosing.

Trademark

Without limitation, SunGard, the SunGard logo, Banner, Campus Pipeline, Luminis, PowerCAMPUS, Matrix, and Plus are trademarks or registered trademarks of SunGard Data Systems Inc. or its subsidiaries in the U.S. and other countries. Third-party names and marks referenced herein are trademarks or registered trademarks of their respective owners.

Revision History Log

Publication Date	Summary
April 2009	Financial Aid and Student ehnancements.
	Added documentation includees:
	New Stop a Running Job
	New Create Banner User ID Translations
	New Run a Process Outside the Administrative UI
	Changed Publishing Parameters and added Create a Meta Data Web Directory
	Changed Third Party Reporting Chapter and added Business Concepts Chapter

Notice of Rights

Copyright © SunGard Higher Education 2004, 2009. This document is proprietary and confidential information of SunGard Higher Education Inc. and is not to be copied, reproduced, lent, displayed or distributed, nor used for any purpose other than that for which it is specifically provided without the express written permission of SunGard Higher Education Inc.



Banner Operational Data Store 8.1 Handbook

Contents



Chapter 1 Overview

Related Documentation
Online Help
Navigation 1-3 Documentation 1-3
Banner Operational Data Store
Why Use a Banner Operational Data Store?
Banner Operational Data Store Architecture
Extract, Transform and Load Process
Source Oracle Database and Banner ODS Components
Source Tables .1-7 Database Triggers .1-7 Trigger Packages .1-7 Change Tables .1-8 Change Table Triggers .1-9
Composite Views and Functions/Packages. .1-10 PL/SQL Scripts (OWB Mappings). .1-10 Banner ODS Composite Tables. .1-11 Base Views .1-12 Banner ODS Reporting Views. .1-12
Multi-Entity Processing
Administrative User Interface
Banner ODS Data Model
Load Process
Naming Conventions
Banner ODS Standards (ODSMGR Schema)

Front-End Views: Reporting Style	-16
Front-End Views: Object: Access Style	-16
Front-End Composite Tables	-16
Indexes	-17
Administrative Standards (IA_ADMIN Schema)	-18
Administrative Tables	-18
Administrative Packages	-18
Meta Data Tables/Views	-19
Sequences	-19

Chapter 2 Banner to Banner ODS

Implementation
Partition Exchange Option
Prerequisite Tasks
Validation Table Data and Incremental Refresh
Product-Specific Information
Common
List of Values for Parameters
Finance
Transaction_History FIELD_CODE Explanation
Student
Extracting Student Data
Additional 'Zero' Record in Banner ODS Tables
Key Student Views Architecture
Composite Views

Chapter 3 Administrative User Interface

Administrative User Interface URL
Set up Users and PINS
Create Users and PINs
Update Existing Users
Update User Roles
Data Display Rules
Display Rule Information in Published Meta Data

Display Rule Cross Reference Chart
Set up a Display Rule
Update Display Rules
Duplicate Display Rules
Reload using a Single ETL Slot Process
Set up Fine-Grained Access Security
Set up and Maintain Organizational Areas
Create a Banner ODS Organizational Area
Update a Banner ODS Organizational Area
Banner User ID Translations
Create Banner User ID Translations
Update Banner User ID Translations
Delete Banner User ID Translations
Set up Business Profiles
Create a Business Profile
Associate Users with a Business Profile
View, Update or Delete a Business Profile
Set up and Maintain Security Rules
Determine Data Security Requirements
Set up a Security Rule
Assign Security Rules
Security Predicates
Policy Management.
Policies for all Tables
Policies for a Single Table
Administrative User Interface Data Access
Set up and Synchronize Data
Set up Parameters
Update or Delete a Parameter
System Parameters
Schedule a Process
Banner ODS Processes
Schedule a Single Process
Schedule Multiple Processes

View and Remove a Scheduled Process
Configure an Account and Stop a Running Job/Process
Configure a User Account to Kill a Job/Process
Kill a Running Job/Process
Run a Process from Outside the Administrative UI
Set up Customized Scheduled Processes
Schedule a Process Parameters
SUBPROCESS Parameter
JOB Parameter
ETL MAP PACKAGE Parameter
ETL MAP PACKAGE LOAD PURGE Parameter
ETL MAP PACKAGE LOGIC Parameter
ETL MAP PACKAGE RECONCILE LOGIC Parameter
ETL SLOT PACKAGE Parameter
ETL CONTROL GROUP Parameter
PARAMETER Parameter
Utilities
Report Banner ODS Source Change Table Counts
Change Tables and Control Reports
Synchronize Comments for a Single Reporting View
Synchronize Comments for Multiple Reporting Views
Banner ODS Checks and Balances
Reconcile Multiple Banner ODS Tables
Reconcile a Single Banner ODS Table
Transfer Banner Fine-Grained Access
View Control Reports
Error Messages
Banner ODS Checks and Balances Process
Freeze Process
Publish Meta Data (PUBLISH_META_DATA)
Reconcile (RECONCILE_JOB, RECONCILE_SINGLE_JOB)
Oracle Warehouse Builder Runtime Audit Browser Integration
Integration Setup
RAB Authentication
Set up E-mail Notification

vi

Freeze Data Maintenance
Set up Banner ODS Freeze Data Lists
Add a Table/View to a Banner ODS Freeze Data List
Delete, Rename or Duplicate Banner ODS Freeze Data
Freeze a Single Banner ODS Table/View
Freeze Multiple Banner ODS Tables/Views at the Same Time
Update or Freeze Recurring Banner ODS Data
Update Banner ODS Daily
Update Banner ODS on Specific Dates and Times
Meta Data
Baseline and Local Meta Data
Create Meta Data
Set up Institutional Meta Data Publish Preferences
Meta Data Parameter Set up for Publishing Reports
Configure Publishing Parameters and Create Meta Data Web Directory
Edit Target Meta Data Properties
Add Target Views and Target Columns
Edit Target Views and Target Columns
Synchronize Meta Data Comments with Reporting Views
Delete Local Target Properties
Delete Local Target Columns
Edit Source Meta Data Properties
Add Source Names and Source Columns
Edit Source Names and Source Columns
Delete Local Source Properties
Delete Local Source Columns
Add and Delete Source to Target Meta Data Local Mappings
Import Target and Source Meta Data
CSV Export
Publish Meta Data from the Administrative UI
Publish Meta Data for an Entire Subject Area
Publish Meta Data for One Source or Target
Publish Meta Data Reports
Publish Meta Data by Scheduling a Process
Publish Meta Data from the Command Line

View Published Meta Data
Reporting View Meta Data
Composite View Meta Data
Metamodel
Banner ODS Meta Data Object Types
Source Meta Data Tables
Target Meta Data Tables
Source and Target Meta Data Tables
Reporting Meta Data Views
Web Tailor Administration
Functions

Chapter 4 Data Models

Entity Relationship Diagrams (ERD)	
ERD Relationship Legend	2
Accounts Receivable	
Receivable Customer	6
Advancement	}
Advancement Prospect	
Annual Giving	
Constituent	12
Designation Giving History	4
Organizational Constituent	6
Pledge.	
Event	
Organization Entity	20
Person Role	22
Person Supplemental	

Finance	5
Budget Availability Ledger	5
Budget Detail	6
Encumbrance	7
Endowment Distribution	8
Endowment Units	9
Fixed Asset	0
General Ledger	1
Grant and Project	2
Grant Ledger	3
Invoice Payable	4
Operating Ledger	5
Purchasing Payable	6
Transaction History	7
Financial Aid	8
Financial Aid Application	
Financial Aid Award and Disbursement.	
Financial Aid Fund	
Human Resources	
Employee	
Human Resource Application	
Human Resource Faculty	
Payroll	
Position	5
Student	6
Active Registration	6
Admissions Application	7
Advisor Student List	8
Course Catalog	9
Enrollment Management	
Faculty Assignment	1
Government Reporting	2
Recruitment Information	3
Residential Life	4
Schedule Offering	5
Student Detail	6
Reporting Views	7
List of Value Views	7

Chapter 5 Third Party Reporting Tools

Cognos 8 Business Intelligence		•	• •	 •		÷	•	 		•	•	•	•	÷	 . 5	5-1
Framework Manager models								 							 .5	5-1

Lists of Values
Cognos 8 Security Integration
Cognos Authorization and Fine-Grained Access
Cognos Branch and Merge Functionality
Branch Process
Transaction History Tracking Process
View and Save Transaction History
Oracle Business Intelligence Discoverer (Banner ODS)
Delivered EULs
Lists of Values.
Lists of Values – Item Classes
Conditions
Date Hierarchies

Chapter 6 Business Concepts

Banner ODS Business Concepts
Diagrams
Accounts Receivable
Receivable Customer
Receivable Revenue
Advancement
Advancement Prospect
Advancement Rating
Annual Giving
Campaign Giving History
Constituent
Constituent Entity
Gift
Organizational Constituent
Pledge
Common
Event
Institution

Organization Entity																			
Person Demographic																			
Person Role																			
Person Supplemental																			
Relationship	• •	• •	·		•	·		·	• •	•	·		•	·	·	•	 ·	•	.6-22
Finance																			
Budget Availability Ledger																			
Budget Detail					•											•			.6-24
Encumbrance																			.6-25
Endowment Distribution																			.6-26
Endowment Units																			.6-27
Fixed Asset																			.6-28
General Ledger																		-	.6-29
Grant and Project																			.6-30
Grant Ledger																			.6-31
Invoice Payable																			.6-32
Operating Ledger																			
Purchasing Payable																			
Transaction History																			
Financial Aid																			.6-36
Financial Aid Application																			.6-36
Financial Aid Award and Disbu																			
Financial Aid Fund																			
Human Resources																			
Human Resource Faculty																			
Human Resource Application																			
Payroll																			
Position		• •	·	• •	•	•	• •	•	• •	·	•		•	·	·	•	 •	•	.6-43
Student																			.6-44
Active Registration																			.6-44
Admissions Application																			
Advisor Student List																			
Course Catalog																			
Enrollment Management																			
Faculty Assignment																			
Government Reporting																			
Recruitment Information.																			
Residential Life																			
Schedule Offering																			
Student Detail																			
		• •	•	• •	• •	•	• •	•	• •	•	•	• •	•	•	•	•	 •	•	.004

Chapter 7 Self-Service Reporting

Navigation Quick Reference .																							.7	-2	!
------------------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----	----	---

Search Criteria Page
Recommended and Required Search Criteria
Dependant Search Criteria Filters
List of Values Search Criteria Filters
Show SQL
List Page
Export
Email
Individual
Sort
Records Per Page (Display Setting)
Access Detail Reports
Detail Reports Page
Detail Reports Drop-down List
Sort
Export
Query Search Criteria
Search Rules
Create and Save a Search Rule
Load a Search Rule
Update a Search Rule
Save as Another Search Rule (Save As)
Rename a Search Rule
Delete a Search Rule
Banner ODS Populations
Create Banner ODS Populations
Refresh (Update) Banner ODS Populations
Delete a Banner ODS Population
Use Populations with Banner ODS
Report Templates
Accounts Receivable Report Templates

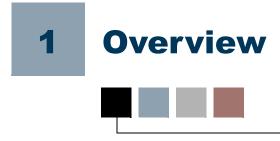
Advancement Report Templates
Advancement Person
Finance Report Templates
General Ledger
Financial Aid Report Templates
Financial Aid Awards
Human Resources Report Templates
Employee
Student Report Templates
Advisor's Students
Admissions Application
Enrolled Students
Self-Service Reporting Configuration Parameters
Security
Oracle Account Security
Authentication
Authorization
APEX Built-in Authentication
Other Security Options

Chapter 8 Indexes

Glossary

Index





The Banner Operational Data Store (Banner ODS) allows your institution to accumulate vast amounts of data that, when properly aggregated, contain valuable information on institutional performance. Ideally, your institution would transform this data into information and knowledge that can be used to support your decision-making processes.

Using this solution, your institution can take full advantage of the data stored in your source system by turning it into applied knowledge that can help you make informed decisions, guide strategic institutional planning and forecasting based on analysis of historical trends, and enhance institutional performance.

Related Documentation

In addition to the *Operational Data Store Handbook*, the following documentation is available:

Release Guide - description of each enhancement and problem resolution included in the current release.

Installation Guide or *Upgrade Guide* – a technical guide to support your institution's conversion to the newest release.

GTVSDAX Handbook – for Banner clients, a user/technical/reference manual describing the setup and use of the Concept/Crosswalk Validation Form (GTVSDAX), which is used with the Object:Access views.

Banner Documentation Bookshelf Getting Started Guide – directs you to SunGard Higher Education documentation for your source system.

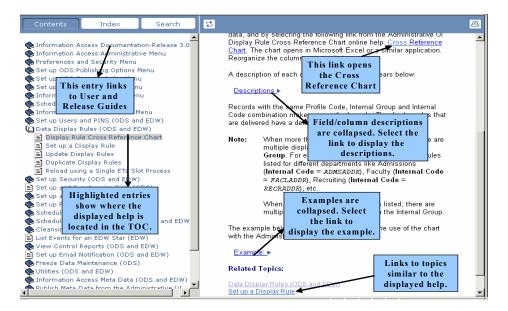
1-1

Online Help

Online help is available from any web page with a help link in the upper right-hand corner of the Administrative User Interface pages. When you select the **Help** link, the corresponding help page open. An example page appears below:

$\overline{\ }$				/		
Dis	NO Rule Cross R	eference Chart				
	eatures: help TOC,		displayed	1e 3		
The Index, Search erence Chart lists all views, table to see the rule (see screen below). SDAX table. The chart enables you to see the rule value of the data, and how your solution is impacted if changes are made to the display rules on MGRSDAX. The codes on the chart that are followed by an asterisk (*) indicate user defined rules that can						
the	chart that are followed b	y an asterisk (*) indicate user d	lefined rules that ca			
the be c The loca can Refe Mici	chart that are followed b changed to fetch the EXT information on the Displ itions: in the business d select the following link erence Chart help web p		lefined rules that ca S_DATE. is available in two ne meta data, or yo Iay Rule Cross e chart opens in	in		
the be of The loca can Refe your A de	chart that are followed b changed to fetch the EXT information on the Displ titions: in the business d select the following link erence Chart help web p rosoft Excel or a similar r needs.	y an asterisk (**) indicate user d TERNAL_CODE or REPORTING ay Rule Cross Reference Chart efinitions and slotted views in th from the Administrative UI Disp age: Cross Reference Chart. Th	lefined rules that ca S_DATE. is available in two le meta data, or yo lay Rule Cross e chart opens in umns to best suit	in		
the be c The loca can Refe Micr your A de app	chart that are followed b changed to fetch the EXT information on the Displ itions: in the business d select the following link erence Chart help web p rosoft Excel or a similar r needs. escription of each colum	y an asterisk (*) indicate user d TERNAL_CODE or REPORTING ay Rule Cross Reference Chart efinitions and slotted views in th from the Administrative UI Disp age: Cross Reference Chart. Th application. Reorganize the col	lefined rules that ca S_DATE. is available in two le meta data, or yo lay Rule Cross e chart opens in umns to best suit	in		

Select the icon in the upper right-hand corner to print a hardcopy version of the help topic. Select the icon in the upper left-hand corner to open a table of contents of all online help topics. The example page below shows an opened table of contents, and explains additional online help features.



Navigation

The help page that is open on the right, is highlighted in the table of contents on the left.

All blue, underlined text in the help is a link to open another file or help page, or to open a drop-down list of examples or field/column descriptions.

Documentation

All documentation for the current release is available through the online help. Select the "BPRA Documentation" entry (the first entry in the table of contents) to display a list and description of our current documentation. Select the link to open the corresponding guide.

Banner Operational Data Store

The Banner Operational Data Store (Banner ODS) enables you to extract information from your administrative systems, reorganize the information into a simplified format, and then store the information in Banner ODS database where end users can create and deploy operational and ad hoc reports.

Banner ODS provides an extensive and flexible data store and business organized reporting views with fewer columns and improved performance. You can use these views alone, or in combination with other views. SunGard Higher Education also uses the Cognos8 Studio or Oracle Discoverer reporting tool to deliver an enterprise business area with many prejoined conditions to enhance operational and ad hoc reporting.

Why Use a Banner Operational Data Store?

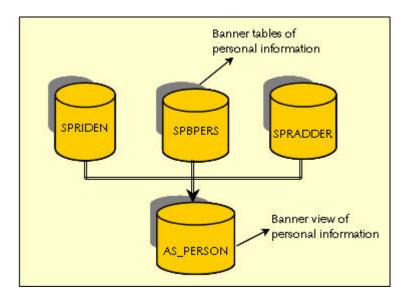
A Banner ODS produces standard and custom reports without the typical overhead associated with a transactional system. A Banner ODS system is built specifically to manage the complex queries associated with institutional report generation.

A Banner ODS also provides the ability to select point-in-time, or frozen data. For example, many institutions close the course refund period three weeks from the start of an academic period; you can select specific data as of this date and use the data from this time frame in your reports. This provides an accurate count of full-time enrollment, or the amount of revenue generated to this point-in-time.

The performance advantages associated with a Banner ODS are perhaps the greatest benefit not only for Banner ODS system, but also for the administrative source system. Banner ODS is designed and built specifically for query purposes. This design results in faster query times in addition to increased load balancing on the administrative system. Most upgrades to the administrative system do not affect Banner ODS.

Banner Operational Data Store Architecture

The Banner Operational Data Store (Banner ODS) is designed to extract information from a source system such as Banner, and reformat the tables into a simplified set of tables to allow for quick and easy reporting. The concept is based on Banner Object:Access approach of grouping complex and normalized source tables into a series of more simplified, denormalized tables that are grouped by concept as in the Personal Demographic data example below:



To properly access the data from Banner tables above for reporting, you need to understand the rules used to store the data in each table, as well as the rules used to properly join the tables. These tables are some of the most commonly used tables in Banner for extracting person related information. Following are some examples.

Examples:

SPRIDEN

- Must be checked for a value of null to retrieve the most current record
- ENTITY_IND must be checked for a Person or Corporation (though for Advancement this is Person or Organization)
- Must be "driving table" in FROM clause

SPBPERS

- Join with SPRIDEN via PIDM column
- Outer Join must be used or omitted based on need

SPRADDR

- Join with SPRIDEN via PIDM column
- Outer Join must be used or omitted based on need
- STATUS IND must be checked for active record
- FROM_DATE and TO_DATE must be checked for current date range allowing for NULL values to be included
- Highest or Lowest SEQ_NO within ADDRESS_TYPE must be used based on need
- ADDRESS_TYPE must be checked against a hierarchy of values to ensure that no more than one address is retrieved

You can access Banner information without understanding the complexities of the data structure because you can retrieve the data from the view. This method provides basic data access, but performance and non-Banner data integration issues are not addressed within Banner database.

Extract, Transform and Load Process

Banner ODS, and its associated data replication process, simplify reporting by replicating data onto a separate database apart from the production environment. This process is called the Extract, Transform, and Load (ETL) process.

Banner ODS uses the ETL process to extract data from the source database, transform the data, and loads it into Banner ODS. All ETL activities are performed from within Oracle PL/SQL packages, and deployed into Banner ODS database schema. The PL/SQL packages are created using Oracle Warehouse Builder (OWB). These packages are scheduled and run via the DBMS_JOBS queue in Oracle. You can submit and monitor the jobs using the Administrative User Interface. Typically referred to as 'mappings', the packages, when executed, delete, update and load data from the source to the composite tables based on the type of mappings executed.

통 Note

Banner and Banner ODS database instances should reside on separate servers and connect through a database link.

The source Oracle database is the database from which the source information, such as Banner, is derived. The source and Banner ODS database instances should reside on separate servers and connect through a database link.

During the initial load of Banner ODS, data is extracted from the source Oracle database using Oracle views that include specific business logic such as Enrolled or In State Resident indicators. The extracted data is then migrated into denormalized composite tables within Banner ODS. These composite tables represent a conceptual organizational structure, such as a Student, an Employee, or a Receivable Customer. To provide for data value security, the Administrative UI allows you to create Oracle Fine Grained Access

rules and apply them to the composite tables to prevent information from being viewed without authorization.

The final layer of data access is the reporting views. These views allow calculated columns and increased flexibility in managing what data the end users can access. In select instances, such as the slotted concepts, data display rules are applied to user and institution profiles which filter out unwanted data.

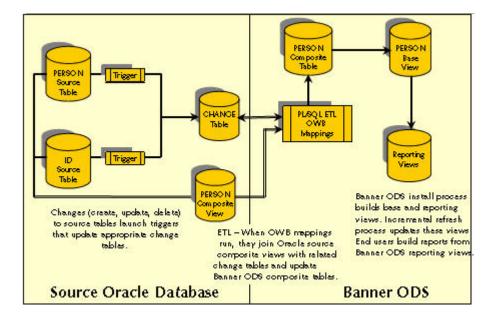
To ensure that the data is current, you can incrementally refresh Banner ODS on a scheduled basis. OWB packages combine the business logic views with the change tables located in the product schemas to determine what updates are applied to Banner ODS composite tables.

You can manage all data loads and updates. Fine grained access rules, meta data management, data display rules and freeze data processing are managed with the Administrative UI.

Source Oracle Database and Banner ODS Components

Using the Oracle Warehouse Builder (OWB) ETL tool, triggers, and new data change tables in Banner, Banner ODS extracts data from Banner and loads it into a separate database schema. Indexes are added to Banner ODS tables as needed to enable the information to be accessed. Banner ODS is updated as needed (Incremental Refresh) to make additions, deletions or changes in Banner database. The data is then presented in a view similar.

The ETL process is accomplished using several components within the source Oracle database and Banner ODS. The following chart illustrates these components. Each component is described in subsequent sections.



Source Tables

Source tables are the database tables in the Banner information system from which data is extracted to load into Banner ODS.

Database Triggers

A single database trigger exists on each source table, excluding validation tables. Triggers are created for all tables used in a view, including function tables. They are created in the schema owner of the associated change table.

Each trigger identifies DML (Data Manipulation Language) activity on the table. When a change is made to an Banner table, that change is loaded into Banner ODS. The change launches a trigger. The trigger calls a stored PL/SQL procedure which updates the appropriate change tables to reflect the change in the source table. The triggers flag changes on Banner tables and update the appropriate change tables.

Triggers are created on the actual Banner tables that provide source data for Banner ODS. The triggers are not delivered with the baseline Banner applications.

Trigger Packages

Trigger packages manage the trigger procedures. There is one procedure for each change table with each procedure managing a unique index on the change table. There is one package per product area within Banner ODS such as Student, Human Resources, Finance, Financial Aid, Advancement. BANINST1 owns the trigger packages.

As data is entered into Banner, it is typically processed one row at a time. For each field being entered, the data is verified for field syntax, such as date or numeric formats, and fields requiring additional verification against rule tables. After the values are properly checked, the data is committed (or written) to the database table that will 'house' the information. During the 'commit' action, any Oracle triggers on the database table being written to are 'fired' and additional, but separate, logic is executed based on the parameters of the trigger (such as Before Insert, After Insert, etc.). Banner ODS has built and enabled triggers on all Banner tables that house information that is used in Banner ODS. Therefore, when one of Banner ODS triggers is 'fired', the trigger inserts the keys of the data being changed into the change tables along with a DML indicator. The existence of these rows in the change tables tells Banner ODS that Banner has data waiting to be retrieved.

통 Note

The change tables only maintain the most recent database activity for a row of information for a specific key. When multiple actions occur against the same Banner database table and row, only the last action is represented in the change table. This allows the replication process to work faster, and decreases the amount of data captured in the change tables.

1-7

Change Tables

Change tables maintain data about what tables and records have been changed, inserted, or deleted in the source system. There is not a one-to-one relationship between change tables and source tables or between changes tables and composite tables in Banner ODS. One change table exists for each logical group of information.

Change tables work like collector tables. They include four basic fields:

- Keys
- Table Name
- Process ID
- Most Recent DML.

Change tables reflect DML activity for specific Banner tables, but are also used when multiple tables use the same key.

Example:

The use of the SPRPCHG table that stores DML activities for the Hold and the Person composite views.

Change tables are owned by their respective product schemas, and are identified using standard Banner table naming conventions. The column names start with the seven-character prefix of the table name. All columns in each of the change tables are identical with the exception of the key columns. Here, the key columns represent the product/ database tables they are accessing, and also represent the keys that Banner ODS uses when records change. All change tables are suffixed by 'CHG'.

The columns that comprise the change table are the key columns relative to the composite view(s) it supports, along with the TABLE_NAME and the PROCESS_ID columns. The last two columns allow inserts into the table with a null PROCESS_ID by updates to Banner that take place during Incremental Refresh. Since Banner ODS processes and deletes all rows in the change tables with a NOT NULL PROCESS_ID, the null value allows the row to stay until the next update. This ensures that it is not bypassed or inadvertently deleted.

Typically, a second index is created in the format of TABLE_NAME, PROCESS_ID, and RECORD_ACTION columns.

Example:

SPRPCHG - Change table for PIDM related Banner tables

Column Name	Data Type	Column Comment
SPRPCHG_TABLE_NAME	VARCHAR2(30)	Used to identify which composite view (and/or Banner ODS table) is being populated by this specific row of data.
SPRPCHG_PIDM	NUMBER	The change table needs to hold as many keys as are required to manage DELETE and UPDATE of information into Banner ODS. Keys do not need to identify a unique row, but must maintain some fields for comparison.
SPRPCHG_RECORD_ ACTION	VARCHAR2(1)	Stores the last DML action for the key combination (I , U , or D).
SPRPCHG_PROCESS_ID	VARCHAR2(30)	Updated by the Banner ODS procedure UPDATE_CHANGE_TABLE which inserts non-null values to flag which rows are being processed during the incremental refresh process. This allows inserts to take place into the change table while replication is also taking place.
SPRPCHG_ACTIVITY_ DATE	DATE	Reflects the actual date of that the rows was last inserted and/or updated.

Change Table Triggers

The Banner ODS maintains triggers on all Banner tables used to incrementally refresh data into the Banner ODS. Although the triggers are enabled on the actual Banner tables, they are referred to as 'change table triggers' because they populate Banner change tables with DML information. The trigger inserts rows of information in one or more change tables by invoking a procedure that packages all trigger insert actions for the Banner ODS change tables.

The triggers use basic logic except that the Exception routines allow for continued processing when encountering a DUP_VAL_ON_INDEX condition. This condition is occurs when a row of data exists within the change table for the table's unique index. When encountered, the procedure updates rather than inserts the information in the change table by overlaying the DML activity and the activity date. This action causes only the most recent DML activity to be stored in the change table.

All triggers are owned and maintained within the product schema of the table to which the triggers are added. For example, SATURN would own Student Triggers, etc.

- Trigger Procedures
 - Each Banner product has a procedure built for it that manages all change table triggers for that product area. For example, GOKODST for General, SOKODST for SATURN, etc.
 - The triggers are owned by the BANINST1 schema.

• The names for each procedure follow Banner standard naming conventions.

Composite Views and Functions/Packages

Composite views exist in Banner and usually match the composite tables that exist in Banner ODS. During the ETL process, when you perform a refresh of Banner ODS data, the composite views are joined with the appropriate change tables and updated with the changed information.

In some cases, functions are used to calculate new data that is created from Banner data and loaded into the Banner ODS. The composite views use packages to manage the functions built on the Banner database. There is one function package for each Banner ODS module of information, i.e., Student, Finance, Advancement, etc. These packages are installed into the ODSMGR schema.

Composite views represent a composite (mixture) of the tables selected from Banner and allow for a single piece of data to be extracted row-by-row, with all the business logic included in the view itself. These views use Object:Access standards. The column names are generic so that they can be used by all SunGard Higher Education product lines. Therefore, names familiar to Banner clients may be more generic than they are used to. For example, Term becomes Academic Period, PIDM becomes UID (unique ID).

The views can be used for reporting in Banner. But, they were designed to be extracted and loaded into Banner ODS, joined to Banner change tables, and to become the Incremental Refresh data extraction view.

Views are created and maintained in the ODSMGR schema. These views are accessed from Banner ODS through a database link that connects from Banner ODS ODSMGR schema to the Banner ODSMGR schema. Since these views are accessing data directly in the various source Banner tables, explicit SELECT (table) and EXECUTE (function) grants are assigned to the Banner ODSMGR schema via a grants script provided in the install media.

PL/SQL Scripts (OWB Mappings)

Your solutions use PL/SQL scripts, which are mappings built in Oracle Warehouse Builder (OWB). These OWB mappings identify the relationship of data between the source composite views and Banner ODS composite tables. You may see the scripts referred to as PL/SQL scripts or OWB mappings. The extract, transform and load processes built using OWB are the mappings that populate Banner ODS.

The OWB mappings are run during the initial load of Banner ODS and when you incrementally refresh Banner ODS. When run, the scripts load, update, or delete data in Banner ODS composite tables. Three scripts—Load, Update, and Delete—exist for each Banner ODS composite table. The different types of mappings perform the following functions:

- LOAD mappings: used to initially load Banner ODS composite tables by selecting all rows of data from the source system via the composite view.
- DELETE mappings: used to delete rows of data in Banner ODS when the change table reflects activity of any type for the key. Uses the key in the change table since no data will be found in the composite view for deletes. This process also updates the PROCESS_ID value in the corresponding change table for all rows before any delete takes place.
- UPDATE: mappings used to insert records into Banner ODS based on keys in the composite view joined against rows in the corresponding change table.

통 Note

It is mandatory that the DELETE mapping is run prior to the related UPDATE mapping or no records will be processed in the UPDATE mapping.

The Oracle Warehouse Builder user interface contains graphical editors that enable you to design a complete logical model of your warehouse. The OWB helps you plan how to extract data from a variety of sources, transform the data, and configure the data for loading into Banner ODS. The OWB code generator lets you deploy and populate Banner ODS without manual coding, and integrates with the Oracle database and query tools.

Banner ODS Composite Tables

Composite tables are the tables within Banner ODS that get loaded with data from the source system. These tables match element-for-element to the source composite views. The composite tables get populated during the initial install process. They are also update during the incremental refresh process.

- Denormalized tables are used to store "conceptual" structures of data.
- Normalized tables are used for quick data filtering or to include unlimited repeating values.
- The MGRSDAX rule table is used to load the composite tables.

Slotted Tables

- Slotted tables are used to denormalize Repeating Concepts (normalized tables.)
- Populated via rules from MGRSDAX.

Some GTVSDAX rules, but not values, are duplicated in the initial population of MGRSDAX. You should use the Administrative UI to add or modify MGRSDAX rules' values to meet your institution's needs.

Understanding Composite Tables and Slotted Tables

Banner ODS includes composite tables and slotted tables. Composite tables include the main data that is extracted from your source system and stored in Banner ODS.

Slotted tables store data values for a specific code related to a base table. For example, the TEST_SCORES_SLOTTED table in Banner ODS stores all valid Test Score values that were loaded from your source system to Banner ODS. When your end user creates a report against Banner ODS, the system pulls data from the composite tables. The system checks codes stored on the slotted tables, as needed, and pulls the appropriate code values. If you choose to use Business Profiles, the system pulls the appropriate values for the profile with which the user is associated. The default business profile of INSTITUTION is used when specific display rules are not established.

Using slotted tables optimizes the speed of your users' queries since the system need only check for specific code values as needed.

Both composite and slotted tables get updated when you run the refresh jobs to update Banner ODS data on a regular basis.

Updating Slotted Tables in Banner ODS

It is important to keep data in the slotted tables synchronized with data in the composite tables. Whenever you update composite tables, you should also update the related slotted tables.

Base Views

Base views are the initial views built within Banner ODS. These views match Banner ODS composite tables element-for-element.

Banner ODS Reporting Views

Data from each Banner ODS composite table is presented in one or more reporting views. Banner ODS reporting views are the views that your users use to create reports within Banner ODS. Users point their report writing tool at these views and build reports. Base views can also be used as reporting views.

The Datamart 1.0 product Object:Access views were recreated as additional reporting views for clients migrating reports written using the Object:Access views in the Datamart, or from Banner into Banner ODS. While will continue to support these views, they will only be enhanced to support migration, therefore, use of the views to create new reports is not recommended.

These Object: Access views are easy to identify because they use the same standard naming conventions as the Object: Access views delivered with Banner products.

Multi-Entity Processing

The Multi-Entity Processing (MEP) framework is available for all Banner ODS composite views, composite tables, and reporting views. This enables all information from multiple sources (data sources, institutions, campuses, etc.) that is located in one database to be selectively assigned security access as needed in Banner ODS.

Example

You could take data from multiple institutions that exists in one database, move that information into Banner ODS, and selectively restrict your user's access to that data by institution, etc.

The MEP columns only appear on generated meta data reports in the Administrative UI if MEP was set up for your institution.

[Note

To use MEP with your source system and Banner ODS, Professional Services must provide the needed analysis, subsequent product enhancements and set up. This includes identifying which source tables require MEP, and which Banner ODS objects must be modified.

Administrative User Interface

The Administrative User Interface (UI) is web-based, using SGHE's WebTailor. You use the Administrative UI to set up and maintain Banner ODS, including initiating and monitoring ETL processes. Administrative functions include:

- Preferences and Security Use to manage security, set global preferences, and set up user accounts.
- Options Use to control the processes to extract and load data into Banner ODS, schedule a process, view control reports, view and/or remove scheduled processes, or maintain information about saving (freezing) data.
- Meta Data Use to view and manage the meta data supporting the systems.
- New Web Tailor Administration Use to customize a web menu, procedure, graphic element, set of information text, or a set of menu items. You can also update user roles, customize a web module, web rules, or WebTailor parameters; customize a login return location; and customize WebTailor overrides or global user interface settings.

Banner ODS Data Model

SunGard Higher Education has developed a data model that includes data from a number of higher education administrative system modules. The administrative system modules supported by Banner ODS data model include Student, Financial Aid, Advancement, Human Resources and Finance — including Accounts Receivable. Each of these modules, or areas of information, include a number of tables in the administrative systems. The data model brings the appropriate data elements from multiple tables in the source system into a different table structure in Banner ODS that supports the reporting needs of the entire institution.

The data model represents the data elements that are included in Banner ODS. Banner ODS shows the individual table, and the relationship with other tables stored within the model. It further includes all the data elements available in Banner ODS composite tables and/or the reporting views related to the object described.

Load Process

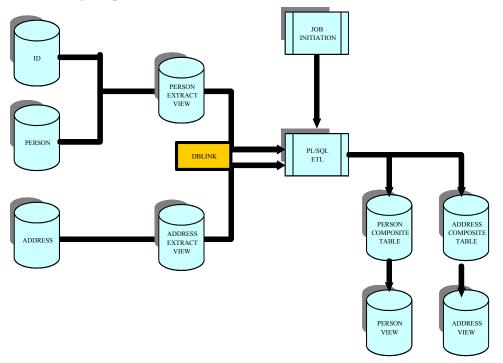
When a Load process is run, (from the Administrative UI, Select a Subprocess menu) one or more LOAD mappings run that extract all the data from a Composite view in the source system and move it into the corresponding Banner ODS Composite table. Typically, a complete load is run once, then the refresh process is run on a nightly basis to keep Banner ODS data in sync.

However, the Load process may be run periodically for one or more composite tables, for any number of reasons, including as an alternative to the Refresh process (see the "Using the Load vs. Refresh Process" section below). To facilitate the use of a load at any time, the Load process also purges the appropriate Change table(s), as applicable, that correspond to the Composite table(s) being loaded.

You may want to disable this feature on certain or all LOAD mappings. To disable the change table purge for a LOAD mapping, records can be created in MTVPARM. See the "Administrative User Interface" chapter of your "Handbook," "Schedule a Process Parameters," for information on the ETL_MAP_PACKAGE-_LOAD_PURGE Parameter.

Load Process Flow

Following is a process flowchart of Banner ODS:



- 1. Submit the Load job from the Administrative UI (Schedule a Process) to execute LOAD scripts for all mappings identified in that job.
- **2.** PL/SQL script reads views via DBLINK, which accesses the ODSMGR schema from the source.
- 3. Write data to Banner ODS composite tables on a separate database.
- 4. Repeat the cycle for all jobs submitted until complete.
- **5.** All process related information is logged in a Control Report, which is viewable via the Administrative UI. Review the associated Control Report for errors and job status messages.
 - (execute and monitor ETL processes),

Naming Conventions

The naming conventions and standards applied to scripts and database objects used to create and maintain the BPRA Solutions are described below.

Banner ODS Standards (ODSMGR Schema)

Front-End Views: Reporting Style

Object name

Natural language naming conventions are acceptable. Maximum length of 30 characters.

Examples:

PERSON, STUDENT_COURSE, CONSTITUENT

Additional Detail

Script names *must* follow unique 7-character naming standards. The first three characters are System Descriptor, Product ID and Object ID. The next four characters are free form.

Front-End Views: Object:Access Style

Object name

Maximum length is 30 characters. See the table below.

1 st Character	A	O:A View Indicator
2 nd Character	 A - Advancement F - Finance P - Payroll R - Financial Aid S - Student T - Accounts Receivable or Billing Receivable 	Product Identifier
3 rd Character 5 th -30 th Characters	_ (underscore) Unique Descriptor	

Examples:

AS_STUDENT_DATA, AA_GIVING

Additional Detail

Script names are the same as the object name.

Front-End Composite Tables

Object name

Maximum length is 30 characters. See the table below.

1 st Character	<i>M</i> - Mart	System Descriptor
2 nd Character	A - Advancement G - General F - Finance	Product Identifier
	<i>P</i> - Payroll <i>R</i> - Financial Aid	
	S - Student T - Accounts Receivable or Billing Receivable	
3 rd Character 4 th Character	T - Table or V - View _ (underscore)	Object Identifier
5 th -30 th Characters	Unique Descriptor	

Examples:

MAT_GIFT, MGT_VALIDATION

Additional Detail

Script names *must* follow unique 7-character naming standards. The first three characters are System Descriptor, Product ID and Object ID. The next four characters are free form.

Indexes

Primary Key Indexes

Object name:

PK_{table_name} (For front-end tables, omit the first three identifiers). Maximum length is 30 characters.

Additional Indexes

Object name

Index will be either table name or abbreviation suffixed by "_INDEX_nn" where nn is a one-up number. Maximum length is 30 characters.

Administrative Standards (IA_ADMIN Schema)

Administrative Tables

Object name

Maximum length is 30 characters. See the table below.

1 st Character	<i>M</i> - Mart	System Descriptor
2 nd Character	<i>D</i> - Control Reports <i>G</i> , <i>T</i> - General Purpose	Table Purpose
3 rd Character	<i>B</i> - Base <i>R</i> - Repeating <i>T</i> - Temporary <i>V</i> - Validation	Table Type
4 th -7 th Characters	Unique Descriptor	

Examples:

MDBLOGH, MTVPARM

Additional Detail

Script names *must* follow unique 7-character naming standards. Script names are the same as the object name.

Administrative Packages

Object name

Maximum length is 30 characters. See the table below.

1 st Character	<i>M</i> - Mart	System Descriptor
2 nd Character	G - General Purpose	Product Identifier
3 rd Character	K - Package	Object Identifier
4 th -7 th Characters	Unique Descriptor	

Examples:

MGKSECR, MGKPARM

Additional Detail

Script names *must* follow unique 7-character naming standards. Script names are the same as the object name.

Meta Data Tables/Views

Object name

Maximum length is 30 characters. See the table below.

1 st Character	W - Warehouse	System Descriptor
2 nd Character	M - Meta Data	Table Purpose
3 rd Character	T - Table or V -View	Object Identifier
4 th Character	_ (underscore)	
5 th -30 th Characters	Unique Descriptor	

Examples:

WMT_SOURCE, WMV_TARGET_OBJECT

Additional Detail

Script names are the same as the object name.

Sequences

Object name

See the table below.

1 st Character	<i>M</i> - Mart	System Descriptor
2 nd Character	G - General Purpose	Product Identifier
3 rd Character	S - Sequence	Object Identifier
4 th -7 th Characters	Unique Descriptor	

Examples:

MGSHOST, MGSPARM, MGSPIDM, MGSSDAX

Additional Detail

Script names *must* follow unique 7-character naming standards. Script names are the same as the object name.





Banner to Banner ODS chapter includes information that should be completed for Bannerspecific source systems, information that is unique to individual Banner products, and Banner composite views.

Implementation

The Implementation section contains information that should be completed for Bannerspecific source systems.

Partition Exchange Option

Some load processes can take a significant amount of time to extract data into Banner ODS, depending on the number of records at your institution. Transaction History and Payroll Distribution information can account for a lot of the total data load time. To compensate for this, you can use Oracle's partition exchange functionality to load information into the MFT_TRANS_HISTORY and MPT_PAYROLL_DISTRIBUTION composite tables in Banner ODS. This enables you to run multiple load mappings for the same table at once, depending on the hardware at your institution. For instance, baseline transaction history load is broken into five separate loads that must run one at a time. After the first mapping is run, the second mapping runs, and so forth until all five are complete. Installing the partition exchange option allows you to run up to five separate mappings for either Transaction History and/or Payroll Distribution at once. This can cut the time to load each table by five. The objects that use partition exchange are optional items that are installed during your Banner ODS installation or upgrade.

텛 Note

When installing these objects, the jobs that load these tables are no longer part of the LOAD_ALL_ODS_PRODUCTS job stream. You need to run these mappings manually through the Administrative UI.

In the Administrative UI, Schedule Banner ODS Mappings, there are five Transaction History Loads and Load Payroll History processes. These allow you to run one to five concurrent fiscal year loads for Transaction History, and one to five concurrent calendar year loads for Payroll History, at your discretion. Each job inserts a fiscal year / calendar year of information into a temporary table and exchanges it with its corresponding partition on the MFT_TRANS_HISTORY / MPT_PAYROLL_DISTRIBUTION tables when it is completed. The partition exchange renders a table's indexes as UNUSABLE. An additional parameter has been included to automatically rebuild existing indexes. You should leave this parameter as N until the last fiscal year is loaded. By rebuilding only on the final fiscal year / calendar year load, you avoid rebuilding the index each time.

통 Note

The nightly refresh processing is not affected by this new load process.

Use the following steps to schedule when you want each process to run:

- 1. Select Options from the Administrative UI menu.
- 2. Select Schedule a Process. The Select a Process page opens.
- 3. Select Schedule Banner ODS Mappings. The Select a Subprocess page opens.
- **4.** Select the Payroll or Transaction History process you want to run. The Schedule a Process page opens.
- 5. Enter the required Scheduling Parameters information.
 - 5.1. Enter a Run Date (format dd-mon-yyyy) and Runtime (format hh24:mi:ss).
 - **5.2.** If you want to run the process on a recurring basis, enter an **Interval**.

Select the link next to the **Interval** field. A sample Interval window opens. Select the link under the **Interval Expression** column for the interval in which you want to schedule a process. For example, to run a process every day at the same time select SYSDATE+1.

6. Select Save to save the information about this job. The job is entered into the job queue to run at the specified day and time.

Prerequisite Tasks

The prerequisites below *must* be completed for Banner General and Finance products before Banner ODS tables are loaded initially. No prerequisites are required for the remaining Banner products.

Step 1 Task 1 - Define General Preferences Address Type

The MST_ADDRESS composite table stores a person's preferred address information from Banner SPRADDR table. Since this information is rule based, the Address Type value needs to be defined in Banner GTVSDAX form so that Banner view AS_PERSON knows which value to use when selecting the address records. All values entered into the GTVSDAX form should stay exactly as listed below except for the external code. This

value should be changed to match the client specific address type from the STVATYP table that defines a preferred address.

칠 Note

Only one address type can be specified for the preferred address.

Example:	External Code	Internal Code	Internal Code Sequence Number	Internal Code Group
P	R	PREFADDR	1	ADDRESS

🔥 Warning

You *must* alter and/or enter your institution's preferred address type before starting Banner ODS load and incremental refresh process. If this parameter is not set up, null values will appear in the preferred address fields.

Step 2 Task 2 - Define Fiscal Years for Baseline Transaction History Loads in Finance

통 Note

This applies only to the baseline Transaction History Load. This is not required if you are using Partition Exchange.

The MFT_TRANSACTION_HISTORY composite table in Banner ODS stores detailed history information from Banner Finance transaction tables FGBTRND and FGBTRNH. These tables are typically very large and take a long time to load. To improve the performance and allow intermittent commits, the load process is 'staged' into five separate load processes. This allows the process to restart if any problems occur during the load. These load processes are driven by fiscal years. Which fiscal years are loaded, and to which load mappings they should belong is defined on the Set Up Parameters page of the Administrative UI. (MTVPARM)

There may be more than one fiscal year defined for each of the load mappings. Therefore, you may define fiscal year groupings that best suit your system resources.

To view SunGard delivered data, plus any data from your last Banner implementation, you need to set up the parameters starting with 1995. See the example below:

Select an Existing Parameter

Click a Description in the table below to select the Parameter you want to update or delete, or change the search criteria and click Search

PARAMETER

LOAD_MFT_TRANS_HISTORY

Search

Internal Group	Internal Code 1	Internal Code 2	Internal Code Sequence	External Code	Description
PARAMETER	LOAD_MFT_TRANS_HISTORY	LOAD_MFT_TRANS_HISTORY_1	1	1994	Fiscal Year To Load
PARAMETER	LOAD_MFT_TRANS_HISTORY	LOAD_MFT_TRANS_HISTORY_1	1	1995	Fiscal Year To Load
PARAMETER	LOAD_MFT_TRANS_HISTORY	LOAD_MFT_TRANS_HISTORY_2	2	1996	Fiscal Year To Load
PARAMETER	LOAD_MFT_TRANS_HISTORY	LOAD_MFT_TRANS_HISTORY_2	2	1997	Fiscal Year To Load
PARAMETER	LOAD_MFT_TRANS_HISTORY	LOAD_MFT_TRANS_HISTORY_2	2	1998	Fiscal Year To Load
PARAMETER	LOAD_MFT_TRANS_HISTORY	LOAD_MFT_TRANS_HISTORY_2	2	1999	Fiscal Year To Load
PARAMETER	LOAD_MFT_TRANS_HISTORY	LOAD_MFT_TRANS_HISTORY_2	2	2000	Fiscal Year To Load
PARAMETER	LOAD_MFT_TRANS_HISTORY	LOAD_MFT_TRANS_HISTORY_3	3	2000	Fiscal Year To Load
PARAMETER	LOAD_MFT_TRANS_HISTORY	LOAD_MFT_TRANS_HISTORY_3	3	2001	Fiscal Year To Load

Step 3 Task 3 - Load Finance into Banner ODS

통 Note

This does not apply to Partition Exchange.

Loading Banner ODS Composite table, MFT_TRANS_HISTORY, is broken into five separate Load mappings. (See the "Banner to Banner ODS User Guide" for details on setting up fiscal year parameters to load this table.) These five Load mappings are part of the LOAD_FINANCE job/process as well as the LOAD_ALL_ODS_PRODUCTS job, and run when either of these jobs are scheduled. The Load Finance Transaction History process in Banner ODS Administrative User Interface runs these five load mappings separately. This allows you to load or reload the MFT_TRANS_HISTORY table without running each of the MFT_TRANS_HISTORY Load mappings separately, and without having to load or reload all of the other Finance tables. The Load Finance Transaction History process is located on the Schedule Banner ODS Mappings web page, and runs the following mappings in the following order:

- LOAD_MFT_TRANS_HISTORY_1, LOAD_MFT_TRANS_HISTORY_2
- LOAD_MFT_TRANS_HISTORY_3, LOAD_MFT_TRANS_HISTORY_4
- LOAD_MFT_TRANS_HISTORY_5

Because of the amount of time required to load the Transaction History table, you may want to remove the loading of the MFT_TRANS_HISTORY table out of the LOAD_FINANCE job, and load your table using this new LOAD_FINANCE_TRANSACTION_HISTORY job. To do this, your Systems Administrator can remove these load mappings from the LOAD_FINANCE job in the MTVPARM table under the IA_ADMIN schema in Banner ODS.

Validation Table Data and Incremental Refresh

The Banner Operational Data Store (Banner ODS) was designed with validation table codes and descriptions stored on each individual data record. This design method was chosen to expedite the display of information since it eliminates the need for excessive joins of as many as 10 or 15 additional tables. During the design phase of Banner ODS, several methodologies on managing validation table change requirements were discussed with institutions. The consensus was that it would be preferable to build internal institutional policies and procedures to ensure that descriptions would not be changed, but that new codes would be added.

This is similar to the way in which Banner Course Catalog process works. If the title of the course changes, the institution creates a new catalog record with the new title for the new effective term - thus an entry with a description such as "Bowling Basics" that changed to "Bowling Fundamentals" would get a new code so that Banner ODS would reflect the data as it existed in the past for "Bowling Basics" and the new values reflected for "Bowling Fundamentals". If it was determined that it was a necessary requirement to physically change a column description, then the institution policy would require that either a reload of all affected tables be initiated (very time intensive) or a script would be created at the institution that would update all columns in Banner ODS, altering the old value to the new value.

Therefore, to ensure that data integrity is maintained, it is important that no updates are applied to existing values within the validation tables once Banner ODS is placed into production and the incremental refresh cycle is implemented. Otherwise, there will be an inconsistency in the information displayed between the source system and Banner ODS.

To further explain the difficulty in incrementally refreshing tables based on coded description changes and not the result of data value changes, it is necessary to understand the efforts that would be required to try and implement a validation to data table refresh. First, the source system would have to be enhanced to maintain triggers on each validation table to track all DML activity. While it is possible to apply triggers to each of these tables, the trigger event would very likely have a performance impact on the source system since it would require the trigger to populate an entry into a change table for every row in every source data table that was populated with the altered validation table value. This would require a full table scan of every affected source table because the source system does not maintain keyed links between the validation tables and the data tables.

For example, the validation table STVDEPT is used enterprise wide in Banner Student, Advancement and H/R systems in 84 different tables. If a value were to be changed in the STVDEPT table, then the trigger on the STVDEPT table would have to read all 84 of the source tables to identify the key(s) of each row that contained the altered DEPT value, and then populate that key into the change table. Given the size of many of these data tables, the commit time required for the end user to wait on the change of the validation table in Banner would freeze their Banner session until the change table population took place.

The table below indicates what Banner ODS tables need to be reloaded if you change a description in any of the Banner validation tables:

Validation

Table	Mapping
AABMSHP	LOAD_MAT_MEMBERSHIP
AFBCAMP	LOAD_MAT_SOLICITOR
ASBSORG	LOAD_MAT_SOLICITOR
ATVAMCT	LOAD_MAT_MEMBERSHIP
ATVAMGP	LOAD_MAT_MEMBERSHIP_INTEREST
ATVAMIN	LOAD_MAT_MEMBERSHIP_INTEREST
ATVAMPM	LOAD_MAT_MEMBERSHIP_DUES
ATVAMST	LOAD_MAT_MEMBERSHIP
ATVAMTP	LOAD_MAT_MEMBERSHIP
ATVASSC	LOAD_MAT_GIFT_ASSOC_ENTITY
ATVCFAE	LOAD_MAT_DESG_GIVING
ATVCFAE	LOAD_MAT_GIFT
ATVCFAE	LOAD_MAT_GIFT_MATCHING
ATVCFAE	LOAD_MAT_GIFT_MEMO
ATVCFAE	LOAD_MAT_GIFT_MULTIPLE
ATVCFAE	LOAD_MAT_PLEDGE
ATVCMTP	LOAD_MAT_CAMP_GIVING
ATVCMTP	LOAD_MAT_GIFT
ATVCMTP	LOAD_MAT_GIFT_MATCHING
ATVCMTP	LOAD_MAT_GIFT_MEMO
ATVCMTP	LOAD_MAT_GIFT_MULTIPLE
ATVCMTP	LOAD_MAT_PLEDGE
ATVDCAM	LOAD_MAT_GIFT_SOCIETY
ATVDCAM	LOAD_MAT_MEMBERSHIP
ATVDCNP	LOAD_MAT_CONSTITUENT_ENTITY
ATVDCNP	LOAD_MAT_CONSTITUENT_ENTITY
ATVDCPR	LOAD_MAT_GIFT_AUXILIARY
ATVDCST	LOAD_MAT_CONSTITUENT_ENTITY
ATVDCST	LOAD_MAT_CONSTITUENT_ENTITY
ATVDCYR	LOAD_MAT_GIFT_SOCIETY
ATVDGRP	LOAD_MAT_GIFT
ATVDGRP	LOAD_MAT_GIFT_MATCHING
ATVDGRP	LOAD_MAT_PLEDGE
ATVDONR	LOAD_MAT_GIFT_AUXILIARY
ATVDOTT	LOAD_MAT_CONSTITUENT_ENTITY
ATVDSTA	LOAD_MAT_GIFT
ATVDSTA	LOAD_MAT_GIFT_MATCHING

Composite View

AA MEMBERSHIP AA SOLICITOR AA SOLICITOR AA MEMBERSHIP AA MEMBERSHIP INTEREST AA MEMBERSHIP INTEREST AA MEMBERSHIP DUES AA MEMBERSHIP AA MEMBERSHIP AA GIFT ASSOCIATED ENTITY AA_DESIGNATION_GIVING_HISTORY AA GIFT AA_GIFT_MATCHING AA_GIFT_MEMO AA GIFT_MULTIPLE AA PLEDGE AA CAMPAIGN GIVING HISTORY AA GIFT AA GIFT MATCHING AA GIFT MEMO AA GIFT MULTIPLE AA PLEDGE AA GIFT SOCIETY AA MEMBERSHIP AA CONSTITUENT AA ORGANIZATIONAL CONSTITUENT AA GIFT AUXILIARY AA CONSTITUENT AA ORGANIZATIONAL CONSTITUENT AA_GIFT_SOCIETY AA GIFT AA GIFT MATCHING AA PLEDGE AA GIFT_AUXILIARY AA CONSTITUENT AA GIFT AA GIFT MATCHING

Validation		
Table	Mapping	Composite View
ATVDSTA	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVDSTP	LOAD_MAT_DESG_GIVING	AA_DESIGNATION_GIVING_HISTORY
ATVDSTP	LOAD_MAT_GIFT	AA_GIFT
ATVDSTP	LOAD_MAT_GIFT_MATCHING	AA_GIFT_MATCHING
ATVDSTP	LOAD_MAT_GIFT_MEMO	AA_GIFT_MEMO
ATVDSTP	LOAD_MAT_GIFT_MULTIPLE	AA_GIFT_MULTIPLE
ATVDSTP	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVEXRS	LOAD_MAT_ADVANCEMENT_RATING	AA_ADVANCEMENT_RATING
ATVFISC	LOAD_MAT_ANNUAL_GIVING	AA_ANNUAL_GIVING
ATVFISC	LOAD_MAT_CAMP_GIVING	AA_CAMPAIGN_GIVING_HISTORY
ATVFISC	LOAD_MAT_CONSTITUENT_ENTITY	AA_CONSTITUENT
ATVFISC	LOAD_MAT_DESG_GIVING	AA_DESIGNATION_GIVING_HISTORY
ATVFISC	LOAD_MAT_GIFT	AA_GIFT
ATVFISC	LOAD_MAT_GIFT_MEMO	AA_GIFT_MEMO
ATVFISC	LOAD_MAT_GIFT_MULTIPLE	AA_GIFT_MULTIPLE
ATVFISC	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVFREQ	LOAD_MAT_PLEDGE_INSTALLMENT	AA_PLEDGE_INSTALLMENT
ATVFUND	LOAD_MAT_FUNDING_INTEREST	AA_FUNDING_INTEREST
ATVGACK	LOAD_MAT_GIFT	AA_GIFT
ATVGCLS	LOAD_MAT_GIFT	AA_GIFT
ATVGCLS	LOAD_MAT_GIFT_MEMO	AA_GIFT_MEMO
ATVGCLS	LOAD_MAT_GIFT_MULTIPLE	AA_GIFT_MULTIPLE
ATVGIFT	LOAD_MAT_GIFT_MEMO	AA_GIFT_MEMO
ATVGIFT	LOAD_MAT_GIFT_MULTIPLE	AA_GIFT_MULTIPLE
ATVGIVH	LOAD_MAT_FUNDING_INTEREST	AA_FUNDING_INTEREST
ATVGIVH	LOAD_MAT_PROSPECT_PROPOSAL	AA_PROSPECT_PROPOSAL
ATVINCM	LOAD_MAT_CONSTITUENT_ENTITY	AA_CONSTITUENT
ATVJOBC	LOAD_MAT_CONSTITUENT_ENTITY	AA_ORGANIZATIONAL_CONSTITUENT
ATVJOBC	LOAD_MAT_ORGANIZATION_CONTACT	AA_ORGANIZATION_CONTACT
ATVJOBC	LOAD_MAT_PREVIOUS_EMPLOYMENT	AA_PREVIOUS_EMPLOYMENT
ATVMOVE	LOAD_MAT_CONSTITUENT_CONTACT	AA_CONSTITUENT_CONTACT
ATVMOVE	LOAD_MAT_CONSTITUENT_PLAN	AA_CONSTITUENT_PLAN
ATVOCON	LOAD_MAT_ORGANIZATION_CONTACT	AA_ORGANIZATION_CONTACT
ATVPACK	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVPCAT	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVPCLS	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVPDUR	LOAD_MAT_PLEDGE_INSTALLMENT	AA_PLEDGE_INSTALLMENT
ATVPGVE	LOAD_MAT_GIFT	AA_GIFT
ATVPGVE	LOAD_MAT_GIFT_MATCHING	AA_GIFT_MATCHING

2-7

Validation		
Table	Mapping	Composite View
ATVPGVE	LOAD_MAT_GIFT_MEMO	AA_GIFT_MEMO
ATVPGVE	LOAD_MAT_GIFT_MULTIPLE	AA_GIFT_MULTIPLE
ATVPGVE	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVPGVE	LOAD_MAT_PLEDGE_MATCHING	AA_PLEDGE_MATCHING
ATVPLDG	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVPRCD	LOAD_MAT_SPECIAL_PURPOSE_GROUP	AA_SPECIAL_PURPOSE_GROUP
ATVPRMD	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVPRMD	LOAD_MAT_PLEDGE_INSTALLMENT	AA_PLEDGE_INSTALLMENT
ATVPROJ	LOAD_MAT_CONSTITUENT_CONTACT	AA_CONSTITUENT_CONTACT
ATVPROJ	LOAD_MAT_CONSTITUENT_PLAN	AA_CONSTITUENT_PLAN
ATVPROJ	LOAD_MAT_FUNDING_INTEREST	AA_FUNDING_INTEREST
ATVPROJ	LOAD_MAT_PROSPECT_PROPOSAL	AA_PROSPECT_PROPOSAL
ATVPROP	LOAD_MAT_PROSPECT_PROPOSAL	AA_PROSPECT_PROPOSAL
ATVPRST	LOAD_MAT_FUNDING_INTEREST	AA_FUNDING_INTEREST
ATVPRST	LOAD_MAT_PROSPECT_PROPOSAL	AA_PROSPECT_PROPOSAL
ATVPRTP	LOAD_MAT_SPECIAL_PURPOSE_GROUP	AA_SPECIAL_PURPOSE_GROUP
ATVPSTA	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVREFR	LOAD_MAT_PROSPECT_INFO	AA_PROSPECT_INFO
ATVRSCR	LOAD_MAT_ADVANCEMENT_RATING	AA_ADVANCEMENT_RATING
ATVRTGT	LOAD_MAT_ADVANCEMENT_RATING	AA_ADVANCEMENT_RATING
ATVSCNT	LOAD_MAT_CONSTITUENT_CONTACT	AA_CONSTITUENT_CONTACT
ATVSICC	LOAD_MAT_CONSTITUENT_ENTITY	AA_ORGANIZATIONAL_CONSTITUENT
ATVSICC	LOAD_MAT_PREVIOUS_EMPLOYMENT	AA_PREVIOUS_EMPLOYMENT
ATVSOLC	LOAD_MAT_SOLICITOR	AA_SOLICITOR
ATVSTFT	LOAD_MAT_CONSTIT_STAFF_ASSIGN	AA_CONSTITUENT_STAFF_ASSIGN
ATVSTFT	LOAD_MAT_PROSPECT_INFO	AA_PROSPECT_INFO
ATVVIPC	LOAD_MAT_SPECIAL_PURPOSE_GROUP	AA SPECIAL PURPOSE GROUP
ATVXREF	LOAD_MAT_RELATION	AA_RELATIONSHIP
FRVBASI	LOAD MFT GRANT	AF GRANT
FRVBASI	LOAD MFT GRANT FUND	AF GRANT FUND
FRVCSTA	LOAD MFT GRANT	AF GRANT
FRVCSTA	LOAD_MFT_GRANT_FUND	AF_GRANT_FUND
FRVCSTD	LOAD MFT GRANT	AF GRANT
FRVCSTD	LOAD MFT GRANT FUND	AF GRANT FUND
FRVCSTR	LOAD MFT GRANT	AF GRANT
FRVCSTR	LOAD_MFT_GRANT_FUND	AF GRANT FUND
FRVINDA	LOAD MFT GRANT	AF GRANT
FRVINDA	LOAD_MFT_GRANT_FUND	AF GRANT FUND
FRVINDD	LOAD MFT GRANT	AF GRANT

Validation	Manufac	Composite View
FRVINDD	LOAD_MFT_GRANT_FUND	AF_GRANT_FUND
FRVINDR	LOAD_MFT_GRANT	AF_GRANT
FRVINDR	LOAD_MFT_GRANT_FUND	AF_GRANT_FUND
FTVACCI	LOAD_MAT_GIFT	AA_GIFT
FTVACCI	LOAD_MAT_PLEDGE	AA_PLEDGE
FTVACCI	LOAD_MFT_ENDOWMENT	AF_ENDOWMENT
FTVACCI	LOAD_MFT_GRANT_BILL_DETAIL	AF_GRANT_BILLING_DETAIL
FTVACCT	LOAD_MAT_GIFT	AA_GIFT
FTVACCT	LOAD_MAT_PLEDGE	AA_PLEDGE
FTVACCT	LOAD_MFT_ACCOUNT_INDEX	AF_ACCOUNT_INDEX
FTVACCT	LOAD_MFT_BUDG_AVAIL_LEDG	AF_BUDGET_AVAILABILITY_LEDGER
FTVACCT	LOAD_MFT_BUDG_DETAIL	AF_BUDGET_DETAIL
FTVACCT	LOAD_MFT_ENCUMBRANCE_ACCOUNT	AF_ENCUMBRANCE_ACCOUNTING
FTVACCT	LOAD_MFT_ENDOWMENT	AF_ENDOWMENT
FTVACCT	LOAD_MFT_ENDOWMENT_UNITS	AF_ENDOWMENT_UNITS
FTVACCT	LOAD_MFT_FA_ADJUSTMENT	AF_FIXED_ASSET_ADJUSTMENT
FTVACCT	LOAD_MFT_FA_DEPRECIATED_ITEM	AF_FIXED_ASSET_DEPRECIATION
FTVACCT	LOAD_MFT_FA_FUNDING_SOURCE	AF_FIXED_ASSET_FUNDING_SOURCE
FTVACCT	LOAD_MFT_GENERAL_LEDGER	AF_GENERAL_LEDGER
FTVACCT	LOAD_MFT_GRANT_BILL_DETAIL	AF_GRANT_BILLING_DETAIL
FTVACCT	LOAD_MFT_GRANT_FUND	AF_GRANT_FUND
FTVACCT	LOAD_MFT_GRANT_LEDGER	AF_GRANT_LEDGER
FTVACCT	LOAD_MFT_INV_ACCOUNTING	AF_INVOICE_ACCOUNTING
FTVACCT	LOAD_MFT_OPERATING_LEDGER	AF_OPERATING_LEDGER
FTVACCT	LOAD_MFT_PO_ACCOUNTING	AF_PURCHASE_ORDER_ACCOUNTING
FTVACCT	LOAD_MTT_LEDGER_ACCOUNTING	AT_LEDGER_ACCOUNTING
FTVACTV	LOAD_MAT_GIFT	AA_GIFT
FTVACTV	LOAD_MAT_PLEDGE	AA_PLEDGE
FTVACTV	LOAD_MFT_ACCOUNT_INDEX	AF_ACCOUNT_INDEX
FTVACTV	LOAD_MFT_BUDG_DETAIL	AF_BUDGET_DETAIL
FTVACTV	LOAD_MFT_ENCUMBRANCE_ACCOUNT	AF_ENCUMBRANCE_ACCOUNTING
FTVACTV	LOAD_MFT_ENDOWMENT	AF_ENDOWMENT
FTVACTV	LOAD_MFT_FA_DEPRECIATED_ITEM	AF_FIXED_ASSET_DEPRECIATION
FTVACTV	LOAD_MFT_FA_FUNDING_SOURCE	AF_FIXED_ASSET_FUNDING_SOURCE
FTVACTV	LOAD_MFT_GRANT_BILL_DETAIL	AF_GRANT_BILLING_DETAIL
FTVACTV	LOAD_MFT_GRANT_LEDGER	AF_GRANT_LEDGER
FTVACTV	LOAD_MFT_INV_ACCOUNTING	AF_INVOICE_ACCOUNTING
FTVACTV	LOAD_MFT_OPERATING_LEDGER	AF_OPERATING_LEDGER
FTVACTV	LOAD_MFT_PO_ACCOUNTING	AF_PURCHASE_ORDER_ACCOUNTING

2-9

Validation Table	Mapping	Composite View
FTVACTV	LOAD_MFT_TRANS_HISTORY_1	AF_TRANSACTION_HISTORY
FTVACTV	LOAD_MFT_TRANS_HISTORY_2	AF_TRANSACTION_HISTORY
FTVACTV	LOAD_MFT_TRANS_HISTORY_3	AF_TRANSACTION_HISTORY
FTVACTV	LOAD_MFT_TRANS_HISTORY_4	AF_TRANSACTION_HISTORY
FTVACTV	LOAD_MFT_TRANS_HISTORY_5	AF_TRANSACTION_HISTORY
FTVACTV	LOAD_MTT_LEDGER_ACCOUNTING	AT_LEDGER_ACCOUNTING
FTVCOAS	LOAD_MAT_GIFT	AA_GIFT
FTVCOAS	LOAD_MAT_PLEDGE	AA_PLEDGE
FTVCOAS	LOAD_MFT_ACCOUNT_INDEX	AF_ACCOUNT_INDEX
FTVCOAS	LOAD_MFT_BUDG_AVAIL_LEDG	AF_BUDGET_AVAILABILITY_LEDGER
FTVCOAS	LOAD_MFT_BUDG_DETAIL	AF_BUDGET_DETAIL
FTVCOAS	LOAD_MFT_ENCUMBRANCE_ACCOUNT	AF_ENCUMBRANCE_ACCOUNTING
FTVCOAS	LOAD_MFT_ENDOWMENT	AF_ENDOWMENT
FTVCOAS	LOAD_MFT_ENDOWMENT_ATTRIBUTE	AF_ENDOWMENT_ATTRIBUTES
FTVCOAS	LOAD_MFT_ENDOWMENT_DIST	AF_ENDOWMENT_DIST
FTVCOAS	LOAD_MFT_ENDOWMENT_MARKET	AF_ENDOWMENT_MARKET_VALUES
FTVCOAS	LOAD_MFT_ENDOWMENT_UNITS	AF_ENDOWMENT_UNITS
FTVCOAS	LOAD_MFT_FA_DEPRECIATED_ITEM	AF_FIXED_ASSET_DEPRECIATION
FTVCOAS	LOAD_MFT_FA_FUNDING_SOURCE	AF_FIXED_ASSET_FUNDING_SOURCE
FTVCOAS	LOAD_MFT_FA_ITEM	AF_FIXED_ASSET_ITEM
FTVCOAS	LOAD_MFT_GENERAL_LEDGER	AF_GENERAL_LEDGER
FTVCOAS	LOAD_MFT_GRANT	AF_GRANT
FTVCOAS	LOAD_MFT_GRANT_BILL_DETAIL	AF_GRANT_BILLING_DETAIL
FTVCOAS	LOAD_MFT_GRANT_FUND	AF_GRANT_FUND
FTVCOAS	LOAD_MFT_GRANT_LEDGER	AF_GRANT_LEDGER
FTVCOAS	LOAD_MFT_INV_ACCOUNTING	AF_INVOICE_ACCOUNTING
FTVCOAS	LOAD_MFT_LOCN_HIERARCHY	AF_LOCATION_HIERARCHY
FTVCOAS	LOAD_MFT_OPERATING_LEDGER	AF_OPERATING_LEDGER
FTVCOAS	LOAD_MFT_ORGN_HIERARCHY	AF_ORGANIZATION_HIERARCHY
FTVCOAS	LOAD_MFT_PO_ACCOUNTING	AF_PURCHASE_ORDER_ACCOUNTING
FTVCOAS	LOAD_MFT_PROG_HIERARCHY	AF_PROGRAM_HIERARCHY
FTVCOAS	LOAD_MFT_PROPOSAL	AF_PROPOSAL
FTVCOAS	LOAD_MFT_PURCHASE_ORDER	AF_PURCHASE_ORDER
FTVCOAS	LOAD_MFT_TRANS_HISTORY_1	AF_TRANSACTION_HISTORY
FTVCOAS	LOAD_MFT_TRANS_HISTORY_2	AF_TRANSACTION_HISTORY
FTVCOAS	LOAD_MFT_TRANS_HISTORY_3	AF_TRANSACTION_HISTORY
FTVCOAS	LOAD_MFT_TRANS_HISTORY_4	AF_TRANSACTION_HISTORY
FTVCOAS	LOAD_MFT_TRANS_HISTORY_5	AF_TRANSACTION_HISTORY
FTVCOAS	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
		—

Validation		
Table	Mapping	Composite View
FTVCOAS	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE
FTVCOAS	LOAD_MPT_FACULTY_APPT_HIST	AP_FACULTY_APPOINTMENT_HISTORY
FTVCOAS	LOAD_MPT_FACULTY_RANK_HIST	AP_FACULTY_RANK_HISTORY
FTVCOAS	LOAD_MPT_FACULTY_SABB_HIST	AP_FACULTY_SABBATICAL_HISTORY
FTVCOAS	LOAD_MPT_PAYROLL_EARNING	AP_PAYROLL_EARNING
FTVCOAS	LOAD_MPT_PAYROLL_EMPL_POSN	AP_PAYROLL_EMPLOYEE_POSITION
FTVCOAS	LOAD_MTT_LEDGER_ACCOUNTING	AT_LEDGER_ACCOUNTING
FTVCOMM	LOAD_MFT_INVOICE_ITEM	AF_INVOICE_ITEM
FTVCOMM	LOAD_MFT_PO_ITEM	AF_PUCHASE_ORDER_ITEM
FTVCOMM	LOAD_MFT_RECEIVED_ITEM	AF_RECEIVED_ITEM
FTVCOMM	LOAD_MFT_RETURNED_ITEM	AF_RETURNED_ITEM
FTVCTYP	LOAD_MPT_PAYROLL_DIST	AN_PAYROLL_DISTRIBUTION
FTVFOBS	LOAD_MFT_RECEIVED_ITEM	AF_RECEIVED_ITEM
FTVFUND	LOAD_MAT_GIFT	AA_GIFT
FTVFUND	LOAD_MAT_PLEDGE	AA_PLEDGE
FTVFUND	LOAD_MFT_ACCOUNT_INDEX	AF_ACCOUNT_INDEX
FTVFUND	LOAD_MFT_BUDG_AVAIL_LEDG	AF_BUDGET_AVAILABILITY_LEDGER
FTVFUND	LOAD_MFT_BUDG_DETAIL	AF_BUDGET_DETAIL
FTVFUND	LOAD_MFT_ENCUMBRANCE_ACCOUNT	AF_ENCUMBRANCE_ACCOUNTING
FTVFUND	LOAD_MFT_ENDOWMENT	AF_ENDOWMENT
FTVFUND	LOAD_MFT_ENDOWMENT_ATTRIBUTE	AF_ENDOWMENT_ATTRIBUTES
FTVFUND	LOAD_MFT_ENDOWMENT_DIST	AF_ENDOWMENT_DIST
FTVFUND	LOAD_MFT_ENDOWMENT_UNITS	AF_ENDOWMENT_UNITS
FTVFUND	LOAD_MFT_FA_DEPRECIATED_ITEM	AF_FIXED_ASSET_DEPRECIATION
FTVFUND	LOAD_MFT_FA_FUNDING_SOURCE	AF_FIXED_ASSET_FUNDING_SOURCE
FTVFUND	LOAD_MFT_GENERAL_LEDGER	AF_GENERAL_LEDGER
FTVFUND	LOAD_MFT_GRANT_BILL_DETAIL	AF_GRANT_BILLING_DETAIL
FTVFUND	LOAD_MFT_GRANT_FUND	AF_GRANT_FUND
FTVFUND	LOAD_MFT_GRANT_LEDGER	AF_GRANT_LEDGER
FTVFUND	LOAD_MFT_INV_ACCOUNTING	AF_INVOICE_ACCOUNTING
FTVFUND	LOAD_MFT_OPERATING_LEDGER	AF_OPERATING_LEDGER
FTVFUND	LOAD_MFT_PO_ACCOUNTING	AF_PURCHASE_ORDER_ACCOUNTING
FTVFUND	LOAD_MTT_LEDGER_ACCOUNTING	AT_LEDGER_ACCOUNTING
FTVINCL	LOAD_MFT_ENDOWMENT	AF_ENDOWMENT
FTVLOCN	LOAD_MAT_GIFT	AA_GIFT
FTVLOCN	LOAD_MAT_PLEDGE	AA_PLEDGE
FTVLOCN	LOAD_MFT_ACCOUNT_INDEX	AF_ACCOUNT_INDEX
FTVLOCN	LOAD_MFT_BUDG_DETAIL	AF_BUDGET_DETAIL
FTVLOCN	LOAD_MFT_ENCUMBRANCE_ACCOUNT	AF_ENCUMBRANCE_ACCOUNTING

Validation		
Table	Mapping	Composite View
FTVLOCN	LOAD_MFT_ENDOWMENT	AF_ENDOWMENT
FTVLOCN	LOAD_MFT_FA_DEPRECIATED_ITEM	AF_FIXED_ASSET_DEPRECIATION
FTVLOCN	LOAD_MFT_FA_FUNDING_SOURCE	AF_FIXED_ASSET_FUNDING_SOURCE
FTVLOCN	LOAD_MFT_FA_ITEM	AF_FIXED_ASSET_ITEM
FTVLOCN	LOAD_MFT_GRANT	AF_GRANT
FTVLOCN	LOAD_MFT_GRANT_BILL_DETAIL	AF_GRANT_BILLING_DETAIL
FTVLOCN	LOAD_MFT_GRANT_LEDGER	AF_GRANT_LEDGER
FTVLOCN	LOAD_MFT_INV_ACCOUNTING	AF_INVOICE_ACCOUNTING
FTVLOCN	LOAD_MFT_OPERATING_LEDGER	AF_OPERATING_LEDGER
FTVLOCN	LOAD_MFT_PO_ACCOUNTING	AF_PURCHASE_ORDER_ACCOUNTING
FTVLOCN	LOAD_MFT_PROPOSAL	AF_PROPOSAL
FTVLOCN	LOAD_MTT_LEDGER_ACCOUNTING	AT_LEDGER_ACCOUNTING
FTVORGN	LOAD_MAT_GIFT	AA_GIFT
FTVORGN	LOAD_MAT_PLEDGE	AA_PLEDGE
FTVORGN	LOAD_MFT_ACCOUNT_INDEX	AF_ACCOUNT_INDEX
FTVORGN	LOAD_MFT_BUDG_AVAIL_LEDG	AF_BUDGET_AVAILABILITY_LEDGER
FTVORGN	LOAD_MFT_BUDG_DETAIL	AF_BUDGET_DETAIL
FTVORGN	LOAD_MFT_ENCUMBRANCE_ACCOUNT	AF_ENCUMBRANCE_ACCOUNTING
FTVORGN	LOAD_MFT_ENDOWMENT	AF_ENDOWMENT
FTVORGN	LOAD_MFT_ENDOWMENT_UNITS	AF_ENDOWMENT_UNITS
FTVORGN	LOAD_MFT_FA_DEPRECIATED_ITEM	AF_FIXED_ASSET_DEPRECIATION
FTVORGN	LOAD_MFT_FA_FUNDING_SOURCE	AF_FIXED_ASSET_FUNDING_SOURCE
FTVORGN	LOAD_MFT_FA_ITEM	AF_FIXED_ASSET_ITEM
FTVORGN	LOAD_MFT_GRANT	AF_GRANT
FTVORGN	LOAD_MFT_GRANT_BILL_DETAIL	AF_GRANT_BILLING_DETAIL
FTVORGN	LOAD_MFT_GRANT_LEDGER	AF_GRANT_LEDGER
FTVORGN	LOAD_MFT_INV_ACCOUNTING	AF_INVOICE_ACCOUNTING
FTVORGN	LOAD_MFT_OPERATING_LEDGER	AF_OPERATING_LEDGER
FTVORGN	LOAD_MFT_ORGN_HIERARCHY	AF_ORGANIZATION_HIERARCHY
FTVORGN	LOAD_MFT_PO_ACCOUNTING	AF_PURCHASE_ORDER_ACCOUNTING
FTVORGN	LOAD_MFT_PROPOSAL	AF_PROPOSAL
FTVORGN	LOAD_MFT_PURCHASE_ORDER	AF_PURCHASE_ORDER
FTVORGN	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
FTVORGN	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE
FTVORGN	LOAD_MPT_FACULTY_APPT_HIST	AP_FACULTY_APPOINTMENT_HISTORY
FTVORGN	LOAD_MPT_FACULTY_RANK_HIST	AP_FACULTY_RANK_HISTORY
FTVORGN	LOAD_MPT_FACULTY_SABB_HIST	AP_FACULTY_SABBATICAL_HISTORY
FTVORGN	LOAD_MPT_PAYROLL_EARNING	AP_PAYROLL_EARNING
FTVORGN	LOAD_MPT_PAYROLL_EMPL_POSN	AP_PAYROLL_EMPLOYEE_POSITION

Validation Table	Mapping	Composite View
FTVORGN		AT LEDGER ACCOUNTING
FTVDRON	LOAD_MTT_LEDGER_ACCOUNTING LOAD MAT GIFT	AA GIFT
FTVPROG	LOAD_MAT_PLEDGE	AA_OIFT AA PLEDGE
	LOAD MFT ACCOUNT INDEX	—
FTVPROG FTVPROG		AF_ACCOUNT_INDEX
	LOAD_MFT_BUDG_AVAIL_LEDG LOAD MFT BUDG DETAIL	AF_BUDGET_AVAILABILITY_LEDGER
FTVPROG FTVPROG	LOAD_MFT_ENCUMBRANCE_ACCOUNT	AF_BUDGET_DETAIL AF_ENCUMBRANCE_ACCOUNTING
FTVPROG	LOAD MFT ENDOWMENT	AF_ENCOMBRANCE_ACCOUNTING AF_ENDOWMENT
FTVPROG	LOAD_MFT_ENDOWMENT_UNITS	AF_ENDOWMENT AF ENDOWMENT UNITS
FTVPROG	LOAD MFT FA DEPRECIATED ITEM	AF FIXED ASSET DEPRECIATION
FTVPROG	LOAD_MFT_FA_DEFRECTATED_TTEM LOAD_MFT_FA_FUNDING_SOURCE	AF_FIXED_ASSET_DEFRECTATION AF_FIXED_ASSET_FUNDING_SOURCE
FTVPROG	LOAD MFT GRANT BILL DETAIL	AF_FIXED_ASSET_FUNDING_SOURCE AF GRANT BILLING DETAIL
FTVPROG	LOAD_MFT_GRANT_BILL_DETAIL LOAD_MFT_GRANT_LEDGER	AF_GRANT_BILLING_DETAIL AF_GRANT_LEDGER
FTVPROG	LOAD MFT INV ACCOUNTING	AF_OKANT_LEDGER AF INVOICE ACCOUNTING
FTVPROG	LOAD MFT OPERATING LEDGER	AF_OPERATING_LEDGER
FTVPROG	LOAD_MFT_PO_ACCOUNTING	AF_OPERATING_LEDGER AF PURCHASE ORDER ACCOUNTING
FTVPROG	LOAD MTT LEDGER ACCOUNTING	AT LEDGER ACCOUNTING
FTVPROJ	LOAD MPT PAYROLL DIST	AN PAYROLL DISTRIBUTION
FTVFRUCL	LOAD MAT GIFT	AA GIFT
FTVRUCL	LOAD_MAT_OFFT LOAD_MPT_PAYROLL_DIST	—
FTVRUCL		AN_PAYROLL_DISTRIBUTION
FTVRUCL	LOAD_MTT_LEDGER_ACCOUNTING	AT_LEDGER_ACCOUNTING
	LOAD_MTT_MISC_TRANSACTION	AT_MISCELLANEOUS_TRANSACTION
GTVCURR	LOAD_MTT_MISC_TRANSACTION	AT_MISCELLANEOUS_TRANSACTION
GTVDICD GTVDICD	LOAD_MGT_EVENT	AG_EVENT AP EMPLOYEE
	LOAD_MPT_EMPLOYEE	—
GTVEMAL	LOAD_MST_ORGANIZATION_ENTITY	AS_ORGANIZATION_ENTITY
GTVEMPH	LOAD_MGT_EVENT	AG_EVENT
GTVFSTA	LOAD_MGT_EVENT	AG_EVENT
GTVFUNC	LOAD_MGT_EVENT	AG_EVENT
GTVFUNC	LOAD_MST_MEETING_TIME	AS_MEETING_TIME
GTVINSM	LOAD_MST_COURSE_SCHEDULE	AS_COURSE_SCHEDULE
GTVINSM	LOAD_MST_MEETING_TIME	AS_MEETING_TIME
GTVINSM	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS
GTVINSM CTVI FTP	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
GTVLETR	LOAD_MGT_COMMUNICATION	AG_COMMUNICATION
GTVMAIL	LOAD_MAT_MAIL	AA_MAIL
GTVMTYP	LOAD_MST_MEETING_TIME	AS_MEETING_TIME
GTVPURP	LOAD_MGT_EVENT	AG_EVENT
GTVSCHS	LOAD_MST_MEETING_TIME	AS_MEETING_TIME

Validation	
Table	Mapping
GTVSYSI	LOAD_MGT_COMMUNICATION
GURIDEN	LOAD_MAT_ADVANCEMENT_RATING
GURIDEN	LOAD_MAT_CONSTIT_STAFF_ASSIGN
GURIDEN	LOAD_MAT_CONSTITUENT_CONTACT
GURIDEN	LOAD_MAT_CONSTITUENT_PLAN
GURIDEN	LOAD_MAT_PROSPECT_INFO
GURIDEN	LOAD_MAT_PROSPECT_PROPOSAL
GXVDIRD	LOAD_MPT_PAYROLL_DOC
NBBPOSN	LOAD_MPT_HR_APPL_STAT
NBBPOSN	LOAD_MPT_HR_APPLICATION
NBBPOSN	LOAD_MPT_INTERVIEW
NTRPCLS	LOAD_MPT_HR_APPL_STAT
NTRPCLS	LOAD_MPT_HR_APPLICATION
NTRPCLS	LOAD_MPT_INTERVIEW
NTRPCLS	LOAD_MPT_POSITION_DEF
NTRSGRP	LOAD_MPT_EMPL_POSITION
NTRSGRP	LOAD_MPT_SALARY_RATE
NTVDOTT	LOAD_MPT_POSITION_DEF
NTVJOBP	LOAD_MPT_POSITION_DEF
NTVPFOC	LOAD_MPT_POSITION_DEF
NTVWKSH	LOAD_MPT_POSITION_DEF
PTRAPPS	LOAD_MPT_HR_APPL_STAT
PTRBCAT	LOAD_MPT_EMPLOYEE
PTRBDCA	LOAD_MPT_BENEFICIARY
PTRBDCA	LOAD_MPT_MONTHLY_DEDUCT
PTRBDCA	LOAD_MPT_TAX
PTRBDCA	LOAD_MPT_YEARLY_DEDUCT
PTRBREL	LOAD_MPT_BENEFICIARY
PTRBURE	LOAD_MPT_BARG_UNIT
PTRCERT	LOAD_MPT_CERTIFICATION
PTRDFPR	LOAD_MPT_EMPL_POSITION
PTREARN	LOAD_MPT_EMPL_EARN_CY
PTREARN	LOAD_MPT_PAYROLL_EARNING
PTRECLS	LOAD_MPT_HR_APPLICATION
PTRECLS	LOAD_MPT_PAYROLL_DIST
PTRECLS	LOAD_MPT_POSITION_DEF
PTREMPR	LOAD_MPT_EMPL_EARN_CY
PTREMPR	LOAD_MPT_EMPL_EARN_FY
PTREMPR	LOAD_MPT_EMPL_POSITION

Composite View

AG COMMUNICATION AA ADVANCEMENT RATING AA_CONSTITUENT_STAFF_ASSIGN AA CONSTITUENT CONTACT AA CONSTITUENT PLAN AA PROSPECT INFO AA PROSPECT PROPOSAL AP PAYROLL DOCUMENT AP HR APPLICATION STATUS AP HR APPLICATION AP INTERVIEW AP HR APPLICATION_STATUS AP HR APPLICATION **AP INTERVIEW** AN POSITION DEFINITION AN EMPLOYEE POSITION AN SALARY RATE AN_POSITION_DEFINITION AN POSITION DEFINITION AN POSITION DEFINITION AN_POSITION_DEFINITION AP HR APPLICATION STATUS AP EMPLOYEE AP BENEFICIARY DEPENDENT AP MONTHLY DEDUCTION AP TAX AP YEARLY DEDUCTION AP BENEFICIARY DEPENDENT AP BARGAINING_UNIT AP CERTIFICATION AN EMPLOYEE POSITION AP EMPLOYEE EARNING CY AP PAYROLL EARNING AP HR APPLICATION AN PAYROLL DISTRIBUTION AN POSITION DEFINITION AP EMPLOYEE EARNING CY AP EMPLOYEE EARNING FY AN EMPLOYEE POSITION

Validation	
Table	Mapping
PTREMPR	LOAD_MPT_PAYROLL_DEDN
PTREMPR	LOAD_MPT_PAYROLL_EMPL_POSN
PTREMTY	LOAD_MPT_PAST_EMPLOYMENT
PTRFTYP	LOAD_MPT_FACULTY_APPT_HIST
PTRFTYP	LOAD_MPT_FACULTY_RANK_HIST
PTRFTYP	LOAD_MPT_FACULTY_SABB_HIST
PTRJBLN	LOAD_MPT_EMPL_POSITION
PTRJBLN	LOAD_MPT_POSITION_DEF
PTRJCRE	LOAD_MPT_EMPL_POSITION
PTRLEAV	LOAD_MPT_LEAVE_ACCRUAL
PTRLEAV	LOAD_MPT_LEAVE_BALANCE
PTRLREA	LOAD_MPT_EMPLOYEE
PTRLREA	LOAD_MPT_FACULTY_SABB_HIST
PTRPGRP	LOAD_MPT_POSITION_DEF
PTRPICT	LOAD_MPT_EMPL_POSITION
PTRPICT	LOAD_MPT_LEAVE_ACCRUAL
PTRPICT	LOAD_MPT_PAYROLL_DEDN
PTRPICT	LOAD_MPT_PAYROLL_DIST
PTRPICT	LOAD_MPT_PAYROLL_DOC
PTRPICT	LOAD_MPT_PAYROLL_EARNING
PTRPICT	LOAD_MPT_PAYROLL_EMPL_POSN
PTRRANK	LOAD_MPT_FACULTY_RANK_HIST
PTRSKIL	LOAD_MPT_SKILL
PTRSKLV	LOAD_MPT_SKILL
PTRTENR	LOAD_MPT_FACULTY_APPT_HIST
PTRTENR	LOAD_MST_FACULTY
PTRTREA	LOAD_MPT_EMPLOYEE
PTVASRC	LOAD_MPT_HR_APPLICATION
PTVASSN	LOAD_MPT_EMPL_POSITION
PTVASSN	LOAD_MPT_PAYROLL_EMPL_POSN
PTVBARG	LOAD_MPT_BARG_UNIT
PTVBARG	LOAD_MPT_POSITION_DEF
PTVBDTY	LOAD_MPT_BENEFIT_DEDUCT
PTVDISP	LOAD_MPT_FACULTY_APPT_HIST
PTVDISP	LOAD_MPT_FACULTY_RANK_HIST
PTVDISP	LOAD_MPT_FACULTY_SABB_HIST
PTVEEOG	LOAD_MPT_HR_APPLICATION
PTVEFUN	LOAD_MPT_POSITION_DEF
PTVEGRP	LOAD_MPT_EMPLOYEE

Composite View

AP PAYROLL DEDUCTION AP PAYROLL EMPLOYEE POSITION AP PAST EMPLOYMENT AP FACULTY APPOINTMENT HISTORY AP FACULTY RANK HISTORY AP FACULTY SABBATICAL HISTORY AN EMPLOYEE POSITION AN POSITION DEFINITION AN EMPLOYEE POSITION AP LEAVE ACCRUAL AP LEAVE BALANCE AP EMPLOYEE AP FACULTY SABBATICAL HISTORY AN POSITION DEFINITION AN EMPLOYEE_POSITION AP LEAVE ACCRUAL AP PAYROLL DEDUCTION AN PAYROLL DISTRIBUTION AP PAYROLL DOCUMENT AP PAYROLL EARNING AP_PAYROLL_EMPLOYEE_POSITION AP FACULTY RANK HISTORY AP SKILL AP SKILL AP FACULTY APPOINTMENT HISTORY AS FACULTY AP EMPLOYEE AP HR APPLICATION AN EMPLOYEE POSITION AP PAYROLL EMPLOYEE POSITION AP BARGAINING UNIT AN POSITION DEFINITION AP BENEFIT DEDUCTION AP FACULTY APPOINTMENT HISTORY AP FACULTY RANK HISTORY AP FACULTY SABBATICAL HISTORY AP HR APPLICATION AN POSITION_DEFINITION AP EMPLOYEE

2-15

Validation	
Table	Mapping
PTVEGRP	LOAD_MPT_POSITION_DEF
PTVESKL	LOAD_MPT_HR_APPLICATION
PTVESKL	LOAD_MPT_POSITION_DEF
PTVLCAT	LOAD_MPT_EMPL_POSITION
PTVLCAT	LOAD_MPT_EMPLOYEE
PTVLCAT	LOAD_MPT_PAYROLL_EMPL_POSN
PTVLGCD	LOAD_MPT_PAYROLL_EMPL_POSN
PTVORGN	LOAD_MPT_EMPL_POSITION
PTVORGN	LOAD_MPT_EMPLOYEE
PTVORGN	LOAD_MPT_FACULTY_APPT_HIST
PTVORGN	LOAD_MPT_FACULTY_RANK_HIST
PTVORGN	LOAD_MPT_FACULTY_SABB_HIST
PTVORGN	LOAD_MPT_PAYROLL_EARNING
PTVORGN	LOAD_MPT_PAYROLL_EMPL_POSN
PTVPCAT	LOAD_MPT_EMPL_POSITION
PTVPCAT	LOAD_MPT_PAYROLL_EMPL_POSN
PTVREVT	LOAD_MPT_FACULTY_APPT_HIST
PTVREVT	LOAD_MPT_REVIEW
PTVSBTY	LOAD_MPT_FACULTY_SABB_HIST
PTVSHCD	LOAD_MPT_EMPL_POSITION
PTVSHCD	LOAD_MPT_PAYROLL_EARNING
PTVSHCD	LOAD_MPT_PAYROLL_EMPL_POSN
PTVSTGR	LOAD_MPT_EMPLOYEE
PTVWKCP	LOAD_MPT_EMPL_POSITION
RFRBASE	LOAD_MRT_AWARD_BY_FUND
RFRBASE	LOAD_MRT_AWARD_BY_PERSON
RFRBASE	LOAD_MRT_AWARD_DISBURSEMENT
RFRBASE	LOAD_MRT_LOAN_APPLICATION
RFRBASE	LOAD_MRT_TRACKING_REQUIREMENT
ROBINST	LOAD_MGT_COMMUNICATION
ROBINST	LOAD_MRT_APPLICANT_NEED
ROBINST	LOAD_MRT_AWARD_BY_FUND
ROBINST	LOAD_MRT_AWARD_BY_PERSON
ROBINST	LOAD_MRT_AWARD_DISBURSEMENT
ROBINST	LOAD_MRT_FINAID_APPL_STATUS
ROBINST	LOAD_MRT_FINAID_BUDGET_COMP
ROBINST	LOAD_MRT_FINAID_ENROLLMENT
ROBINST	LOAD_MRT_FINAID_FUND
ROBINST	LOAD_MRT_LOAN_APPLICATION

Composite View

AN POSITION DEFINITION AP HR APPLICATION AN POSITION DEFINITION AN EMPLOYEE POSITION AP EMPLOYEE AP PAYROLL EMPLOYEE POSITION AP PAYROLL EMPLOYEE POSITION AN EMPLOYEE POSITION AP EMPLOYEE AP FACULTY APPOINTMENT HISTORY AP FACULTY RANK HISTORY AP FACULTY SABBATICAL HISTORY AP PAYROLL EARNING AP PAYROLL EMPLOYEE POSITION AN EMPLOYEE POSITION AP PAYROLL EMPLOYEE POSITION AP FACULTY APPOINTMENT HISTORY AP REVIEW AP FACULTY SABBATICAL HISTORY AN EMPLOYEE POSITION AP PAYROLL EARNING AP PAYROLL EMPLOYEE POSITION AP EMPLOYEE AN EMPLOYEE POSITION AR AWARD BY FUND AR AWARD BY PERSON AR AWARD DISBURSEMENT AR LOAN APPLICATION AR FINAID TRACKING REQUIREMENT AG COMMUNICATION AR APPLICANT NEED AR AWARD BY FUND AR AWARD BY PERSON AR AWARD DISBURSEMENT AR FINAID APPLICANT STATUS AR FINAID BUDGET COMPONENT AR FINAID ENROLLMENT AR FINAID FUND AR LOAN_APPLICATION

Validation		
Table	Mapping	Composite View
ROBINST	LOAD_MRT_NEED_ANALYSIS	AR_NEED_ANALYSIS
ROBINST	LOAD_MRT_SATISFACT_ACAD_PROG	AR_SATISFACTORY_ACAD_PROGRESS
ROBINST	LOAD_MRT_TRACKING_REQUIREMENT	AR FINAID TRACKING REQUIREMENT
ROBINST	LOAD_MRT_USER_DEFINED_FIELDS	AR_USER_DEFINED_FIELDS
ROBINST	LOAD_MRT_YEAR_TYPE_DEFINITION	AR_YEAR_TYPE_DEFINITION
ROBINST	LOAD MST YEAR TYPE DEF	AS YEAR TYPE DEFINITION
RTVAPRD	LOAD_MRT_APPLICANT_NEED	AR_APPLICANT_NEED
RTVAPRD	LOAD_MRT_FINAID_APPL_STATUS	AR_FINAID_APPLICANT_STATUS
RTVAPRD	LOAD_MRT_FINAID_BUDGET_COMP	AR_FINAID_BUDGET_COMPONENT
RTVAPRD	LOAD_MRT_YEAR_TYPE_DEFINITION	AR_YEAR_TYPE_DEFINITION
RTVBGRP	LOAD_MRT_FINAID_APPL_STATUS	AR_FINAID_APPLICANT_STATUS
RTVBGRP	LOAD_MRT_FINAID_BUDGET_COMP	AR_FINAID_BUDGET_COMPONENT
RTVINFC	LOAD_MRT_NEED_ANALYSIS	AR_NEED_ANALYSIS
RTVLNST	LOAD_MRT_LOAN_APPLICATION	AR_LOAN_APPLICATION
RTVPGRP	LOAD_MRT_FINAID_APPL_STATUS	AR_FINAID_APPLICANT_STATUS
RTVSAPR	LOAD_MRT_SATISFACT_ACAD_PROG	AR_SATISFACTORY_ACAD_PROGRESS
RTVTGRP	LOAD_MRT_FINAID_APPL_STATUS	AR_FINAID_APPLICANT_STATUS
RTVTREQ	LOAD_MRT_TRACKING_REQUIREMENT	AR_FINAID_TRACKING_REQUIREMENT
RTVTRST	LOAD_MRT_TRACKING_REQUIREMENT	AR_FINAID_TRACKING_REQUIREMENT
SMRPRLE	LOAD_MST_CURRICULUM	AS_CURRICULUM
SMRPRLE	LOAD_MST_CURRICULUM_BATCH	AS_CURRICULUM_FOS
SMRPRLE	LOAD_MST_GENERAL_STUDENT	AS_LEARNER_CURRICULUM_FOS
STVACAT	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVACAT	LOAD_MST_CURRICULUM_BATCH	AS_ACADEMIC_OUTCOME
STVACAT	LOAD_MST_CURRICULUM_BATCH	AS_CURRICULUM_FOS
STVACAT	LOAD_MST_GENERAL_STUDENT	AS_LEARNER_CURRICULUM_FOS
STVACCG	LOAD_MAT_SPECIAL_ACTIVITY	AA_SPECIAL_ACTIVITY
STVACCG	LOAD_MAT_SPECIAL_ACTIVITY_YR	AA_SPECIAL_ACTIVITY_YEAR
STVACCG	LOAD_MST_STUDENT_ACTIVITY	AS_STUDENT_ACTIVITY
STVACCT	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVACTC	LOAD_MST_SPORT	AS_SPORT
STVACTC	LOAD_MST_STUDENT_ACTIVITY	AS_STUDENT_ACTIVITY
STVACTP	LOAD_MAT_SPECIAL_ACTIVITY	AA_SPECIAL_ACTIVITY
STVACTP	LOAD_MAT_SPECIAL_ACTIVITY_YR	AA_SPECIAL_ACTIVITY_YEAR
STVACTP	LOAD_MST_STUDENT_ACTIVITY	AS_STUDENT_ACTIVITY
STVACYR	LOAD_MAT_DEGREE	AA_DEGREE
STVACYR	LOAD_MGT_COMMUNICATION	AG_COMMUNICATION
STVACYR	LOAD_MST_ADMINISTRATOR	AS_ADMINISTRATOR
STVACYR	LOAD_MST_ADMISSIONS_ATTRIBUTE	AS_ADMISSIONS_ATTRIBUTE

Validation		
Table	Mapping	Composite View
STVACYR	LOAD_MST_ADMISSIONS_COHORT	AS_ADMISSIONS_COHORT
STVACYR	LOAD_MST_ADMISSIONS_DECISION	AS_ADMISSIONS_DECISION
STVACYR	LOAD_MST_ADMISSIONS_RATING	AS_ADMISSIONS_RATING
STVACYR	LOAD_MST_ADMISSIONS_REQUIREM	AS_ADMISSIONS_REQUIREMENT
STVACYR	LOAD_MST_ADMISSIONS_SOURCE	AS_ADMISSIONS_SOURCE
STVACYR	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVACYR	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVACYR	LOAD_MST_CURRICULUM_BATCH	AS_ACADEMIC_OUTCOME
STVACYR	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVACYR	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVACYR	LOAD_MST_DISABILITY_INFO	AS_DISABILITY_INFORMATION
STVACYR	LOAD_MST_ENROLLMENT	AS_ENROLLMENT
STVACYR	LOAD_MST_ENROLLMENT	AS_ENROLLMENT_HISTORY
STVACYR	LOAD_MST_GENERAL_STUDENT	AS_ACTIVE_TERMS
STVACYR	LOAD_MST_GENERAL_STUDENT	AS_LEARNER_CURRICULUM_FOS
STVACYR	LOAD_MST_INSTRUCTIONAL_ASSIGN	AS_INSTRUCTIONAL_ASSIGNMENT
STVACYR	LOAD_MST_MEAL_ASSIGNMENT	AS_MEAL_ASSIGNMENT
STVACYR	LOAD_MST_MEETING_TIME	AS_MEETING_TIME
STVACYR	LOAD_MST_NONINSTRUCT_ASSIGN	AS_NONINSTRUCTIONAL_ASSIGNMENT
STVACYR	LOAD_MST_OFFERING_COREQ	AS_OFFERING_COREQ
STVACYR	LOAD_MST_OFFERING_PREREQ	AS_OFFERING_PREREQ
STVACYR	LOAD_MST_PHONE_ASSIGNMENT	AS_PHONE_ASSIGNMENT
STVACYR	LOAD_MST_RECRUITMENT_ATTRIBUT E	AS_RECRUITMENT_ATTRIBUTE
STVACYR	LOAD_MST_RECRUITMENT_COHORT	AS_RECRUITMENT_COHORT
STVACYR	LOAD_MST_RECRUITMENT_SOURCE	AS_RECRUITMENT_SOURCE
STVACYR	LOAD_MST_ROOM_ASSIGNMENT	AS_ROOM_ASSIGNMENT
STVACYR	LOAD_MST_SPORT	AS_SPORT
STVACYR	LOAD_MST_STDNT_CRSE_ATT_STEP_1	AS_STUDENT_COURSE_ATTRIBUTE
STVACYR	LOAD_MST_STDNT_CRSE_ATT_STEP_2	AS_STUDENT_COURSE_ATTR_TRANS
STVACYR	LOAD_MST_STDNT_CRSE_GRD_CHG	AS_STUDENT_COURSE_GRADE_CHG
STVACYR	LOAD_MST_STUDENT_ACTIVITY	AS_STUDENT_ACTIVITY
STVACYR	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS
STVACYR	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVACYR	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUDENT_COURSE_TRANSFER
STVACYR	LOAD_MST_STUDENT_WORK_EXP	AS_STUDENT_WORK_EXPERIENCE
STVACYR	LOAD_MST_YEAR_TYPE_DEF	AS_YEAR_TYPE_DEFINITION
STVACYR	LOAD_MTT_ACCOUNT_DETAIL	AT_ACCOUNT_DETAIL
STVACYR	LOAD_MTT_AR_DEPOSITS	AT_AR_DEPOSIT

Validation		
Table	Mapping	Composite View
STVACYR	LOAD_MTT_CONTRACT	AT_CONTRACT
STVACYR	LOAD_MTT_EXEMPTION	AT_EXEMPTION
STVACYR	LOAD_MTT_INSTALLMENT_PLAN	AT_INSTALLMENT_PLAN
STVADMR	LOAD_MST_ADMISSIONS_REQUIREM	AS_ADMISSIONS_REQUIREMENT
STVADMT	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVADMT	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVADMT	LOAD_MST_CURRICULUM_BATCH	AS_CURRICULUM_FOS
STVADMT	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVADMT	LOAD_MST_GENERAL_STUDENT	AS_LEARNER_CURRICULUM_FOS
STVADVR	LOAD_MST_ADVISOR	AS_ADVISOR
STVAPDC	LOAD_MST_ADMISSIONS_DECISION	AS_ADMISSIONS_DECISION
STVAPDC	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVAPRV	LOAD_MST_COURSE_CATALOG	AS_COURSE_CATALOG
STVAPST	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVARTP	LOAD_MST_MEAL_ASSIGNMENT	AS_MEAL_ASSIGNMENT
STVARTP	LOAD_MST_PHONE_ASSIGNMENT	AS_PHONE_ASSIGNMENT
STVARTP	LOAD_MST_ROOM_ASSIGNMENT	AS_ROOM_ASSIGNMENT
STVASCD	LOAD_MST_ROOM_ASSIGNMENT	AS_ROOM_ASSIGNMENT
STVASTD	LOAD_MST_ACADEMIC_STANDING	AS_ACADEMIC_STANDING
STVASTD	LOAD_MST_ENROLLMENT	AS_ENROLLMENT_HISTORY
STVASTY	LOAD_MST_INSTRUCTIONAL_ASSIGN	AS_INSTRUCTIONAL_ASSIGNMENT
STVASTY	LOAD_MST_NONINSTRUCT_ASSIGN	AS_NONINSTRUCTIONAL_ASSIGNMENT
STVATTR	LOAD_MST_COURSE_ATTRIBUTE	AS_COURSE_ATTRIBUTE
STVATTR	LOAD_MST_STDNT_CRSE_ATT_STEP_1	AS_STUDENT_COURSE_ATTRIBUTE
STVATTR	LOAD_MST_STDNT_CRSE_ATT_STEP_2	AS_STUDENT_COURSE_ATTR_TRANS
STVATTS	LOAD_MST_ADMISSIONS_ATTRIBUTE	AS_ADMISSIONS_ATTRIBUTE
STVATTS	LOAD_MST_RECRUITMENT_ATTRIBUT	AS_RECRUITMENT_ATTRIBUTE
	E	
STVATYP	LOAD_MAT_CONSTITUENT_ENTITY	AA_CONSTITUENT
STVATYP	LOAD_MAT_CONSTITUENT_ENTITY	AA_ORGANIZATIONAL_CONSTITUENT
STVATYP	LOAD_MAT_GIFT_ASSOC_ENTITY	AA_GIFT_ASSOCIATED_ENTITY
STVATYP	LOAD_MAT_MAIL	AA_MAIL
STVATYP	LOAD_MAT_ORGANIZATION_CONTACT	AA_ORGANIZATION_CONTACT
STVATYP	LOAD_MAT_PROSPECT_INFO	AA_PROSPECT_INFO
STVATYP	LOAD_MAT_RELATION	AA_RELATIONSHIP
STVATYP	LOAD_MFT_FUND_HIERARCHY	AF_FUND_HIERARCHY
STVATYP	LOAD_MFT_INVOICE	AF_INVOICE
STVATYP	LOAD_MFT_ORGN_HIERARCHY	AF_ORGANIZATION_HIERARCHY
STVATYP	LOAD_MFT_PURCHASE_ORDER	AF_PURCHASE_ORDER

2-19

Validation		
Table	Mapping	Composite View
STVATYP	LOAD_MFT_VENDOR	AF VENDOR
STVATYP	LOAD MGT EVENT	AGEVENT
STVBCHR	LOAD_MST_INST_CHARACTERISTIC	AS INSTITUTION CHARACTERISTIC
STVBLCK	LOAD MST GENERAL STUDENT	AS GENERAL STUDENT
STVBLDG	LOAD MST MEETING TIME	AS MEETING TIME
STVBLDG	LOAD MST ROOM ASSIGNMENT	AS ROOM ASSIGNMENT
STVCAMP	LOAD_MAT_DEGREE	AA_DEGREE
STVCAMP	LOAD_MGT_EVENT	AG_EVENT
STVCAMP	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE
STVCAMP	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVCAMP	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVCAMP	LOAD_MST_CURRICULUM_BATCH	AS_CURRICULUM_FOS
STVCAMP	LOAD_MST_GENERAL_STUDENT	AS_LEARNER_CURRICULUM_FOS
STVCAMP	LOAD_MST_ROOM_ASSIGNMENT	AS_ROOM_ASSIGNMENT
STVCAMP	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS
STVCAMP	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVCAST	LOAD_MST_ACADEMIC_STANDING	AS_ACADEMIC_STANDING
STVCCSL	LOAD_MST_COURSE_SUPPLEMENTAL	AS_COURSE_SUPPLEMENTAL
STVCHRT	LOAD_MST_ADMISSIONS_COHORT	AS_ADMISSIONS_COHORT
STVCHRT	LOAD_MST_RECRUITMENT_COHORT	AS_RECRUITMENT_COHORT
STVCHRT	LOAD_MST_STUDENT_COHORT	AS_STUDENT_COHORT
STVCIPC	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
STVCIPC	LOAD_MST_COURSE_CATALOG	AS_COURSE_CATALOG
STVCIPC	LOAD_MST_CURRICULUM_BATCH	AS_CURRICULUM_FOS
STVCIPC	LOAD_MST_GENERAL_STUDENT	AS_LEARNER_CURRICULUM_FOS
STVCIPC	LOAD_MST_FIELD_OF_STUDY	AS_FIELD_OF_STUDY
STVCIPC	LOAD_MST_PREVIOUS_EDUCATION	AS_PREVIOUS_EDUCATION_PCOL
STVCNTR	LOAD_MST_FACULTY_CONTRACT	AS_FACULTY_CONTRACT
STVCNTY	LOAD_MAT_ORGANIZATION_CONTACT	AA_ORGANIZATION_CONTACT
STVCNTY	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVCNTY	LOAD_MST_INSTITUTION	AS_INSTITUTION
STVCOLL	LOAD_MAT_CONSTITUENT_ENTITY	AA_CONSTITUENT
STVCOLL	LOAD_MAT_DEGREE	AA_DEGREE
STVCOLL	LOAD_MAT_DESG_GIVING	AA_DESIGNATION_GIVING_HISTORY
STVCOLL	LOAD_MAT_GIFT	AA_GIFT
STVCOLL	LOAD_MAT_GIFT_MATCHING	AA_GIFT_MATCHING
STVCOLL	LOAD_MAT_GIFT_MEMO	AA_GIFT_MEMO
STVCOLL	LOAD_MAT_GIFT_MULTIPLE	AA_GIFT_MULTIPLE
STVCOLL	LOAD_MAT_MEMBERSHIP_INTEREST	AA_MEMBERSHIP_INTEREST

TableMappingComposite ViewSTVCOLLLOAD_MAT_PLEDGEAA_PLEDGESTVCOLLLOAD_MGT_EVENTAG_EVENTSTVCOLLLOAD_MRT_NEED_ANALYSISAR_NEED_ANALYSISSTVCOLLLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCOLLLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCOLLLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVCOLLLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVCOLLLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVCOLLLOAD_MST_STUDENT_COURSE_STEP_1AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_HISTORYSTVCONTLOAD_MST_STUDENT_WORK EXPAS_STUDENT_WORK_EXPENENCESTVCOPCLOAD_MST_STUDENT_WORK EXPAS_STUDENT_WORK_EXPENENCESTVCOPCLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_COURSE_CATALOGAS_COURCULUMSTVDEGCLOAD_MST_CURRICULUMAS_COURRICULUMSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_COURSE_CATALOGSTVDEFTLOAD_MST_CURRICULUM_BATCHAS_COURSE_OFFERINGSTVDEFTLOAD_MST_CURRICULUM_BATCHAS_GENERALSTVDEFT </th <th>Validation</th> <th></th> <th></th>	Validation		
STVCOLLLOAD_MGT_EVENTAG_EVENTSTVCOLLLOAD_MTP_EMPLOYEEAP_EMPLOYEESTVCOLLLOAD_MT_NEED_ANALYSISAR_NEED_ANALYSISSTVCOLLLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCOLLLOAD_MST_COURSE_OFFERINGAS_COURSE_CATALOGSTVCOLLLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVCOLLLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVCOLLLOAD_MST_STUDENT_COURSE_STEP_1AS_STUDENT_COURSE_IN_PROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_2AS_STUDENT_COURSE_IN_PROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_IN_PROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_TRANSFERSTVCOMTLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_TRANSFERSTVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCTPNLOAD_MST_STUDENT_COHORTAS_COURSE_CATALOGSTVCTYPLOAD_MST_CONTACTAS_COURSE_CATALOGSTVCTYPLOAD_MST_CONTACTAS_PRE_STUDENTSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_GENERAL_STUDENTAS_COURCOME_HONOR_INSTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUMAS_COURSE_CATALOGSTVDEFTLOAD_MST_GENERAL_STUDENTAS_COURSE_CATALOGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_COURSE_CATALOGSTVDEPTLOAD_MST_GENERAL_STUDEN	Table	Mapping	Composite View
STVCOLLLOAD_MPT_EMPLOYEEAP_EMPLOYEESTVCOLLLOAD_MRT_NEED_ANALYSISAR_NEED_ANALYSISSTVCOLLLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCOLLLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVCOLLLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVCOLLLOAD_MST_PACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVCOLLLOAD_MST_STUDENT_COURSE_STEP_1AS_STUDENT_COURSE_IN_PROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_2AS_STUDENT_COURSE_IN_PROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_IN_PROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_INTENCSTVCOVCLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_INTENCSTVCOVCLLOAD_MST_STUDENT_COHORSE_STEP_3AS_STUDENT_COURSE_INTENCSTVCREALOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCREALOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_OURCATAS_COURSE_CATALOGSTVDEGCLOAD_MST_OURCIDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OURCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_PRE_STUDENTAS_REVIOUS_EDUCATIONSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_GENERAL_STUDENTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_OUTCOME_HONOR_INSTSTVDEFTLOAD_MAT_DEGREEAA_DEGREESTVDEFTLOAD_MAT_DEGREEAA_DEGREESTVDEFTLOAD_MAT_DEGREEC	STVCOLL		—
STVCOLLLOAD_MRT_NEED_ANALYSISAR_NEED_ANALYSISSTVCOLLLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCOLLLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVCOLLLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVCOLLLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVCOLLLOAD_MST_STUDENT_COURSE_STEP_1AS_STUDENT_COURSE_INPROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_2AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_COURSE_HISTORYSTVCOPLLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCOPLLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCOPLLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_COURSE_CATALOGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_COURSE_OFFERINGSTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_OFF_MATCHINGAA_GIFTSTVDEPTLOAD_MAT_OFF_MATCHINGAA_GIFTSTVDEPTLOAD_MAT_GIFTAA_GIFT <td></td> <td></td> <td>—</td>			—
STVCOLLLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCOLLLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVCOLLLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVCOLLLOAD_MST_ACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVCOLLLOAD_MST_STUDENT_COURSE_STEP_1AS_STUDENT_COURSE_IN_PROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_TRANSFERSTVCOLLLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCOPLLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCOPLLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_CORRECAA_DEGREESTVCTYPLOAD_MST_CORRICULUMAS_COURCICULMSTVDEGCLOAD_MST_OURRICULUMAS_COURCICULMSTVDEGCLOAD_MST_OURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT	STVCOLL		AP_EMPLOYEE
STVCOLLLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVCOLLLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVCOLLLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVCOLLLOAD_MST_STUDENT_COURSE_STEP_1AS_STUDENT_COURSE_IN_PROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_2AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_TRANSFERSTVCONTLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_TRANSFERSTVCONTLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCREALOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCREALOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCREALOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_CONTACTAS_CONTACTSTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_CURRICULUM_SATCHAS_COUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_COUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_COURSE_CATALOGSTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFT_MATCHINGAA_COERSE_CATALOGSTVDEPTLOAD_MAT_CURRICULUM_BATCHAS_COURSE_CATALOGSTVDEPTLOAD_MAT_COURSE_OFFERINGAS_COURSE_CATALOG <t< td=""><td>STVCOLL</td><td></td><td>AR_NEED_ANALYSIS</td></t<>	STVCOLL		AR_NEED_ANALYSIS
STVCOLLLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVCOLLLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVCOLLLOAD_MST_STUDENT_COURSE_STEP_1AS_STUDENT_COURSE_IN_PROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_2AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_TRANSFERSTVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_COURSE_TRANSFERSTVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_COURSE_CATALOGSTVCCPLNLOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCSTALOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_CONTACTAS_CONTACTSTVDEGCLOAD_MST_CONTACTAS_COURSE_CATALOGSTVCTYPLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_OURRICULUM_BATCHAS_GENERAL_STUDENTSTVDEFTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_GIFT_MATCHINGAS_COURSE_OTALOGSTVDEPTLOAD_MAT_GIFT_MATCHINGAS_COURSE_CATALOGSTVDEPTLOAD_MAT_DEGREEAA_PLEDGESTVDEPTLOAD_MAT_COURSE_OFFERINGAS_COURSE	STVCOLL		— — —
STVCOLLLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVCOLLLOAD_MST_NONINSTRUCT_ASSIGNAS_NONINSTRUCTIONAL_ASSIGNMENTSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_1AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_TRANSFERSTVCOMTLOAD_MST_MEETING_TIMEAS_MEETING_TIMESTVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCPLNLOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCCTPLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_CONTACTAS_CONTACTSTVDEGCLOAD_MST_CORTACTAS_CONTACTSTVDEGCLOAD_MST_GENERAL_STUDENTAS_COURSICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_COURSICULUMSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEGCLOAD_MST_CURRICULUM_BATCHAS_COURSE_CATALOGSTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_CLEDGESTVDEPTLOAD_MAT_GIFT_MATCHINGAS_CURRICULUM_FOSSTVDEPTLOAD_MAT_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_COURSE_CATALOGAS_CURRICULUM_FOSSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENT <tr< td=""><td>STVCOLL</td><td>LOAD_MST_COURSE_OFFERING</td><td>AS_COURSE_OFFERING</td></tr<>	STVCOLL	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVCOLLLOAD_MST_NONINSTRUCT_ASSIGNAS_NONINSTRUCTIONAL_ASSIGNMENTSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_1AS_STUDENT_COURSE_IN_PROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_2AS_STUDENT_COURSE_INSTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_TRANSFERSTVCOLLLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCVPLNLOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCSTALOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_ORE_STUDENTAS_CONTACTSTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_COREAA_DEGREESTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_GENERAL_STUDENTAS_OUTCOME_HONORSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEGSLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEFTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFTSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPT	STVCOLL	LOAD_MST_GENERAL_STUDENT	AS_GENERAL_STUDENT
STVCOLLLOAD_MST_STUDENT_COURSE_STEP_1AS_STUDENT_COURSE_IN_PROGRESSSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_2AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_TRANSFERSTVCOMTLOAD_MST_MEETING_TIMEAS_MEETING_TIMESTVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCPLNLOAD_MGT_COMMUNICATIONAG_COMMUNICATIONSTVCREALOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCTYPLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_CONTACTAS_ONTACTSTVDEGCLOAD_MST_CURRICULUMAS_CORNECTSTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_PREVIOUS_EDUCATIONAS_REVIOUS_EDUCATION_PCOLSTVDEGSLOAD_MAT_DEGREEAA_DEGREESTVDEFTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GURSESTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE	STVCOLL	LOAD_MST_FACULTY_DEPART_COLL	AS_FACULTY_DEPARTMENT_COLLEGE
STVCOLLLOAD_MST_STUDENT_COURSE_STEP_2AS_STUDENT_COURSE_HISTORYSTVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_TRANSFERSTVCOPCLOAD_MST_MEETING_TIMEAS_MEETING_TIMESTVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCPLNLOAD_MGT_COMMUNICATIONAG_COMMUNICATIONSTVCRALOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCTYPLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_CONTACTAS_CONTACTSTVDEGCLOAD_MST_CORSECAA_DEGREESTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEGCLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFTAG_EVENTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_GURS_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENT <t< td=""><td>STVCOLL</td><td>LOAD_MST_NONINSTRUCT_ASSIGN</td><td>AS_NONINSTRUCTIONAL_ASSIGNMENT</td></t<>	STVCOLL	LOAD_MST_NONINSTRUCT_ASSIGN	AS_NONINSTRUCTIONAL_ASSIGNMENT
STVCOLLLOAD_MST_STUDENT_COURSE_STEP_3AS_STUDENT_COURSE_TRANSFERSTVCOMTLOAD_MST_MEETING_TIMEAS_MEETING_TIMESTVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCPLNLOAD_MGT_COMMUNICATIONAG_COMMUNICATIONSTVCREALOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCREALOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_ONTACTAS_CONTACTSTVDEGCLOAD_MST_PRE_STUDENTAS_PRE_STUDENTSTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEGTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFTAG_EVENTSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MAT_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPT	STVCOLL	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS
STVCOMTLOAD_MST_MEETING_TIMEAS_MEETING_TIMESTVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCPLNLOAD_MGT_COMMUNICATIONAG_COMMUNICATIONSTVCREALOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCSTALOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_COURSE_CATALOGAS_CONTACTSTVCTYPLOAD_MST_CONTACTAS_CONTACTSTVDEGCLOAD_MST_CURRICULUMAS_PRE_STUDENTSTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEGSLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_CIFT_MATCHINGSTVDEPTLOAD_MAT_OURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_EARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_EARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_EARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICUL	STVCOLL	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVCOPCLOAD_MST_STUDENT_WORK_EXPAS_STUDENT_WORK_EXPERIENCESTVCPLNLOAD_MGT_COMMUNICATIONAG_COMMUNICATIONSTVCREALOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCSTALOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_CONTACTAS_CONTACTSTVCTYPLOAD_MST_PRE_STUDENTAS_PRE_STUDENTSTVDEGCLOAD_MAT_DEGREEAA_DEGREESTVDEGCLOAD_MST_GENERAL_STUDENTAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEFTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_ILEDGESTVDEPTLOAD_MAT_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MAT_COURSE_CATALOGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOS<	STVCOLL	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUDENT_COURSE_TRANSFER
STVCPLNLOAD_MGT_COMMUNICATIONAG_COMMUNICATIONSTVCREALOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCSTALOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_CONTACTAS_CONTACTSTVCTYPLOAD_MST_PRE_STUDENTAS_PRE_STUDENTSTVDEGCLOAD_MAT_DEGREEAA_DEGREESTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEGSLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MAT_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_COURSE_OFFERINGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVCOMT	LOAD_MST_MEETING_TIME	AS_MEETING_TIME
STVCREALOAD_MST_STUDENT_COHORTAS_STUDENT_COHORTSTVCSTALOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_CONTACTAS_CONTACTSTVCTYPLOAD_MST_PRE_STUDENTAS_PRE_STUDENTSTVDEGCLOAD_MAT_DEGREEAA_DEGREESTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_PREVIOUS_EDUCATIONAS_PREVIOUS_EDUCATION_PCOLSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MAT_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_FIELD_OF_STUDY	STVCOPC	LOAD_MST_STUDENT_WORK_EXP	AS_STUDENT_WORK_EXPERIENCE
STVCSTALOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVCTYPLOAD_MST_CONTACTAS_CONTACTSTVCTYPLOAD_MST_PRE_STUDENTAS_PRE_STUDENTSTVDEGCLOAD_MAT_DEGREEAA_DEGREESTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MAT_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_CURSE_OFFERINGAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVCPLN	LOAD_MGT_COMMUNICATION	AG_COMMUNICATION
STVCTYPLOAD_MST_CONTACTAS_CONTACTSTVCTYPLOAD_MST_PRE_STUDENTAS_PRE_STUDENTSTVDEGCLOAD_MAT_DEGREEAA_DEGREESTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_PREVIOUS_EDUCATIONAS_PREVIOUS_EDUCATION_PCOLSTVDEGSLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_PLEDGESTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVCREA	LOAD_MST_STUDENT_COHORT	AS_STUDENT_COHORT
STVCTYPLOAD_MST_PRE_STUDENTAS_PRE_STUDENTSTVDEGCLOAD_MAT_DEGREEAA_DEGREESTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_PREVIOUS_EDUCATIONAS_PREVIOUS_EDUCATION_PCOLSTVDEGSLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVCSTA	LOAD_MST_COURSE_CATALOG	AS_COURSE_CATALOG
STVDEGCLOAD_MAT_DEGREEAA_DEGREESTVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_PREVIOUS_EDUCATIONAS_PREVIOUS_EDUCATION_PCOLSTVDEGSLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_FIELD_OF_STUDY	STVCTYP	LOAD_MST_CONTACT	AS_CONTACT
STVDEGCLOAD_MST_CURRICULUMAS_CURRICULUMSTVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_PREVIOUS_EDUCATIONAS_PREVIOUS_EDUCATION_PCOLSTVDEGSLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_PLEDGESTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MAT_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_ILEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_IELANER_CURRICULUM_FOS	STVCTYP	LOAD_MST_PRE_STUDENT	AS_PRE_STUDENT
STVDEGCLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_PREVIOUS_EDUCATIONAS_PREVIOUS_EDUCATION_PCOLSTVDEGSLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MGT_EVENTAG_EVENTSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_FIELD_OF_STUDY	STVDEGC	LOAD_MAT_DEGREE	AA_DEGREE
STVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_DEPTSTVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_PREVIOUS_EDUCATIONAS_PREVIOUS_EDUCATION_PCOLSTVDEGSLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MGT_EVENTAG_EVENTSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEGC	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVDEGCLOAD_MST_OUTCOME_HONORAS_OUTCOME_HONOR_INSTSTVDEGCLOAD_MST_PREVIOUS_EDUCATIONAS_PREVIOUS_EDUCATION_PCOLSTVDEGSLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MGT_EVENTAG_EVENTSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEGC	LOAD_MST_GENERAL_STUDENT	AS_GENERAL_STUDENT
STVDEGCLOAD_MST_PREVIOUS_EDUCATIONAS_PREVIOUS_EDUCATION_PCOLSTVDEGSLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MGT_EVENTAG_EVENTSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEGC	LOAD_MST_OUTCOME_HONOR	AS_OUTCOME_HONOR_DEPT
STVDEGSLOAD_MST_CURRICULUM_BATCHAS_ACADEMIC_OUTCOMESTVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MGT_EVENTAG_EVENTSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_FIELD_OF_STUDY	STVDEGC	LOAD_MST_OUTCOME_HONOR	AS_OUTCOME_HONOR_INST
STVDEPTLOAD_MAT_DEGREEAA_DEGREESTVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MGT_EVENTAG_EVENTSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEGC	LOAD_MST_PREVIOUS_EDUCATION	AS_PREVIOUS_EDUCATION_PCOL
STVDEPTLOAD_MAT_GIFTAA_GIFTSTVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MGT_EVENTAG_EVENTSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEGS	LOAD_MST_CURRICULUM_BATCH	AS_ACADEMIC_OUTCOME
STVDEPTLOAD_MAT_GIFT_MATCHINGAA_GIFT_MATCHINGSTVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MGT_EVENTAG_EVENTSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEPT	LOAD_MAT_DEGREE	AA_DEGREE
STVDEPTLOAD_MAT_PLEDGEAA_PLEDGESTVDEPTLOAD_MGT_EVENTAG_EVENTSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEPT	LOAD_MAT_GIFT	AA_GIFT
STVDEPTLOAD_MGT_EVENTAG_EVENTSTVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEPT	LOAD_MAT_GIFT_MATCHING	AA_GIFT_MATCHING
STVDEPTLOAD_MST_COURSE_CATALOGAS_COURSE_CATALOGSTVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEPT	LOAD_MAT_PLEDGE	AA_PLEDGE
STVDEPTLOAD_MST_COURSE_OFFERINGAS_COURSE_OFFERINGSTVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEPT	LOAD_MGT_EVENT	AG_EVENT
STVDEPTLOAD_MST_CURRICULUM_BATCHAS_CURRICULUM_FOSSTVDEPTLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEPT	LOAD_MST_COURSE_CATALOG	AS_COURSE_CATALOG
STVDEPTLOAD_MST_FACULTY_DEPART_COLLAS_FACULTY_DEPARTMENT_COLLEGESTVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEPT	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVDEPTLOAD_MST_GENERAL_STUDENTAS_GENERAL_STUDENTSTVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEPT	LOAD_MST_CURRICULUM_BATCH	AS_CURRICULUM_FOS
STVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEPT	LOAD_MST_FACULTY_DEPART_COLL	AS_FACULTY_DEPARTMENT_COLLEGE
STVDEPTLOAD_MST_GENERAL_STUDENTAS_LEARNER_CURRICULUM_FOSSTVDEPTLOAD_MST_FIELD_OF_STUDYAS_FIELD_OF_STUDY	STVDEPT	LOAD_MST_GENERAL_STUDENT	AS_GENERAL_STUDENT
STVDEPT LOAD_MST_FIELD_OF_STUDY AS_FIELD_OF_STUDY	STVDEPT		
	STVDEPT	LOAD_MST_FIELD_OF_STUDY	AS_FIELD_OF_STUDY
	STVDEPT	LOAD_MST_NONINSTRUCT_ASSIGN	AS_NONINSTRUCTIONAL_ASSIGNMENT

Validation		
Table	Mapping	Composite View
STVDEPT	LOAD MST STUDENT COURSE STEP 1	AS STUDENT COURSE IN PROGRESS
STVDEPT	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVDEPT	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUDENT_COURSE_TRANSFER
STVDISA	LOAD_MST_DISABILITY_INFO	AS_DISABILITY_INFORMATION
STVDISA	LOAD_MST_MEDICAL_INFORMATION	AS_MEDICAL_INFORMATION
STVDIVS	LOAD_MST_COURSE_CATALOG	AS_COURSE_CATALOG
STVDIVS	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVDIVS	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS
STVDIVS	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVDIVS	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUDENT_COURSE_TRANSFER
STVDPLM	LOAD_MST_PRE_STUDENT	AS_PRE_STUDENT
STVDPLM	LOAD_MST_PREVIOUS_EDUCATION	AS_PREVIOUS_EDUCATION_HSCH
STVEDLV	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVEDLV	LOAD_MST_GENERAL_STUDENT	AS_GENERAL_STUDENT
STVEDLV	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVEGOL	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVEGOL	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVEGOL	LOAD_MST_GENERAL_STUDENT	AS_GENERAL_STUDENT
STVEGOL	LOAD_MST_PREVIOUS_EDUCATION	AS_PREVIOUS_EDUCATION_PCOL
STVELIG	LOAD_MST_SPORT	AS_SPORT
STVEMPL	LOAD_MST_STUDENT_WORK_EXP	AS_STUDENT_WORK_EXPERIENCE
STVEPSC	LOAD_MRT_NEED_ANALYSIS	AR_NEED_ANALYSIS
STVEPSC	LOAD_MST_ADDRESS	AS_ADDRESS
STVEPSC	LOAD_MST_INSTITUTION	AS_INSTITUTION
STVESTS	LOAD_MST_ENROLLMENT	AS_ENROLLMENT_HISTORY
STVETYP	LOAD_MGT_EVENT	AG_EVENT
STVEXAM	LOAD_MST_ENROLLMENT	AS_ENROLLMENT_HISTORY
STVFATT	LOAD_MST_FACULTY_ATTRIBUTE	AS_FACULTY_ATTRIBUTE
STVFCNT	LOAD_MST_FACULTY	AS_FACULTY
STVFCNT	LOAD_MST_FACULTY_CONTRACT	AS_FACULTY_CONTRACT
STVFCNT	LOAD_MST_INSTRUCTIONAL_ASSIGN	AS_INSTRUCTIONAL_ASSIGNMENT
STVFCNT	LOAD_MST_NONINSTRUCT_ASSIGN	AS_NONINSTRUCTIONAL_ASSIGNMENT
STVFCST	LOAD_MST_FACULTY	AS_FACULTY
STVFCTG	LOAD_MST_FACULTY	AS_FACULTY
STVFSTP	LOAD_MST_FACULTY	AS_FACULTY
STVGCHG	LOAD_MST_STDNT_CRSE_GRD_CHG	AS_STUDENT_COURSE_GRADE_CHG
STVGCHG	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS
STVGCHG	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVGCHG	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUDENT_COURSE_TRANSFER

Validation Table	Mapping	Composit
STVGCMT	LOAD_MST_STDNT_CRSE_GRD_CHG	AS_STUD
STVGCMT	LOAD_MST_STDNT_CRSE_REG_AUD	AS_STUD
STVGEOD	LOAD_MGT_GEOGRAPHIC_REG_INST	AG_GEO
STVGEOR	LOAD_MGT_GEOGRAPHIC_REG_INST	AG_GEO
STVGMOD	LOAD_MST_COURSE_OFFERING	AS_COUI
STVGMOD	LOAD_MST_OFFERING_GRADE_MODE	AS_OFFE
STVGMOD	LOAD_MST_STDNT_CRSE_GRD_CHG	AS_STUE
STVGMOD	LOAD_MST_STDNT_CRSE_REG_AUD	AS_STUE
STVGMOD	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUE
STVGMOD	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUE
STVGMOD	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUE
STVGRST	LOAD_MST_CURRICULUM_BATCH	AS_ACAI
STVHAPS	LOAD_MST_MEAL_ASSIGNMENT	AS_MEA
STVHAPS	LOAD_MST_PHONE_ASSIGNMENT	AS_PHON
STVHAPS	LOAD_MST_ROOM_ASSIGNMENT	AS_ROOM
STVHOND	LOAD_MAT_DEGREE	AA_DEG
STVHOND	LOAD_MST_OUTCOME_HONOR	AS_OUT
STVHONR	LOAD_MAT_DEGREE	AA_DEG
STVHONR	LOAD_MST_OUTCOME_HONOR	AS_OUT
STVHONR	LOAD_MST_PREVIOUS_EDUCATION	AS_PREV
STVINTS	LOAD_MST_INTEREST	AS_INTE
STVINTV	LOAD_MST_CURRICULUM_BATCH	AS_ADM
STVLEAD	LOAD_MAT_SPECIAL_ACTIVITY	AA_SPEC
STVLEAD	LOAD_MST_STUDENT_ACTIVITY	AS_STUD
STVLEAV	LOAD_MST_CURRICULUM	AS_CURF
STVLEAV	LOAD_MST_GENERAL_STUDENT	AS_LEAR
STVLEND	LOAD_MST_CURRICULUM_BATCH	AS_RECF
STVLEVL	LOAD_MST_COURSE_LEVEL	AS_COUI
STVLEVL	LOAD_MST_COURSE_PREREQ	AS_COUI
STVLEVL	LOAD_MST_GENERAL_STUDENT	AS_GENE
STVLEVL	LOAD_MST_GPA	AS_GPA_
STVLEVL	LOAD_MST_GPA	AS_GPA_
STVLEVL	LOAD_MST_OFFERING_PREREQ	AS_OFFE
STVLEVL	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUE
STVLEVL	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUE
STVLEVL	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUE
STVLEVL	LOAD_MST_STUDENT_WORK_EXP	AS_STUE
STVMAJR	LOAD_MAT_DEGREE	AA_DEG
STVMAJR	LOAD_MRT_LOAN_APPLICATION	AR_LOAI

ite View

DENT COURSE GRADE CHG DENT COURSE REG AUDIT OGRAPHIC_REGION_INST OGRAPHIC REGION INST **RSE OFFERING** ERING GRADE MODE DENT COURSE GRADE CHG DENT COURSE REG AUDIT DENT COURSE IN PROGRESS DENT COURSE HISTORY DENT COURSE TRANSFER DEMIC OUTCOME L ASSIGNMENT NE ASSIGNMENT M ASSIGNMENT REE COME HONOR DEPT REE COME HONOR INST VIOUS EDUCATION PCOL EREST **MISSIONS APPLICATION** CIAL_ACTIVITY DENT_ACTIVITY RICULUM RNER CURRICULUM FOS RUITMENT INFORMATION RSE LEVEL RSE PREREQ ERAL STUDENT LEVEL TERM ERING PREREQ DENT COURSE IN PROGRESS DENT COURSE HISTORY DENT COURSE TRANSFER DENT WORK EXPERIENCE REE

N APPLICATION

Validation Table	Mapping	Composite View
STVMAJR	LOAD MST CURRICULUM BATCH	AS CURRICULUM FOS
STVMAJR	LOAD MST FIELD OF STUDY	AS_EURRICOLOM_FOS
	LOAD MST GENERAL STUDENT	AS_FIELD_OF_STUDY AS GENERAL STUDENT
STVMAJR STVMA IB	LOAD MST GENERAL STUDENT	AS_GENERAL_STUDENT AS LEARNER CURRICULUM FOS
STVMAJR STVMAJR	LOAD MST PREVIOUS EDUCATION	
STVMAJR STVMATL	LOAD MGT COMMUNICATION	AS_PREVIOUS_EDUCATION_PCOL AG COMMUNICATION
STVMAL	LOAD MST MEDICAL INFORMATION	AS MEDICAL INFORMATION
STVMDEQ	LOAD MST DISABILITY INFO	AS DISABILITY INFORMATION
STVMEDI	LOAD MST MEDICAL INFORMATION	AS MEDICAL INFORMATION
STVMEDI	LOAD_MST_MEAL_ASSIGNMENT	AS MEAL ASSIGNMENT
		AS_MEAL_ASSIGNMENT AA RELATIONSHIP
STVMRTL	LOAD_MAT_RELATION	—
STVMSCD STVNATN	LOAD_MST_MEAL_ASSIGNMENT	AS_MEAL_ASSIGNMENT
STVNAIN	LOAD_MAT_CONSTITUENT_ENTITY LOAD_MAT_ORGANIZATION_CONTACT	AA_CONSTITUENT AA ORGANIZATION CONTACT
STVNAIN	LOAD MFT INVOICE	AF INVOICE
STVNAIN	LOAD MPT PAST EMPLOYMENT	AP PAST EMPLOYMENT
STVNAIN	LOAD MRT LOAN APPLICATION	AR LOAN APPLICATION
STVNAIN	LOAD MST CURRICULUM	AS CURRICULUM
STVNAIN	LOAD_MST_CURRICULUM_BATCH	AS ADMISSIONS APPLICATION
STVNAIN	LOAD MST CURRICULUM BATCH	AS RECRUITMENT INFORMATION
STVNAIN	LOAD MST GENERAL STUDENT	AS LEARNER CURRICULUM FOS
STVINAIN	LOAD MST COURSE SUPPLEMENTAL	AS COURSE SUPPLEMENTAL
STVOCCS	LOAD_MST_GENERAL_STUDENT	AS GENERAL STUDENT
STVORSN	LOAD MST PHONE ASSIGNMENT	AS PHONE ASSIGNMENT
STVPREV	LOAD MST ACADEMIC STANDING	AS ACADEMIC STANDING
STVPSCD	LOAD_MST_PHONE_ASSIGNMENT	AS PHONE ASSIGNMENT
STVPTRM	LOAD_MST_COURSE_OFFERING	AS COURSE OFFERING
STVPTRM	LOAD MST GENERAL STUDENT	AS LEARNER CURRICULUM FOS
STVPTRM	LOAD MST MEETING TIME	AS MEETING TIME
STVPTRM	LOAD MST OFFERING COREQ	AS OFFERING COREQ
STVPTRM	LOAD_MST_OFFERING_PREREQ	AS_OFFERING_PREREQ
STVPTRM	LOAD MST STDNT CRSE ATT STEP 1	AS_STUDENT_COURSE_ATTRIBUTE
STVPTRM	LOAD_MST_STDNT_CRSE_ATT_STEP_2	AS_STUDENT_COURSE_ATTR_TRANS
STVPTRM	LOAD MST STDNT CRSE GRD CHG	AS STUDENT COURSE GRADE CHG
STVPTRM	LOAD_MST_STUDENT_COURSE_STEP_1	AS STUDENT COURSE IN PROGRESS
STVPTRM	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVPTYP	LOAD_MST_INSTITUTION	AS INSTITUTION
STVRADM	LOAD MST ADMINISTRATOR	AS ADMINISTRATOR
STVRADM	LOAD MST ADMISSIONS RATING	AS ADMISSIONS RATING

Validation		
Table	Mapping	Composite View
STVRATE	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVRATE	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVRATE	LOAD_MST_GENERAL_STUDENT	AS_LEARNER_CURRICULUM_FOS
STVRATP	LOAD_MST_ADMISSIONS_RATING	AS_ADMISSIONS_RATING
STVRECR	LOAD_MST_CONTACT	AS_CONTACT
STVRECR	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVRECR	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVREPS	LOAD_MST_COURSE_CATALOG	AS_COURSE_CATALOG
STVRESD	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVRESD	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVRESD	LOAD_MST_GENERAL_STUDENT	AS_GENERAL_STUDENT
STVRGRE	LOAD_MST_ENROLLMENT	AS_ENROLLMENT
STVRSLT	LOAD_MST_CONTACT	AS_CONTACT
STVRSTA	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVRSTS	LOAD_MST_STDNT_CRSE_REG_AUD	AS_STUDENT_COURSE_REG_AUDIT
STVRSTS	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS
STVRSTS	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVRTYP	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVRTYP	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVSAPR	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVSBGI	LOAD_MAT_DEGREE	AA_DEGREE
STVSBGI	LOAD_MRT_TRACKING_REQUIREMENT	AR_FINAID_TRACKING_REQUIREMENT
STVSBGI	LOAD_MST_ADMISSIONS_SOURCE	AS_ADMISSIONS_SOURCE
STVSBGI	LOAD_MST_CONTACT	AS_CONTACT
STVSBGI	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVSBGI	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVSBGI	LOAD_MST_ENROLLMENT	AS_ENROLLMENT_HISTORY
STVSBGI	LOAD_MST_PRE_STUDENT	AS_PRE_STUDENT
STVSBGI	LOAD_MST_PREVIOUS_EDUCATION	AS_PREVIOUS_EDUCATION_HSCH
STVSBGI	LOAD MST PREVIOUS EDUCATION	AS PREVIOUS EDUCATION PCOL
STVSBGI	LOAD_MST_RECRUITMENT_SOURCE	AS RECRUITMENT SOURCE
STVSBGI	LOAD MST STUDENT COURSE STEP 3	AS STUDENT COURSE TRANSFER
STVSCHD	LOAD_MST_COURSE_OFFERING	AS COURSE OFFERING
STVSCHD	LOAD MST COURSE SCHEDULE	AS COURSE SCHEDULE
STVSCHD	LOAD MST MEETING TIME	AS MEETING TIME
STVSCHD	LOAD MST STUDENT COURSE STEP 1	AS STUDENT COURSE IN PROGRESS
STVSCHD	LOAD MST STUDENT COURSE STEP 2	AS STUDENT COURSE HISTORY
STVSESS	LOAD MST COURSE OFFERING	AS COURSE OFFERING
STVSESS	LOAD MST CURRICULUM BATCH	AS ADMISSIONS APPLICATION

Validation Table	Mapping	Composite View
STVSESS	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVSESS	LOAD_MST_GENERAL_STUDENT	AS_GENERAL_STUDENT
STVSITE	LOAD MGT EVENT	AGEVENT
STVSITE	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVSITE	LOAD_MST_GENERAL_STUDENT	AS_LEARNER_CURRICULUM_FOS
STVSPSR	LOAD_MST_DISABILITY_INFO	AS_DISABILITY_INFORMATION
STVSPSR	LOAD_MST_MEDICAL_INFORMATION	AS_MEDICAL_INFORMATION
STVSPST	LOAD_MST_SPORT	AS_SPORT
STVSSTS	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVSTAT	LOAD_MAT_CONSTITUENT_ENTITY	AA_CONSTITUENT
STVSTAT	LOAD_MAT_ORGANIZATION_CONTACT	AA_ORGANIZATION_CONTACT
STVSTAT	LOAD_MFT_INVOICE	AF_INVOICE
STVSTAT	LOAD_MPT_PAST_EMPLOYMENT	AP_PAST_EMPLOYMENT
STVSTAT	LOAD_MRT_LOAN_APPLICATION	AR_LOAN_APPLICATION
STVSTAT	LOAD_MRT_NEED_ANALYSIS	AR_NEED_ANALYSIS
STVSTAT	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVSTAT	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVSTAT	LOAD_MST_GENERAL_STUDENT	AS_LEARNER_CURRICULUM_FOS
STVSTST	LOAD_MST_GENERAL_STUDENT	AS_GENERAL_STUDENT
STVSTYP	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVSTYP	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVSTYP	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVSTYP	LOAD_MST_GENERAL_STUDENT	AS_LEARNER_CURRICULUM_FOS
STVSUBJ	LOAD_MST_COURSE_ATTRIBUTE	AS_COURSE_ATTRIBUTE
STVSUBJ	LOAD_MST_COURSE_CATALOG	AS_COURSE_CATALOG
STVSUBJ	LOAD_MST_COURSE_COREQ	AS_COURSE_COREQ
STVSUBJ	LOAD_MST_COURSE_LEVEL	AS_COURSE_LEVEL
STVSUBJ	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVSUBJ	LOAD_MST_COURSE_PREREQ	AS_COURSE_PREREQ
STVSUBJ	LOAD_MST_COURSE_SCHEDULE	AS_COURSE_SCHEDULE
STVSUBJ	LOAD_MST_COURSE_SUPPLEMENTAL	AS_COURSE_SUPPLEMENTAL
STVSUBJ	LOAD_MST_MEETING_TIME	AS_MEETING_TIME
STVSUBJ	LOAD_MST_OFFERING_COREQ	AS_OFFERING_COREQ
STVSUBJ	LOAD_MST_OFFERING_GRADE_MODE	AS_OFFERING_GRADE_MODE
STVSUBJ	LOAD_MST_OFFERING_PREREQ	AS_OFFERING_PREREQ
STVSUBJ	LOAD_MST_STDNT_CRSE_ATT_STEP_1	AS_STUDENT_COURSE_ATTRIBUTE
STVSUBJ	LOAD_MST_STDNT_CRSE_ATT_STEP_2	AS_STUDENT_COURSE_ATTR_TRANS
STVSUBJ	LOAD_MST_STDNT_CRSE_GRD_CHG	AS_STUDENT_COURSE_GRADE_CHG
STVSUBJ	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS

Validation		
Table	Mapping	Composite View
STVSUBJ	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVSUBJ	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUDENT_COURSE_TRANSFER
STVTADM	LOAD_MST_TEST	AS_TEST
STVTEAC	LOAD_MST_TEST	AS_TEST
STVTEFR	LOAD_MST_TEST	AS_TEST
STVTEIN	LOAD_MST_TEST	AS_TEST
STVTEPR	LOAD_MST_TEST	AS_TEST
STVTERM	LOAD_MGT_COMMUNICATION	AG_COMMUNICATION
STVTERM	LOAD_MRT_AWARD_BY_PERSON	AR_AWARD_BY_PERSON
STVTERM	LOAD_MRT_AWARD_DISBURSEMENT	AR_AWARD_DISBURSEMENT
STVTERM	LOAD_MRT_FINAID_ENROLLMENT	AR_FINAID_ENROLLMENT
STVTERM	LOAD_MRT_SATISFACT_ACAD_PROG	AR_SATISFACTORY_ACAD_PROGRESS
STVTERM	LOAD_MRT_YEAR_TYPE_DEFINITION	AR_YEAR_TYPE_DEFINITION
STVTERM	LOAD_MST_ADMINISTRATOR	AS_ADMINISTRATOR
STVTERM	LOAD_MST_ADMISSIONS_ATTRIBUTE	AS_ADMISSIONS_ATTRIBUTE
STVTERM	LOAD_MST_ADMISSIONS_COHORT	AS_ADMISSIONS_COHORT
STVTERM	LOAD_MST_ADMISSIONS_DECISION	AS_ADMISSIONS_DECISION
STVTERM	LOAD_MST_ADMISSIONS_RATING	AS_ADMISSIONS_RATING
STVTERM	LOAD_MST_ADMISSIONS_REQUIREM	AS_ADMISSIONS_REQUIREMENT
STVTERM	LOAD_MST_ADMISSIONS_SOURCE	AS_ADMISSIONS_SOURCE
STVTERM	LOAD_MST_ADVISOR	AS_ADVISOR
STVTERM	LOAD_MST_COURSE_ATTRIBUTE	AS_COURSE_ATTRIBUTE
STVTERM	LOAD_MST_COURSE_CATALOG	AS_COURSE_CATALOG
STVTERM	LOAD_MST_COURSE_COREQ	AS_COURSE_COREQ
STVTERM	LOAD_MST_COURSE_LEVEL	AS_COURSE_LEVEL
STVTERM	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVTERM	LOAD_MST_COURSE_PREREQ	AS_COURSE_PREREQ
STVTERM	LOAD_MST_COURSE_SCHEDULE	AS_COURSE_SCHEDULE
STVTERM	LOAD_MST_COURSE_SUPPLEMENTAL	AS_COURSE_SUPPLEMENTAL
STVTERM	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVTERM	LOAD_MST_CURRICULUM_BATCH	AS_ACADEMIC_OUTCOME
STVTERM	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVTERM	LOAD_MST_CURRICULUM_BATCH	AS_CURRICULUM_FOS
STVTERM	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVTERM	LOAD_MST_DISABILITY_INFO	AS_DISABILITY_INFORMATION
STVTERM	LOAD_MST_FACULTY	AS_FACULTY
STVTERM	LOAD_MST_FACULTY_ATTRIBUTE	AS_FACULTY_ATTRIBUTE
STVTERM	LOAD_MST_FACULTY_CONTRACT	AS_FACULTY_CONTRACT
STVTERM	LOAD_MST_FACULTY_DEPART_COLL	AS_FACULTY_DEPARTMENT_COLLEGE

2-27

Validation		
Table	Mapping	Composite View
STVTERM	LOAD_MST_FIELD_OF_STUDY	AS_FIELD_OF_STUDY
STVTERM	LOAD_MST_GENERAL_STUDENT	AS_ACTIVE_TERMS
STVTERM	LOAD_MST_GENERAL_STUDENT	AS_GENERAL_STUDENT
STVTERM	LOAD_MST_GENERAL_STUDENT	AS_LEARNER_CURRICULUM_FOS
STVTERM	LOAD_MST_INSTRUCTIONAL_ASSIGN	AS_INSTRUCTIONAL_ASSIGNMENT
STVTERM	LOAD_MST_MEETING_TIME	AS_MEETING_TIME
STVTERM	LOAD_MST_NONINSTRUCT_ASSIGN	AS_NONINSTRUCTIONAL_ASSIGNMENT
STVTERM	LOAD_MST_OFFERING_COREQ	AS_OFFERING_COREQ
STVTERM	LOAD_MST_OFFERING_GRADE_MODE	AS_OFFERING_GRADE_MODE
STVTERM	LOAD_MST_OFFERING_PREREQ	AS_OFFERING_PREREQ
STVTERM	LOAD_MST_RECRUITMENT _ATTRIBUTE	AS_RECRUITMENT_ATTRIBUTE
STVTERM	LOAD_MST_RECRUITMENT_COHORT	AS_RECRUITMENT_COHORT
STVTERM	LOAD_MST_RECRUITMENT_SOURCE	AS_RECRUITMENT_SOURCE
STVTERM	LOAD_MST_SPORT	AS_SPORT
STVTERM	LOAD_MST_STDNT_CRSE_ATT_STEP_1	AS_STUDENT_COURSE_ATTRIBUTE
STVTERM	LOAD_MST_STDNT_CRSE_ATT_STEP_2	AS_STUDENT_COURSE_ATTR_TRANS
STVTERM	LOAD_MST_STDNT_CRSE_GRD_CHG	AS_STUDENT_COURSE_GRADE_CHG
STVTERM	LOAD_MST_STUDENT_ACTIVITY	AS_STUDENT_ACTIVITY
STVTERM	LOAD_MST_STUDENT_ATTRIBUTE	AS_STUDENT_ATTRIBUTE
STVTERM	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS
STVTERM	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVTERM	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUDENT_COURSE_TRANSFER
STVTERM	LOAD_MST_YEAR_TYPE_DEF	AS_YEAR_TYPE_DEFINITION
STVTERM	LOAD_MTT_CONTRACT	AT_CONTRACT
STVTERM	LOAD_MTT_EXEMPTION	AT_EXEMPTION
STVTESC	LOAD_MST_COURSE_PREREQ	AS_COURSE_PREREQ
STVTESC	LOAD_MST_OFFERING_PREREQ	AS_OFFERING_PREREQ
STVTESC	LOAD_MST_TEST	AS_TEST
STVTMST	LOAD_MST_ENROLLMENT	AS_ENROLLMENT
STVTMST	LOAD_MST_FIELD_OF_STUDY	AS_FIELD_OF_STUDY
STVTOPS	LOAD_MST_COURSE_SUPPLEMENTAL	AS_COURSE_SUPPLEMENTAL
STVTOPS	LOAD_MST_NONINSTRUCT_ASSIGN	AS_NONINSTRUCTIONAL_ASSIGNMENT
STVTRCN	LOAD_MST_GENERAL_STUDENT	AS_GENERAL_STUDENT
STVTSRC	LOAD MST TEST	AS TEST
STVWRSN	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVWRSN	LOAD MST CURRICULUM BATCH	AS_RECRUITMENT_INFORMATION
STVWRSN	LOAD MST ENROLLMENT	AS_ENROLLMENT_HISTORY
TBBDETC	LOAD_MTT_ACCOUNT_DETAIL	AT_ACCOUNT_DETAIL

Validation		
Table	Mapping	Composite View
TBBDETC	LOAD_MTT_CONTRACT	AT_CONTRACT
TBBDETC	LOAD_MTT_EXEMPTION	AT_EXEMPTION
TTVDCAT	LOAD_MTT_ACCOUNT_DETAIL	AT_ACCOUNT_DETAIL
TTVDCAT	LOAD_MTT_MISC_TRANSACTION	AT_MISCELLANEOUS_TRANSACTION
TTVDELI	LOAD_MTT_ACCOUNT	AT_ACCOUNT
TTVSRCE	LOAD_MTT_ACCOUNT_DETAIL	AT_ACCOUNT_DETAIL
TTVSRCE	LOAD_MTT_GRANT_ACCT_DETAIL	AT_GRANT_ACCOUNT_DETAIL

Product-Specific Information

Product-specific information is information that is unique to individual Banner products. The information is organized by product.

Common

List of Values for Parameters

The VALIDATION reporting view provides a pull-down list of values (LOV) for parameters by various reporting tools. Performing a select distinct on a code within a reporting view may be a valid solution to generate a List of Values. However, this method would likely cause a performance impact on the system. The VALIDATION reporting view can be used instead as the pull-down list. It provides the appropriate Banner Table name as a filter for VALIDATION.TABLE_NAME. The MGT_VALIDATION table is also used to build the LOV views that reside in the ODSLOV schema.

The information on the List and Detail Reports pages can be viewed online or exported to a CSV file (Microsoft Excel format) or XML file for printing or additional manipulation.

- AA_VALIDATION
- AF_VALIDATION
- AG_VALIDATION
- AN_VALIDATION
- AP_VALIDATION
- AR_VALIDATION
- AS_VALIDATION
- AT_VALIDATION

Each of these Banner composite views extracts values from validation tables in their respective Banner Product areas. Also included are the status indicators, effective dates, and sometimes the qualifiers.

Within Banner Finance, there are several groups of values stored within the FTVSDAT System Data Maintenance table. To properly represent some of these values, they have been pulled into the AF_VALIDATION Composite view with the TABLE_NAME as follows:

- GRANT_CATEGORY represents all grant categories stored within FTVSDAT
- GRANT_SUBCATEGORY represents all grant sub categories stored within FTVSDAT
- GRANT_TYPE represents all grant types stored within FTVSDAT

Values have been added to table FTVFSPD to represent beginning and ending periods. The added values are '00', '13', and '14'. The FTVFSYR table has for its description, the Fiscal Year converted to a 4 digit year.

In specific situations, Banner source tables were not used. The following is a compiled list of data element names used in place of Banner specific tables names. The source for each of these names is documented in Chapter 3 of the Banner Operational Data Store Handbook.

The hard coded TABLE_NAMES are as follows:

- ACADEMIC TITLE
- ACCOUNT_ATTRIBUTE_TYPE
- ACCOUNT_ATTRIBUTE_VALUE
- ACCOUNT_CLASS
- ACCOUNT_LEVEL_1
- ACCOUNT_LEVEL_2
- ACCOUNT_LEVEL_3
- ACCOUNT_LEVEL_4
- ACCOUNT_POOL
- ACCOUNT SET CODE
- ACCOUNT_TYPE_ATTR_TYPE
- ACCOUNT_TYPE_ATTR_VALUE
- ACCOUNT_TYPE_LEVEL_1
- ACCOUNT_TYPE_LEVEL_2

- ACCOUNT_TYPE_SET_CODE
- ADVISOR_NAME_LFMI
- ASSIGNMENT_GRADE
- CALENDAR_MONTH
- CALENDAR_YEAR
- COLLECTION_AGENCY_NAME
- CONTRACT_NUMBER
- CONTRACT_TYPE
- COURSE_IDENTIFICATION
- COURSE_REFERENCE_NUMBER
- EMPLOYEE_STATUS
- EMPLOYEE_TIME_STATUS
- ENDOWMENT_FUND
- ENTITY_TYPE
- FINANCIAL_AID_SOURCE_TYPE
- FINANCIAL_AID_TYPE
- FINANCIAL_MANAGER
- FISCAL_QUARTER
- FUND_ATTRIBUTE_TYPE
- FUND_ATTRIBUTE_VALUE
- FUND_LEVEL_1
- FUND_LEVEL_2
- FUND_LEVEL_3
- FUND_LEVEL_4
- FUND_LEVEL_5
- FUND_POOL
- FUND_SET_CODE
- FUND_TYPE_ATTR_TYPE
- FUND_TYPE_ATTR_VALUE
- FUND_TYPE_LEVEL_1

2-31

- FUND_TYPE_LEVEL_2
- FUND_TYPE_SET_CODE
- GENDER
- INSTALLMENT_PLAN
- INSTRUCTOR_NAME
- INTENDED_TIME_STATUS
- INTERNAL_ACCOUNT_TYPE
- INTERNAL_FUND_TYPE
- LOCATION_LEVEL_1
- LOCATION_LEVEL_2
- LOCATION_LEVEL_3
- LOCATION_LEVEL_4
- LOCATION_LEVEL_5
- ORGANIZATION_ATTR_TYPE
- ORGANIZATION_ATTR_VALUE
- ORGANIZATION_LEVEL_1
- ORGANIZATION_LEVEL_2
- ORGANIZATION_LEVEL_3
- ORGANIZATION_LEVEL_4
- ORGANIZATION_LEVEL_5
- ORGANIZATION_LEVEL_6
- ORGANIZATION_LEVEL_7
- ORGANIZATION_LEVEL_8
- ORGANIZATION_POOL
- ORGANIZATION_SET_CODE
- ORG_FINANCIAL_MANAGER
- POSITION_STATUS
- POST_SECONDARY_SCHOOL
- PREF_CLAS
- PRINCIPAL_INVESTIGATOR

- PROGRAM_ATTR_TYPE
- PROGRAM ATTR VALUE
- PROGRAM LEVEL 1
- PROGRAM LEVEL 2
- PROGRAM_LEVEL_3
- PROGRAM_LEVEL_4
- PROGRAM_LEVEL_5
- PROGRAM_SET_CODE
- RECEIVABLE_CONTRACT
- RECEIVABLE_DELINQUENCY
- RECEIVABLE EXEMPTION
- SECONDARY_SCHOOL
- SPORTS

Finance

Transaction_History FIELD_CODE Explanation

Following is an explanation of the use for FIELD_CODE and LEDGER_IND within the TRANSACTION_HISTORY reporting view. The LEDGER_IND and FIELD_CODE work together to drive what ledger amount field was updated.

Ledger_Ind	Ledger	Field_ Code	Amount Field Updated	Description
G	General	01	Sum_Periodic_Debits	Debits
		02	Sum_Periodic_Credits	Credits
0	Operating	01	Curr_Adopted_Budget	Current Period Original Budget
		02	Curr_Budget_Adjustments	Current Period Budget Adjustment
		03	Curr_Year_To_Date_Activity	Current Period Activity
		04	Curr_Encumbrances	Current Period Purchase Order and General Encumbrance
		05	Curr_Budget_Reservation	Current Period Requisition Budget Reservation
		06	Curr_Accumulated_Budget	Current Period Accounted Budget

2-33

Ledger_Ind	Ledger	Field_ Code Amount Field Updated		Description		
		07	Curr_Temporary_Budget	Current Period Temporary Budget		
		08	Curr_Grant_Activity	Obsolete		
E	Encumbrance	01	Original_Amount	Original Encumbrance Amount		
		02	Curr_Adjustments	Encumbrance Adjustments		
		03	Curr_Liquidations	Encumbrance Liquidations		

Student

Extracting Student Data

When a new base student record is created in Banner, a new record is created in the Banner ODS table MST_BASE_STUDENT. Each record in this table contains a range of academic periods in which the student status allows the student to register. If the status prevents the student from registering, then the beginning and ending academic periods in the Banner ODS record are the same and match the Banner effective term.

Additionally, the MST_BASE_STUDENT table contains information on each student's program of study. This table contains one record per student per effective term per curriculum.

How Banner ODS composite table MST_GENERAL_STUDENT is populated

Creating a new record within one of a number of Banner tables indicates to Banner ODS that the student has activity within a specific term. As a result, a new record is created in the MST_GENERAL_STUDENT table for the student and term when Banner ODS is loaded or refreshed.

Following is a list of Banner tables that define student activity in Banner ODS:

- SGBSTDN student base table
- SFBETRM student registration table
- SHRTTRM institutional course maintenance term header table
- SHRTRAM attendance period by transfer institution table
- SHRDGMR degree table
- SGRCHRT student cohort table
- SGRSPRT sport table
- SGRSATT student attribute table

- SGRSACT student activity table
- SGRCOOP cooperative education table
- RPRATRM applicant award by term table
- RORSTAT applicant status table
- TBRACCD account charge/payment detail table
- TBBCSTU contract student authorization table

The MST_GENERAL_STUDENT table also contains information about each student's program of study. This table contains one record per student per academic period with student activity per curricula.

Additional 'Zero' Record in Banner ODS Tables

In Banner, the values for student classification and academic standing are specific for a student, academic period, and their primary program level only. In Banner ODS, many reports require student classification and academic standing data for all student curricula, regardless of the level value. In order to create comprehensive reports while limiting the number of outer-joins used, a single record with a value of zero for the key fields (person_uid, student_level, and academic_period) is inserted into the MST_STUDENT_CLASSIFICATION and MST_ACADEMIC_STANDING composite tables as a step in the load mappings. Existing student classification and academic standing values are displayed if they exist for a specified student, level and academic period. Otherwise, the NULL values from this new record are displayed.

Key Student Views Architecture

Due to the complex architecture of some Student views, the table below shows how those Student reporting views are currently built from Banner to Banner ODS.

통 Note

The table below only refers to key views and key tables used within the reporting views.

Composite Views		Composite Tables		Report-ing View	End Reporting View
AS_CURRICLUM_FOS	=>	MST_CURRICULUM_FOS	Split into		
		MST_CURR_ACADEMIC _OUTCOME			
AS_ACADEMIC_ OUTCOME	+	MST_CURR_ACADEMIC _OUTCOME			
	=>	MST_ACADEMIC_OUTCOME	=>		ACADEMIC_ OUTCOME

2-35

Composite Views		Composite Tables		Report-ing View	End Reporting View
AS_CURRICLUM_ FOS	=>	MST_CURRICULUM _FOS	Split into		
		MST_CURR_ACADEMIC _OUTCOME			
AS_ACADEMIC_ OUTCOME	+	MST_CURR_ACADEMIC _OUTCOME			
	=>	MST_ACADEMIC_OUTCOME _SLOT	=>		ACADEMIC_ OUTCOME_SLOT
AS_ACADEMIC_ STANDING	=>	MST_ACADEMIC_STANDING			
AS_ENROLLMENT					
AS_ENROLLMENT_ HISTORY	=>	MST_ENROLLMENT			
AS_LEARNER_ CURRICLUM_FOS	=>	MST_CURR_STUDENT	Curri c		
AS_STUDENT_ CLASSIFICATION	=>	MST_STUDENT _CLASSIFICATION			
AS_GENERAL_STUDENT	=>	MST_GENERAL_STUDENT _STAGE			
MST_GENERAL_STUDE NT_STAGE	+	MST_CURR_STUDENT	Non- curric		
	=>	MST_BASE_STUDENT	Non- curric		
AS_ACTIVE_TERMS	=>	MST_ACTIVE_TERMS _STAGE			
		MST_ACTIVE_TERMS _STAGE			
	+	MST_BASE_STUDENT			
	=>	MST_GENERAL_STUDENT			
		MST_GENERAL_STUDENT			
	+	MST_ENROLLMENT			
	+	MST_STUDENT _CLASSIFICATION			
	+	MST_ACADEMIC_STANDING	=>		ACADEMIC_STU DY
AS_CURRICLUM_ FOS	=>	MST_CURRICULUM_FOS	Split into		
		MST_CURR_ADMISSIONS _APPL			
AS_ADMISSIONS_ APPLICATION	+				

Composite Views		Composite Tables		Report-ing View	End Reporting View
	=>	MST_ADMISSIONS_APPLICA TION	=>		ADMISSIONS_ APPLICATION
AS_CURRICLUM_ FOS	=>	MST_CURRICULUM_FOS	Split into		
		MST_CURR_ACADEMIC _OUTCOME			
AS_ACADEMIC_ OUTCOME	+	MST_CURR_ACADEMIC _OUTCOME			
	=>	MST_ACADEMIC_OUTCOME			
	+				
AA_DEGREE	=>	MAT_DEGREE			
	+				
AS_PREVIOUS_ EDUCATION_HSCH	=>	MST_PREVIOUS _EDUCATION			
AS_PREVIOUS_ EDUCATION_PCOL	=>	MST_PREVIOUS _EDUCATION	=>		COMBINED_ ACADEMIC_ OUTCOME
AS_ACADEMIC_ STANDING	=>	MST_ACADEMIC_STANDING			
AS_ENROLLMENT					
AS_ENROLLMENT_ HISTORY	=>	MST_ENROLLMENT			
AS_LEARNER_ CURRICLUM_FOS	=>	MST_CURR_STUDENT	curric		
AS_STUDENT_ CLASSIFICATION	=>	MST_STUDENT _CLASSIFICATION			
AS_GENERAL_ STUDENT	=>	MST_GENERAL_STUDENT _STAGE			
		MST_GENERAL_STUDENT _STAGE			
	+	MST_CURR_STUDENT			
		MST_BASE_STUDENT			
AS_ACTIVE_TERMS	=>	MST_ACTIVE_TERMS _STAGE			
		MST_ACTIVE_TERMS _STAGE			
	+	_ MST_BASE_STUDENT			
	=>	MST_GENERAL_STUDENT			

2-37

Composite Views		Composite Tables		Report-ing View		End Reporting View
		MST_GENERAL_STUDENT				
	+	MST_ENROLLMENT				
	+	MST_STUDENT_CLASSIFICA TION				
	+	MST_ACADEMIC_STANDING	=>	STUDENT	+	
AS_CURRICLUM_FOS	=>	MST_CURRICULUM_FOS	Split into			
		MST_CURR_ACADEMIC _OUTCOME				
AS_ACADEMIC _OUTCOME	+	MST_CURR_ACADEMIC _OUTCOME				
	=>	MST_ACADEMIC_OUTCOME	=>	ACADEMIC _OUTCOME	= >	GOVERNMENT _ACADEMIC _OUTCOME
AS_LEARNER_CURRICL UM_FOS	=>	MST_CURR_STUDENT	curric			
AS_GENERAL_STUDENT	=>	MST_GENERAL_STUDENT _STAGE				
		MST_GENERAL_STUDENT _STAGE				
	+	MST_CURR_STUDENT				
		MST_BASE_STUDENT				
AS_ACTIVE_TERMS	=>	MST_ACTIVE_TERMS _STAGE				
		MST_ACTIVE_TERMS _STAGE				
	+	MST_BASE_STUDENT				
	=>	MST_GENERAL_STUDENT				
AS_CURRICLUM_FOS	=>	MST_CURRICULUM_FOS	Split into			
		MST_CURR_ADMISSIONS _APPL				
AS_ADMISSIONS _APPLICATION	+	MST_CURR_ADMISSIONS _APPL				
	=>		=>	ADMISSIONS _APPLICATIO N	= >	GOVERNMENT _ADMISSIONS
AS_ACADEMIC _STANDING	=>	MST_ACADEMIC_STANDING				
AS_ENROLLMENT						
AS_ENROLLMENT _HISTORY	=>	MST_ENROLLMENT				

Composite Views		Composite Tables		Report-ing View		End Reporting View
AS_STUDENT _CLASSIFICATION	=>	MST_STUDENT _CLASSIFICATION				
AS_LEARNER _CURRICLUM_FOS	=>	MST_CURR_STUDENT	curric			
AS_GENERAL_STUDENT	=>	MST_GENERAL_STUDENT _STAGE				
		MST_GENERAL_STUDENT _STAGE				
	+	MST_CURR_STUDENT				
	=>	MST_BASE_STUDENT				
AS_ACTIVE_TERMS	=>	MST_ACTIVE_TERMS _STAGE				
		MST_ACTIVE_TERMS _STAGE				
	+	MST_BASE_STUDENT				
	=>	MST_GENERAL_STUDENT				
		MST_GENERAL_STUDENT				
	+	MST_ENROLLMENT				
	+	MST_STUDENT _CLASSIFICATION				
	+	MST_ACADEMIC_STANDING	=>	STUDENT, ACADEMIC _STUDY	= >	GOVERNMENT _FINANCIAL_AID
AS_CURRICLUM_FOS	=>	MST_CURRICULUM_FOS	Split into			
		MST_CURR_RECRUITMENT _INFO				
AS_RECRUITMENT _INFORMATION	+	MST_CURR_RECRUITMENT _INFO				
	=>	MST_RECRUITMENT _INFORMATION	=>			RECRUITMENT _INFORMATION
AS_ACADEMIC_ STANDING	=>	MST_ACADEMIC_STANDING				
AS_ENROLLMENT						
AS_ENROLLMENT_ HISTORY	=>	MST_ENROLLMENT				
AS_STUDENT_ CLASSIFICATION	=>	MST_STUDENT _CLASSIFICATION				
AS_LEARNER_ CURRICLUM_FOS	=>	MST_CURR_STUDENT	curric			

2-39

Composite Views		Composite Tables	Report-ing View	End Reporting View
AS_GENERAL_STUDENT	=>	MST_GENERAL_STUDENT _STAGE		
		MST_GENERAL_STUDENT _STAGE		
	+	MST_CURR_STUDENT		
	=>	MST_BASE_STUDENT		
AS_ACTIVE_TERMS	=>	MST_ACTIVE_TERMS _STAGE		
		MST_ACTIVE_TERMS _STAGE		
	+	MST_BASE_STUDENT		
	=>	MST_GENERAL_STUDENT		
		MST_GENERAL_STUDENT		
	+	MST_ENROLLMENT		
	+	MST_STUDENT _CLASSIFICATION		
	+	MST_ACADEMIC_STANDING	=>	STUDENT

Composite Views

The composite views gather Banner source data necessary to populate and maintain the information stored in the Banner Operational Data Store (Banner ODS). This source information then updates the information that resides on the separate Banner ODS database.

통 Note

Any institution change to a composite view impacts Banner ODS maintenance processes.

Banner ODS composite view meta data is also available as published meta data. Use the following steps to view published composite view meta data reports using the Administrative UI.

- 1. Select Meta Data from the Administrative menu.
- 2. Select **Banner Operational Data Store**. The Banner Operational Data Store Reporting View Meta Data Reports page opens.
- **3.** Select **Banner ODS Composite View Meta Data Reports** link located at the top right-hand corner of the page. The Operational Data Store Composite View Reports page opens.

- **4.** Select a subject area. The Composite View Meta Data Reports page opens listing the view name and description.
- 5. To display the column details associated with the selected composite view, select one of the composite views. A description of each field on the report appears below:

Field	Description
Description	Business description of the composite view target, including the key and frequency of data returned by the view.
Target Column	Column name in the composite view target.
Business Definition	Defines the target column in business terms.
Database Data Type	Used for formatting purposes when writing reports.
Business Data Type	This field is empty by default. It can be used to store client- specific data about a given column.
Domain Value	This field is empty by default. It can be used to store client- specific data about a given column.
Source Name	Source table, FUNCTION, CONSTANT, or CALCULATION
Source Column	Source column name from the source table or view, if the source is a table or view. Name of the PL/SQL function if the source is FUNCTION, description of the constant if the source is CONSTANT, or description of the calculation used if the source is CALCULATION.

2-41



3 Administrative User Interface



The Administrative User Interface (UI) enables you to easily perform the tasks required to set up and maintain Banner Operational Data Store (Banner ODS) at your institution. Review the map below to become acquainted with the location of the options on the Administrative UI menus.

Preferences and Security	Meta Data
Institutional Preferences	Banner Operational Data Store
Set Up Users & PIN	
Set Up Data Display Rules	Maintain Banner ODS Meta Data
Set Up Banner ODS Security Rules	
Options	New Web Tailor Administration
Set Up Parameters	Customize a Web Menu or Procedure
Schedule a Process	Customize a Graphic Element
View Control Reports	Customize a Set of Information Text
View and/or Remove Scheduled Processes	Customize a Set of Menu Items
Freeze Data Maintenance	Update User Roles
	Customize a Web Module
	Customize Web Rules
	Customize Web Tailor Parameters
	Customize a Login Return Location
	Customize Web Tailor Overrides
	Customize Global User Interface Settings
	Customize Web for Alumni Rules

There are a number of tasks involved in setting up and maintaining Banner ODS. Some tasks are performed one time when you initially install and implement Banner ODS. Other

3-1

tasks are performed during implementation and on an ongoing basis. Each task is listed below, and is described in detail in the next sections of this guide.

- Setting up institutional preferences
- Setting up user accounts
- Setting up data display rules
- Setting up security
- Setting up and maintaining parameters
- Populating and synchronizing data in Banner ODS
- Scheduling a process
- Freezing Banner ODS data
- · Reviewing meta data

You can also use Web Tailor to perform some security functions and set some securityrelated preferences. In addition, Web Tailor gives you some options for customizing the appearance and behavior. For more information on using Web Tailor, see the "Web Tailor User Guide."

\Lambda Warning

Because Banner ODS contains sensitive business information, you should take standard precautions to prevent unauthorized access. User IDs and PINs should, of course, be kept secret, since anyone with a valid ID and PIN, and URL, can gain access to the system.

This section outlines all the tasks, and offers suggestions about when you want to perform them.

Administrative User Interface URL

Type the following URL into the address line of your browser to access Banner ODS .

http://yourWebServer.yourDomain:yourPort/yourDAD/twbkwbis.P_WWWLogin

Set up Users and PINS

Anybody using a reporting tool to access Banner ODS must be defined as an Oracle User. Use your normal Oracle processes procedures to create user accounts.

After a user account is created, that user can report against Banner ODS. Each user is listed in the Administrative UI on the View Banner ODS Business Profile and User Associations page. From that page, you can assign security rules for each user using a Business Profile. See <u>"Set up Fine-Grained Access Security" on page 3-15</u> for more information.

You should set up user accounts for Banner ODS users at your institution based on how each user needs to use Banner ODS. Banner ODS includes two types of users:

- Administrative Users—who require a user account so they can use the Administrative UI to set up and maintain Banner ODS.
- Oracle Users—who require an Oracle user account (set up in your source system) so that they can use a reporting tool to access Banner ODS and build reports.

Some users may be both Administrative and Oracle users, in which case they need a user account of both types. In these cases, you can use the same user ID in both systems (Administrative UI and Oracle).

PINs are disabled if the number of login attempts is exceeded (set on Web Tailor "Customize Web Rules" screen). They can be easily enabled on the Update a User Account screen using this checkbox.

Create Users and PINs

Administrative UI users set up and maintain Banner ODS at your institution. Each Administrative user must have a unique ID and PIN created for them in order to gain access to the Administrative UI.

- 1. Click **Preferences & Security** from the Administrative menu.
- 2. Click Set Up Users & PIN.
- **3.** Click **Create a New User Account** from the Set Up User and PIN page. The Create a New User Account page opens.
- 4. Enter a User ID.

A User ID can be one to nine characters, is limited to numbers and upper case letters, and may not contain spaces. (If you enter lower case letters, they will be converted to upper case letters.)

- 5. Enter First, Middle, and Last Names (only Last Name is required.)
- 6. Enter a PIN (It must be exactly six numbers; it cannot contain letters or special characters.)
- 7. Indicate whether the PIN is enabled or disabled.
- 8. Click Create.

Update Existing Users

Use this option to update misspelled or changed names, or to enable or disable a PIN.

If a user's login attempts are exceeded (as set up in Web Tailor, Customize Web Rules page), their PIN is disabled. Use this page to enable their PIN.

- 1. Click Preferences & Security from the Administrative menu.
- 2. Click Set Up Users & PIN.
- 3. Click an entry from the Name column on the Set Up Users and PIN page.
- 4. Change the fields. Only the Last Name field is required.

Solution Note

The PIN must be exactly six numbers, and cannot contain letters or special characters.

5. Click Update to save. Or, click Delete to remove the User Account.

Update User Roles

When you create an Administrative user, the user is set up in Web Tailor with two roles— Administrator and Web Tailor Administrator. This gives the user access to all options within both Banner ODS and Web Tailor menus. There may be times when you want to change a user's access, for example, allow only access to Banner ODS, but not Web Tailor. Use the steps below to change a user's defined roles in Web Tailor.

- 1. Click New Web Tailor Administration from the Administrative menu.
- 2. Click Update User Roles. The Select a User to Update page opens.
- **3.** Enter the User ID, or select it from the drop-down list from the Select a User to Update page.
- 4. Click Submit to save.

- 5. Check or uncheck the boxes next to Meta Data, Options, Security and Web Tailor Administrator to assign the desired access privileges.
- 6. Click Submit Changes.

Data Display Rules

Display rules enable you to control and customize how data stored in your Banner ODS composite tables is displayed in your Reporting views. Display rules determine the positional location of data in a view, or the hierarchical order in which a particular type of data should be retrieved. "Positional" display rules are required for all Slotted views while "hierarchical" display rules are required for a sub-set of (non-slotted) Reporting views. There are also a number of display rules used to determine a value stored in either a Banner ODS composite table or displayed in a Banner ODS Reporting view. All display rules are stored in Banner ODS database table - MGRSDAX.

Example - Positional Display Rules (for Slotted views)

The TEST view in Banner ODS displays all valid test score values loaded from your source system to Banner ODS. This data is stored in a vertical presentation as "one row per person per test". The corresponding TEST_SLOT view provides an alternative horizontal presentation, that 'flattens' the data to "one row per person with the details of (up to) seven test scores." Positional display rules are required to define what seven test scores will be included, and in what position or order they will appear within this "slotted" presentation. These Display rules will be used to build the underlying MST_TEST_SLOT table.

Example – Hierarchical Display Rules (for applicable non-slotted views)

The PERSON_ADDRESS and ADDRESS_BY_RULE view displays one address per entity per ADDRESS_RULE (stored in MGRSDAX as an Internal Code under the Internal Group of ADDRESS, and must end in ADDR) to be used for mailing purposes.

The mailing address displayed is based upon the hierarchical display rules created to determine which address types should be retrieved for the mailing address. Users can create a series of hierarchical display rules based on priority, so that if "address type 1" does not exist, fetch "address type 2," etc.

To invoke the ADDRESS_BY_RULE reporting view rule, add a Filter/WHERE clause that states "where ADDRESS_RULE = IC_REG_ADDR." This will retrieve the first current address found in the source system for the hierarchy you created.

When Banner ODS is first installed, MGRSDAX (Banner ODS table that stores display rules) is populated with specific rules from your source system, as well as suggested SunGard Higher Education delivered rules. The records (or display rules) in MGRSDAX match external codes (institution specific values) with internal codes (SunGard Higher

Education defined values). After Banner ODS system is installed, you must then use the Administrative UI Preferences and Security option and Set Up a Display Rule to review and update the display rules in MGRSDAX. This ensures that display rules match your criteria, and are set up to meet your reporting needs.

Multiple display rules can also be managed, or assigned, using business profiles. (See <u>"Set</u> <u>up a Display Rule" on page 3-10</u> for information on setting up business profiles.)

통 Note

Business profiles are only used when more than one Oracle user is used to access the data from your institution supported report writer.

If business profiles are used, then the system pulls the appropriate values for the profile with which the user is associated, if a rule exists for that profile.

<u> Marning</u>

If multiple profiles exist for that user, then the first profile with a matching display rule is used.

칠 Note

If no display rules are found for any profiles assigned to the user, the display rule for the default profile (INSTITUTION) is used.

For reporting views such as the TEST_SLOT view, use business profiles to designate unique sets of test score data and the positional order of that data within the view for different business offices and users at the institution.

For hierarchical reporting views such as the PERSON_ADDRESS view, business profiles enable you to designate unique sets of (mailing) address type hierarchies for different business offices and users.

Example:

A display rule consists of one or more related records in MGRSDAX. Records that share the same Profile Code, Internal Group and Internal Code values make up a single display rule. The display rule also includes the Business PROFILE_CODE that defaults to INSTITUTION or is set to an institution defined value.

MGRSDAX is delivered with the following records that all have an Internal Group value of ADDRESS, and the business profile of INSTITUTION.

Internal Group: ADDRESS

Profile Code	Internal Code	Internal Code Sequence	External Code
INSTITUTION	ALUMMAIL	1	BUS
INSTITUTION	ALUMMAIL	2	ART

Profile Code	Internal Code	Internal Code Sequence	External Code
INSTITUTION	ALUMMAIL	3	RES
INSTITUTION	ALUMMAIL	4	CPS
INSTITUTION	RECRLETR	1	ACCEPT
INSTITUTION	RECRLETR	2	CHKL
INSTITUTION	RECRLETR	3	COLLEGE NIGHT
INSTITUTION	RECRLETR	4	DCSN
INSTITUTION	RECRLETR	5	INTERVIEW ONE

The first four records also share the same Internal Code value of ALUMMAIL. These four records make up the Display Rule that defines which Mail codes to retrieve for Advancement-related reporting views. The last five records share the Internal Code value RECRLETR. These five records make up the display rule that defines which MAIL internal codes to retrieve for the COMMUNICATION_SLOT and Recruiting-related reporting views.

By editing the above values to reflect the Advancement and Recruiting Mail internal code values used by your institution, your users can then report on the desired data. Before your users begin creating reports, you need to review all of the delivered display rules, and edit them to reflect your institution's specific values.

통 Note

After changing display rules for views that work from slotted database tables, the corresponding slotted tables must be reloaded before the updated values will display in the reporting views seen by your users. By default, this happens during the incremental refresh cycle, which typically occurs nightly. However, if you want to see more immediate results, reload the corresponding slotted table(s) manually via the Schedule a Process page. See <u>"Schedule a Single Process" on page 3-60</u>

통 Note

Also note that there are few reporting views, like the PERSON_ADDRESS and ADDRESS_BY_RULE, that go directly against the rules in the MGRSDAX database table and do not need to be reloaded for you to view the changes.

Display Rule Information in Published Meta Data

Meta Data includes a business definition for each reporting view. When the reporting view being defined uses display rule entries from Banner ODS MGRSDAX database table, the

3-7

required rule code, INTERNAL _GROUP and INTERNAL_CODE values are explained as part of the business definition. Most reporting views that require MGRSDAX rules have a column labeled PROFILE_CODE, and a column with the name of the view and XXXXXXX_RULE that are used as the INTERNAL_GROUP for that set of display values.

When the reporting view has a column that uses the MGRSDAX database table, that is explained in the column business definition.

Display Rule Cross Reference Chart

Display rules are defined by a set of records stored in Banner ODS database table -MGRSDAX. You can use the Display Rule Cross Reference Chart to identify display rule value combinations as they are delivered.

The Display Rule Cross Reference Chart lists all views, tables, procedures or packages that use the MGRSDAX table. The chart enables you to see the rule values that are set up in order to retrieve the data, and how your solution is impacted if changes are made to the display rules on MGRSDAX. The codes on the chart followed by an asterisk (*) indicate user defined rules that can be changed to fetch the EXTERNAL_CODE or REPORTING_DATE.

To open the Display Rule Cross Reference Chart, select the following link from the Administrative UI Display Rule Cross Reference Chart online help: Cross Reference Chart.

The chart opens in Microsoft Excel or a similar application. You can reorganize the columns as needed. A description of each column on the chart appears below:

Column	Description
REPORTING_VIEWS	The view that is directly affected by a change to an MGRSDAX value in Banner ODS.
INTERNAL_GROUP	Value Banner ODS is using to connect the set of display rules with the reporting view and/or column that are to use them. These values are coded within Banner ODS and must be used for the purpose specified.
INTERNAL_CODE	Institutions may define any values as required to represent the business rules of the institution. Some values are extracted from Banner GTVSDAX rules for institutions that use the O:A views.
EXTERNAL_CODE	X identifies valid institutions values must be provided.

Column	Description
REPORTING_DATE	<i>X</i> indicates that the Reporting Date is used for sequence of display values.
TABLES	Banner ODS Composite table used as the basis for the selection of values based on the display rules defined by the institution on the MGRSDAX database table.
COMPARISON COLUMN	Column within Banner ODS composite table that is used to retrieve data based on the value in the either MGRSDAX_EXTERNAL_CODE or MGRSDAX_REPORTING_DATE.
	Example:
	TEST rule: The MSKTEST package gets the MGRSDAX_EXTERNAL_CODE value from MGRSDAX based on the MGRSDAX_INTERNAL_GROUP = 'TEST' and the MGRSDAX_INTERNAL_CODE = 'STDNTEST'. This value is then used to retrieve records from the TEST column in MST_TEST to populate the MST_TEST_SLOT table and the TEST_SLOT view.
REPORTING	Package View Name of the package or view in which MGRSDAX is referenced.
	Procedure/Function Name of the process or function being used by MGRSDAX.

Records with the same Profile Code, Internal Group and Internal Code combination make up one display rule. The display rules that are delivered have a default business profile code of INSTITUTION.

통 Note

When more than one Internal Code is listed, there are multiple display rules for the value in the Internal Group. For example, there are several ADDRESS rules listed for different departments like Admissions (Internal Code = ADMSADDR), Faculty (Internal Code = FACLADDR), Recruiting (Internal Code = RECRADDR), etc.

통 Note

When more than one Profile Code is listed, there are multiple display rules for the value in the Internal Group.

The example below will help you tie together one use of the chart with the Administrative UI.

Example:

You want to see what display rules exist for (or are impacted by) the VENDOR reporting view because you want to change the external code for that reporting view. Follow the steps below:

1. The copy of the chart is already sorted in alphabetical order by Reporting View. Look in the Reporting View column (the first column) of the chart. Find VENDOR. It is near the end of the list.

You will find that the assigned Profile Code is INSTITUTION, the Internal Group is ADDRESS and the Internal Code is VENDADDR for VENDOR.

- 2. Open the Set Up a Display Rule web page in your Administrative UI.
- **3.** Select the Profile Code (INSTITUTION), Internal Group (ADDRESS) and Internal Code (VENDADDR) from the drop-down lists.
- **4.** Click **Search**. The Select an Existing Display Rule page opens. This page shows the display rule for the reporting view VENDOR.
- 5. To change the External Code, click **BU** under the External Code column.

The Update an Existing Display Rule page opens. You can change the external code from this page.

6. Click Save.

Set up a Display Rule

You may want to create new display rules by adding new internal codes for a business purpose, or by adding additional external codes not currently defined.

통 Note

You may want to set up your business profiles before you set up display rules.

To create a new rule, follow the steps below:

- 1. From the Administrative menu, Click Preferences & Security.
- 2. Click Set Up Data Display Rules. The Set Up a Display Rule page opens.

통 Note

If a PROFILE_CODE is to be used in the display rule, it must be set up first. See <u>"Set up Fine-Grained Access Security" on page 3-15</u> for information on setting up business profiles.

- **3.** Click **Create** from the Set Up a Display Rule page. The Create a New Display Rule page opens.
- **4.** Enter the information for the new display rule, or click an existing code from one of the drop-down lists. Each field is described below:

Field	Description
Business	Business Profile for which you want to set up display rules.
Profile Code	You can create additional Business Profiles from the Create a Banner ODS Business Profile web page. <i>INSTITUTION</i> is the default code for users for whom no other business profile is defined.
Internal Group	High-level group of rows of data (Internal Codes) that are categorized together to provide multiple entries for a single concept. The value is predefined by SunGard Higher Education. It should <i>not</i> be changed, but new internal groups can be added for client specific processing. (Click the appropriate value from the Internal Group list.)
Internal Code 1	Specific code relationships for source system concepts. This field is used internally within PL/SQL functions and procedures to determine which row(s) to retrieve from the MGRSDAX table.
	You can add new internal codes to be used for business purposes, and then click the appropriate code when writing a report. (Click the appropriate value from the Internal Code list.)

3-11

Field	Description
Internal Code Sequence Number	Internal sequence number that provides either a hierarchy or positional identifier:
	Hierarchy identifier
	Order in which to retrieve display rule driven data (such as the Address Type for a designated mailing address in the PERSON_ADDRESS view). Each sequence number should be a single numeric value. Give the most important code value a sequence number of 1, and number each subsequent value consecutively (such as 2, 3, 4).
	Positional identifier
	Position within a slotted view where a repeating group should appear. The sequence number entered by the user must correspond to the slotting concept applicable to the slotted view for which the display rule is being created (such sequence numbers 1-7 for the seven available test score slots in the TEST_SLOT view).
External Code	Institution-specific values that usually come from rules and validation tables in the transactional or administrative source system. Enter the values used by your institution to define either the hierarchy or the positional value for the particular display rule.
	Note: Change this value so that the external codes match your institution's code value for each display rule value.

5. Click Save. The Update an Existing Display Rule page opens.

통 Note

After changing display rules the corresponding slotted tables must be reloaded for those changes to take effect. By default, this happens during the incremental refresh cycle, which typically occurs nightly. However, if you want to see more immediate results, reload the corresponding slotted table(s) manually via the Schedule a Process page. See "Schedule a Single Process" on page 3-60

Update Display Rules

You may want to display different types of test scores, address information, etc. If the display rule already exists, then you can use the steps below to add, update, duplicate or delete display rules.

칠 Note

You can use these steps for every Profile Code, Internal Group and Internal Code combination listed in the table in the "Display Rule Cross Reference -Chart" section.

- 1. From the Administrative menu, Click Preferences & Security.
- 2. Click Set Up Data Display Rules. The Set Up a Display Rule page opens.
- **3.** Choose a Business Profile, Internal Group, and Internal Code combination from the drop-down lists on the Set Up a Display Rule page. Or, you can show all groups and codes.
- 4. Click Search. The Select an Existing Display Rule page opens.

통 Note

Use the Meta Data reporting view business definition and the Display Rule Cross Reference chart, available from the **Help** button in the Administration UI, to identify Internal Group and Internal Code combinations that make up a Display Rule. Information about this chart is available in the "Display Rules Cross Reference" section.

- **5.** Review all information for the selected combination. Determine the data on which your users want to report (it may be different from what is delivered). Create a list of the data you want to use in place of the data that was delivered.
- 6. Choose an External Code link from the External Code column to edit a record. The Update an Existing Display Rule page opens.
- 7. Make your change
- 8. Click Save to save the display rule. Click Delete to remove the display rule.

칠 Note

After changing display rules, the corresponding slotted tables must be reloaded for those changes to take effect. By default, this happens during the incremental refresh cycle, which typically occurs nightly. However, if you want to see more immediate results, reload the corresponding slotted table(s) manually via the Schedule a Process page. See <u>"Schedule a</u> <u>Single Process" on page 3-60</u>.

Duplicate Display Rules

To save time, you can copy the settings from an existing display rule and use it to create a new display rule.

- 1. From the Administrative menu, Click Preferences & Security.
- 2. Click Set Up Data Display Rules. The Set Up a Display Rule page opens.
- **3.** Choose a Business Profile, Internal Group and Internal Code combination from the drop-down lists on the Set Up a Display Rule page. Or, choose to show all groups and codes.
- 4. Click Search. The Select an Existing Display Rule page opens.
- 5. Choose an external code link from the External Code column. The Update an Existing Display Rule page opens.
- 6. Enter the External Code information or select it from the drop-down list.
- 7. Click the Duplicate. The Create a New Display Rule page opens.
- 8. Replace the information for the existing display rule with the information for the new display rule.
- 9. Click Save to save your settings.

통 Note

After changing display rules, the corresponding slotted tables must be reloaded for those changes to take effect. By default, this happens during the incremental refresh cycle, which typically occurs nightly. However, if you want to see more immediate results, reload the corresponding slotted table(s) manually via the Schedule a Process page. See <u>"Schedule a</u> <u>Single Process" on page 3-60</u>.

Reload using a Single ETL Slot Process

Changes made to a display rule affect all associated slotted tables and reporting views. The ETL slot process must be rerun before any changes made to slotted tables or display rules can be viewed in the slotted reporting views. If only one slotted table was changed, then this process enables you to quickly run a single slot process. Use the following steps to schedule when you want to run a slot process job.

- 1. Click **Options** from the Administrative UI menu.
- 2. Click Schedule a Process. The Select a Process page opens.

- 3. Click Schedule Banner ODS Mappings. The Select a Subprocess page opens.
- 4. Click **Run A Single ETL Slot Package** from the Select a Subprocess page. The Schedule a Process page opens.
- 5. Choose the table from the Slotted Table to Reload drop-down list.
- 6. Enter the required Scheduling Parameters information.
 - **6.1.** Enter a Run Date (format dd-mon-yyyy) and Runtime (format hh24:mi:ss).
 - **6.2.** If you want to run the process on a recurring basis, enter an Interval.

Click the link next to the Interval field. A sample Interval window opens. Click the link under the Interval Expression column for the interval in which you want to schedule a process. For example, to run a process every day at the same time click SYSDATE+1.

7. Click **Save** to save the information about this job. The job is entered into the job queue to run at the specified day and time.

Set up Fine-Grained Access Security

Banner ODS includes two types of users:

- Oracle users who require an Oracle user account in your source system so they can access Banner ODS to build reports
- Administrative users who require a user account in the Administrative UI so they can use the UI to maintain Banner ODS.

This section explains how fine-grained access security applies to the first type of users -Oracle users when they access Banner ODS for reporting.

Fine-grained access security lets you selectively restrict an Oracle user's access to rows of Banner ODS data based on the value of a specific data element. For example, you might allow a user to see data only from their own department. After you set up security rules and assign them to Oracle users, the rules are applied when the user searches for information within Banner ODS.

칠 Note

This security applies to the rows of data returned, not the columns. To 'mask' columns of data for a given reporting view, create a copy of the view with those columns removed that contain sensitive data.

Secured access to data is controlled by Oracle Policies, in conjunction with the security rules set up in the Administrative UI. A policy is an Oracle construct that applies a

WHERE clause predicate to any queries made against a table. A security rule is simply data in Banner ODS security tables that determine what that WHERE predicate should look like for a given user.

By default, Banner ODS is delivered with no Policies (no security restrictions) on any tables. Therefore, you can set up data access values (security rules) for given users without affecting any user's ability to access Banner ODS data. However, once Policies are defined for the tables, users can only access data to which they have been granted permission.

Once a policy is set up on a Banner ODS table, Oracle calls the MGKSECR package to create a WHERE clause predicate any time that the database table is accessed, such as using a SELECT query. The MGKSECR package, in turn, uses the security rules data to generate the appropriate WHERE clause predicate for the current Oracle User ID. For users with access set to "all" (either All Banner ODS Data, All Data for that Area, or All Data for all columns and rules in the table), MGKSECR does not generate a predicate, thereby allowing those users full access to that data. For rules that list access to particular values, for example campus codes of A, B, or C, MGKSECR generates a corresponding WHERE clause code with the appropriate level of restriction.

통 Note

Security rules are cumulative -- they are joined with an AND clause. Users must be granted access rights for each rule in a table in order to gain access. For example, if a table has three security rules defined, and two of the rules give *all* access, but the third rule gives the user access to *none*, that user will not have access to any data in that table.

You can manage users by grouping similar users together as business profiles. You can also manage Security and Display Rule assignments as a group rather than at the individual user account level.

Use Banner ODS menu selections in the order below to set up your security:

1. Set up Organizational Areas.

Set up one or many organizational areas by grouping similar areas together. See <u>"Set</u> up and Maintain Organizational Areas" on page 3-17 for additional information.

2. Set up and Maintain User ID Translations, and Set up Business Profiles

These menu options can be completed in any order.

• User ID Translations

Bring Banner data into Banner ODS fine-grained access. See <u>"Banner User ID</u> <u>Translations" on page 3-19</u> for additional information.

• Business Profiles

Group similar users together. See <u>"Set up Business Profiles" on page 3-22</u> for additional information.

3. Security Rules

Defines the data that each user can access. See <u>"Set up and Maintain Security Rules"</u> on page 3-25 for additional information.

4. (optional) Security Predicates

Review the code that generates the predicate in MGKSECR to determine if it is aligned correctly with your business rules. Also, verify the code that is generated for a security predicate. See <u>"Security Predicates" on page 3-46</u> for additional information.

5. Assign Security Rules

Enables security rules to work. Policies are either turned on or turned off. See <u>"Policy Management" on page 3-47</u> for additional information.

6. Transfer Banner Fine-Grained Access process.

This process transfers data for Finance Fund, Fund Type, and Organizations, and for Human Resources Organizations, and Employee Class from Banner to Banner ODS. To transfer additional data you need to sent up additional rules. See <u>"Transfer Banner Fine-Grained Access" on page 3-93</u> for additional information.

Set up and Maintain Organizational Areas

Organizational Areas are used to set up and group organizational areas together, and to help simplify the implementation of Banner ODS fine-grained access.

Example

If you have users in the Human Resources area that should have access to all of the Human Resources tables. Instead of granting access for each user to each individual Human Resources table, you can define an Organizational Area called "HR" (the name is user-defined). Then, when you create your Banner ODS Security Rules for Human Resources tables, assign those rules to the "HR" Organizational Area. Once your Organizational Areas and Human Resources Security Rules are created, go to the Assign Security Rules page. Select your Human Resources users then, check the **Access All Data In This Area** check box. This gives the user access to all tables included in the "HR" Organizational Area.

Organizational Areas can be set up in any manner you wish. In the example above, an Organizational Area was created which included all Employee tables. However, you could also set up Organizational Areas that cross Banner product groups or you could set up Organizational Areas that are subsets of a product group. The idea is that you can set up Organizational Areas in any way that makes sense for the way you divide security among your reporting users.

Banner ODS is delivered with sample Organizational Areas and sample Security Rules that are assigned to them. The sample data gives an idea of how to go about setting up your own Organizational Areas and the Security Rules that apply to them.

Create a Banner ODS Organizational Area

Use to create organizational areas.

- 1. Click Preferences and Security.
- 2. Click Set up Banner ODS Security Rules.
- 3. Click Set up and Maintain Organizational Areas.
- 4. Click Create a Banner ODS Organizational Area.
- **5.** Enter the code and description.
- 6. Click Save.

Update a Banner ODS Organizational Area

Use to update organizational areas.

- 1. Click Preferences and Security.
- 2. Click Set up Banner ODS Security Rules.
- 3. Click Set up and Maintain Organizational Areas.
- 4. Click an organizational area code description.
- 5. Select another organizational code, or change the current description.

Solution 😸

The table at the bottom of the page indicates what rows in that table will be deleted if you delete the organizational area.

6. Click Save.

Delete a Banner ODS Organizational Area

Use to delete organizational areas.

- 1. Click Preferences and Security.
- 2. Click Set up Banner ODS Security Rules.

3. Click Set up and Maintain Organizational Areas.

- 4. Click an organizational area code description.
- 5. Select another organizational code, or change the current description.

Note

The table at the bottom of the page indicates what rows in that table will be deleted if you delete the organizational area.

6. Click Save.

Banner User ID Translations

Use Banner User ID Translations to match Banner security user IDs with Banner ODS security IDs if they are different and you plan to run the Transfer Banner Fine-Grained Access process.

The MGBXWLK table (owned by the IA_ADMIN schema and set up through the Banner User ID Translations pages) is used to associate the two IDs. MGBXWLK contains two primary columns: the Banner User ID and the Banner ODS User ID. The Banner ODS User ID is not required, therefore you can transfer all Banner User IDs into the MGBXWLK table without triggering constraint errors. MGBXWLK has two primary purposes:

- Facilitate data transfer when user IDs are not the same
- Additional security. You may not want everyone with fine-grained access information in Banner to be able to access the data in Banner ODS. In that case, you would follow the instructions in <u>"- Restrict the Information Transferred to a Limited Group of Users" on page 3-20</u>. Only those users whose user IDs were added to MGBXWLK are able to access Banner ODS data after all the fine-grained access policies are enabled.

The MGBXWLK table is populated based on the scenarios below.

- Banner User IDs are the same as the Banner ODS User IDs

- The MGBXWLK table does not need to be populated
- The delivered Administrative parameter record with internal group *BANNER TO ODS FGA TRANSFER* and internal code *ODS USER ID NOT FOUND* is used to tell the transfer job what to do when a given Banner ODS user ID is not found in MGBXWLK. As delivered the value of External Code is *USE BANNER USER ID*.

3-19

- Some User IDs are the Same in Banner and Banner ODS, and Some are Not

- Enter only users with different Banner and Banner ODS user IDs into the MGBXWLK table (using the Set Up and Maintain Banner User ID Translations pages). Users with the same user ID in Banner and Banner ODS can be omitted from the table.
- The delivered Administrative parameter record with internal group *BANNER TO ODS FGA TRANSFER* and internal code *ODS USER ID NOT FOUND* is used to tell the Transfer Banner Fine-Grained Access process what to do when a given Banner ODS user ID is not found in MGBXWLK. As delivered the value of external Code is *USE BANNER USER ID*.
- If you populated the MTVPARM record with an external code of USE BANNER USER ID, but populated MGBXWLK with only the Banner User IDs and the Banner ODS User IDs have not yet been populated, the process <u>"Transfer Banner</u> <u>Fine-Grained Access" on page 3-93</u>, (MGKXFER.P_TransferFGA), does not read the MGBXWLK table and the Banner User ID is used.

- All Users are to have a record in MGBXWLK, regardless of whether the Banner and Banner ODS User IDs are the Same

- Add all Banner user IDs (**Banner User ID** field) and Banner ODS user IDs (**Banner ODS User ID** field) to MGBXWLK. This includes users with the same Banner user ID as their Banner ODS user ID.
- Enter the same MTVPARM record as <u>"- Banner User IDs are the same as the</u> <u>Banner ODS User IDs</u>" and <u>"- Some User IDs are the Same in Banner and Banner</u> <u>ODS, and Some are Not</u>", but with an external code of *DENY ACCESS*.

- Restrict the Information Transferred to a Limited Group of Users

- Add the limited set of Banner user IDs to MGBXWLK. If the Banner ODS user IDs are different, enter them in the Banner ODS User ID field. If the Banner User IDs are the same in Banner ODS, enter the Banner User IDs in the Banner User ID field and the Banner ODS User ID field.
- Enter the same MTVPARM record as <u>"- Some User IDs are the Same in Banner</u> and Banner ODS, and Some are Not" and <u>"- All Users are to have a record in</u> <u>MGBXWLK, regardless of whether the Banner and Banner ODS User IDs are the</u> <u>Same</u>" but with an external code of *DENY ACCESS*.

Create Banner User ID Translations

Use this to match a Banner user ID with a Banner ODS user ID.

Prerequisites

It is recommended that the Banner ODS ID is set up so that it can be selected from the drop-down list that appears when you select **Select a Banner ODS User ID** on the translation Create and Update pages.

- 1. Click Preferences and Security.
- 2. Click Set up Banner ODS Security Rules.
- 3. Click Set up and Maintain Banner User ID Translations.
- 4. Click Create a New User ID Translation.

If no User ID translations exist, you are taken directly to the Create a New User ID Translation page.

5. Enter the Banner user ID, or click the Select a **Banner User ID** link to choose it from the list.

The Banner User IDs are drawn from the Banner Finance tables FORUSFN, FORUSOR, and FOBPROF, and the Banner HR tables PSRORGN, PTRUSER, and PSRECLS.

6. Enter the Banner ODS user ID, or click the **Banner ODS User ID** link to choose it from the list.

The Select a Banner ODS User ID list is drawn from the WAV_ALL_USERS view which contains a list of IDs for users most likely to run the reports. Your institution can change this view to include additional users (ODSMGR IA_ADMIN, for example) so that additional user IDs will appear in the list.

7. Click Save.

Update Banner User ID Translations

Use this to change the Banner ODS user ID matched with a Banner user ID.

- 1. Click Preferences and Security.
- 2. Click Set up Banner ODS Security Rules.
- 3. Click Set up and Maintain Banner User ID Translations.
- 4. Select the Banner user ID you want to change.
- 5. Enter the Banner ODS user ID, or click the link to select if from a list.
- 6. Click Save.

Delete Banner User ID Translations

Use this to delete the Banner ODS user ID matched with a Banner user ID.

- 1. Click Preferences and Security.
- 2. Click Set up Banner ODS Security Rules.
- 3. Click Set up and Maintain Banner User ID Translations.
- 4. Select the Banner user ID you want to change.
- 5. Enter the Banner ODS user ID, or click the link to select if from a list.
- 6. Click Delete.

Set up Business Profiles

Business Profiles enable you to easily manage groups of users by grouping similar users together. In turn, you can manage Security and Display Rule assignments as a group rather than at the individual user account level.

First you create a Business Profile, then associate one or more users with that Business Profile, or associate one or more Profiles with one or more users.

Multiple display rules can also be managed, or assigned, using business profiles.

텛 Note

Business profiles are only used when more than one Oracle user is used to access the data from your institution supported report writer.

If business profiles are used, then the system pulls the appropriate values for the profile with which the user is associated, if a rule exists for that profile.

칠 Note

If multiple profiles exist for that user, then the first profile with a matching display rule is used. If no display rules are found for any profiles assigned to the user, the display rule for the default profile (*INSTITUTION*) is used.

For reporting views such as the TEST_SLOT view, use business profiles to designate unique sets of test score data and the positional order of that data within the view for different business offices and users at the institution.

For hierarchical reporting views such as the PERSON_ADDRESS view, business profiles enable you to designate unique sets of (mailing) address type hierarchies for different business offices and users.

Create a Business Profile

Use this to create a business profile.

Prerequisites

- Create an organizational area
- 1. Click Preferences and Security.
- 2. Click Set up Banner ODS Security Rules.
- 3. Click Set Up Business Profiles.
- 4. Click Create a Banner ODS Business Profile.
- 5. Enter a new profile code and description.
- 6. Click Save.

See <u>"View, Update or Delete a Business Profile" on page 3-24</u> for steps on updating and viewing Business Profiles.

Associate Business Profiles with a User

Use this to associate a Business Profile with a user or group of users. You can also link to the Set Up Banner ODS Security Rules page to set up security rule assignments for that profile or user.

- 1. Click Preferences and Security.
- 2. Click Set up Banner ODS Security Rules.
- 3. Click Associate Users and Business Profiles.
- 4. Choose the user to which you want to associate (or view existing) Business Profiles.

If you selected the user from the user drop-down list, then click **Refresh Profile List** to redisplay the business profiles list for that user.

Below the user drop-down list is an alphabetical list of all Business Profiles and the user name associated with them.

- 5. Check or uncheck the corresponding check boxes to associate or disassociate Business Profiles with the user.
- 6. To set up security rules for a user, click Assign Security Rules. This opens to the Set Up Banner ODS Security Rules page.

See <u>"Set up Fine-Grained Access Security" on page 3-15</u> for additional information.

7. Click Save to update the user associations.

Associate Users with a Business Profile

Use this option to associate a user or group of users with a Business Profile. You can also link to the Set Up Banner ODS Security Rules page to set up security rule assignments for that profile or user.

- 1. Click Preferences and Security.
- 2. Click Set up Banner ODS Security Rules.
- 3. Click Associate Users and Business Profiles.
- 4. Choose the Business Profile to which you want to associate (or view existing) users from the **Business Profile** column.

Note

When you select the Business Profile column or Oracle User Name column, the table toggles between associating a Business Profile with a user and associating a user with a Business Profile.

- 5. Check the corresponding check boxes to associate or disassociate users with a Business Profile.
- 6. Click Save to submit your changes.
- 7. To set up security rules for a Business Profile, click Assign Security Rules.

See <u>"Set up Fine-Grained Access Security" on page 3-15</u> for instructions on assigning security rules.

View, Update or Delete a Business Profile

Use this option to change or delete a Business Profile.

- 1. Click Preferences and Security.
- 2. Click Set up Banner ODS Security Rules.
- 3. Click Set Up Business Profiles.
- 4. Click the description of the Business Profile you want to change.

The Update a Banner ODS Business Profile page opens. From this page you can change the descriptions or delete the Business Profile.

5. Make your changes to the description. Click **Save** to submit your changes.

OR

Click **Delete** to remove the displayed profile.

[Note

The table at the bottom of the page indicates what rows in that table are also deleted if you delete the business profile.

Set up and Maintain Security Rules

The following tables (in the IA_ADMIN schema) are used to store the security rules information in Banner ODS.

Table	Functional Name	Security Rules Stored
MGBFGAA	Fine Grained Access User Areas	Indicates if the user has access to all of the elements and values within an area code
MGBFGAE	Fine Grained Access User Elements	Indicates if the user has access to all of the values within an element code
MGBFGAV	Fine Grained Access User Values	If the user does not have the MGBFGAV_ALL_IND or MGBFGAA_ALL_IND for an element, area, or all of FGA, indicates which values for the element the user may access.
MGBSECR	User Security Table.	Various user security related data.
MGBFGAR	Fine Grained Access Element Rule Table	The security rules that consist of Banner ODS tables and columns that have security applied to them.
MTVFGAA	Fine Grained Access Area Validation Table	The security rules that consist of Banner ODS area that have security applied to them.

Understanding the data relationships in these tables is best explained by reviewing the Administrative UI that maintains that data.

To set up security, you need to:

- Determine the data security requirements
- Set up and maintain the security rules

3-25

Determine Data Security Requirements

Use this section to determine whether it's necessary to restrict some users' access to some of the data within Banner ODS and to determine the specific security restrictions that apply to each user.

\Lambda Warning

When deciding whether to apply fine-grained access, keep in mind that its use limits the accuracy and usefulness of data. The system does not inform users that the data they are seeing has been filtered by fine-grained access security. This can cause incorrect numerical results in some circumstances.

Example

If a user queries across the entire institution, and that same user has been restricted from seeing data from some departments. Although the data appears to cover the whole institution, it does in fact sum data only from those departments which the user is allowed to access. The user may draw incorrect conclusions if he or she is unaware that the data is incomplete.

If you choose to use fine-grained access, you have the following options for the level of access you can give an individual Oracle user who accesses Banner ODS:

- Full access to all data in Banner ODS.
- Full access to all data at the level of the Organizational Dimension, for example, Academic, Course and Academic, Financial, or Workforce.
- Full access to all data at an element level, for example, college, department, major, organization, or fund level.
- Restricted access to data at the element level based on a list or range of values for a specific data element, for example., allow a user to access only data related to the user's department or a range of fund codes.

Set up a Security Rule

If you want to secure data at a granular level, you need to create the security rules that define that level of security. A security rule consists of an Organization Dimension, Table, Rule Type, and Column (you may define one or two columns).

Setting up a rule involves entering and maintaining the data that comprises a rule in the MGBFGAR table. You can use the Administrative UI to create and maintain the list of security rules that can be applied to a given user account, and to assign particular values for a given rule to a given user account. (Another method available using the Administrative UI is to assign values for a given rule using <u>"Set up Fine-Grained Access</u> <u>Security" on page 3-15</u>. The Administrative UI uses the MGKFGAC package to apply the security rules you define.

Use the <u>"Set up and Maintain Security Rules</u>" on page 3-25 option within the Administrative UI to create, update, delete, and search for rules. (These processes are described in the next few sections.) Creating or updating rules is reflected in the MGBFGAR table. Deleting rules changes the MGBFGAR table, but in addition, any values related to a rule that are deleted are cascaded through the other fine-grained access tables. There is a list at the bottom of the security rules web pages that indicates what rows in the table are deleted if the security rule is deleted.

Sample security rules (generated from the ods\ia_admin\dbscripts\mgbfgar_data_ods.sql script) are added to MGBFGAR when ODS is installed or upgraded. The delivered sample Finance and Human Resources security rules reflect the way that security rules should be set up if you plan to use Transfer Banner Fine-Grained Access. Since those rules are added to MGBFGAR by the install or upgrade, they can be viewed through the Administrative UI Set Up and Maintain Security Rules pages.

Prerequisites

- Create organizational areas
- Create business profiles
- 1. Determine a Banner ODS table and column value on which you want to secure information.
- 2. Click Preferences & Security from the Administrative menu.
- 3. Click Set Up Banner ODS Security Rules.
- **4.** Click **Set Up and Maintain Banner ODS Security Rules**. The Set Up a Banner ODS Security Rule page opens.
- **5.** Click **Create** from the Set up a Banner ODS Security page. The Create a New Security Rule page opens.
- 6. Enter the values for each field as described below.

Field	Description
Organizational Areas	This attribute enables you to group similar rules together for easier maintenance/assignment. You can grant access to entire sets of columns/ tables at this level using a single check-box. Rules are delivered with four groupings. You can add more groupings using the <u>"Set up and Maintain Organizational Areas" on page 3-17</u> .
Table	Banner ODS table on which you want to secure data, for example, the MST_TEST table, the MPT_EMPL_EARN_FY table, etc.

3-27

Field	Description
Rule Type	The type of Security Rule. There are two possibilities:
	<i>Range:</i> This type of rule pertains to limits, such as Financial amounts. Results in a WHERE clause predicate like: WHERE COLUMN1 > [some value1] AND < [some value2].
	<i>List:</i> This type of rule pertains to lists of valid values. Results in a WHERE clause predicate that matches up the list of allowed values (from the MGBFGAV table) with the values in the source table itself.
	Note: The Transfer Banner Fine-Grained Access process only uses security rules with rule type of "List".
Column 1	Banner ODS table column to which the rule pertains.
Query for Column 1	The PL/SQL SELECT statement used to populate the list of values in the Administrative UI for the specified Column 1 when assigning values to users. Click Generate to automatically create the PL/SQL statement.
	The base rules are delivered with simple SELECT DISTINCT queries for each of the columns on the various Banner ODS tables. However, if performance becomes an issue (for the SELECT DISTINCTs to return), you can create temporary tables (manually) from the results of a SELECT DISTINCT query, then change this query to have the rule point to the temporary table instead.
	For two-column rules, select distinct values for both columns into a temporary table and then include select distinct statements for both query for Column1 and query for Column 2.
	Example
	You have a two-column rule for MFT_GENERAL_LEDGER where Column 1 is FUND and Column 2 is CHART_OF_ACCOUNTS. First create a table: CREATE TABLE <i>temp_table</i> as SELECT DISTINCT CHART_OF_ACCOUNTS, FUND FROM MFT_GENERAL_LEDGER. Then, in Query for Column 1 enter SELECT DISTINCT FUND FROM <i>temp_table</i> and in Query for Column 2 enter SELECT DISTINCT

Column 2 enter SELECT DISTINCT

CHART_OF_ACCOUNTS FROM temp_table.

Field	Description
Column 2	An optional second column on the Banner ODS table to which the rule pertains. This column can be used to join AND values together from two columns.
	Note: If you are creating or modifying rules that deal with Finance such as Fund, Organization, Account, Location, or Program you <i>must</i> enter the table's Chart of Accounts column name in the Column 2 field. This is required because Banner ODS Finance hierarchy tables check to see if there are additional permissions for a given user, and that lookup on the hierarchy table cannot occur without a value for Chart of Accounts.
	Example
	You want to set up a security rule for the FUND column on MFT_GENERAL_LEDGER. You enter <i>FUND</i> into Column 1 and CHART_OF_ACCOUNTS into Column 2 . If you create that rule without CHART_OF_ACCOUNTS in Column 2 , a user's permissions for General Ledger Funds are incomplete because the Transfer Banner Fine-Grained Access process and the Fine-Grained Access Policy package, MGKSECR, are not able to read the Fund hierarchy table, MFT_FUND_HIERARCHY. If a user has access to Fund 0100 for Chart of Accounts A, the Transfer Banner Fine-Grained Access process and MGKSECR can look up the Fund hierarchy record and determine if there are additional Fund codes related to Fund 0100 that this user should also have access to. Those additional Fund codes would be stored on the hierarchy record in Fund Level 1, 2, 3, 4, and 5.
Query for Column 2	The PL/SQL SELECT statement used to populate the list of values in the Administrative UI for the optional Column 2. Click Generate to automatically create the PL/SQL statement.

3-29

Field	Description
FGA Transfer Type	Select a value for this field if you plan to use the Transfer Banner Fine- Grained Access process to transfer security information from Banner to Banner ODS.
	Finance Organization
	• Finance Fund
	HR Organization
	HR Employee Class
	A rule is excluded from the Transfer Banner Fine-Grained Access process if this column is blank.
	Note: A rule <i>must</i> contain a value in this field for the Transfer Banner Fine- Grained Access process to use the rule during the transfer.
	Example

When the Transfer Banner Fine-Grained Access process transfers Finance Fund permissions into Banner ODS, it selects the rules from MGBFGAR that apply to the Finance Fund transfer. To include a rule in the Finance Fund part of the transfer process select *Finance Fund*.

Field	Description
Column 2 Type	When you create or modify a security rule that is used to apply security to an element of Finance, that rule must have a value for the Chart of Accounts in the Column 2 field. In addition, Column 2 Type must contain the value <i>Chart of Accounts</i> which identifies the column 2 value as a Chart of Accounts value.
	Example
	If a rule is created to limit access to the Fund column on the General Ledger, you would select <i>FUND</i> as the Column 1 value, <i>CHART_OF_ACCOUNTS</i> as the column 2 value, and <i>Chart of</i>

Accounts as the Column 2 Type.

Note: It is obvious that the column 2 value is a Chart of Accounts value because the name of the column is CHART_OF_ACCOUNTS. This is not obvious for all Chart of Accounts column names. Some appear as DESG_CHART_OF_ACCOUNT on the MAT_GIFT table and HOME_ORGANIZATION_CHART on MPT_EMPLOYEE. The Column 2 Type field explicitly identifies a column 2 value as a Chart of Accounts column.

> If the rule's column 2 value is a Chart of Accounts column name during the Transfer Banner Fine-Grained Access process, then the Chart of Accounts value is brought over from Banner when the data is written to MGBFGAV.

Description
Leave this field blank for all rules that pertain to Finance Fund, Finance Organization, and Human Resources Organization to transfer file access permissions using the Transfer Banner Fine-Grained Access process. When the field is blank, the Transfer Banner Fine-Grained Access process writes additional data to MGBFGAV from the appropriate Banner ODS Finance Hierarchy table.
Example
If John Smith has access to Fund 0100, when the Predicate Code is blank on all of the Finance Fund security rules, the Transfer Banner Fine-Grained Access process reads the Banner ODS Finance Fund Hierarchy table, MFT_FUND_HIERARCHY, and determines if having access to fund 0100 also gives John access to additional Fund numbers. If the Fund Hierarchy entry for Fund 0100 includes a Fund Level 1 value of 0101 and a Fund Level 2 value of 0102, additional records are written to MGBFGAV giving John access to funds 0101 and 0102 as well as fund 0100.
However, if you preferred to have the Fund Hierarchy values for funds 0101 and 0102 added to the query predicate at query runtime by means of a join to the Fund Hierarchy, you can add a Predicate Code of <i>Fund</i> to each of the Finance Fund security rules.
Note: It is not recommended that you use the Predicate Code for Finance Fund, Finance Organization, or Human Resources Organization rules because adding the join to the Banner ODS applicable Hierarchy table at runtime can significantly impact query performance.
Keep in mind that Banner Finance permissions are transferred only for Fund and Organization (whether they apply to Finance or HR tables). If you want to add security rules for other portions of Finance, (namely Account, Location, or Program), those permissions are not transferred from Banner. You need to create those security rules with a predicate code of <i>Account, Location</i> , or <i>Program</i> so that the additional values from the appropriate hierarchy table are included in the query predicate at runtime.
However, the same potential performance warning applies for using predicate codes for those security rules. To resolve the performance issue you might consider adding records to MGBFGAV for rules pertaining to Account, Location, or Program.

Update or Delete a Security Rule

Perform all of these steps for each Security Rule you want to set up. Use the following steps to update an existing Security Rule.

- 1. Click Preferences & Security from the Administrative menu.
- 2. Click Set Up a Banner ODS Security Rules.
- **3.** Click **Set Up and Maintain Banner ODS Security Rules**. The Set Up a Banner ODS Security Rule page opens.
- **4.** From the drop-down list, choose the **organizational area**, **table**, and/or **column** for the rule you want to edit.

Click Search. The list of related Security Rules displays.

- 5. Click the link in the Column 1 column for the rule you want to edit. The Update an Existing Rule page opens.
- 6. Edit Query for Column 1, Query for Column 2, FGA Transfer Type, Column 2 Type, and/or Predicate Code. Click Save.

OR

Click **Delete** to remove the displayed security rule.

통 Note

The table at the bottom of the page indicates what rows in that table will be deleted if you delete the security rule.

Assign Security Rules

After security rules are created, you must determine what level of security each user requires. This is also where the rules are turned on and off.

Next, set up the security rules for users. You can use the Administrative UI to maintain the list of rules in the MGBFGAR table.

Solution Note

The administrator account that you use to set up fine-grained access control needs to have unrestricted access to all data, or the list of values the administrator can grant to others is limited to what the administrator can access.

Use any of the following methods to secure user access:

- user name
- organizational area

- business profile
- element

Secure Access by User Name

Use the following steps to assign security by user name. This method also enables you to grant a user access to all data in the entire solution by checking a single checkbox.

- 1. Click Preferences & Security from the Administrative menu.
- 2. Click Set Up Banner ODS Security Rules.
- 3. Click Assign Banner ODS Security Rules.

The list of User IDs is determined by the IA_ADMIN.WAV_ALL_USERS view. This view contains a list of IDs for users most likely to run the reports. Your institution can change this view to include additional users (ODSMGR IA_ADMIN, for example) so that additional user IDs will appear in the list.

4. Check the Access to all Banner ODS Data check box for each user in which you want to assign access to all data from the Secure Banner ODS Access by User Name page.

Each column is described below.

Click the individual user's name to restrict access to specific areas for that user. The link opens the Secure by Organizational Dimension page. See <u>"Secure Access by User ID" on page 3-36</u> for steps on restricting a user's access by Organizational Dimension.

Field	Description
Oracle User Name	Grouping of similar rules for easier maintenance/assignment. Rules are delivered with four groupings, but more groupings can be added in the MTVFGAA validation table, and can be used for new or existing rules.
	To restrict access for a specific user, click that user's user name. Organizational Dimension restrictions are made on the Secure Banner ODS Access by Organizational Dimension page.
	See <u>"Secure Access by User ID" on page 3-36</u> to restrict a user's access.
Profiles	Set up an existing business profiles on the Create a Business Profile page.
	Click Assign Profiles to open the View Business Profiles and User Association page.
Access Level	The current level of access the user has to areas of information. To grant full access, check the checkbox in the Access to all Banner ODS Data column.
	Possible values:
	All Green. Full access.
	<i>Partial</i> Yellow. Access to specified areas only.
	<i>None</i> Red. No access.
Access to all Banner ODS Data	Check the checkbox to give the user unrestricted access to all areas and information.
	If the checkbox is checked, a Y is stored in the MGBSECR_FGA_ALL_IND column in the MGBSECR table. When the MGKSECR package is called from the policy, no predicate is returned. This allows access to all data.

5. Click Save to update the Administrative UI.

Secure Access by User ID

Use the following steps to assign security to an individual user.

- 1. Click Preferences & Security from the Administrative menu.
- 2. Click Set Up Banner ODS Security Rules.
- 3. Click Assign Security Rules.

The Secure Banner ODS Access by User Name page opens listing all users and their current access level to information. Check the Access to All Banner ODS Data check box to grant the user unrestricted access to all information.

4. Click the user name to which you want to assign access from the Secure Banner ODS Access User Name page.

This page displays the security rules defined on the Set Up Banner ODS Security Rule page. The rules are grouped alphabetically by Organizational Dimension.

Each column is described below:

Column	Description
Oracle User Name	Click Select Another User to open the Secure Access by User Name page.
Profiles	Existing Business Profiles set up on the Create a Business Profile page.
	Click Assign Profiles to open the View Banner ODS Business Profile and User Associations page
Access to All Banner ODS Data	Check the checkbox to give the user unrestricted access to all areas and information.
	Click Duplicate User to open the Duplicate User Security Rules window.
Organizational Area	Area within the institution set up within the IA_ADMIN.MTVFGAA table.

Column	Description
Access All Data in this Area	Select the checkbox to grant the user security access to information within the corresponding organizational area.
	The list of areas is stored in the MTVFGAA table. You may change this list as desired. Rules can be grouped differently, for example. The All Data indicator for an area is stored in the MGBFGAA_ALL_IND in the MGBFGAA table. If the indicator is <i>Y</i> for a given table you are accessing, no predicate is returned from MGKSECR and you have full access.
Table	Banner ODS table on which you want to secure data, for example, the MST_TEST table, the MPT_EMPL_EARN_FY table, etc.
	Click the link to enable or disable the security policies for that organizational area.
Element	Click an element to open the Secure Access by Element page.
	Elements can be set up as double or single column rule elements on the Create Security Rules page.
	Double Column Rules
	If a single rule was created that applies to two element columns, then both of the column names appear together in the Element column on the Secure Access by Organizational Dimension page, and are connected by an & (ampersand). This may be done when the user needs to see both pieces of the data in order to accurately understand the data.
	Single Column Rules
	A single column rule is when an element column was set up with a single column and a single rule.

3-37

Column	Description	
Rule Type	The type of Security Rule. There are two possibilities:	_
	<i>Range:</i> This type of rule pertains to limits, such as Financial amounts. Results in a WHERE clause predicate like: WHERE COLUMN > [some value1] AND < [some value2]	
	<i>List:</i> This type of rule pertains to lists of valid values. Results in a WHERE clause predicate that matches up the list of allower values (from the MGBFGAV table) with the values in the source table itself.	d
Access Level	The level of security access assigned to the user.	e
	All Green. Full access.	
	Partial Yellow. Access to specified areas only.	S
	<i>None</i> Red. No access.	

- 5. To copy security access settings from one user or Business Profile to another, click **Duplicate User**. The Duplicate User Security Rules window opens.
 - **5.1.** Choose the user(s) and Business Profiles(s) whose setting you want to merge, or duplicate. To choose more than one user or profile, hold down the Ctrl key while you continue to choose users or profiles.
 - **5.2.** Use the radio buttons to indicate whether to merge current settings together, or replace one set of settings with another.
 - **5.3.** Click **Duplicate** to save your settings, or **Cancel** to close the page.
- 6. Click Save at the bottom of the page to update the Administrative UI.

Secure Access by Business Profile

Use the following steps to assign security by Business Profiles.

- 1. Click **Preferences & Security** from the Administrative menu.
- 2. Click Set Up Banner ODS Security Rules.

- **3.** Click **Assign Security Rules**. The Secure Banner ODS Access by User Name page opens listing all users and their current access level.
- **4.** Click **Secure by Profile** from the Secure Banner ODS Access by User Name page. The Secure Banner ODS Access by Profile page opens.

A description of each field on the page appears below:

Field	Descri	otion
Business Profile		g Business Profiles set up on the Create ess Profile page.
		Business Profiles to open the Set Up y Rules page.
Access Level		el of security access assigned to the s profile.
	All	Green. Full access.
	<i>Partial</i> only.	Yellow. Access to specified areas
	None	Red. No access.
Access to All Banner ODS Data		the check box to give the business unrestricted access to all information.

5. Click the Business Profile to which you want to assign access from the Secure Banner ODS Access by Profile page. The Set Up Security Rules page opens.

This page displays the security rules defined on the Set Up Banner ODS Security Rule page. The rules are grouped alphabetically by Organizational Area. Each column is described below:

Column	Description
Profile	Click Select Another Profile to open the Secure Access by Profile page.
Users	The Users associated with this Business Profile.
	Click Assign Users to open the View Banner ODS Business Profile and User Associations page. Check the checkbox to give the Business profile unrestricted
Access to All Banner ODS Data	access to all areas and information.
	Click Duplicate User to open the Duplicate User Security Rules window.

Column	Description
Organizational Area	Area within the institution set up within the IA_ADMIN.MTVFGAA table.
Access All Data in this Area	Select the checkbox to grant the Business Profile security access to information within the corresponding organizational area.
	The list of areas is stored in the MTVFGAA table. You may change this list as desired. Rules can be grouped differently, for example. The All Data indicator for an area is stored in the MGBFGAA_ALL_IND in the MGBFGAA table. If the indicator is <i>Y</i> for a given table you are accessing, no predicate is returned from MGKSECR and you have full access.
Table	Banner ODS table on which you want to secure data, for example, the MST_TEST table, the MPT_EMPL_EARN_FY table, etc.
	Click the link to enable or disable the security policies for that organizational area.
Element	Click an element to open the Secure Access by Element page. Elements can be set up as double or single column rule elements on the Create Security Rules page.
	Double Column Rules
	If a single rule was created that applies to two element columns, then both of the column names appear together in the Element column on the Secure Access by Organizational Dimension page, and are connected by an & (ampersand). This may be done when the user needs to see both pieces of the data in order to accurately understand the data.
	Single Column Rules

A single column rule is when an element column was set up with a single column and a single rule.

Description
The type of Security Rule. There are two possibilities:
Range:
This type of rule pertains to limits, such as Financial amounts. Results in a WHERE clause predicate like: WHERE COLUMN1 > [some value1] AND < [some value2]
List:
This type of rule pertains to lists of valid values. Results in a WHERE clause predicate that matches up the list of allowed values (from the MGBFGAV table) with the values in the source table itself
The level of security access assigned to the user.
All Green. Full access.
Partial Yellow. Access to specified areas only.
<i>None</i> Red. No access.

- 6. To copy security access settings from one user or Business Profile to another, click **Duplicate User**. The Duplicate User Security Rules window opens.
 - **6.1.** Choose the user(s) and Business Profiles(s) whose setting you want to merge, or duplicate. To choose more than one user or profile, hold down the Ctrl key while you continue to choose users or profiles.
 - **6.2.** Use the radio buttons to indicate whether to merge current settings together, or replace one set of settings with another.
 - 6.3. Click Duplicate to save your settings, or Cancel to close the page.
- 7. Click Save at the bottom of the page to update the Administrative UI.

Secure Access by Element

Use the following steps to assign security by element.

- 1. Click Preferences & Security from the Administrative menu.
- 2. Click Set Up Banner ODS Security Rules.

- **3.** Click **Assign Security Rules**. The Secure Banner ODS Access by User Name page opens listing all users and their accessibility to information. If you wish to secure by element for a Business Profile, select **Secure By Profile**.
- **4.** Depending on whether you are securing by User ID or by Business Profile, choose a name for Oracle User Name or Business Profile column. The Set Up Security Rules page opens.

This page displays the security rules defined on the Set Up Banner ODS Security Rules page. The rules are grouped alphabetically by Organizational Dimension.

5. Elements can be set up as double or single column rule elements on the Create Security Rules page.

Double Column Rules

If a single rule was created that applies to two element columns, then both of the column names appear together in the **Element** column on the Secure Access by Organizational Dimension page, and are connected by an & (ampersand). This is often done when the user needs to see both pieces of the data in order to accurately understand the data.

Single Column Rules

A single column rule is when an element column is set up with a single column and a single rule.

6. Choose the element to which you want to assign security for the user. The Secure Banner ODS Access by Element page opens.

From this page you can:

- choose another element
- · assign profiles to the user/business profile to access all values for the element
- copy user access to another user

A description of each field appears below:

Field	Description
Oracle User Name	The user's Oracle User ID.
Name	Grouping of similar rules for easier maintenance/assignment. Rules are delivered with four groupings, but more groupings can be added in the MTVFGAA validation table, and can be used for new or existing rules.
Organizational Area	Area within the institution set up within the IA_ADMIN.MTVFGAA table.

Field	Description
Table	Banner ODS table on which you want to secure data, for example, the MST_TEST table, the MPT_EMPL_EARN_FY table, etc.
Element	Elements can be set up as double or single column rule elements on the Create Security Rules page.
	Double Column Rules If a single rule was created that applies to two element columns, then both of the column names appear together in the Element column on the Secure Access by Organizational Dimension page, and are connected by an & (ampersand). This is often done when the user needs to see both pieces of the data in order to accurately understand the data. Single Column Rules
	A single column rule is when an element column is set up with a single column and a single rule.

3-43

Field	Description
Rule Type	The type of Security Rule. There are two possibilities:
	<i>Range:</i> This type of rule pertains to limits, such as Financial amounts. Results in a WHERE clause predicate like: WHERE COLUMN1 > [some value1] AND < [some value2]
	<i>List:</i> This type of rule pertains to lists of valid values. Results in a WHERE clause predicate that matches up the list of allowed values (from the MGBFGAV table) with the values in the source table itself.
Allow this user/	Click the appropriate button:
profile Access to	<i>All values:</i> The user is granted access to all values for this element, and is stored in the MGBFGAE_ALL_IND column as a <i>Y</i> . If new values are add, they will be considered accessible after the next refresh.
	<i>Only the values specified below:</i> Specify which values the user can access. If new values are added then they will not be considered accessible after the next refresh. Each new value needs to be checked individually.
	You can click All Values , which is then stored in the MGBFGAE_ALL_IND column as a <i>Y</i> , then the user or business profile is granted access to all values for this element.
	If you can choose Only the values specified below, then you can choose the specific values to which the user will have access (a la carte style). Those selected values are then stored in the MGBFGAV table.

- 7. Indicate whether you want to allow the user or business profile access to all values, or only the values that appear in the Values table below the Allow this user (or profile) Access to radio group.
 - 7.1. If you selected a single column rule element, then refer to the sample screen for a single column rule element below:

Oracle User Name:	DBSNMP	1		
Oganizational Area:	Academic	c Organization		
Table:	MST_ACA	ADEMIC_OUTCOME		
Element:	CAMPUS		Select Another Element	<u>Duplicate Val</u>
Rule Type:	LIST			
Allow this user access to	O All va	alues		
	Only	the values specified be	elow	
	Access			
Values				
Values				
Values 001 1				
Values 001 1 B				
Values 001 1 B				
Values 001 1 B H				
Values 001 1 B H M				
Values OO1 1 B H M U U NULL *				

A description of each single column rule element column appears below:

Field	Description
Value	These values are set up in the validation tables in your source system. NULL indicates missing codes in your source system.
Access	Check the checkbox of the values to which you want to assign security for the selected user.

7.2. If you selected a double column rule element, then refer to the sample screen for a double column rule element below.

Click the checkbox next to a value to give the user access to that value, then click Save.

Oracle User Name:	DBSNMP		
Oganizational Area:	Academic Organization		
Table:	MFT_GENERAL_LEDGER		
Element:	CHART_OF_ACCOUNTS	Select Another Element	Duplicate Values
Rule Type:	LIST		
Allow this user access t	to 🗢 All values		
	Only the values specified below		
Values Access to Valu	es of FUND		
B <u>3/53</u>			
I <u>0/37</u>			

A description of each column appears below

Column	Description
Value	These values are set up in the validation tables in your source system. NULL indicates missing codes in your source system.
Access to Values of (column name)	These values have one rule for two columns. The number to the right of the slash indicates the number of values in the column that have been assigned to the user. The second number indicates the total number of possible values available for that column. In the sample screen above, 2 out of 53 possible values have been assigned for the FUND column.

8. Click Save to keep your settings.

Security Predicates

An important, but optional, step in your implementation of Banner ODS Fine-grained Access is to review the delivered code in the MGKSECR PL/SQL package. This way you can review the delivered business logic, and determine if it is appropriate for your institution. You can also determine if there is any business logic that you might want to add.

If you encounter issues using the Security system, you might examine the security predicates that are generated. Enter the following query:

```
Query:
select mgksecr.f_check_ODS_fga('ODSMGR','MST_TEST') from dual;
Returns:
exists (select 'x' from mgbfgav where mgbfgav_username =
sys_context( 'userenv','session_user') and
```

```
mgbfgav_fgaa_code='ACAORG'and mgbfgav_column_name = 'TEST' and
NVL(mgbfgav_value,1) = NVL(TEST,1)) and exists(select 'x' from
mgbfgav where mgbfgav_username = sys_context(
'userenv','session_user') and mgbfgav_fgaa_code = 'ACAORG' and
mgbfgav_column_name = 'TEST_TYPE' and NVL(mgbfgav_value,1) =
NVL(TEST_TYPE,1))
```

Oracle produces a JOIN to the security tables for any columns that do not have the **All Data** indicator set. This allows the Oracle query optimizer to determine the fastest way to retrieve the data.

Policy Management

Typically, policies (and hence security) are either completely on or off. Two scripts are delivered with the Administrative UI to help manage the policies.

Prerequisites

- Create organizational areas
- Create user ID translations
- Create business profiles
- Create security rules

Policies for all Tables

To set up policies for all the tables that have security rules defined for them, run the following script:

sqlplus IA_ADMIN/<password>@create_all_fga_policies

칠 Note

These scripts are delivered in the dbscripts/utility_scripts directory.

To remove all the policies from Banner ODS tables, run:

sqlplus IA_ADMIN/<password>@drop_all_fga_policies

통 Note

These scripts add or drop Policies only for those tables with defined security rules. However, by default, security rules are not defined for all Banner ODS tables. You should review the list of security rules in the Administrative UI to verify that all tables that you want to secure have rules defined. Since you only set up Policies for the tables with rules, any other tables remain unsecured. Remember, however, you can always update the security rules later, and then rerun the "drop" and "create" scripts to establish Policies as well.

Policies for a Single Table

Banner ODS is delivered with a script that can create a policy for a single table. This script enables you to independently test security access. Edit the script to supply the name of the table for which you want to create a policy, and then run the following:

```
sqlplus IA ADMIN/<password>@create fga policy
```

Another way to enable a policy for a single table is available on the Assign Security Rules/ set Up Security Rules pages of the Administrative UI. In the **Table** column is a link that is either set to **Policy Enabled**, or **Policy NOT Enabled**. Click the link to toggle between enabling or disabling the policy for a single table.

Example:

- 1. Create a new user to access Banner ODS call the account BRUCE.
- 2. Use the MST_TEST table, and add nine rows using the following commands:

```
TRUNCATE TABLE ODSMGR.MST_TEST;
INSERT INTO ODSMGR.MST_TEST (TEST,TEST_TYPE) VALUES ('Test1','Type A');
INSERT INTO ODSMGR.MST_TEST (TEST,TEST_TYPE) VALUES ('Test1','Type A');
INSERT INTO ODSMGR.MST_TEST (TEST,TEST_TYPE) VALUES ('Test2','Type A');
INSERT INTO ODSMGR.MST_TEST (TEST,TEST_TYPE) VALUES ('Test3','Type A');
INSERT INTO ODSMGR.MST_TEST (TEST) VALUES ('Test3','Type A');
INSERT INTO ODSMGR.MST_TEST (TEST) VALUES ('Test3');
INSERT INTO ODSMGR.MST_TEST (TEST) VALUES ('Test3');
COMMIT;
```

칠 Note

The last two rows have a NULL value for TEST_TYPE.

Banner ODS does not have any policies in place when it is delivered. If the user BRUCE has been granted SELECT access to the MST_TEST table, you can execute the following query:

```
SQL> select count(*) from odsmgr.mst_test;
```

COUNT(*)

9

3. Apply the policy to this table (from the IA_ADMIN user account):

SQL> set serveroutput on size 50000;

SQL> exec mgkutil.p_createFGAPolicy('ODSMGR','MST_TEST',1);

Policy added to table: MST_TEST

PL/SQL procedure successfully completed.

4. Run the BRUCE query again. The following appears:

SQL> select count(*) from odsmgr.mst_test;

COUNT(*) ------0

Look in the Administrative UI Security. The BRUCE account is displayed with no global access.

5. Select the All Data checkbox, and rerun the query. The following appears:

Secure Access by User Name

🔍 You have successfully updated this entry.

To give a user unrestricted access to all data, click the checkbox i user's name.

Oracle User Name	Access to All Data
ANONYMOUS	
BRUCE	
<u>CTXSYS</u>	

SQL> select count(*) from odsmgr.mst_test;

- 6. Clear the All Values.
- 7. Click the Save.
- **8.** Choose the BRUCE account.

To duplicate these results check/uncheck the **Access All Data in This Area** checkbox for the Academic Organization. To continue to test this, choose a combination of values for the two columns in the MST_TEST table, namely:

	COOKOL_LEVEL	цот	ноне
MST_TEST	TEST	LIST	None
MST_TEST	TEST_TYPE	LIST	None
MOT COURCE ONTAL CO	0011505	LIOT	K1

3-49

9. Enable the first two values of the TEST element as follows:

Oracle User Name:	BRUCE	
Oganizational Dimension	: Academic Organization	
Table:	MST_TEST	
Element:	TEST	Select Another Element
Rule Type:	LIST	
Allow this user access to	O All values	
	Only the values specified below	1
Select All Deselect All Values Access Test1 Image: Constraint of the select all select All Select All Deselect All		
Save Reset All F	ields	

And yet:

SQL> select count(*) from odsmgr.mst_test;

COUNT(*) ------0

Security rules are cumulative. Users must have access to values across *all* columns/ rules for a given table in order to access the data.

10. Update the TEST_TYPE element as follows:

Oracle User Name:	BRUCE	
Oganizational Dimension	: Academic Organization	
Table:	MST_TEST	
Element:	TEST_TYPE	Select Another Element
Rule Type:	LIST	
Allow this user access to	O All values	
	Only the values specified below	1
Select All Values Access Type A NULL * (* - refers to actual database NULL value) Select All Deselect All Save		

The expected results are:

SQL> select count(*) from odsmgr.mst_test; COUNT(*) ------6

You can continue to test security using the Administrative UI, and see the results from queries that are run against the system.

Administrative User Interface Data Access

Once policies are in place, you control all access to tables using the information in the security (MGBFGA*) tables. You might wonder how can the Administrative UI issue the SELECT DISTINCT queries to retrieve the list of values? Shouldn't they need to be configured in the Security Tables also? Does the user account used by the web or application server have some kind of back door around the security system? The answer is, yes and no. As part of the Policy/FGA security system, Oracle provides a way to selectively bypass security using application context variables. You can create a context that is associated with a particular package that has permission to set application context values. This can then be retrieved by other parts of the application.

In practice, this means you can create a context called IA_FGA and associate it with the Administrative UI (MGKFGAC) package. In that package, you can set a context variable prior to making queries to the tables. Then, when Oracle calls the MGKSECR package to

3-51

enforce the policy, it checks that the context variable exists, and sensing it, returns no predicate. This allows full access to the data in that table. The context variable only exists for the life of the package (in the application server memory) and can be accessed only by that package. So, no other attempts to access the context are allowed. This allows the Administrative UI to maintain complete access to administer security while keeping security in place for all other access attempts. (For more information on using Application Context for security, see the Oracle Database Security Guide)

Set up and Synchronize Data

Maintaining current data in Banner ODS is key to producing accurate reports. Banner ODS uses programs—Oracle Warehouse Builder (OWB) mappings—to associate elements in the administrative system with their corresponding elements in Banner ODS. When you run a job (schedule a process via the Administrative UI), it calls the related mappings and loads or updates the data defined by them.

Banner ODS includes two main categories of mappings:

- LOAD mappings—load data from the administrative system into Banner ODS. These mapping names include a "LOAD_" prefix.
- REFRESH mappings—update Banner ODS with data that has changed in the administrative system. Mappings in this category have an "UPDATE_" or "DELETE_" prefix. Typically, these mappings exist in pairs. To perform a complete refresh, you run the DELETE mapping followed by its associated UPDATE mapping.

Banner ODS is delivered with hundreds of mappings already defined. LOAD and REFRESH mappings exist for each composite table in Banner ODS. To make it easier to work with the mappings, they are organized into groups by product area. This gives you the ability to run one job that includes a group of mappings at one time. (For example, Finance-related mappings.) Or, you can run a single mapping.

Banner ODS exists in a self-contained environment separate from your source system. You synchronize data between the two systems using the processes that load and refresh data in Banner ODS. Even with daily synchronization, you can expect minor differences between the two systems. Three main reasons that differences exist are:

- Data currency in Banner ODS is dependent on the timing of a query against Banner ODS, and when Banner ODS was last refreshed. Changes that occur in the administrative system after the last refresh are not reflected until the next refresh occurs. This causes a variance between the two systems until Banner ODS is refreshed again.
- Display rules may differ between the two systems. In Banner ODS, display rules defined on the MGRSDAX table drive Banner ODS views created to support

existing Object: Access functionality. Differences may occur based on which rules are applied to each system.

• Security rules may also cause differences between the two systems. Your source system allows you to set up fine-grained access security at the element level as does Banner ODS. Rules in both systems are discrete, so there may be differences in the data a user can view based on the security rules defined within each system.

It is important to keep in mind these possible differences while reporting against Banner ODS.

- When you first install Banner ODS, populate it with data from your source system by running the "Load All Banner ODS Products" job
- Refresh data in Banner ODS on a regular basis by scheduling jobs that update Banner ODS each night
- Update specific areas of Banner ODS as needed by scheduling that job when data is changed in the source system

The EDW EXTRACT PARAMETERS parameter includes values for the Banner source nation code that identifies the home nation. This nation value is used when loading address data for institutions, prospective students and applicants.

If an institution, prospective student or applicant is from the home nation, their Banner nation source field is null. However, to make report information more valuable a populated nation field is preferred. Rather than load a null for nation in the Banner EDW, this NULL_NATION value is used to load the home nation data from Banner into the WDT_POSTAL dimension table and WFT_POST_SECONDARY_SCHOOL, WFT_ADMISSIONS_APPLICATION and WFT_INSTITUTION fact tables.

Set up Parameters

Parameters that are delivered with your solution are stored in a table called MTVPARM. You can use the Administrative UI to view and modify the entries in MTVPARM, and to customize Banner ODS and the Administrative UI. (Example customizations: Schedule a process, define mappings that move data from the source system, define data cleansing, freeze data, publishing meta data, etc. See <u>"Set up Customized Scheduled Processes" on page 3-68</u> for additional information.)

칠 Note

These parameters are different from the actual runtime parameters that you supply when you schedule a process (run the mappings). (See <u>"Schedule a Process Parameters" on page 3-72</u>.) The parameters discussed in this section are internal parameters that are used in internal processing.

3-53

A parameter can include multiple values. The values for a single parameter all use the same Internal Code. You use the Internal Code to choose a parameter to edit. Parameters are edited on the Set Up a Parameter page of the Administrative UI.

Follow the steps below to create a parameter entry.

- 1. Click **Options** from the Administrative UI menu. The Options menu opens.
- 2. Click Set Up Parameters. The Set Up a Parameter page opens.
- **3.** Click **Create** from the Set Up a Parameter page, or click **Duplicate** from the Update an Existing Parameter page. The Create a New Parameter page opens.
- **4.** Enter the information for the new parameter. A description of each field, followed by an example, appears below:

Field	Description
Internal Group	Rows of data with varying Internal Codes that are categorized together to provide multiple entries for one parameter.
Internal Code 1	Parameter values. Related values have the same Internal Code 1.
Internal Code 2	Used in combination with Internal Code 1 to further define the parameter values when the values in Internal Code 1 are not unique. Often this field is not used.
Internal Code Sequence Number	Order in which multiple rows of data appear within their parameter group. For parameters that are used to create a list, it specifies the order in which the values will appear in that list.
External Code	Short description of the parameter value for the related Internal Code. Also used as a Yes/No value indicator in some parameters.
Description	Long description of the parameter value for the related Internal Code.
System Required?	Yes or No. Indicates whether the field is required for production processing.

Example: Event parameter

When you freeze data, you must specify an event so that the process knows where to load the new information. The Event parameter is used to define EVENT codes that are used for freezing data.

The Internal Group value is EVENT. It's used to identify all of the values for the Event parameter.

Internal Code 1 defines the various areas within Banner ODS that require different event definitions. It includes all the Subprocess values used to freeze data

Internal Code 2 defines each different event related to the areas defined by Internal Code 1. The values in this field are the valid values you can enter in the Event Code field.

The Internal Code Sequence is used to order parameter values that fall within the same area defined by Internal Code 1.

5. Click Save to create the new parameter.

Update or Delete a Parameter

Follow the steps below to change or delete an existing parameter.

- 1. Click **Options** from the Administrative UI menu. The Options menu opens.
- 2. Click Set Up Parameters. The Set Up a Parameter page opens.
- **3.** From the **Show All Internal Groups** drop-down list on the Set Up a Parameter page, choose the Internal Group and Internal Code name of the parameter you want to access. Or, keep the default setting to show all Internal Groups or Internal Codes.

💡 Tip

If you know the first letter of the Internal Group or Code you want to choose, open the **Show all Internal Groups** (or **Codes**) drop-down list then type the first letter of the group or code. Your cursor will move to the first group or code in the list that begins with that letter. This saves you from scrolling through the entire list.

통 Note

All internal codes appear in the drop-down list, not just the codes associated with the selected Internal Group.

- 4. Click Search. The Select an Existing Parameter page opens.
- **5.** Click the description link that corresponds to the parameter entry you want to update or delete. The Update an Existing Parameter page opens.
- 6. Change the information as needed.

통 Note

Only External Codes less than 80 characters in length display in the dropdown list. You can create entries that are longer than 80 characters, and they will exist in the system, but do not appear in the list.

7. Click Save, to save the parameter, or **Delete** to completely remove the parameter.

System Parameters

Your solution is delivered with values that define aspects of your solution. Below are the delivered system parameters, and how they are used. Additional information can be found in the <u>"Schedule a Process" on page 3-59</u> section.

칠 Note

The parameters listed below are delivered with Banner ODS. For a list of parameters used only to schedule a process, see <u>"Schedule a Process</u> <u>Parameters" on page 3-72</u>.

Parameters

This Parameter	Used for this Task and Solution	Does This
ADMIN_PREFERENCES	Administrative UI for Banner ODS	Optional parameters. These are various settings used to control aspects of the Administrative UI. Currently can be used to control the number of Control Reports that are displayed on the main selection page.
BANNER TO ODS FGA TRANSFER	<u>"Schedule a Process"</u> on page 3-59	Transfers security for Banner Finance Fund, Fund Type, and Organizations, and Banner Human Resources Organizations and Employee Class.
CLEANSING PREFIX		
ETL CONTROL GROUP	<u>"Schedule a Process"</u> on page 3-59	Groups together ETL MAP PACKAGE and/or ETL SLOT PACKAGE jobs as one job.
ETL MAP PACKAGE	<u>"Schedule a Process"</u> on page 3-59	Groups related jobs (OWB mappings) as one job.
ETL MAP PACKAGE LOAD PURGE	<u>"Schedule a Process"</u> on page 3-59	Identifies the required crosswalk DELETE mappings for the Load Purge Process.

This Parameter	Used for this Task and Solution	Does This
ETL MAP PACKAGE LOGIC	<u>"Schedule a Process"</u> on page 3-59	Allows you to specify job termination logic for a mapping within a job stream. By default, all mappings in a job run in sequence regardless of whether they have errors or not. By defining an ETL Map Package record for a given mapping in a job, you can have the job stop if that mapping encounters errors.
		This parameter is used primarily with Banner EDW jobs as they have dependencies from one step (or mapping) to another, while Banner ODS mappings are independent of each other.
ETL MAP PACKAGE RECONCILE LOGIC	"Reconcile a Single Banner ODS Table" on page 3-92 and "Reconcile Multiple Banner ODS Tables" on page 3-91	Provides a list of mappings that are exceptions in the reconcile Banner ODS tables process. In this list are the mappings that are ignored in the reconcile process because of the complexity of the mapping or other factors outside the scope of reconciling that Banner ODS table. This list also includes mappings that require either multiple source composite views or mappings in order to reconcile a Banner ODS table.
ETL SLOT PACKAGE	"Schedule a Process" on page 3-59	Groups together related slot jobs (SQL packages) as one job.
EVENT	<u>"Freeze Data</u> <u>Maintenance" on</u> <u>page 3-107</u>	Defines EVENT codes used for Freezing data.
EVENT-EDW	<u>"Freeze Data</u> <u>Maintenance" on</u> <u>page 3-107</u>	Defines the Event parameter for freezing EDW business concepts.
INSTALLED PROCESS	<u>"Schedule a Process"</u> on page 3-59	Populates a list of processes displayed on the Select a Process page.

This Parameter	Used for this Task and Solution	Does This
JOB	<u>"Schedule a Process"</u> on page 3-59	Defines the actual name of the job (program) to run when you schedule a process.
JOB INTERVAL	<u>"Schedule a Process"</u> on page 3-59	Defines the list of sample Job Interval settings displayed in the Select an Interval window on the Schedule a Process page.
JOB_KILLER	"Kill a Running Job/ Process" on page 3-65	Defines which administrative accounts have the ability to stop a process that is running.
JOB_NOTIFICATION	<u>"Set up E-mail</u> Notification" on page 3-105	Defines a list of process parameters you need to set up e-mail notification.
METADATA	Meta Data publishing. <u>"Meta Data" on</u> <u>page 3-115</u>	Defines meta data related settings. Currently there is one for where to publish Meta Data pages, and another for where to view them.
ODS FINANCE TEXT	Finance Reporting Text Views	Defines different types of text for Finance Reporting Text Views. For example, Encumbrance Text, Grant Text, Fund Text, Fixed Asset Text, etc.
OWB_SYSTEM_ PARAMETER	<u>"Schedule a Process"</u> on page 3-59	Defines the list of known OWB system – used when running mappings, to differentiate which mapping parameters are passed to OWB specifically, and which are passed to the mapping itself.
PARAMETER	<u>"Schedule a Process"</u> on page 3-59	Defines a list of a job's input parameters you need to supply when you schedule a process.
PUBL_CATE_CODE	<u>"Schedule a Process"</u> on page 3-59	Used during meta data publishing to differentiate the source from the target types.

This Parameter	Used for this Task and Solution	Does This
SSR CONFIGURATION (optional)	Chapter 7, "Self- Service Reporting"	Defines the location of the SSR help files and Banner ODS metadata used by SSR, if SSR is installed.
SUBPROCESS	<u>"Schedule a Process"</u> on page 3-59	Populates a list of processes displayed on the Select a Subprocess page.

Schedule a Process

Jobs can be scheduled to run at specific times. To run load and refresh (update) jobs, select the **Schedule a Process** option on the Options menu of the Administrative UI. To review a spreadsheet of processes and subprocesses, Banner ODS fact and Banner EDW fact tables, click this link: Processes List.

The chart opens in Microsoft Excel or a similar application. You can reorganize the columns as needed. A description of each column on the chart appears below:

This section describes how to schedule a process. Below are the processes that can be loaded or run.

Banner ODS Processes

Schedule Banner ODS Mappings

Use this option to load or update the corresponding data into all Banner ODS composite and slotted tables.

Load All Banner ODS Products Refresh All Banner ODS Products Load Accounts Receivable Load Advancement Load Finance Load Financial Aid Load General Load Human Resources Load Student Refresh Accounts Receivable Refresh Advancement Refresh Finance Refresh Financial Aid

Refresh General Refresh Human Resources Refresh Student Refresh Validation Tables Load All Banner ODS Slotted Tables Run A Single Banner ODS Mapping Run A Single ETL Slot Package Refresh Date Hierarchy Table Load Finance Transaction History

Banner ODS Utilities

Use this option to report source change table counts, reconcile tables, add comments to reporting views, and run checks and balances.

Report Source Change Table Counts Synchronize Comments for Multiple Reporting Views Synchronize Comments for a Single Reporting View Transfer Banner Fine-Grained Access Banner ODS Checks and Balances Reconcile Multiple Tables Reconcile a Single Table Test Job for ETL PACKAGEs

Marning

Before you schedule any jobs to run, you *must* review and set up parameters associated with scheduling a process. See <u>"Set up</u> Parameters" on page 3-53 for more details.

Schedule a Single Process

Use the following steps to schedule when you want a single process to run:

- 1. Click **Options** from the Administrative UI menu.
- 2. Click Schedule a Process. The Select a Process page opens.
- **3.** Choose the type of process you want to schedule to run from the Select a Process page.

If you chose Schedule Banner ODS Mappings or Freeze Multiple Banner ODS Tables/Views, then the Select a Subprocess page opens. Continue to the next step below.

All other selections open the Schedule a Process page. Skip to step #4.

- 4. Choose the subprocess you want to run. The Schedule a Process page opens.
- 5. If you selected the subprocess **Run a Single** Banner ODS **Mapping**, choose the mapping from the **Mapping to Run** drop-down list.
- 6. Enter values for other Process Parameters for the selected process, if any exist.
- 7. Enter the required Scheduling Parameters information.
 - 7.1. Enter a **Run Date** (format dd-mon-yyyy) and **Runtime** (format hh24:mi:ss).
 - 7.2. If you want to run the process on a recurring basis, enter an Interval.

Click the link next to the **Interval** field. A sample Interval window opens. Click the link under the **Interval Expression** column for the interval in which you want to schedule a process. For example, to run a process every day at the same time select SYSDATE+1.

8. Click **Save** to save the information about this job. The job is entered into the job queue to run at the specified day and time.

Schedule Multiple Processes

You can schedule and list multiple processes with different parameters as a group. For example, if you want to run multiple Banner ODS Freeze Tables.

To create a multiple process schedule, you must export the definition of each desired single process (including all related parameters) to a comma separated values (.csv) file. You can then use that information to define/copy multiple job definitions in that file into a single master schedule which is then re-imported into the job queue.

To schedule multiple processes:

- 1. From the Administrative UI menu, click **Options**.
- 2. Click Schedule a Process. The Select a Process page opens.
- 3. From the Select a Process page, choose the type of process you want to schedule.

If you chose Schedule Banner ODS Mappings, Banner ODS Utilities, or Freeze Multiple Banner ODS Tables/Views, then the Select a Subprocess page opens. Continue to the next step below.

For all other selections, the Schedule a Process page opens. Skip to step 5.

4. Choose a subprocess. The Schedule a Process page opens.

April 2009

- 5. If you selected the subprocess **Run a Single** Banner ODS **Mapping**, choose the mapping from the **Mapping to Run** drop-down list.
- 6. To open the.csv file, click Export.

You can either open the file directly, or save it to another directory and open it from there.

The columns names in the .csv file are described below:

Column	Description
JOBDEF	A constant for parsing the input data.
DATE	Date the job should run. Use MON-DD- YYYY format.
TIME	Time the job should run. Use H:MM:SS format.
PROCESS and SUBPROCESS	Internal identifiers for the job.
(Additional job specific parameters)	Any job-specific parameters such as Event, Source Institution, etc.
	For job-specific parameters that use drop- down lists of allowable values, all possible values for those fields are provided in the export download so that they can be copied when setting up the job records to import.

\Lambda Warning

You *must* retain the formatting of each field in the .csv file. Each field is surrounded by single quotes. These must be retained for the import to parse the data correctly. Microsoft Excel sometimes strips a leading single quote from the contents of a cell, so you *must* be sure it is retained in the .csv output. You may want to use an alternate editing application, although Microsoft Excel works fine as long as you are careful.

- 7. Duplicate the **JOB** line once for each run desired.
- 8. Enter the date and time you want the process to run.
- 9. Enter the desired parameter values for each line.
- **10.** Remove extra values in the additional lines. An example resulting .csv file is displayed below:

B C D		D	E	F	G	н	Second Second
DATE	TIME	PROCESS	SUBPROCESS	Source Institution:	Event:	Academic Period:	Replace Event (Cheo
JAN-30-2007*	23:00:00*	MAPGROUP-EDW	LOAD_EDW_ENROLLMENT'	'SGHE'	'REG021'	2009101	'Y'
FEB-28-2007	23.00.00*	MAPGROUP-EDW	LOAD_EDW_ENROLLMENT'	'SGHE'	'REG020'	200830'	Υ.
MAR-29-2007	23:00:00*	MAPGROUP-EDW	LOAD EDW ENROLLMENT'	'SGHE'	'REG019'	200820*	Υ.
APR-31-2007	23.00.00*	MAPGROUP-EDW	LOAD_EDW_ENROLLMENT'	'SGHE'	'REG018'	2008111	γ.
MAY-30-2007	23:00:00*	MAPGROUP-EDW	LOAD EDW ENROLLMENT	'SGHE'	'REG017'	2008101	Υ.
JUN-30-2007*	23.00.00*	MAPGROUP-EDW	LOAD_EDW_ENROLLMENT'	'SGHE'	'REG016'	200809'	Y'
JUL-30-2007*	23.00.00*	MAPGROUP-EDW	LOAD_EDW_ENROLLMENT	'SGHE'	'REG015'	200740'	γ.
AUG-30-2007	23:00:00	MAPGROUP-EDW	LOAD_EDW_ENROLLMENT'	'SGHE'	'REG014'	200730'	'Y'
SEP-31-2007	23.00.00*	MAPGROUP-EDW	LOAD_EDW_ENROLLMENT'	'SGHE'	'REG013'	2007201	γ.
OCT-30-2007	23:00:00*	MAPGROUP-EDW	LOAD EDW ENROLLMENT	'SGHE'	'REG012'	200710	Υ.

- **11.** Click **Import** on the Schedule a Process page to re-import the .csv file into the Administrative UI.
- 12. Enter the name of the exported job into the subwindow, or search for it using Browse.
- **13.** Click Import Jobs.

The Select and View Scheduled Processes window opens in the background listing the new jobs.

View and Remove a Scheduled Process

You can schedule to run a process/job immediately, or at a future date/time. Processes scheduled to run at a future time remain in the job queue until runtime. Processes already in the queue can be edited as long as they have not run.

Use the steps below to access the queue and review which processes are scheduled, or to edit or delete a job from the queue.

- 1. Click **Options** from the Administrative menu.
- **2.** Click **View and/or Remove Scheduled Processes**. The Select and View Scheduled Processes page opens.
- **3.** Choose the date from which you would like to view scheduled processes from the Select and View Scheduled Processes page.

Click **Select a Date** to open a calendar window. The default date is *Today*. When you Choose a date on the calendar, that date appears in the date field.

4. Click **Display Jobs**. The processes scheduled for the selected date display.

To sort the columns in ascending or descending order, click the corresponding column header.

To Edit

- 4.1. Click Edit next to the job number. The Schedule a Process page opens.
- **4.2.** Make your changes.
- **4.3.** Check the **Overwrite Existing Job in Queue** checkbox at the bottom of the page to overwrite the existing process.

Or, leave the box unchecked to create a duplicate process with the information.

4.4. Click Submit.

To Delete

- **4.1.** To delete processes, check the checkbox in the **Delete** column for the process you want to delete.
- 4.2. Click Delete Jobs.

Configure an Account and Stop a Running Job/Process

Sometimes jobs/processes run for too long, or are run by accident and you want to stop the job and maybe restart it later. A running job/process can be stopped from the job's control report if the user's account is configured to allow this feature.

Configure a User Account to Kill a Job/Process

A user account name must be configured before that user has the ability to stop a job.

Prerequisite

Set up the Administrative user name accounts (See <u>"Set up Users and PINS" on page 3-3</u>.)

- 1. Click **Options** from the Administrative UI menu.
- 2. Click Set up Parameters.
- 3. Click Create.
- **4.** In the **Internal Group Code** field type *JOB KILLER*, or select it from the drop-down list.
- 5. In the Internal Code 1 field type *ACCOUNT NAME*, or select it from the drop-down list.
- 6. In the External Code field, type the administrative user name (account log in name).

If the user name was entered as an External Code when the parameter was created (by following the steps of Options<Set up Parameters<click **Create** button) you can select the name from the drop-down list.

- **7.** Enter a description into the description field. The description is usually the same as what appears in the External Code field.
- 8. Click Save.

Kill a Running Job/Process

A running job/process can be stopped from within the job's/processes control report.

Prerequisite

The administrative account user name must be set up with this ability. See <u>"Configure a</u> <u>User Account to Kill a Job/Process" on page 3-64</u>

- 1. Click **Options** from the Administrative UI menu.
- 2. Click View Control Reports.
- 3. Click the link in the **Process** column for the job/process you want to stop.

The Control Report for that process opens.

4. Click Kill Job located in the Status column.

통 Note

This link only appears for jobs that are currently running, and if the user's account is properly configured to kill jobs.

The Process Termination Wizard window opens and displays the process attributes.

5. Choose to either kill the process (at the operating system level), or to have the wizard display a list of Oracle commands needed to kill the process manually from the command line outside Banner ODS.

Killing the process at the operating system level immediately stops the process, refreshes the Control Report, and displays a *Terminated* status for the process.

통 Note

Killing a running process could leave the affected parts of Banner ODS in an undefined state, depending on the process that was stopped. Be sure to clean up data as necessary. Rerun the process to overwrite existing data.

3-65

Run a Process from Outside the Administrative UI

All Banner ODS and Banner EDW processes can be run from outside the Administrative UI. The processes are defined in the database as PL/SQL packaged procedures, therefore they can be run from outside the Administrative UI using any application that executes Oracle commands (typically Oracle's sqlplus utility). The name of the (packaged) procedure to run for a given process is defined using the JOB parameter (See <u>"JOB</u> <u>Parameter" on page 3-76</u> in the Banner ODS and Banner EDW Handbook for additional information.). However, an easy way to determine the name of the procedure used to execute a process is to submit that process to run at a future date, then view the process definition in the Job Queue using the steps below.

- 1. Schedule the Load Student process to run from the Schedule Banner ODS Mappings menu.
- 2. Select a date or time in the future.
- 3. Click Submit.
- 4. Return to the Options menu.
- 5. Select View and/or Remove Scheduled Processes.
- 6. Enter the date you scheduled the process to run.
- 7. Click Display Jobs.

Below is an example page that might display:

Select and View Scheduled Processes

Delete	Job	Next Run Date	Interval	Job To Run
Г		31-OCT-08-23:00	null	mgkmap.P_RunETLMapSlots(8,JOB,'LOAD_STUDENT',NULL, "

This page indicates in the **Job To Run** field that the Load Student process calls the (IA_ADMIN.) MGKMAP.p_runETLMapSlots, and takes the following parameters:

PROCEDURE P_RunETLMapSlots(userID IN VARCHAR2 DEFAULT NULL,

jobNumber IN BINARY_INTEGER DEFAULT NULL,

process IN VARCHAR2 DEFAULT NULL,

subProcess IN VARCHAR2 DEFAULT NULL,

parms IN VARCHAR2 DEFAULT NULL);

Parameter	Description
userID	Name/ID of the user associated with the job.
	The 8 in the example is the Administrative UI user account for "BILL" (for example, select mgbuser_id from mgbuser where mgbuser_pidm=&userID)
jobNumber	Number of the job, and of the corresponding Control Report created when the job runs. When these jobs are run using the Administrative UI, using the DBMS_JOBS queue to run them, Oracle takes the <i>JOB</i> keyword and substitutes in the actual job number in the queue for this value. (811 in the example above).
	When the job is run outside the Administrative UI, you can give the job any number you want to.
	<i>Tip</i> : Do not use a number that is currently used by the Control Report or you'll have duplicate numbers. Begin numbering with high numbers so that the jobs are easy to find.
process	Name of the PROCESS to schedule (see Admin UI PROCESS parameter description). In the example it is LOAD_STUDENT.
subprocess	Name of the SUBPROCESS to schedule (see Admin UI PROCESS parameter description). In the example it is NULL (or empty)
parms	Any process-specific parameters needed. In the example there are none. Typical LOAD/REFRESH jobs in Bann ODS do not take parameters. When scheduling the job through the Administrative UI, these parameters are specified on the Submit page (things like checkboxes, dropdown selections, etc). See <u>"PARAMETER Parameter" on page 3-85</u> in the Banner ODS and Banner EDW Handbook for additional information.)

8. Issue the following command to run LOAD STUDENTjob:

EXEC mgkmap.P_RunETLMapSlots(8,811,'LOAD_STUDENT',NULL, ");

In the example, this would run the LOAD_STUDENT job as the userID 8 and the job number 811.

텛 Note

This executes the job synchronously, outside of the DBMS_JOBS queue, meaning the job actually runs to completion and the above call does not return until the job completes. This is usually desired when calling jobs outside the Administrative UI.

It is also possible to submit jobs to the DBMS_JOBS queue externally as well to run jobs asynchronously. See the DBMS_JOBS package documentation for more details.

9. Remove the job from the queue when you are finished.

All other Administrative UI processes (Metadata Publishing, the Utilities, etc) can also be executed externally following similar steps.

Set up Customized Scheduled Processes

A scheduled process can be set up to run one or more customized mappings, and to have the new, customized process appear in the list of scheduled processes on the Select a Subprocess page.

For example, you want to bring in additional data and you don't want to modify an existing mapping. You can create your own mapping(s) then run it either as part of one of the existing processes, like LOAD_STUDENT, REFRESH_ALL, etc., or create your own process, like LOAD_MY_DATA, etc.

The way mappings are organized can also be changed. Delivered mappings are grouped into processes. LOAD_STUDENT runs all the Student LOAD mappings, REFRESH_HR runs all the HR REFRESH mappings, etc. However, you can combine the groups differently to improve performance, to run them simultaneously in separate job processes, etc.

To set up a scheduled mappings process, you need to:

- create a parameter record with an internal group code using the ETL MAP PACKAGE parameter set up for each new OWB mapping to be scheduled
- use the SUBPROCESS parameter to create a new group containing one or more customized mappings (MAPGROUP) to appear on the Select a Subprocess web page, and on the Schedule Banner ODS Mappings menu. It is also possible to add the new OWB mapping to an already existing group, by selecting one of the entries in the pull-down list.
- link the JOB parameter record to the process. This tells Banner ODS which item in the Schedule Banner ODS Mappings list (MAPGROUP) to run.

Follow the steps below. Examples appear after the steps.

- 1. Click Set Up Parameters from the Options menu. The Set Up a Parameter page opens.
- 2. Click **Create** from the Set Up a Parameter page. The Create a New Parameter page opens. Enter the information for the new process, or select it from the drop-down lists.

Repeat these steps once for each mapping in the group to set up the ETL MAP PACKAGE parameter, once to set up the SUBPROCESS (or PROCESS) parameter, and once to set up the JOB parameter. They can be set up in any order.

- **4.** To run the newly created process, click **Schedule a Process** from the Options menu. The Select a Process page opens.
- 5. Click Schedule Banner ODS Mappings. The Select a Subprocess page opens.
- 6. Choose your new process.

Banner ODS Example:

The example below walks you through how to create a scheduled process called TEST_LOAD_STUDENT_COURSE. This group will have one mapping called TEST_LOAD_STUDENT_COURSE_1

First, create an internal group record using the ETL MAP PACKAGE parameter.

- 1. Click **Set Up Parameters** from the Options menu. The Set up a Parameter page opens.
- 2. Open the Create a New Parameter page.
- 3. Enter the information below into the fields.

In This Field	Enter This	Here's Why
Internal Group	ETL MAP PACKAGE	<i>Must</i> be ETL MAP PACKAGE.
Internal Code 1	TEST_LOAD_STUDENT_COURSE	Mapping group name. Create your own name, or specify an existing group if you want to add this mapping to an existing group.
Internal Code 2	TEST_LOAD_STUDENT_COURSE_ 1	Mapping name in OWB and the package name in Banner ODS.
Internal Code Sequence Number	1	Order of the mappings within the Mapping group (Internal Code 1). Controls the order in which multiple mappings are executed within that group. If you add more mappings then the code should on number up such as 2, 3, 4, 5, etc.

In This Field	Enter This	Here's Why
External Code	ODS_TARGET_STUDENT	Location/project in the OWB repository. These locations pertain to the schema containing the target table(s).
Description	TEST_LOAD_STUDENT_COURSE_ 1	Actual name of the mapping. <i>Must</i> be the exact same entry as entered into the Internal Code 2 field.
System Required	No	Parameter records entered through the Administrative UI are marked as <i>No</i> to differentiate those delivered by SunGard Higher Education. Display only.

Second, set up the SUBPROCESS parameter so that you can create and name a new group of one or more customized mappings. This tells Banner ODS that you want this new process(es) to appear on the Select a Subprocess page, and on the Schedule Banner ODS Mappings menu (MAPGROUP) on that page.

- 1. Click **Create a New Parameter** at the bottom of the page. The fields on the page reset.
- **2.** Enter the following information.

In This Field	Enter This	Here's Why
Internal Group	SUBPROCESS	<i>Must</i> be SUBPROCESS. This tells Banner ODS to display this group on the Select a Subprocess menu.
Internal Code 1	MAPGROUP	Must be MAPGROUP in order to display this group on the Schedule Banner ODS Mappings menu. You can enter a different SUBPROCESS name if you want to create or use additional process listings.
Internal Code 2		This field remains blank.

In This Field	Enter This	Here's Why
Internal Code Sequence Number	1	Order of the entries on the Select a Subprocess menu. Entries with the same number are sorted by group name. If you add more mappings then the code should on number up such as 2, 3, 4, 5, etc.
External Code	TEST_LOAD_MST_STUDENT	Group name. Must be the same as what was entered into the Internal Code 1 field when you set up the ETL MAP PACKAGE parameter.
Description	TEST Load MST Student	Actual text you want to display on the Schedule Banner ODS Mappings list on the Schedule a Subprocess page.
System Required	No	Parameter records entered through the Administrative UI are marked as <i>No</i> to differentiate those delivered by SunGard Higher Education. Display only.

Third, link the JOB parameter to the new group of mappings. This tells Banner ODS which item in the Schedule Banner ODS Mappings list (MAPGROUP) to run.

- 1. Click **Create a New Parameter** at the bottom of the page. The fields on the page reset.
- **2.** Enter the following information.

In This Field	Enter This	Here's Why
Internal Group	JOB	JOB <i>must</i> be entered.
Internal Code 1	MAPGROUP	Must match the Internal Code 1 field of the SUBPROCESS record.
Internal Code 2	TEST_LOAD_STUDENT	<i>Must</i> match the Internal Code 1 field when you set up the ETL MAP PACKAGE.
Internal Code Sequence Number	1	Leave as <i>is</i> .

In This Field	Enter This	Here's Why
External Code	0	Leave as 0.
Description	mgkmap.P_RunETLMapSlots	Name of the PL/SQL procedure executed by the process. For mapping scheduled processes, use the standard procedure P_RunETLMapSlots
System Required	No	Parameter records entered through the Administrative UI are marked as <i>No</i> to differentiate those delivered by SunGard Higher Education. Display only.

Schedule a Process Parameters

The Administrative UI uses several system parameters to create the web pages associated with scheduling a process (running the mappings). The next sections describe these parameters, their purpose, and their role in scheduling a process.

통 Note

These runtime parameters are different from the set up parameters stored in MTVPARM (See <u>"Set up Parameters" on page 3-53.</u>)

Parameters are maintained on the Set Up a Parameter page of the Administrative UI. See <u>"Update or Delete a Parameter" on page 3-55</u> for additional information on updating parameters. Each parameter and its purpose appear below:

This Parameter	Does This
"INSTALLED PROCESS Parameter" on page 3-73	Populates a list of processes displayed on the Select a Process page.
<u>"SUBPROCESS Parameter"</u> on page 3-74	Populates a list of processes displayed on the Select a Subprocess page.
"JOB Parameter" on page 3-76	Defines the actual name of job (program) to run when you schedule a process.
"ETL MAP PACKAGE Parameter" on page 3-78	Groups related jobs (OWB mappings) as one job.

This Parameter	Does This
"ETL MAP PACKAGE LOAD PURGE Parameter" on page 3-80	Identifies DELETE mappings for the Load Purge Process.
"ETL MAP PACKAGE LOGIC Parameter" on page 3-81	Allows you to specify job termination logic for a mapping within a job stream. By default, all mappings in a job run in sequence regardless of whether they have errors or not. By defining an ETL Map Package record for a given mapping in a job, you can have the job stop if that mapping encounters errors.
	This parameter is used primarily with Banner EDW jobs as they have dependencies from one step (or mapping) to another, while Banner ODS mappings are independent of each other.
<u>"ETL MAP PACKAGE RECONCILE LOGIC</u> Parameter" on page 3-82	Provides a list of mappings that are exceptions in the reconcile Banner ODS tables process. In this list are the mappings that are ignored in the reconcile process because of the complexity of the mapping or other factors outside the scope of reconciling that Banner ODS table. This list also includes mappings that require either multiple source composite views or mappings in order to reconcile a Banner ODS table.
"ETL SLOT PACKAGE Parameter" on page 3-82	Groups together related slot jobs (SQL packages) as one job.
<u>"ETL CONTROL GROUP</u> Parameter" on page 3-83	Groups together ETL MAP PACKAGE and/or ETL SLOT PACKAGE jobs as one job.
"PARAMETER Parameter" on page 3-85	Defines a list of a job's input parameters you need to supply when you schedule a process.

INSTALLED PROCESS Parameter

The Description field for this parameter defines the process names that display on the Select a Process page of the Administrative UI. You can choose from that list to schedule a process.

This parameter is delivered with one entry for each type of process (job) that you can run. The processes defined by this parameter have 'children' defined by the SUBPROCESS and JOB parameters. To designate the parent/child relationship, match the External Code

of the INSTALLED PROCESS to the Internal Code 1 of the SUBPROCESS and the Internal Code 1 of the JOB.

The following table illustrates a sample of the values as delivered. This is just a sample. The second row gives a definition of each field.

Internal Code 1	Internal Code 2	Internal Code Seq.	External Code	Description
Can be a short description of the process. This field is not used in processing, but it requires a value.	N/A	Order for entries on Select a Process page.	Short description of the process. Map values of this field to the Internal Code 1 values of Subprocesses and related Jobs to define them as its children.	Actual process name that appears on the Select a Process administrative page.
ADHOC_FREEZE	N/A	6	ADHOC_FREEZE	Freeze A Single Banner ODS Table/View
FREEZE_TABLE	N/A	5	FREEZE_TABLE	Freeze Multiple Banner ODS Tables/Views
MAPGROUP	N/A	1	MAPGROUP	Schedule Banner ODS Mappings

Internal Group: INSTALLED PROCESS

Setting up the INSTALLED PROCESS parameter

The only field you should change for the delivered values of this parameter is the **Description** field. If you want to change the name of a process that appears on the Select a Process page, change its description.

Create a new Installed Process parameter value

If you want to add a process developed by your institution, create the process and add it as a new record for this parameter.

SUBPROCESS Parameter

The **Description** field of this parameter defines the subprocess names that display on the Select a Subprocess of the Administrative UI.

This parameter is delivered with one entry for each subprocess, which are processes grouped under one of the main processes—Schedule Banner ODS Mappings, Freeze Multiple Banner ODS Tables/Views, or Freeze A Single Banner ODS Table/View.

Subprocesses are related to JOB parameter values and both are "children" of one of the processes defined by the INSTALLED PROCESS parameter. To designate the parent/child relationship, match the **External Code** of the INSTALLED PROCESS to the **Internal Code 1** of the SUBPROCESS and the **Internal Code 1** of the JOB.

The following table illustrates a sample of the values as delivered. This is just a sample. The second row gives a definition of each field.

Internal Code 1	Internal Code 2	Internal Code Seq.	External Code	Description
Map to External Code of the INSTALLED PROCESS that is parent to this subprocess.	N/A	Order for entries with same Internal Code 1.	Short description of the subprocess. Use values of this field in the Internal Code 2 of its related Job.	Actual process name that appears on the Select a Subprocess administrative page.
MAPGROUP	N/A	1	LOAD_ALL	Load all Banner ODS products
MAPGROUP	N/A	2	LOAD_ALL_SLOTS	Load all Banner ODS slotted tables
MAPGROUP	N/A	3	LOAD_FINANCE	Load finance
MAPGROUP	N/A	8	REFRESH_ALL	Refresh all Banner ODS products
MAPGROUP	N/A	9	REFRESH_FINANCE	Refresh finance
MAPGROUP	N/A	14	RUN_SINGLE_MAP	Run a single mapping

Internal Group: SUBPROCESS

Set up the SUBPROCESS Parameter

The only field you should change for the delivered values of this parameter is the Description. If you want to change the name of a subprocess that appears on the Select a Subprocess page, change its Description.

Create a SUBPROCESS Parameter

You can add to the subprocess list jobs developed by your institution that you can then run via the Administrative UI. Use the following steps to do this.

- **1.** Create the job.
- **2.** Add the job to the list of subprocesses you can schedule by creating a new Subprocess parameter with the following values:
 - 2.1. Internal Group: Subprocess
 - **2.2.** Internal Code 1: The External Code value of the INSTALLED PROCESS you want the subprocess to be listed under. Existing values include:
 - MAPGROUP to list under the Schedule OWB Mappings process.
 - FREEZE_TABLE to list under the Freeze Multiple Banner ODS Tables process.
 - ADHOC_FREEZE to list under the Freeze A Single Banner ODS Table process.
 - **2.3.** Internal Code 2: blank
 - **2.4.** Internal Code Sequence Number: Number indicating the order in which to run this subprocess.
 - **2.5.** External Code: The External Code value of the INSTALLED PROCESS you want the subprocess to be listed under. See existing values listed above with the Internal Code 1 field.
 - **2.6. Description**: The name of the subprocess that will display on the Select a Subprocess page in the Administrative UI.

JOB Parameter

This parameter defines the actual program name of a job that gets sent to the job queue via the **Schedule a Process** administrative page in the Options menu.

This parameter is delivered with one entry for each process (job) that you can schedule. A Job is related to a SUBPROCESS and a "child" of one of the processes defined by the INSTALLED PROCESS parameter. To designate the parent/child relationship, match the **External Code** of the INSTALLED PROCESS to the **Internal Code 1** of the SUBPROCESS and the **Internal Code 1** of the JOB.

The following table illustrates a sample of the values as delivered. This is just a sample. The second row gives a definition of each field.

Internal Group: JOB

Internal Code 1	Internal Code 2	Internal Code Seq.	External Code	Description
Map to External Code of the INSTALLED PROCESS that is parent to this job.	Map to External Code of the SUBPROCESS related to this job.	N/A	The number of parameters that get passed to the mapping.	Actual program name (package.procedure) for the job. Refer to the mgkproc package for more information about submitting jobs.
MAPGROUP	LOAD_ALL	1	0	mgkmap.P_RunETLMapSlots
MAPGROUP	LOAD_ALL_SLOTS	1	0	mgkmap.P_RunETLMapSlots
MAPGROUP	LOAD_AR	1	0	mgkmap.P_RunETLMapSlots
MAPGROUP	LOAD_FINANCE	1	0	mgkmap.P_RunETLMapSlots

Set up the JOB Parameter

You should not edit any of these entries. If your institution doesn't maintain one of the areas of Banner ODS data, you can delete all of the entries for that area.

Create a Job Parameter Value

You can add a program developed by your institution to the Schedule a Process page. Create the program and define it by adding a new record for this parameter with the program name in the **Description** field.

OWB Mappings and Slot Packages

OWB mappings are executed from the Administrative UI via the MGKMAP package. This package provides routines for running both OWB mappings and slotted table LOAD and UPDATE jobs. Refer to the MGKMAP package for more details.

The primary APIs used in the MGKMAP package are:

P_RunETLMapSlots:

When a process/subprocess pair is passed to the procedure, it runs all mappings and slot package records associated with that process/subprocess combination. Specifically, if any **ETL Control Group** records are defined for the process/subprocess pair and the **Description** value is *Y*, then the procedure runs all Mapping and Slot Package records associated with those Control Group areas. If there are no **ETL Control Group** records associated with the process/subprocess pair but there are individual mapping records associated with the procedure runs those Mapping and Slot Package records.

Example: P_RunETLMapSlots

As delivered, the ETL Control Group parameter records for all baseline systems have an External Code value of *Y*. This means data for all systems is loaded into Banner ODS when you submit the Load All Banner ODS Products and Refresh All Banner ODS Products processes. If you want to load only Student and Finance data into Banner ODS, set the **External Code** field to *N* for the ETL Control Group record for each of the other systems. The Mappings and Slot Packages will only run for Student and Finance when you submit the Load All Banner ODS Products and Refresh All Banner ODS Products processes.

P_RunETLMaps:

When a process/subprocess pair is passed to the procedure, it runs all mappings associated with that process/subprocess combination. This API follows the same processing rules as P_RunETLMapSlots, except that it only runs mappings; it does *not* run Slot Packages.

P RunETLSlots:

When a process/subprocess pair is passed to the procedure, it runs all Slot Packages associated with that process/subprocess combination. This API follows the same processing rules as P_RunETLMapSlots, except that it only runs Slot Packages; it does *not* run mappings.

P RunSingleMap:

When a process/subprocess pair and mapping name are passed to the procedure, it runs that single mapping.

ETL MAP PACKAGE Parameter

Hundreds of OWB mappings are used to load and refresh Banner ODS data. The ETL Map Package parameter defines groups of related mappings as one job. This allows you to quickly run just one job that, for example, loads all of the AR mappings.

This parameter is delivered with one entry for each mapping. The actual program name for the mapping occupies the Internal Code 2 and Description fields and is associated with an ETL group name in the Internal Code 1 field.

Example

When you run the LOAD_AR job using the Schedule a Process option in the Administrative UI, the mappings associated with each ETL Map Package entry that has an Internal Code 1 of LOAD_AR is run. The External Code field contains the Location value defined for the mappings in OWB. These values are defined at mapping deployment time (usually at install) and are generally not modified.

The following table shows the entries for ETL Map Package entries that have an Internal Code 1 value of LOAD_AR. The following table illustrates a sample of the values as delivered. This is just a sample. The second row gives a definition of each field.

Internal Group: ETL MAP PACKAGE

Internal Code 1	Internal Code 2	Internal Code Seq.	External Code	Description
The ETL group to which the mapping is assigned.	Mapping name.	Order to run the mapping within the group.	OWB locations of the mapping.	Mapping name.
LOAD_AR	LOAD_MTT_ACCOUNT	1	ODS_TARGET_AR	LOAD_MTT_ACCOUNT
LOAD_AR	LOAD_MTT_ACCOUNT_DE TAIL	2	ODS_TARGET_AR	LOAD_MTT_ACCOUNT_DE TAIL
LOAD_AR	LOAD_MTT_APPLICATION_ OF_PAYM	3	ODS_TARGET_AR	LOAD_MTT_APPLICATION_ OF_PAYM
LOAD_AR	LOAD_MTT_AR_DEPOSITS	4	ODS_TARGET_AR	LOAD_MTT_AR_DEPOSITS
LOAD_AR	LOAD_MTT_CONTRACT	5	ODS_TARGET_AR	LOAD_MTT_CONTRACT
LOAD_AR	LOAD_MTT_EXEMPTION	6	ODS_TARGET_AR	LOAD_MTT_EXEMPTION
LOAD_AR	LOAD_MTT_INSTALLMENT _PLAN	7	ODS_TARGET_AR	LOAD_MTT_INSTALLMENT _PLAN
LOAD_AR	LOAD_MTT_LEDGER_ACC OUNTING	8	ODS_TARGET_AR	LOAD_MTT_LEDGER_ACC OUNTING

Set up the ETL MAP PACKAGE Parameter

You shouldn't change any of the delivered values for this parameter.

Create an ETL Map Package

You can define a new ETL group of mappings by creating a new set of related ETL Map Package parameter entries. Create one new entry for each mapping in the group using the following steps.

- 1. Create new entries with a new ETL Group name in the Internal Code 1 field.
- 2. Specify in the Internal Code 2 and Description fields for the mappings you want to include in the group.
- 3. Specify the location of each mapping in the External Code field.
- 4. Specify the order in which to run the mappings in the Internal Code Sequence Number field.

- **5.** Add the new ETL group to the list of subprocesses you can schedule by creating a new Subprocess parameter with the following values:
 - **5.1.** Internal Group: Subprocess
 - 5.2. Internal Code 1: MAPGROUP
 - **5.3.** Internal Code 2: blank
 - **5.4.** Internal Code Sequence Number: Number indicating the order in which to run this subprocess.
 - **5.5.** External Code: the new ETL Group name you created. This is the value in Internal Code 1 in the ETL Map Package entries created above.
 - **5.6. Description**: Name of the subprocess (ETL Group job) as it appears on the Select a Subprocess administrative page.

ETL MAP PACKAGE LOAD PURGE Parameter

As part of the LOAD mapping Change Table Purge process, use this parameter to define the appropriate DELETE mapping for those LOAD_x mappings that do not have an equivalent DELETE_x counterpart, or where no Change table purge is required.

The MGKMAP package in Banner ODS (in the IA_ADMIN schema which executes the various OWB mappings that make up a job) automatically runs the Purge process for each change table that is related to a particular Load mapping. The name of the change table and the PROCESS_ID (a key field in the change table that identifies which records relate to a given mapping) are retrieved from the corresponding Delete mapping of the same name where LOAD_x = DELETE_x. For example, for the LOAD mapping LOAD_MST_STUDENT, the DELETE_MST_STUDENT mapping is used to identify the change table and process ID. However, occasionally there is no direct equivalent DELETE mapping for the LOAD mapping in context, or no change table purge is required. For example:

- Sometimes the mapping names do not match exactly (for example, LOAD_MAT_ORGANIZATION_CONTACT and DELETE_MAT_ORGANIZATION_CONT).
- LOAD mappings that require multiple DELETE mappings.
- LOAD mappings where change tables do not exist (such as the VALIDATION mappings) and subsequently no purge process is required.
- LOAD mappings are broken up across several sequential mappings (such as LOAD_MFT_TRANS_HISTORY_1, _2, 3, etc.) and the change table purge process is only required to run once (DELETE MFT TRANS HISTORY).

In these cases, a Load Purge parameter is required to provide the MGKMAP package with the appropriate crosswalk information to designate what DELETE mapping(s) are

required to run the Change Table Purge process, or when the Change Table Purge process should be ignored.

Any errors encountered when running the purge appear in the Load Control Report.

Use the following codes:

- Group Code: ETL_MAP_PACKAGE_LOAD_PURGE
- Internal Code: Enter the designated LOAD mapping
- External Code: Enter the designated DELETE mapping(s) or, enter NA to disable the Purge process for a given LOAD mapping.

The following table illustrates a sample of the values as delivered. This is just a sample. The second row gives a definition of each field.

Internal Group: ETL MAP PACKAGE LOAD PURGE

Internal Code 1	Internal Code 2	Internal Code Seq.	External Code	Description
Name of LOAD mapping		Ignored	Name of DELETE mapping(s – note comma-separated if >1) or "NA"	Simple text to explain record's purpose.
LOAD_MAT_ORGANIZ ATION_CONTACT		1	DELETE_MAT _ORGANIZATION_CONT	Load Purge Record
LOAD_MGT_VALIDATION _GENERAL		1	NA	Load Purge Record
LOAD_MFT_TRANS_HI STORY_1		1	DELETE_MFT_TRANS _HISTORY	Load Purge Record
LOAD_MFT_TRANS_HI STORY_2		1	NA	Load Purge Record
LOAD_MFT_TRANS_HI STORY_3		1	NA	Load Purge Record

ETL MAP PACKAGE LOGIC Parameter

This parameter controls job processing if an error occurs during one of the mappings. By default, the MGKMAP package, which executes mappings for a job, runs all mappings for the job, regardless of whether they complete successfully. This assumes that there are no dependencies between mappings. Use this parameter to override processing logic. Specifically, if a parameter record exists with the ETL Map Package Logic group code, and the same Internal Code 1 (the job name) and Internal Sequence Number as the ETL

Map Package record for the mapping for the job in question, and the External Code is set to "Terminate Job," then the job stops if there is an error in that particular mapping.

ETL MAP PACKAGE RECONCILE LOGIC Parameter

This parameter controls how the reconciliation process identifies LOAD mappings which do not follow the standard pattern (of one source Composite view equating to one Banner ODS Composite table). Those exceptions are notes by the External Code, being either:

- IGNORE: used to identify mappings not to try to reconcile
- • IGNORE COLUMN: used to identify specific columns (1 parameter record per column) not to try to reconcile, where Int Code2 stores the column name
- UNION: used to identify Composite tables populated by multiple Composite views, in which case the name(s) of the related mappings are stored in the **Description** field.

Internal Code 1	Internal Code 2	Internal Code Seq.	External Code	Description
Name of LOAD mapping	Ignored	1	Action to take	Either simple description or name of related LOAD mappings
LOAD_MAT_CONST IT_STAFF_ASSIGN	Ignored	1	IGNORE	Do not reconcile this mapping
LOAD_MST_STDNT _CRSE_ATT_STEP_1	Ignored	1	UNION	LOAD_MST_STDNT_ CRSE_ATT_STEP_2
LOAD_MTT_ACCOU NT_DETAIL	OPERATIN G_DATE	1	IGNORE COLUMN	Do not reconcile this column

Internal Group: ETL MAP PACKAGE RECONCILE LOGIC

ETL SLOT PACKAGE Parameter

The ETL Slot Package parameter is similar to the ETL Map Package parameter; it defines groups of related Slot Packages as one job. The difference is that the groups defined by the Slot Package parameter use the slot packages to load data into the slotted tables within Banner ODS. The groups of jobs defined by this parameter let you easily run one job that, for example, loads all of the Financial Aid slot slotted tables.

This parameter is delivered with one entry for each package that loads or updates data in a slotted table in Banner ODS. The actual program name for the slot package occupies the **Description** field and is associated with an ETL group name in the **Internal Code 1** field.

For example, when you run the LOAD_FINANCIAL_AID job from the Schedule a Process option in the Administrative UI, the slot packages associated with each ETL SLOT PACKAGE entry that has an **Internal Code 1** of LOAD_FINANCIAL_AID is run.

The following table shows the entries for ETL Slot Package entries that have an **Internal Code 1** value of LOAD_FINANCIAL_AID. The table illustrates a sample of the values as delivered. This is just a sample. The second row gives a definition of each field.

Internal Code 1	Internal Code 2	Internal Code Seq.	External Code	Description
The ETL group to which the mapping is assigned.	This field is not used.	Order to run the mapping within job group.	Package.procedure	Slot Package name.
LOAD_FINANCIA L_AID		1	MRKBCMP.P_POPULATE('L')	MRT_FINAID_BUDGET_CO MP_SLOT
LOAD_FINANCIA L_AID		2	MRKTREQ.P_POPULATE('L')	MRT_TRACKING_REQUIRE MENT_SLOT

Internal Group: ETL SLOT PACKAGE

Set up the ETL SLOT PACKAGE Parameter

You should not change any delivered values for this parameter. If you want to define a new ETL group of slot packages, you can create new entries with a new ETL group name in the **Internal Code 1** field. Then specify the slot packages that you want to include in the group. Create one new entry for each package in the group.

ETL CONTROL GROUP Parameter

This parameter gives you the ability to load or refresh all the data in your Banner ODS by running one job. The parameter is used in conjunction with the ETL Map Package parameter to further combine groups of jobs into one job.

As delivered, the ETL Control Group parameter defines which groups of job mappings, defined by the ETL Map Package parameter, to run when you run the LOAD_ALL and REFRESH_ALL jobs.

This parameter is delivered with one entry for each ETL group defined by the ETL Map Package parameter. The actual ETL group name (e.g., LOAD_AR, LOAD_FINANCE, LOAD_GENERAL, etc.) occupies the Internal Code 2 field. Each entry is associated with either the LOAD_ALL or REFRESH_ALL control group job in the **Internal Code 1**

field. The External Code field for each record has the value *Y*, which means that all jobs (mappings) defined by the group are run when you run the LOAD_ALL job.

The following table shows the entries for the ETL Control Group when the value of **Internal Code 1** is LOAD_ALL. The table illustrates a sample of the values as delivered. This is just a sample. The second row gives a definition of each field.

Internal Code 1	Internal Code 2	Internal Code Seq.	External Code	Description
Control Group to which the ETL group is assigned.	ETL Group Name	Order to run the ETL group within the control group.	Controls whether to run the group.	A description of the record.
	Map to Internal Code 1 of the ETL MAP PACKAGE related to this ETL group.			This values is not used in processing.
			<i>Y</i> = run ETL group	
			<i>N</i> =do not run ETL group	
LOAD_ALL	LOAD_ADVANCEMENT	1	Y	Advancement Load ETL Control Record
LOAD_ALL	LOAD_AR	2	Y	AR Load ETL Control Record
LOAD_ALL	LOAD_FINANCIAL_AID	3	Y	FinAid Load ETL Control Record
LOAD_ALL	LOAD_FINANCE	4	Y	Finance Load ETL Control Record
LOAD_ALL	LOAD_GENERAL	5	Y	General Load ETL Control Record
LOAD_ALL	LOAD_HUMAN_RESOU RCES	6	Y	HR Load ETL Control Record
LOAD_ALL	LOAD_STUDENT	7	Y	Student Load ETL Control Record

Internal Group: ETL CONTROL GROUP

Set up the ETL CONTROL GROUP Parameter

Review all of the entries delivered for this parameter. If your institution doesn't maintain some of the areas of Banner ODS data, change the **External Code** value to *N* for those areas. For example, if your institution doesn't use Advancement and Human Resources, change the **External Code** value to *N* for entries that have **Internal Code 2** values of LOAD_ADVANCEMENT or LOAD_HUMAN_RESOURCES.

Create an ETL Control Group

You can define a new ETL Control Group by creating a new set of related ETL Control Group parameter entries. Create one new entry for each ETL Group you want to include in the Control Group using the following steps.

- 1. Create new entries with a new Control Group name in the Internal Code 1 field.
- 2. Specify in the Internal Code 2 field the ETL Groups that you want to include in the Control Group.
- **3.** Specify that you want to run each ETL Group by entering a *Y* in the **External Code** field.
- **4.** Specify the order in which to run the ETL Groups in the **Internal Code Sequence Number** field.
- 5. Enter a **description** for the new Control Group entry.
- 6. Add the new ETL Control Group to the list of subprocesses you can schedule by creating a new Subprocess parameter with the following values:
 - 6.1. Internal Group: Subprocess
 - 6.2. Internal Code 1: MAPGROUP
 - 6.3. Internal Code 2: blank
 - **6.4.** Internal Code Sequence Number: Number indicating the order in which to run this subprocess.
 - **6.5.** External Code: the new ETL Control Group name you created. This is the value in Internal Code 1 in the ETL Control Group entries created above.
 - **6.6. Description**: Name of the subprocess (ETL Control Group job) as it will appear on the Select a Subprocess administrative page.

PARAMETER Parameter

The Parameter parameter is a processing parameter named "Parameter." This parameter defines the parameters that you must enter at runtime when you Schedule a Process. Basically, all values set up with the Internal Group of "Parameter" and the same Internal Code 2, display on the Schedule a Process page as the runtime parameters for the job defined by that Internal Code 2 value. The values of this parameter are stored in the MTVPARM table.

For example, when you freeze data in a Banner ODS table, you need to specify which table to freeze and the name you want to give the frozen table. Those two parameters are

defined by the first two rows in the table below. This parameter is delivered with one entry for every process parameter. The following table illustrates a sample of the values as delivered. This is just a sample. The second row gives a definition of each field.

Internal Group: PARAMETER

Internal Code 1	Internal Code 2	Internal Code Seq.	External Code	Description
External Code of the process that is parent to this subprocess.	External Code of subprocess for this parameter.	Order for entries with same Internal Code 2 .	Short description of parameter. This value is used in the processing code. Short description of parameter. This value is used in the processing code.	Actual parameter field prompt that appears on Schedule a Process administrative page.
ADHOC_FREEZE		1	TABLE_NAME	Enter Table to Freeze
ADHOC_FREEZE		2	TABLE_HISTORY	Enter Table Name to Freeze to



If the Internal Code 2 field is left blank, the parameter appears for all subprocesses under the parent process in Internal Code 1. For example, the Enter Table to Freeze parameter does not have an entry for Internal Code 2. This parameter value appears for all subprocesses under the ADHOC FREEZE (Internal Code 1) area

Set up the PARAMETER Parameter

The only existing values you should change for this parameter are the descriptions. If you want to change the name of a parameter that appears on the Schedule a Process page, change its description.

If you want to add a process to the Schedule a Process page and it requires input parameters, you need to define the parameters by adding new values for this Parameter parameter.

Create Runtime Parameters to Scheduled Processes

You may add new processes to the Administrative UI that require runtime parameters, or you may want to add runtime parameters to existing processes, for example, a defined Freeze Data list. Create a new record for this Parameter to define a runtime parameter.

The easiest way to understand how to create a new runtime parameter is to review the existing ones. In the previous table, there are two records whose Internal Code 1 =

FREEZE_TABLE and the Internal Code 2 field is blank. Each of these records defines a runtime parameter that appears on the Schedule a Process page when Freeze Multiple Banner ODS Tables/Views is selected. The Internal Code 1 field of FREEZE_TABLE on the Parameter record here matches to the External Code of FREEZE_TABLE on the INSTALLED PROCESS parameter.

Example

If you add a runtime parameter to a freeze data list called TEST1, the following steps show the field values needed to create this new parameter.

- **1.** Enter **Internal Group** = *PARAMETER*.
- 2. Enter Internal Code 1 = *FREEZE_TABLE*. The parent process for the TEST1 freeze data list.
- **3.** Enter **Internal Code 2** = *TEST1*. The actual name of the freeze data list to associate the parameter.
- **4.** Enter **Internal Code Sequence Number** = 2. The order that parameters are listed at runtime. You can add up to two parameters to a freeze data list.
- 5. Enter External Code = ACADEMIC_PERIOD. The actual field value that you want the user to supply at runtime.
- 6. Enter **Description** = *Enter Term Code*. The prompt that a user needs to supply at runtime.
- 7. Choose **PARAMETER Type** = *SELECT*. Identifies how the user enters the runtime parameter. The field accepts four values:
 - SELECT = User must supply a valid PL/SQL statement.
 - DATE = User must supply a valid date.
 - EDIT = User can supply a text string.
 - CHECKBOX = User must check or uncheck an option.
- 8. Enter **PARAMETER SQL**. This field is only required when the **PARAMETER Type** is *SELECT*. Enter a valid PL/SQL statement, which is used to populate the valid field values to display in the drop-down list of the runtime prompt.
- **9.** Enter **PARAMETER SQL Delimiter**. This field is only required when the **PARAMETER Type** is *SELECT* and you use a delimiter in the **PARAMETER SQL** field. Specify the delimiter used in the **PARAMETER SQL** field.
 - Internal Code 2 = MTVPARM_INTERNAL_CODE_2 = '<new institution code>' AND MTVPARM_INTERNAL_CODE = 'MULTI_SOURCE_GROUP'
 - Internal Code 2 =

Utilities

The Utilities process contains utility jobs/processes that perform various administrative tasks, and provide on-going maintenance of Banner ODS. For example, the Utilities option enables you to compare the number of rows in one table or multiple tables in the source system with the number of rows in the composite tables in Banner ODS. You can also check for potential problems that may cause performance issues.

Once a job is completed, a control report is created. When discrepancies are found, the control report indicates the number of records found in each object, as well as the key values for the records that are not synchronized.

Each sub-process is described in the sections below.

See <u>"Schedule a Process" on page 3-59</u> for instructions on how to schedule processes.

Report Banner ODS Source Change Table Counts

The Report Banner ODS Source Change Table Counts produces a control report that calculates how many rows are in each of the source system Change tables for each Banner ODS Composite table. This enables you to monitor the accumulation of Change records for a particular Composite table.

Depending on how many rows are in a Change table for a given Banner ODS Composite table, it may be more efficient to run a Load process instead of the Refresh process. Determining which process to run is a matter of individual experience with Load/Refresh times for various Composite Tables.

Change Tables and Control Reports

The row count totals that are reported in a Control Report for a given mapping reflect all rows that OWB accesses during the processing of that mapping. So, for a given DELETE mapping, OWB may SELECT 500 records, and then DELETE 500 records. Alternatively, if there is a filter condition applied in the mapping, the number SELECTED and DELETED (and/or UPDATED) may vary, based on the filter condition. Typically, these filter conditions occur to "filter" out change records associated with other processes. As an example, the SPRPCHG table processes many PIDM based tables, including SPRIDEN, SPBPERS, SPRADDR and SPRTELE. If the DELETE and UPDATE mappings for the Address process were running, and the SPRPCHG table had 100 records in it for different processes, the DELETE_MST_ADDRESS mapping would "select" all 100 records, but then it would only filter out and pass along those records where the field "SPRPCHG_TABLE_NAME" was equal to "ADDRESS". Therefore, the delete would only "delete" those records, which would be the subset of the overall "selected" count.

The Change Tables contain the identifying data (sometimes the primary key value) about the records that are modified in the Banner system. Hence, if a record in a Banner table is edited 5 times, only one record will appear in the Change Table for it, which the Refresh process uses to know to bring the entire row of data over to the ODS for that record. Further, some of the Change Tables are used by multiple mappings, so the mappings will typically apply a filter when accessing the Change Table. This means that the row count totals in the Control Reports will usually not match up directly with the Change Table counts, though there are some cases of Changes Tables that are used only by a single mapping and that mapping also doesn't apply filter conditions.

Example

Addresses are managed through the ETL process by PIDM. If a person has 10 addresses and 3 of them change, then there is one record in the SPRPCHG table with the PIDM of the changed record, it has in it the most recent date/time of the last DML activity, and it also reflects the most recent DML action (C- change, D- Delete, or U-update). The delete mapping deletes all 10 addresses for that PIDM from the ODS even though there is only one record in the change table. The update mapping adds all the address records using the AS_ADDRESS composite view where the PERSON_UID field in the view matches the PIDM in the SPRPCHG table (ultimately re-adding all 10 addresses). Thus, a single change table entry results in 10 records being deleted and 10 records being inserted. The Change Table Counter process attempts to handle the change tables that are used by multiple mappings. That is, for a given DELETE mapping, it parses the mapping (PL/SQL) code for the default value of the second parameter (P_TABLE) which it then uses to construct the following SQL: code:

= 'SELECT COUNT(*) FROM ' || parm1Value || '@' || linkName || ' WHERE ' || parm1Value || '_TABLE_NAME=" || parm2Value || ""; where parm1Value is the CHG_TABLE value and parm2Value is the P_TABLE value.

See <u>"Schedule a Process" on page 3-59</u> for instructions on how to schedule processes.

Synchronize Comments for a Single Reporting View

Run this process to generate comments on a reporting view. The meta data Business Definition for the reporting view and the meta data business definition for each of the columns is copied from the meta data into the database **Comments** field.

This process is scheduled from Banner ODS Utilities menu. (See <u>"Schedule a Process" on page 3-59</u> for instructions on how to schedule a process.) The same functionality is also available by selecting the **Sync Comments** link on the View Target Report page. (See <u>"Synchronize Meta Data Comments with Reporting Views" on page 3-125</u> for instructions.)

Synchronize Comments for Multiple Reporting Views

Run this process to generate comments on multiple reporting views. The meta data Business Definitions for each reporting view and the meta data business definitions for each of the columns is copied from the meta data into the database **Comments** field.

This process is scheduled from Banner ODS Utilities menu. (See <u>"Schedule a Process" on page 3-59</u> for instructions on how to schedule a process.) The same functionality is available by selecting the **Sync Comments** link on the View Target Report page. (See <u>"Synchronize Meta Data Comments with Reporting Views" on page 3-125</u> for instructions.)

Banner ODS Checks and Balances

Banner ODS Checks and Balances utility processes can be run after an upgrade or intermittently to verify the following:

• Check Mappings and Parameters

Verifies that all Banner ODS Mapping packages have been created in the database and are valid. This process also confirms that all ETL MAP PACKAGE parameters have a corresponding DELETE*, LOAD* and UPDATE* package (for example, LOAD_MAT_GIFT, UPDATE_MAT_GIFT, DELETE_MAT_GIFT).

• Check Meta data

Compares the defined total of Banner ODS baseline delivered meta data records to a count of the records in Banner ODS to determine if the meta data records have loaded successfully

• Miscellaneous Checks

Verifies that the database link to the source system exists and is working.

· Check Indexes

Confirms that all Banner ODS baseline indexes exist. Any missing baseline or local indexes are reported. If there are local indexes you would like verified by this process, insert the appropriate data into the MGBINDX table.

• Freeze Table Changes

As new versions of Banner ODS are released, Reporting views may have new columns added and, in some cases, existing column names changed. Therefore, if you have created freeze table data in earlier versions of Banner ODS, those table structures may become out of sync with newer versions of Reporting views, causing subsequent freeze processes to fail.

This process compares the table structure of any existing freeze table data against the current Reporting view, and any column discrepancies are reported. In addition, the appropriate Oracle 'ALTER TABLE' statement is also provided in the control report so you can resynchronize your freeze tables with the Reporting views.

See <u>"Schedule a Process" on page 3-59</u> for instructions on how to schedule processes.

Reconcile Multiple Banner ODS Tables

Reconcile Multiple Banner ODS Tables compares the number of records for all Banner ODS composite tables (by subject area) with the corresponding Banner source composite views.

You can run this process at any time to verify that the source system and Banner ODS are synchronized. However, it is recommended that it is run directly after a LOAD or REFRESH, otherwise the counts will be off by the number of records in the change tables. You could also run the process during evening or non-processing hours to ensure that processing on the source system is not producing discrepancies in the reconciliation process.

The reconciliation process checks the source and Banner ODS objects dynamically. The process pulls SQL from the load mappings that are created and deployed from Oracle Warehouse Builder. Occasionally, Banner ODS tables are omitted from the reconciliation process because of the complexity of multiple sources of the mappings. These exceptions can be found in the Administrative UI, Set Up Parameters, under the Internal Group parameter <u>"ETL MAP PACKAGE RECONCILE LOGIC Parameter" on page 3-82</u>. The search displays a list of mappings that have been identified to ignore, or mappings that have multiple sources composite views.

- 1. From the main menu, click **Options**.
- 2. Click Schedule a Process.
- 3. Click Banner ODS Utilities.
- 4. Click Reconcile Multiple Tables.
- 5. To display the .sql statement used in the process, check the Show SQL check box.
- 6. Select the **Reconciliation Type** drop-down list to choose whether to run the reconcile process by row counts or data.

Rowcounts

Data is compared between the Banner ODS composite table and Banner composite view by counting the number of rows in each, based on the primary keys (which are determined from the indexes on the composite views). If the row counts do not agree, a warning message displays in the Control Report indicating the row counts in both systems and the primary key values.

Data

Every value in every column is compared between the two systems based on the primary key. Discrepancies and primary key information are displayed in the Control Report. The data reconcile process can require a lot more processing power and hence can run longer than rowcount mode.

- 7. Enter the remaining required fields.
- 8. Click Submit to schedule the process to run.

See "Schedule a Process" on page 3-59 for instructions on how to schedule processes.

Reconcile a Single Banner ODS Table

Reconcile a Single Banner ODS Table compares the number of records in a single Banner ODS composite table with the corresponding composite view in the source database. To display the .sql statement used in the process, check the **Show SQL** check box.

You can run this process at any time to verify that the source system and Banner ODS are synchronized. However, it is recommended that it is run directly after a LOAD or REFRESH, otherwise the counts will be off by the number of records in the change tables. You could also run the process during evening or non-processing hours to ensure that processing on the source system is not producing discrepancies in the reconciliation process.

The reconciliation process checks the source and Banner ODS objects dynamically. The process pulls SQL from the load mappings that are created and deployed from Oracle Warehouse Builder. Occasionally, Banner ODS tables were omitted from the reconciliation process because of the complexity of multiple sources of the mappings. These exceptions can be found in the Administrative UI, Set Up Parameters, under the Internal Group parameter ETL MAP PACKAGE RECONCILE LOGIC. The search displays a list of mappings that have been identified to ignore, or mappings that have multiple sources composite views.

- 1. Click Options.
- 2. Click Schedule a Process.
- 3. Click Banner ODS Utilities.
- 4. Click Reconcile Single Tables.
- 5. To display the .sql statement used in the process, check the Show SQL check box.
- 6. Select the **Reconciliation Type** drop-down list to choose whether to run the reconcile process by row counts or data.

Rowcounts

Data is compared between the Banner ODS composite table and Banner composite view by counting the number of rows in each, based on the primary keys (which are determined from the indexes on the composite views). If the row counts do no agree, a warning message displays in the Control Report indicating the row counts in both systems and the primary key values.

Data

Every value in every column is compared between the two systems based on the primary key. Discrepancies and primary key information are displayed in the Control Report. The data reconcile process can require a lot more processing power and hence can run longer than row count.

7. Check the **Retain Output Table** check box to keep the temporary output table.

The data option uses a temporary output table to store results. This table is normally deleted when the process completes, but it can be retained (primarily for trouble-shooting).

- 8. Enter the remaining required fields.
- 9. Click Submit to schedule the process to run.

See <u>"Schedule a Process" on page 3-59</u> for instructions on how to schedule processes.

Transfer Banner Fine-Grained Access

Use Transfer Banner Fine-Grained Access to transfer data for Banner Finance Fund, Fund Type, and Organizations, and for Banner Human Resources Organizations and Employee Class from Banner to Banner ODS.

Prerequisites

- "Set up and Maintain Organizational Areas" on page 3-17
- "Banner User ID Translations" on page 3-19
- <u>"Set up Business Profiles" on page 3-22</u>
- "Set up and Maintain Security Rules" on page 3-25
- "Policy Management" on page 3-47
- "Transfer Banner Fine-Grained Access" on page 3-93
- 1. Click Options.
- 2. Click Schedule a Process.
- 3. Click Banner ODS Utilities.
- 4. Click Transfer Banner Fine-Grained Access.

Schedule a Process

To submit this subprocess to the job queue, t	īll in the information below, then click Submit.
★ - indicates a required field.	
Banner ODS Utilities Transfer Banner Fine-Grained Acce	Process to Schedule
	Process Parameters
Finance: Transfer Fund/Organization FGA?*	
HR: Transfer Organization FGA?*	
HR: Transfer Employee Class FGA?*	N

- **5.** Check the boxes that correspond to the fine-grained access security permissions you want to transfer.
- 6. Click Submit to schedule the process to run.

The transfer checks GUBINST to see if Banner Finance or Banner Human Resources is installed. If it is not, then a warning message displays.

Also, if Banner Finance is not installed, then the Banner Finance Fund/Organization transfer is bypassed. If Banner Human Resources is not installed, then both the Human Resources Organizations and Employee Class transfers are bypassed.

The data is transferred using the ODSMGR XXXX@SOURCE_DB database link. Whether the data transfers to Banner ODS or not is based on whether security is turned on in Banner in the following areas:

- Finance: FOBSYSC_FUND_ORG_SECURITY_IND
- Human Resources Organization: PTRINST ORGN SECURITY IND
- Human Resources Employee Class: PTRINST_ECLS_SECURITY_IND

In the Banner ODS Administrative UI (**Options** tab, **Set up Parameters** link) there are three process/job parameters under the Internal Group of BANNER TO ODS FGA TRANSFER which indicate whether or not Banner security settings should affect the job. By default, all three parameters are set to *N* (maintained on the Update a Parameter Administrative UI web page).

In Banner, FOBSYSC_FUND_ORG_SECURITY_IND, from the Banner FOBSYSC table, indicates whether or not Banner Finance Fund and Organizations security is active. For the Banner Finance Fund and Organizations transfer, the BANNER TO ODS FGA TRANSFER parameter with a value for Internal Code 1 of FINANCE FUND/ORG SECURITY ACTIVE determines whether not to consider the value of FOBSYSC_FUND_ORG_SECURITY_IND. If the job parameter has an external Code of *Y*, then this indicates that Banner Finance Fund and Organizations security must be turned

on for the Fund/Org transfer to occur. If it is not tuned on, a warning message is displayed and the Banner Finance Fund and Organizations transfer is bypassed. If the external Code is *N*, then this indicates to go ahead and run the Finance Fund/Org transfer, regardless of whether Banner Fund/Org security is active.

The BANNER TO ODS FGA TRANSFER parameters with internal Codes of HR ORG SECURITY MUST BE ACTIVE and HR ECLS SECURITY MUST BE ACTIVE perform the same function against PTRINST_ORGN_SECURITY_IND and PTRINST_ECLS_SECURITY_IND respectively. After these parameters have been evaluated, the transfer begins.

At this point the data transfer begins and MGBXWLK is checked. The way that MGBXWLK has been configured, i.e., which of the four set up options you have chosen, determines how value-level data is written to MGBFGAV and column-level data is written to MGBFGAE.

The Finance Fund/Org transfer reads data from FORUSFN and FORUSOR and transfers user permissions for individual Funds and Organizations to IA_ADMIN.MGBFGAV based on the fine-grained access rules in IA_ADMIN.MGBFGAR. For users who have access to either all Finance Funds or all Finance Organizations, data is read from FOBPROF and is written to IA_ADMIN.MGBFGAE. For users who have Fund Type permissions on FORUSFN, the fund numbers associated with each Fund permission, as listed by fund in the Banner ODS Fund Hierarchy table MFT_FUND_HIERACHY, are also written to MGBFGAV.

The Banner Human Resources Organizations transfer reads data from PSRORGN and transfers user permissions for individual Organizations to IA_ADMIN.MGBFGAV based on the fine-grained access rules in IA_ADMIN.MGBFGAR. For users who have access to all Banner Human Resources Organizations, data is read from PTRUSER and written to IA_ADMIN.MGBFGAE.

The Banner Human Resources Employee Class transfer reads data from PSRECLS and transfers user permissions for individual Employee Classes to IA_ADMIN.MGBFGAV based on the fine-grained access rules in IA_ADMIN.MGBFGAR. For users who have access to all Banner Human Resources Organizations, data is read from PTRUSER and written to IA_ADMIN.MGBFGAE.

See <u>"Schedule a Process" on page 3-59</u> for instructions on how to schedule processes.

View Control Reports

When a process is run, it creates a control report that details the progress, status, and errors in the process. Each control report highlights run time errors, record counts, job status, etc. for the process submitted.

3-95

Follow the steps below to review these control reports to determine whether a process ran successfully, and to view errors.

- 1. From the Administrative menu, click **Options**.
- 2. Click View Control Reports. The Select a Control Report page opens.
- 3. On the Select a Control Report page, find the process you want to review in the list. Check the Status column to see if the process ran successfully. If the status is ERROR, there was a problem with the process.

Click **Refresh Jobs Status Codes** to obtain the most current job status. Often a job status will change from Running to Completed.

The Refresh Status Codes button is helpful with jobs that have been terminated in the database (due to a shutdown, or other error, etc.). If a job is terminated in the database, it locks the status as Running on the View Control Reports page. Therefore, if you click this button you not only refresh all status codes, but also ensure that any Terminated status codes display correctly.

To delete a control report, select the corresponding checkbox in the Delete column. To select or clear all the control reports, click **Select All** or **Deselect All**.

- **4.** To review additional information on how a process ran, click the link for that process from the Process column. The Display a Control Report page opens.
 - 4.1. Click View error message(s) to view the first error message.
 - **4.2.** Click **Next error** to browse all errors for the job.

A description of each button on the Display a Control Report page appears below:

Button	Description
Filter Report	To view only selected lines of a report.
	The Select Report Filters window opens. Check the box next to the filter phrases that you want to see in the report. (Select All and Deselect All links select or clear all lines on the report.) Click Filter Report .
	To redisplay the information, click Show Detail .
	To filter the report for certain leading words/ phrases, enter one or more delimiter characters and click Scan . (The default delimiter is a colon.) The page then displays all the unique occurrences of text up to the first occurrence of that delimiter, which you can use to filter the Control Report.
CSV Summary	Click to save a control report to a .csv (comma separated values) file that you can open and review in a spreadsheet application like Microsoft Excel. This option may be especially helpful for viewing large control reports.
	Note: This option is primarily intended to use with output from LOAD and REFRESH jobs, reporting the number of rows processed for each mapping. There are also CSV outputs specific to the Reconcile utilities, as well as the Change Table Counts utility process.
Reschedule Process	Click to open the Schedule a Process page and reschedule a process.

Error Messages

This section lists some of the error messages you may encounter on the control report for any process. Not all error messages are documented, so this is not a complete list.

Banner ODS Checks and Balances Process

Warning: Obsolete sequence numbers in MGBPSQL

Reason: Each row in the IA_ADMIN.MGBPSQL table should have a corresponding row in the IA_ADMIN.MTVPARM table matching on the sequence number. Any unmatched rows in MGBPSQL are reported

Action: Sequence numbers that exist in MGBPSQL but not in MTVPARM should be deleted from the table

Error: <mapname> is INVALID in the database

Reason: A delivered ETL mapping (PL/SQL) package currently has an INVALID status, and will not run during any of the LOAD/REFRESH jobs.

Action: Recreate the mapping package in the ODSMGR schema of the database.

Warning: <mapname> parameter does not have corresponding MAPPING

Reason: Baseline ETL mapping packages, that have been created with Oracle Warehouse Builder, exist in the ODSMGR schema with a name starting with "LOAD_", "DELETE_", "UPDATE_". Each package has a corresponding Parameter record with the same name. This warning indicates that a parameter exists for the specified mapping, but the actual package does not exist in the ODSMGR schema of the database.

Action: For baseline packages, create the ETL mapping package in the ODSMGR schema. If the mapping package does not exist in the database, use the Administrative UI to remove the parameter.

Warning: <mapname> mapping package does not have corresponding parameter record

Reason: The baseline Banner ODS ETL mapping packages, that have been created with Oracle Warehouse Builder, exist in the ODSMGR schema with a name starting with "LOAD_", "DELETE_", "UPDATE_". Each package has a corresponding parameter with the same name. Without this parameter record, the mapping will not be run during any of the LOAD/REFRESH jobs.

Action: Create the parameter record for the <mapname> package, similar to the other ETL MAP PACKAGE parameter records. Note: If the mapping is a locally developed package, consider using a different naming standard (ex: 'MY_LOAD_%', 'MY_DELETE %'), OR create a different schema for local modifications.

ERROR: Parameters not loaded for Banner ODS mappings (ETL MAP PACKAGE)

Reason: The mapping parameters for Banner ODS have not been created in MTVPARM.

Action: Check with technical staff to create the missing entries.

Warning: ---> <view name> is documented but does not exist

Reason: This check will verify that all reporting views documented in the metadata actually exist in the database. The warning message reports views that do not exist in the database.

Action: Check with technical staff to create the missing view in the ODSMGR schema of the database.

Warning for REPORTING View: <view name> WARNING: ---> MetaData column missing in view: <column name>

Reason: Baseline reporting views are delivered with corresponding metadata for each view column. The column that is documented does not exist within the view.

Action: Check with technical staff to determine why the column is missing from the view, and recreate the view if necessary.

통 Note

Client developed reporting views can be imported into the metadata using the Administrative User Interface. If the column should not be documented for a locally developed view, use the Administrative UI to remove the metadata.

Warning for REPORTING View: <view name> WARNING: ---> View column missing in MetaData: <column name>

Reason: Baseline reporting views are delivered with corresponding metadata for each view column. The column exists n the view, but is not documented in the metadata

Action: Check with technical staff to determine why the column is not documented in the metadata. Document the missing column with the Administrative UI.

통 Note

Client developed reporting views can be imported into the metadata using the Administrative User Interface. If the column should not be documented for a locally developed view, use the Administrative UI to create the metadata.

Baseline index <index_name> is missing from table

Reason: Delivered index names are stored in the IA_ADMIN.MGBINDX table. Any missing indexes may impact Banner ODS performance and are reported

Action: Create the missing index to ensure optimum system performance.

Additional index (index_name) found for table

Reason: Local indexes that do not exist in the IA_ADMIN.MGBINDX table are reported.

Action: To eliminate the warning message from the control report, insert the index information into MGBINDX with local = YES.

Warning: More than one database link found as source location for OWB

Reason: Verify that only one source database is identified for the OWB.

Action: Remove or rename incorrect database links from Banner ODS database. (Search DBA_DB_LINKS where LINK_NAME like '%SOURCE_DB%' to identify these).

WARNING: Use the Freeze Data Maintenance page to remove these columns from the freeze table <freeze_table>

Reason: It is possible to select columns to include in the freeze data. If a column that has been used in a freeze table is no longer valid in the source, a warning message is provided

Action: Use the Freeze Data Maintenance page in the Administrative UI to locate the freeze table and review the selected columns. Remove the obsolete columns from the selected columns list.

Freeze Table <freeze_table> does not exist. Used in Freeze Data List <freeze_data_list>

Reason: Freeze data lists are created to freeze multiple tables

Action: Review tables in the Freeze Data Lists reported to determine why the freeze data has not been generated.

ERROR: AR dblink test failed

Reason: A query from AT_AR_DEPOSIT view in Banner database failed.

Action: If the database link is valid, verify that the listed view exists in Banner database

ERROR: ADVANCEMENT dblink test failed

Reason: A query from a single Advancement view in Banner database (AA_CONSTITUENT) is done as a check that the system configuration is correct for Advancement ETL mapping packages to execute. The error message would indicate that the database link is incorrect or the view is not valid.

Action: Verify that Advancement views have been created in Banner database

ERROR: FINANCE dblink test failed

Reason: A query from a single Finance view in Banner database (AF_PURCHASE_ORDER_ACCOUNTING) is done as a check that the system configuration is correct for Finance ETL mappings to execute. The error message would indicate that the database link is incorrect or the view is not valid.

Action: Verify that Finance views have been created in Banner database.

FINANCIAL AID dblink test failed

Reason: A query from a single Financial Aid view in Banner database (AR_AWARD_BY_PERSON) is done as a check that the system configuration is correct for Financial Aid ETL mappings to execute. The error message would indicate that the database link is incorrect or the view is not valid.

Action: Verify that Financial Aid views have been created in Banner database.

ERROR: COMMON dblink test failed

Reason: A query from a single view in Banner database (AS_PERSON) is done as a check that the system configuration is correct for Common ETL mappings to execute. The error message would indicate that the database link is incorrect or the view is not valid.

Action: Verify that this view and other General views have been created in Banner database.

ERROR: HR dblink test failed

Reason: A query from a single Human Resources view in Banner database (AP_REVIEW) is done as a check that the system configuration is correct for Human Resources ETL mappings to execute. The error message would indicate that the database link is incorrect or the view is not valid.

Action: Verify that Human Resources views have been created in Banner database.

ERROR: STUDENT dblink test failed

Reason: A query from a single Student view in Banner database (AS_COURSE_CATALOG) is done as a check that the system configuration is correct for Student ETL mappings to execute. The error message would indicate that the database link is incorrect or the view is not valid.

Action: Verify that Student views have been created in Banner database.

Index indexname missing from tablename

The table name from the error message should have an index that does not exist. The name of the index is listed in the error message. Recreate the index, or remove the entry from the MGBINDX table.

Additional Index indexname found on tablename

The Banner EDW table listed in the error message had an index that is not expected. The index name is listed in the error message. If this is a valid index that your institution has added to the table, add the index to MGBINDX table.

Freeze Process

Process failed, no mgbfrez records for this list

The selected freeze table list does not have entries in MGBFREZ table. Click the **Freeze Data Maintenance** menu to review the tables included in the freeze list.

Multiple owners for inputted table/view to freeze. Please precede table name with owner.

The original table or view name exists in more than one schema. Verify which table the data should be selected from, and precede the table name with the owner name.

Source table not found

The original table was not found in the database.

Warning, no data found to Freeze

There are no rows in the original table, or the where condition caused no rows to be selected.

***Warning--Replace parameter is N and EVENT exists!!!- did not replace data

Data has been previously frozen to the new table with the same event code. If the data should truly be replaced, submit the process with the **Replace parameter** checkbox checked. If the existing data should remain intact, use a different event name to freeze additional data into the new table.

Publish Meta Data (PUBLISH_META_DATA)

Configuration error: No script found for COPY_SCRIPT parameter

The location of the ftp script used to transfer the html files was not found in the MTVPARM table. Click the menu options of **Options** and **Set Up Parameters**, with the internal group = METADATA and the internal code = PUBLISH, to store the copy script.

P_MakeAllTarget - E_NoTablesFound

There were entries found in metadata tables

P_MakeAllTarget - E_NoMetafileLoc

The parameter record in MTVPARM does not exist. To create this records, click the menu options of **Options** and **Set Up Parameters** with the internal group = METADATA and the internal code2 = PUBLISH LOCATION.

P_MakeAllTarget - E_NoUTLfileLoc

The file location supplied in the parameter is not valid. Click the menu options **Options** and **Set Up Parameters** with the internal group = METADATA and the internal code2 = PUBLISH_LOCATION to verify the correct location for the creation of the meta data files.

Reconcile (RECONCILE_JOB, RECONCILE_SINGLE_JOB)

If there are zero discrepancies, the number of rows in the source view match the number of rows extracted to Banner ODS table. Run a refresh (or load) for the mapping that has the discrepancies, then rerun the reconcile job.

mapName has 'n' discrepancies

There are 'n' differences between Banner and Banner ODS. (The message below provides additional details.)

Banner ODS has 'n' rows while the source has 'n' rows. Key values are:

'n' rows while Banner has 'n' rows. Key values are:

This indicates the key values for the rows in either Banner ODS or Banner that do not match to the other system. Use these key values to further diagnose the discrepancy.

통 Note

If you run this reconcile process after the refresh process is run, records that have been updated (with changes noted in the change tables) may have caused the discrepancies - you can use the key values to confirm this.

Mapping processes (DELETE_mapping, UPDATE_mapping, LOAD_mapping, REFRESH_mapping)

OWB Runtime not running - waited for 'n' minutes...

ETL Mapping Package record not found for mapping: <map name>

Run Banner ODS Utilities - 'Checks and Balances' job to ensure that all parameter records exist and mapping packages are valid.

Mapping not found - Please check the mapping name and location.

Run Banner ODS Utilities - 'Checks and Balances' job to ensure that all parameter records exist and mapping packages are valid.

No ETL CONTROL GROUP or ETL MAP PACKAGES found for this job.

Check that records exist in MTVPARM table where mtvparm_internal_code_group = 'ETL MAP PACKAGE'

No ETL SLOT PACKAGE entry found for this table:

Check that records exist in MTVPARM table where mtvparm_internal_code_group = 'ETL SLOT PACKAGE'.

Oracle Warehouse Builder Runtime Audit Browser Integration

Oracle Warehouse Builder (OWB) provides a utility called the Runtime Audit Browser (RAB) that displays status information for mappings that have been run. You can use RAB to view in depth statistics and job analysis. (For more information on setting up RAB, refer to the OWB Installation documentation).

Integration Setup

The Administrative UI can be configured to automatically link to the RAB for mappings that have been run. All you'll need to do is click a hyperlink from the control report to view RAB mapping information. A new browser window opens displaying the RAB information for that mapping. Follow the steps below to set up a parameter RAB_URL:

- 1. Click **Options** from the Administrative UI menu. The Options page opens.
- 2. Click Set Up Parameters. The Set Up a Parameter page opens.
- **3.** Select Internal Group *METADATA* and Internal Code *RAB_URL* from the drop-down lists on the Set Up a Parameter page.

🗟 Note

(If Internal Code *RAB_URL* does not appear in the drop-down list, then click **Create** to create the parameter. See <u>"Set up Parameters" on</u> <u>page 3-53</u> for instruction on how to create this optional parameter.)

4. Click Search. The Select an Existing Parameter page opens.

The External Code on the Select an Existing Parameter page can be any value. (It is required, but ignored. You can enter a hyphen, for example.) The key is the **Description** column. It must be the URL for the RAB that you have installed and set up. It will be similar to the URL below:

```
http://<machine_name>/owbb/
RABMapExecution.uix?event=navigate&p_type=PLSQLMap&repos=RUNREP
```

To access your URL, continue to the next step.

5. Open the RAB in another browser window. Copy your URL from the address bar in that window, and paste it into the **Description** column on the Select an Existing Parameter page.

통 Note

The particular RAB address ("RABMapExecution.uix") and the associated parameters need to match the above address, with the exception of the "repos" parameter, which should reflect the repository owner in your system (if it isn't the default RUNREP schema/user).

RAB Authentication

The integration is not complete in the sense of typical web-based "single-signon." You must first sign into the RAB in that separate browser window before you can browse any of the mapping execution information. Once signed in, your RAB credentials are stored locally (in a cookie) in your browser so you can close the RAB window (after logging in).

Š Note

Those cookie credentials are persistent, so future attempts to view RAB reports will succeed until you Log Out of your RAB session explicitly (via the Log Out link in the RAB window).

Subsequent links from the control report should take you directly to the mapping information for that report. Click the link after the OWB Audit Execution ID on the control report. The Runtime Reposition page opens.

Set up E-mail Notification

You can configure the Administrative UI to send an e-mail when a process (job) is completed. To do this, set up the following system parameters (MTVPARM records): Select a Parameter

Click a Description in the table below to select the Parameter you want to update or delete, or change the search criteria and click Search.					
JOB NOTIFICATION	Show All Internal Codes- Search				
Internal Group	Internal Code 1	Internal Code 2	Internal Code Sequence	External Code	Description
JOB NOTIFICATION	EMAIL_ADMIN_URL		1	URL	<web server="" url<br="">here></web>
JOB NOTIFICATION	EMAIL_FROM_ADDRESS		1		IAD5 Admin System
JOB NOTIFICATION	EMAIL_SERVER		1	MAILHOST.SCT.COM	Email Server



These parameters are not delivered. (You must create them. See the <u>"Set</u> <u>up Parameters</u>" on page 3-53.) E-mails are only sent if all parameters (except the Administration URL) are set up. No e-mail notification takes place until you set these parameters. Below are the parameter defaults:

Column	Description
EMAIL_ADMIN_ URL	The complete URL to connect to the Administration system. If this parameter is defined, the URL is included in the e-mail message which makes it easier for the recipient to log into the system. The message contents are:
	<i>Subject:</i> <job name=""> Job Completion <with errors=""> (where the Job Name is the job that ran, and "with Errors" is appended only for jobs that had errors.)</with></job>
	<i>Message:</i> This job has completed. Check the Administrative UI for more details.
	Job Name: <job name=""></job>
	Job User: <admin account="" job="" of="" ran="" that="" the="" username=""></admin>
	Job Number: <job number=""></job>
	<for jobs="" mappings:="" run="" that=""></for>
	Job Execution Time:
	Start of Mapping at (start time)
	Process completed at (end time)
	<if any="" are="" as="" during="" errors="" follows:="" job,="" listed="" next="" occurred="" the="" they=""></if>
	Error Details:
	Error
EMAIL_FROM_ ADDRESS	E-mail address in the From section of the e-mail. This is typically a server address. Required.
EMAIL_LIST	E-mail address to receive a job notification message for all Administration jobs that complete. Create one parameter for each recipient address. By default, you only receive e-mail notification for jobs submitted by that account. If the Administrative UI user name that ran the job matches (not case sensitive) the name in the Description field for this parameter. Or, you can set up an email address to receive notifications for all jobs that are run by setting the INTERNAL_CODE_2 field to <i>GET_ALL_JOBS</i> . Required
EMAIL SERVER	The machine name of your SMTP server machine. Required

Freeze Data Maintenance

Freezing data enables you to take snapshots of related data at any point in time and keep a static copy of that data. You may want to run data comparison reports at the same point-in-time (example: each month, semester, or year) To do this you will need to 'freeze' the data at each point-in-time. As you save these data slices over time, you will create a history (freeze) of the data on which to report. You can also associate that point-in-time with an event name (example: YearEnd, MonthEnd, SummerSession, etc).

Banner ODS freezes data from a single table/view or from multiple tables/views. When the freeze data has been defined, the freeze process must be scheduled to run (refer to <u>"Freeze a Single Banner ODS Table/View" on page 3-111</u> and <u>"Freeze Multiple Banner</u> <u>ODS Tables/Views at the Same Time" on page 3-112</u>).

- Set up Freeze Data list for Banner ODS tables/views
- · Add additional Banner ODS tables to existing freeze lists
- · Review events in existing Banner ODS freeze tables

Set up Banner ODS Freeze Data Lists

A Freeze List is what Banner ODS calls for one or more tables/views that have related data to be frozen at the same time. The freeze process selects data from the source table/ view, creates a table with the 'history' name supplied, and copies (freeze) the selected source data into the history table. By default, all the columns from the source table are copied to the freeze table. Click **Select Columns** to specify if only specific columns are required for the freeze.

Example

During a student registration cycle it may be important to capture student courses weekly. First, you would create a freeze list called STUDENT_COURSE_REGDATA. The source data would then be selected from STUDENT_COURSE.

The data from the source is stored in a freeze table which could be named STUDENT_COURSE_STATIC, for example. The new table is created the first time the freeze is run. Any successive freezes for this freeze list reuses the static table.

텛 Note

It is recommended that your institution have a naming convention in place for freeze lists and freeze tables

3-107

There is an optional WHERE condition that allows you to qualify the data to be frozen from each source table. The condition is ACADEMIC PERIOD = (200510).

텛 Note

Do not include the actual word WHERE in the condition. It is assumed.

- 1. Click Options.
- 2. Click Freeze Data Maintenance. The Set Up Freeze Data Lists page opens.
- 1. Click **Create** from the Set Up Freeze Data Lists page. The Create a Freeze Data Table page opens.

The links on this page are described below:

Link	Description
View Current Lists	Opens a window of the current freeze lists.
Copy Table Name	Copies the source name to the Freeze Table Name field.
	Note: The freeze table name must be different than the source name.
	The data is frozen with this table.
Select Columns	Opens a window of existing freeze columns. Choose the column(s) to freeze or not freeze, then click the corresponding arrows to move them to the appropriate box.
	• Click a single arrow to move one column.
	• Click a multi-arrow to move all columns.
	• Hold down the Ctrl key while selecting to move a few columns.
	The number of columns selected out of the total number of columns appears on the page and in the window. For example, (178/181) indicates that 178 columns out of 181 will be frozen.

- 2. Enter the new list name, source name and freeze table name.
- **3.** *(Optional)* Enter a valid PL/SQL WHERE condition. Use fields from the table or view being frozen and exclude the word "where", which is added by the system.

Example

ACADEMIC_PERIOD= '200510' and COURSE_LEVEL = '01'

4. Click Save.

Add a Table/View to a Banner ODS Freeze Data List

Maintaining freeze lists may require that additional tables be included in specific freeze lists, that a freeze list be deleted, that a freeze list be renamed or duplicated. It is also useful to review which events exist in which freeze tables.

In the example above, it is decided to capture data from STUDENT_COHORT_SLOT and so an additional table should be added to the STUDENT_COURSE_REGDATA freeze list.

- Click the freeze list called **STUDENT_COURSE_REGDATA** from the drop down list.
- Click Add another Table.
- Click STUDENT_COHORT_SLOT as the source table.
- For this example, the freeze table will be STUDENT_COHORT_SLOT_STATIC

There is an optional WHERE condition that will allow you to qualify the data to be frozen from each source table (ACADEMIC_PERIOD = '200510'). NOTE: Do *not* include the actual word WHERE in the condition. It is assumed.

- 1. Click Options.
- 2. Click Freeze Data Maintenance. The Set Up Freeze Data Lists page opens.
- **3.** Choose the freeze list you want to modify from the drop-down list on the Set Up Freeze Data Lists page.
- **4.** Click **Search**. The Select a Freeze Data Table page opens displaying the freeze tables associated with the displayed freeze list.
- 5. Click the link in the Source Name column for the tables/views you want to add. The Update an Existing Freeze Data Table page opens.
- 6. Click Add Another Table. The Create a Freeze Data Table page opens.

The links on this page are described below:

3-109

Link	Description
Select Another Lists	Returns to the Select a Freeze Data Table page.
Add Another Table	Opens the Create a Freeze Data Table page where you can enter freeze tables to add.
Select Columns	Opens a window of existing freeze columns. Click the column(s) to freeze or not freeze, then click the corresponding arrows to move them to the appropriate box.
	• Click a single arrow to move one column.
	• Click a multi-arrow to move all columns.
	• Hold down the Ctrl key while selecting/deselecting to move a multiple columns.
	The number of columns selected out of the total number of columns appears on the page and in the window. For example, (178/181) indicates that 178 columns out of 181 will be frozen.

- 7. Enter the new list name, source name and freeze table name.
- 8. (Optional) Enter a valid PL/SQL Where Condition. Use fields from the table or view being frozen and exclude the word "where", which is added by the system.

For example: *academic period* = '200510'.

- 9. Click Save.
- 10. Click Add Another Table to add another table to your list.

Delete, Rename or Duplicate Banner ODS Freeze Data

Follow the steps below to delete, rename, or duplicate freeze data list.

- 1. Click **Options** from the Administrative menu.
- 2. Click Freeze Data Maintenance. The Set Up Freeze Data Lists page opens.

- **3.** Choose the Freeze List you want to modify from the drop-down list on the Set Up Freeze Data Lists page.
- **4.** Click **Search**. The Select a Freeze Data Table page opens. The list of tables currently included in the list displays.

Use the links on this page to delete, rename or duplicate a freeze list. Each link is described below:

Link	Description
Delete Freeze List	Confirms that you want to delete the displayed freeze list. Tables of frozen data will not be deleted.
Rename Freeze List	Displays the Rename a Freeze List window. Enter the new freeze list name, then click Rename . Tables of frozen data will not be renamed.
Duplicate Freeze List	Displays the Duplicate a Freeze List window. Enter the new name, then click Duplicate . None of the history tables are duplicated.

5. (Optional) Check the **Show Event Names** checkbox to indicate whether to display the event within each table. An extra column of names displays.

통 Note

You choose how these events are handled when scheduling a job by choosing to either to insert, delete or replace the events from the **Event Handling** field on the Schedule a Process page.

Freeze a Single Banner ODS Table/View

You can freeze a single table using the Schedule a Process>Freeze a Single Banner ODS Table option. Follow the steps below:

- 1. From the Administrative menu, click **Options**.
- 2. Click Schedule a Process. The Select a Process page opens.
- 3. Click Freeze A Single Banner ODS Table/View from the Select a Process page.

- 4. Enter the required process parameters.
 - 4.1. Type the name of a table/view into the Enter Table to Freeze field.
 - **4.2.** Type the new (history) table name into the **Enter Table Name to Freeze to** field. (Follow your history table naming conventions.)
- 5. Enter the required scheduling parameters.
 - **5.1.** Enter a **Run Date** (format dd-mon-yyyy) and **Runtime** (format hh24:mi:ss).
 - **5.2.** If you want to run the process on a recurring basis, enter an **Interval**. For example, to run a process every day at the same time enter *SYSDATE*+1 in the **Interval** scheduling parameter.

See <u>"Update or Freeze Recurring Banner ODS Data" on page 3-113</u> for more details on setting the **Interval**.

6. Click **Save** to save the information about this freeze job. The job is entered into the job queue to run at the specified day and time.

Freeze Multiple Banner ODS Tables/Views at the Same Time

If the freeze is going to occur repeatedly, it may be useful to create a Freeze List. The Freeze List is a name/label/title for one or more tables/views with data to be frozen at the same time. See <u>"Freeze Data Maintenance" on page 3-107</u> for instructions on how to define a list of freeze tables.

Follow the steps below to freeze multiple tables/views:

- 1. From the Administrative menu, click **Options**.
- 2. Click Schedule a Process. The Select a Subprocess page opens.
- 3. Click Freeze Multiple Banner ODS Tables/Views from the Select a Process page.

All freeze data lists defined within Freeze Data Maintenance display.

- 4. Click the freeze data list. The Schedule a Process page opens.
- 5. From the **Event Handling** drop-down list, indicate whether you want to replace, insert (add), or delete existing events from the tables in the freeze data list.

6. Choose an event to capture. The system tags the information extracted during this process with the event code you choose.

텛 Note

You have to choose an event name when you submit the freeze job to run (refer to the "System Parameters" section). Once that freeze job is run, the data exists in the freeze tables with an 'event' name attached. There could be multiple event names in a single freeze table.

7. Enter the **Run Date** (format dd-mon-yyyy) and **Runtime** (format hh24:mi:ss).

If you want to run the process on a recurring basis, enter an Interval. For example, to run a process every day at the same time enter *SYSDATE+1* in the Interval scheduling parameter. See <u>"Update or Freeze Recurring Banner ODS Data" on page 3-113</u> for more details on setting the Interval.

8. Click **Save** to save the information about this freeze job. The job is entered into the job queue to run at the specified day and time.

Update or Freeze Recurring Banner ODS Data

You'll need to refresh the data in your Banner ODS on a regular basis to keep it synchronized with data in your administrative system. You may also want to freeze portions of Banner ODS data on a regular basis so that your users can create data comparison reports.

To automate the refresh or freeze processes, use the **Schedule a Process** option to define processes that run on a recurring basis. Specify that a job run on a recurring basis by entering a valid PL/SQL value in the **Interval** field. This field accepts a data expression value, which defines the length of time between processing runs. The key to setting the interval correctly is determining whether you need to run a job so that:

- Each execution of the job follows the previous run by a specific time interval.
 - or
- The job executes on specific dates and times.

The first thing you need to do is determine when and/or how often your institution needs to update Banner ODS data.

Update Banner ODS Daily

It is recommended that Banner ODS is updated daily. Use the **Schedule a Process** option to define processes that run on a recurring basis. Specify that a job run on a recurring basis by entering a valid PL/SQL value in the **Interval** field. This field accepts a data expression value, which defines the length of time between processing runs. The key to setting the interval correctly is determining whether you need to run a job so that:

• Each execution of the job follows the previous run by a specific time interval.

or

• The job executes on specific dates and times.

The first thing you need to do is determine when and/or how often your institution needs to update Banner ODS data.

In this case, the interval value is a date arithmetic expression like SYSDATE+N, where N represents the time interval expressed in days. So, an interval of SYSDATE+1 runs the job on a daily basis.

Job intervals set using date expressions do not guarantee that the next execution happens at a specific day or time, only that the spacing between executions is at least what was specified.

Example

If a job is first executed at 12:00 p.m. with an interval of SYSDATE + 1, it will be scheduled to execute the next day at 12:00 p.m. However, the job is executed manually at 4:00 p.m. using DBMS_JOB.RUN, then it is rescheduled for execution at 4:00 p.m. the next day. Another example is when the database is down or the job queue is so busy that the job cannot be executed exactly at the time scheduled. In this case, the job runs as soon as it can, but the execution time then moves away from the original submission time due to the later execution.

Update Banner ODS on Specific Dates and Times

You can set the Interval to execute jobs on a specific date and time. This type of interval involves more complex interval date expressions. Specifying intervals like these can get tricky, so be sure that your date arithmetic expression is correct. The following table provides samples of both simple and more complex types of job intervals.

통 Note

Refer to your Oracle documentation for more information on setting job intervals.

Run job	Interval Value
Daily	SYSDATE+1
Hourly	SYSDATE + 1/24
Weekly (every 7 days)	SYSDATE + 7
Every day at 12:00 midnight	TRUNC(SYSDATE + 1)

Run job	Interval Value
Every day at 8:00 a.m.	TRUNC(SYSDATE + 1) + 8/24
Every Tuesday at 12:00 noon	$NEXT_DAY(TRUNC(SYSDATE), TUESDAY) + 12/24$
First day of the month at midnight	$TRUNC(LAST_DAY(SYSDATE) + 1)$
Last day of the quarter at 11:00 P.M.	<i>TRUNC(ADD_MONTHS(SYSDATE + 2/24, 3), 'Q') - 1/24</i>
Every Monday, Wednesday, and Friday at 9:00 a.m.	TRUNC(LEAST(NEXT_DAY(SYSDATE, MONDAY), NEXT_DAY(SYSDATE, WEDNESDAY), NEXT_DAY(SYSDATE, FRIDAY))) + 9/24

Meta Data

Meta data is 'data about data' or information, or characteristics, about data entities such as a column name, description, format, length, origin and destination.

Meta data in Banner ODS tells what data columns are in Banner ODS, a definition of their business use, the type of data (number, character, date, etc.), how long they are, where they come from (in the source system) and their destination (in the target system.)

The Administrative UI meta data pages include reports that show the relationship between the data stored in Banner ODS and the source from which it is extracted.

통 Note

The meta data includes Banner ODS reporting views and source composite views, both with the original source tables and source column names. Banner ODS recreated Object:Access views are *not* delivered in the meta data. They are additional reporting views to be used for clients migrating from Datamart 1.0, or clients who used the source Object:Access views for custom reporting. Newly developed Banner ODS reporting should *not* use the Object:Access views.

The following navigation links and buttons display throughout the Administrative UI meta data pages:

This Link/Button	Does this
<-	Moves through the subject areas in alphabetical order.
->	Moves alphabetically through the views within a subject area.
	Moves through the columns within a view in column ID order.
Select	From the Subject Area:
	Opens the Select A Subject Area window.
	Click the Target or Source radio group, and click Reporting View or Composite View radio group to indicate the report type with which you want to work.
	Choose the new subject area with which you want to work. The window closes automatically.
	From the Reporting or Composite View:
	Opens the Select A Target window.
	Choose the reporting or composite view with which you wish to work. The window closes automatically.
	From the EDW star Target report List
	Opens the Select a Report Type and a Star window. Choose the target or source view and select the star. The window closes automatically.
	From the Reporting or Composite View Column:
	Opens the Select a Target Column or Select a Source Column window.
	To have the columns listed alphabetically, click the Sort By: Column Name radio group. To have the columns listed in column order, click the Sort By: Column Order radio group. Click the column with which you wish to work. The window closes automatically.
Add Target	Adds a target view or table. The Target window opens.
Add Source	Adds a source view. The Source window opens.

This Link/Button	Does this
Add Target Column	Add a target column. The Add a New Column window opens
Add Source Column	Add a source column. The Add a New Column window opens
List Composite Views	Displays the composite views for the selected subject area.
List Banner ODS Reporting Views	Displays the reporting views for the selected subject area.
Preview	Save, then click Preview to review your changes. Do not click this link then click the back button. Or, click Preview to review the list of:
	• all reporting or composite views within a subject area
	• a list of all source, or target columns within a view
	• a list of fact/dimension tables within a star
Properties	Works in conjunction with the Columns link to toggle between the Edit Target Columns and the Edit Target Properties pages.
Columns	Works in conjunction with the Properties link to toggle between the Edit Target Properties and the Edit Target Columns pages.
Preferences	Opens the Institutional Preferences window.
Publish	Publishes the meta data.
CSV Export	Exports meta data into a .csv file that you can open in Microsoft Excel.
Import	Enables you to choose a view to import into the meta data. The view must exist in the ODSMGR schema. All the columns in the view are created as LOCAL meta data. Click the button to display a list of views that do not exist in the meta data for that subject area.
Show Baseline/Hide	Toggles between displaying baseline information versus local information.

3-117

This Link/Button	Does this
Save Changes	Records your changes.
Select Another Maintenance Function	Returns to the Maintain Banner ODS Meta Data page.

Baseline and Local Meta Data

Baseline meta data is the meta data delivered with your solution. When you change the baseline meta data, a local copy is created and the edited version becomes your local meta data. Local meta data appears on the Administrative UI page in the color specified in your Institutional Preferences. The **Local Record** field on the Edit Target (or Source) Columns pages indicates whether the displayed meta data is the baseline or local version.

If both local and baseline meta data exist for the column meta data, only the local meta data displays and can be edited. Only local meta data can be changed or deleted.

Create Meta Data

When Banner ODSis installed, the baseline meta data is installed as well. The sections "Set Up Meta Data Publish Preferences" and "Meta Data Parameter Set Up for Publishing Reports," describe procedures that were completed during installation. They are included here for completeness, but you do not have to perform them to create meta data. The maintaining target or source meta data sections describe how to update the meta data repository with your own meta data.

Set up Institutional Meta Data Publish Preferences

The Meta Data Publish Preferences option controls which pieces of meta data can be previewed on the screen and saved (published) in a report. Meta data is considered 'published' after you save the selected source or target information as an HTML file using the Administrative UI. Before you publish meta data, follow the steps below to set the preferences.

- 1. Click **Preferences & Security** from the Administrative menu. The Preferences & Security menu opens.
- 2. Click Institutional Preferences. The Set Up Banner ODS Publishing Options menu opens.
- **3.** Click **Banner ODS Publishing Preferences.** The Set Up Meta Data Publish Preference page opens.

- 4. In the Banner ODS Meta Data Target Report Preferences area on the Set Up Meta Data Publish Preference page, check the checkbox to indicate the meta data you want to display in your meta data target or source reports. Your solution is delivered with the default check boxes selected.
- 5. Choose the color in which you want your report rows and local meta data information to appear.

통 Note

Colors appear institution-wide. They are not personal colors.

- 6. Indicate whether reports should appear in column or name order.
- 7. Click Save to keep your changes.

Meta Data Parameter Set up for Publishing Reports

The meta data reports are created as static HTML pages from the Administrative UI or from the command line. This process is called 'publishing'. (See <u>"Publish Meta Data from the Administrative UI" on page 3-134</u> for additional information on publishing meta data reports from the command line.)

There are system parameters that must be configured when Banner ODS is installed. The PUBLISH_LOCATION parameter provides the directory location on the database server where the HTML pages are written when using the Publish buttons from the Administrative UI, or by running the PUBLISH.BAT script in batch mode.

There are two supported techniques for specifying the location on the file system where the HTML pages are created:

• Use an Oracle DIRECTORY object

This is the preferred method as it does not require you to restart the database for changes to take effect, and also offers greater control over security. DIRECTORY objects are like any other objects in the Oracle database and offer the same levels of security control (grants by schema/user) while the UTL_FILE_DIR parameter setting is a global resource that does not offer tighter security control.

• Use the Oracle initialization UTL_FILE_DIR parameter

This technique has been replaced by the DIRECTORY usage but will be supported for backward compatibility.

When using an Oracle DIRECTORY, use the following syntax to create the directory object in the IA ADMIN schema:

```
CREATE DIRECTORY < DIRNAM> FOR '< PATH>';
```

where <DIRNAME> is a string, like *METADATA_DIR* and <PATH> is the actual path to the folder/directory location where the files are created.

The DIRECTORY object should be created and owned by the IA_ADMIN schema. The value of the PUBLISH_LOCATION parameter would then be set to the DIRECTORY name (in the above example, the value: *METADATA_DIR*.

You need to specify the initialization parameter UTL_FILE_DIR within the init.ora file for Banner ODS instance. This UTL_FILE_DIR parameter must contain the name of the directory where the Admin pl/sql package (MGKPUBL) generates the meta data files on the database server.

Once this directory is known and the UTL_FILE_DIR parameter is set, then configure the PUBLISH_LOCATION parameter through the Administrative UI. (Follow the "Configuring Publishing Parameters" section later in this chapter.)

The VIEW_URL parameter provides the Web server location where the published files are hosted. SunGard Higher Education recommends using the delivered /meta data folder to store the generated reports for viewing. This is a subdirectory beneath the "document root" for the Web server instance.

- Specify the VIEW_URL parameter as a relative path to the document root.
- If the Oracle http server (Web server) is on a different computer from Banner ODS database server, then newly published reports must be copied from the PUBLISH_LOCATION to the /metadata subdirectory before they can be viewed from the Operational Data Store Meta Data Reports page.

The COPY_SCRIPT parameter allows you to specify a script to accomplish the moving HTML files from the application server to the web server.

The sample script delivered (ia_admin\dbscripts\utility_scripts\copyMetaData.sh) demonstrates how to do this using FTP, but the script can be replaced with any technique (such as SFTP, copying files directly using a mapped drive, even just copying them from one directory to another if the application server and web server are on the same machine, etc.). It is recommended that you examine and customize this script as needed to comply with your institutional security requirements and policies.

Configure Publishing Parameters and Create Meta Data Web Directory

1. Login to the Administrative UI.

Example

http://machine.sct.com:port/pls/ods/ twbkwbis.P_GenMenu?name=bmenu.P_MainMnu

2. Click **Options** from the Administrative UI menu.

- 3. Click Set Up Parameters.
- 4. From the Show All Internal Groups drop-down list, select METADATA.
- 5. Click Search.
- 6. Look for the PUBLISH_LOCATION, VIEW_URL, or COPY_SCRIPT parameter in the Internal Code 2 column.
- 7. Click the corresponding link in the **Description** column.
- **8.** Each link for the selected parameter appears in the **Description** field of the Update a Parameter page.

3-121

For parameter	Change this Directory or Server Location
PUBLISH_LOCATION	UTL_FILE_DIR location or DIRECTORY name. Select this parameter to set up the location to which the meta data is published.
	If the Web server is running on a Banner ODS machine, set up the UTL_FILE_DIR location (for output of generated pages) to be the same as the meta data subdirectory path under the Web server document root. PUBLISH_LOCATION would be set to the same thing.
	Example:
	D:\ORACLE\UTL_FILE
	PUBLISH_LOCATION may be case sensitive. The directory name on the Banner ODS database server should be in the same case as the UTL_FILE_DIR entry. If the case does not match, you may receive the error "Unknown Status: ERR_UTL_FILE" when attempting to Publish.
	The description should correspond to the UTL_FILE_DIRECTORY setting.
	Example
	Iin the initSID.ora file may contain this line:
	utl_file_dir = D:\ORACLE\UTL_FILE
	The database init parameter file (initSID.ora) typically resides in the Oracle Home\database directory (Windows) or the Oracle Home/dbs directory (Unix).
VIEW_URL	The VIEW_URL parameter is set to the meta data subdirectory of the document root. This saves you from copying files each time they are published.
	Example:
	\metadata
	If the Oracle http server (Web server) is on a different computer from the ODS database server, then newly published reports must be copied from the PUBLISH_LOCATION to the /metadata subdirectory before they can be viewed from the Banner Operational Data Store Meta Data Reports page.
COPY_SCRIPT	Script used to move HTML pages from the database server to the application Web server.



On the Update a Parameter page, you can only change the **External Code** and **Description** fields. But, if you click **Duplicate** you can change any of the fields. For example, to update the Internal Code you could duplicate the current one and change the Internal Code. Then, go back and delete the original parameter (to clean up). Click the back button (twice), then click **Delete**.

- 9. Click Save from the Update a Parameter page to save the new settings.
- **10.** Return to the Select a Parameter page to set up a different parameter.

Edit Target Meta Data Properties

Follow the steps below to change the properties of your target meta data.

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data The View Target Report List page opens.

통 Note

All subject areas on the View Target Report List page display in alphabetical order by default.

To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group . Then, click the **Target(s)** radio group.
- 5. Click the subject area you want to view. The window closes automatically.
- 통 Note

Check the **Show locally modified targets only** checkbox to display local target views only.

- 6. Click the reporting or composite view whose properties you want to change. The View Target Report page opens.
- **7.** Click **Properties** located to the right of the reporting/composite view name. The Edit Target Properties page opens.
- **8.** Make your changes.
- **9.** Click **Save Changes** at the bottom of the page to keep your new information. The page refreshes automatically.

After the page refreshes, the **Local Record** field changes from *No* to *Yes* to indicate that this is now local meta data. The field names also display in the color that was set up in your Institutional Preferences page to indicate local meta data.

The **Show Baseline** and **Delete Local** links appear to the right of the **Local Record** field after you save.

Add Target Views and Target Columns

Follow the steps below to add target reporting or composite views and target columns to a subject area.

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data . The View Target Report List page opens.

통 Note

All subject areas on the View Target Report List page display in alphabetical order by default.

To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group . Then, click the **Target(s)** radio group.

통 Note

Check the **Show locally modified targets only** checkbox to display local target views only.

- 5. Click Add Target. The Add Target window opens.
- **6.** Enter the new target name.
- 7. Click Add Target to save the new view. The View Target Report page opens displaying the new target reporting or composite name.
- 8. Click Add Target Column to add columns to the view. The Add a New Column window opens.
- **9.** Enter the new information, then click **Add Column** to save. The View Target Report page refreshes and displays the new target column information.

Edit Target Views and Target Columns

Follow the steps below to change the information for target and reporting or composite views.

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data . The View Target Report List page opens.

[Note

All subject areas on the View Target Report List page display in alphabetical order by default.

To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group . Then, click the **Target(s)** radio group.
- 5. Click the subject area you want to view. The window closes automatically.

👶 Note

Check the **Show locally modified targets only** checkbox to display local target views only.

- 6. Click the reporting or composite view you want to change. The View Target Report page opens.
- 7. Click the Target Column you want to change.

The Edit Target Columns page opens.

8. Enter your changes. Click Save Changes to keep your changes.

Synchronize Meta Data Comments with Reporting Views

Use this option to generate multiple comments on a reporting view. The meta data business definitions for the reporting view and the meta data business definitions for each of the columns is copied from the meta data into the database **Comments** field. Any existing comment will be overwritten.

This process (for a single or for multiple business definitions) can also be scheduled from Banner ODS Utilities menu. (See <u>"Schedule a Process" on page 3-59</u> for instructions on how to schedule a process.)

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data. The View Target Report List page opens.
- **3.** Click **Select** to choose the subject area, or click <- or -> to move through the subject areas in alphabetical order.

Solution Note

If you click **Select**, which opens the Select a Subject Area window, keep the default Reporting View and Target radio groups. The window closes automatically after you select a subject area.

- 4. Click the reporting view to which you want to add comments.
- 5. Click the Sync Comments link.

The business definitions are copied to the database comments.

Delete Local Target Properties

Follow the steps below to delete local target properties:

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data . The View Target Report List page opens.

통 Note

All subject areas on the View Target Report List page display in alphabetical order by default.

To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group. Then, click the **Target(s)** radio group.
- 5. Click the subject area you want to view. The window closes automatically.

통 Note

Check the **Show locally modified targets only** checkbox to display local target views only.

- 6. Click the reporting or composite view whose target properties you want to delete. The View Target Report page opens.
- 7. Click Delete. A message window appears.
- 8. Click **OK** to delete the target, or **Cancel** to keep the target. If you delete the target, the View Target Report List page opens. If you keep the target, you remain on the View Target Report page.

Delete Local Target Columns

Follow the steps below to delete local target columns.

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data a. The View Target Report List page opens.

통 Note

All subject areas on the View Target Report List page display in alphabetical order by default.

To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group. Then, click the **Target(s)** radio group.
- 5. Click the subject area you want to view. The window closes automatically.

텛 Note

Check the **Show locally modified targets only** checkbox to display local target views only.

- 6. Click the reporting or composite view whose columns you want to delete. The View Target Report page opens.
- 7. Click the target column you want to delete. The Edit Target Column page opens.
- 8. Click Delete Local. A message window appears.
- **9.** Click **OK** to delete the target, or **Cancel** to keep the target. If you delete the target, you return to the View Target Report page. If you keep the target, you remain on the Edit Definitions page.

Edit Source Meta Data Properties

Follow the steps below to change the properties of your source meta data.

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data . The View Target Report List page opens.

Note

All subject areas on the View Target Report List page display in alphabetical order by default.

To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group . Then, click the **Target(s)** radio group.
- 5. Click the subject area you want to view. The window closes automatically.

통 Note

Check the **Show locally modified sources only** checkbox to display local target views only.

- 6. Click the Source Name whose properties you want to change. The View Source Report page opens.
- **7.** Click **Properties** located to the right of the source name. The Edit Source Properties page opens.
- 8. Make your changes.
- **9.** Click **Save Changes** at the bottom of the page to keep your new information. The page refreshes automatically.

After the page refreshes, the **Local Record** field changes from *NO* to *YES* to indicate that this is now local meta data. The field names also display in the color that was set up in your Institutional Preferences page to indicate local meta data.

The Show Baseline and Delete Local links appear to the right of the Local Record field after you save.

Add Source Names and Source Columns

Follow the steps below to add source names and source columns to a subject area for reporting and composite views

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data . The View Target Report List page opens.

Note

All subject areas on the View Target Report List page display in alphabetical order by default.

To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group . Then, click the **Target(s)** radio group.
- 5. Click the subject area you want to view. The window closes automatically.

🗟 Note

Check the **Show locally modified targets only** checkbox to display local target views only.

- 6. Click Add Source. The Add Source window opens.
- **7.** Enter the new source name. Click **Add Source** to save the new name. The View Source Report page opens displaying the new source name.
- **8.** Click **Add Source Column** to add columns to the source. The Add a New Column window opens.
- **9.** Enter the new column information, then click **Add Column** to save. The Edit Source Columns page opens and displays the new source column information.

Edit Source Names and Source Columns

Follow the steps below to change the properties of your source meta data for reporting and composite views.

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data The View Target Report List page opens.

Note

All subject areas on the View Target Report List page display in alphabetical order by default.

To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group . Then, click the **Target(s)** radio group.
- 5. Click the subject area you want to view. The window closes automatically.

👶 Note

Check the **Show locally modified Sources only** checkbox to display local source views only.

- 6. Click the source name you want to change. The View Source Report page opens.
- 7. Choose the source column you want to change. The Edit Source Columns page opens.
- 8. Enter your changes. Click Save Changes to keep your changes.

Delete Local Source Properties

Follow the steps below to delete local source properties:

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data . The View Target Report List page opens.

통 Note

All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click <- or ->.

3. Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group . Then, click the **Target(s)** radio group.
- 5. Click the subject area you want to view. The window closes automatically.

통 Note

Check the **Show locally modified sources only** checkbox to display local target views only.

- 6. Click the source name whose source properties you want to delete. The View Source Report page opens.
- 7. Click the Delete. A message window appears.
- 8. Click **OK** to delete the source, or **Cancel** to keep the source. If you delete the source, the View Source Report List page opens. If you keep the source, you remain on the View Source Report page.

Delete Local Source Columns

Follow the steps below to change the properties of your source meta data.

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data . The View Target Report List page opens.

통 Note

All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group . Then, click the **Target(s)** radio group.
- 5. Click the subject area you want to view. The window closes automatically.

통 Note

Check the **Show locally modified sources only** checkbox to display local target views only.

- 6. Click the source name whose columns you want to delete. The View Source Report page opens.
- 7. Click the source column you want to delete. The Edit Source Column page opens.

- 8. Click the Delete Local. A message window appears.
- **9.** Click **OK** to delete the source, or **Cancel** to keep the source. If you delete the source, you return to the Edit Source Column page. If you keep the source, you remain on the Edit Source Column page.

Add and Delete Source to Target Meta Data Local Mappings

Meta data contains information about which source column in the source system contained the information that is in the target column. You can create your own local source to target meta data mappings.

Follow the steps below to add or delete local source to target mappings to the meta data:

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data . The View Target Report List page opens.
- 통 Note

All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group. Then, click the **Target(s)** radio group.
- 5. Click the subject area you want to view. The window closes automatically.

Solution 😸

Check the **Show locally modified targets only** checkbox to display local target views only.

- 6. Click the reporting view to map. The View Target Report page opens.
- 7. Click the target column you want to map. The Edit Target Columns page opens.
- 8. To Add:

Click **Add Local Mapping** at the bottom of the web page. The Add a Source Mapping window opens. (Continue to the next step below.)

To Delete: Click the **Delete Local Mapping** link at the bottom of the web page.

Click OK to delete the local mapping.

- **9.** Enter the source subject area, table and column (required fields). Or, search for them using the corresponding links. Choose the table or column from the drop-down list associated with that link.
- **10.** Click **Add Mapping** to save the newly mapped meta data.

Import Target and Source Meta Data

The Import option enables you to import an entire view into the meta data. The view must exist in the ODSMGR schema. All the columns in the view are created as local meta data.

Follow the steps below to change the properties of your source meta data.

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data . The View Target Report List page opens.

통 Note

All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group . Then, click the **Target(s)** radio group.
- 5. Click the subject area you want to view. The window closes automatically.

S Note

Check the **Show locally modified targets (or sources) only** checkbox to display local target (or source) views only.

- 6. Click **Import** located at the top right side of the web page. The Select a View window opens.
- 7. Click one or more views to import.

To choose more than one view, click the first view, the hold down the Ctrl key while selecting the remaining views.

8. Click Import.

CSV Export

The Export option enables you to export target and source meta data into a .csv file that you can open in Microsoft Excel, or similar application.

Follow the steps below to change the properties of your source meta data.

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data . The View Target Report List page opens.

📄 Note

All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click <- or ->.

- **3.** Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
- 4. Click either the **Reporting View(s)** or **Composite View(s)** radio group. Then, click the **Target(s)** radio group.
- 5. Choose the subject area you want to view. The window closes automatically.

S Note

Check the **Show locally modified targets only** checkbox to display local target views only.

- 6. To export all reporting or composite views in a subject area, click CSV Export located at the top right side of the View Target (or Source) Report List page.
- 7. A window opens either to warn you that the operation will take a long time, or to indicate whether you want to save or open the file. Click **Cancel** to stop.

Publish Meta Data from the Administrative UI

Meta data is considered 'published' after the selected source or target information is saved as an HTML file and a meta data report is created. And, it can be published for some or all sources and targets. Meta data enables users to easily view the relationships between Banner ODS columns and their sources. Meta data can be published from the Administrative UI, or from the command line outside the Administrative UI. Once a meta data report is published, it can be stored on a server that is accessible to reporting users.

📄 Note

If the Web server is not on the Banner ODS machine, the files need to be copied to the Web server after publishing.

Publish Meta Data for an Entire Subject Area

Follow the steps below to publish meta data for an entire subject area (Student, Finance, etc.).

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data. The View Target Report List page opens.

통 Note

All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click <- or ->.

텛 Note

Check the **Show locally modified targets only** checkbox to display local target views only.

- 3. Click Select on the View Target Report List page. The Select A Subject Area window opens.
- 4. Click the **Target(s)** radio group.
- 5. Click the subject you want to view. The window closes automatically.
- 6. Click **Publish** located at the top right side of the web page.
- 7. Click **Ok** to confirm that you want to publish all reports for the subject area.

Publish Meta Data for One Source or Target

Follow the steps below to preview and publish the meta data for one source or target.

- 1. Click Meta Data from the Administrative UI menu.
- 2. Click Maintain Banner ODS Meta Data. The View Target Report List page opens.

통 Note

All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click <- or ->.

통 Note

Check the **Show locally modified targets only** checkbox to display local target views only.

3. Click Select on the View Target Report List page. The Select A Subject Area window opens.

- 4. Click the **Target(s)** radio group.
- 5. Click the subject you want to view. The window closes automatically.
- 6. Click the reporting view whose meta data you want to preview or publish.
- **7.** Click Preview to open the View Target Report List page, and preview the report. The meta data is not permanently published until you complete the following step.
- 8. Click **Publish** at the top of the web page. An HTML file is published (saved as a report). The file is saved to the location specified by the parameters with an internal group *METADATA* and internal_code_2= *PUBLISH_LOCATION*.

Publish Meta Data Reports

Meta data can be published using three methods.

- Publish all meta data by scheduling a process. See <u>"Publish Meta Data by</u> <u>Scheduling a Process" on page 3-136</u>
- Publish for an entire subject area. See <u>"Publish Meta Data for an Entire Subject</u> <u>Area" on page 3-135</u>
- Publish for one source or target. See <u>"Publish Meta Data for One Source or Target"</u> on page 3-135

통 Note

Baseline meta data reports are provided when your solution is installed. Therefore, you should *not* need to perform the publishing step initially.

Publish Meta Data by Scheduling a Process

You can schedule meta data to publish at a predetermined day and time. Follow the steps in the <u>"Schedule a Process" on page 3-59</u> section. You should click the **Publish Meta Data** process.

Publish Meta Data from the Command Line

You can publish all meta data reports using the MGKPUBL.P_MakeAllReports procedure. A sample script, PUBLISH.SQL, is provided in the dbscripts/utility_scripts for publish.sql. To generate all the meta data reports, use the following command:

SQLPLUS IA_ADMIN/<password> @PUBLISH.SQL

The following PUBLISH.BAT script (in the web_files/metadata directory) can be customized to perform the entire process (generating the files, and then using FTP to put them on a remote server):

if "%1" == "move" goto movem
echo Publishing...
echo SET SERVEROUTPUT ON SIZE 500000 > doit.sql
echo EXEC MGKPUBL.P_MakeAllReports >> doit.sql
echo QUIT >> doit.sql
type doit.sql
sqlplus ia_admin/<password>@<Oracle database> @doit.sql
:movem
echo Moving...
if exist *.html del *.html
ftp -n -s:getfiles.dat <ODS machine>
ftp -n -s:putfiles.dat <web server machine>

View Published Meta Data

Meta data is considered 'published' after the selected source or target information is saved as an HTML file and, as a result, a meta data report is created. There are two kinds of reports for reporting view and composite view meta data. They are target reports and source reports.

Target Reports:

Show the relationship between the columns in Banner ODS reporting views (or composite views) and the columns to which they are mapped in the source system tables.

Source Reports:

Show the relationship between columns in the source system tables and the columns to which they are mapped in Banner ODS reporting view (or composite view).

Reporting View Meta Data

Use the following steps to view a published reporting view meta data report.

- 1. Click Meta Data from the Administrative menu.
- 2. Click Banner Operational Data Store. Banner Operational Data Store Reporting View Meta Data Reports page opens.

3-137

- **3.** Choose a subject area from Banner Operational Data Store Reporting View Meta Data Reports page. The Reporting View Meta Data Reports page opens.
- 4. Choose a reporting view. The selected report displays.

통 Note

Sometimes the number of targets in the source report can exceed a 30,000 character limit. If this happens the output for the source is cut off, and a message "(*More Targets…*)" displays.

Composite View Meta Data

Banner ODS composite view meta data is also available as published meta data. Use the following steps to view published composite view meta data reports.

- 1. Click Meta Data from the Administrative menu.
- 2. Click Banner Operational Data Store. The Reporting View Meta Data Reports page opens.
- **3.** Click **Banner ODS Composite View Meta Data Reports** located in the top righthand corner of Banner Operational Data Store Reporting View Meta Data Reports page. The Banner Operational Data Store Composite View Meta Data Reports page opens.
- **4.** Choose the subject area. The Composite View Meta Data Reports page opens listing the view name and description.
- To view the column details associated with the selected composite view, choose one of the composite views. A report opens listing the Local Target, Target Column, Business Definition, Database Data Type, Source Name and Source Column.

Metamodel

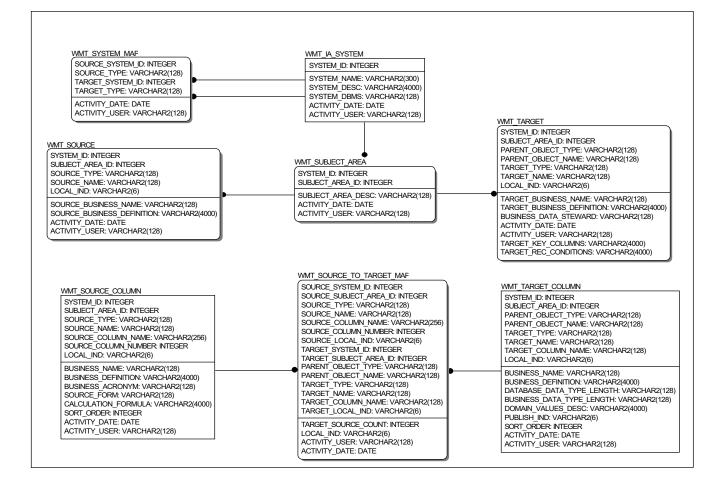
The SunGuard Higher Education metamodel is the physical relational data model that stores the meta data. This should not be confused with the meta data repository, which refers to the physical database tables that contain the meta data.

Meta data tables are stored in a repository that is owned by the user - IA_ADMIN. Each table in the meta data repository begins with a "WMT_" prefix to identify it as a Banner ODS "Warehouse Meta Data Table." In addition, there is a public synonym for each table that simply removes the "WMT_" prefix.

The meta data tables and views that make up the metamodel illustrate the different pieces of meta data available, and how they relate to each object type. The object types are the reporting views and the source tables.

Meta Data Table Name	Synonym
WMT_IA_SYSTEM	IA_SYSTEM
WMT_SOURCE	SOURCE
WMT_SOURCE_COLUMN	SOURCE_COLUMN
WMT_SOURCE_TO_TARGET_MAP	SOURCE_TO_TARGET_MAP
WMT_SUBJECT_AREA	SUBJECT_AREA
WMT_SYSTEM_MAP	SYSTEM_MAP
WMT_TARGET	TARGET
WMT_TARGET_COLUMN	TARGET_COLUMN

A diagram of the metamodel follows:



These meta data tables that store information about the meta data are further described in the next section.

Banner Operational Data Store 8.1 Handbook Administrative User Interface

3-139

Banner ODS Meta Data Object Types

Information exists in the meta data layer for the following types of objects:

Object	Description
Target View	Banner ODS reporting views that join related information from Banner ODS tables. Use these views to build reports.
	<i>Example</i> : CONSTITUENT reporting view is the Advancement constituent data.
Source Table	Database tables in your source system used as the source for the data in Banner ODS.
	<i>Example</i> APBCONS is the Constituent Base Table.
Source Function	Functions that use data from the source system's source tables to create new data to be stored in Banner ODS.

Source Meta Data Tables

The following meta data tables store information about the source of Banner ODS data. In Banner ODS, this is meta data about the source systems.

Source Table (WMT_SOURCE)

Column	Description
SYSTEM_ID	Unique ID for the source system.
SUBJECT_AREA _ID	Unique ID for the subject area.
SOURCE_TYPE	Identifies whether the source is a table, view, or function. Sample source types are TABLE, REPORTING VIEW and FUNCTION.
SOURCE_NAME	Source table, view, or function name.
SOURCE_ BUSINESS_ NAME	Source table, view, or function descriptive name.
SOURCE _BUSINESS_ DEFINITION	Table or view business purpose.

Column	Description
LOCAL_IND	Indicates whether the row is a local or baseline version.
ACTIVITY_DAT E	Date the meta data was changed.
ACTIVITY_USER	User who changed the meta data.

Source Column Table (WMT_SOURCE_COLUMN)

Column	Description
SYSTEM_ID	Unique ID for the source system.
SUBJECT_AREA _ID	Unique ID for the subject area.
SOURCE_TYPE	Identifies whether the source is a table, view or function. Sample source types are TABLE, REPORTING VIEW, and FUNCTION.
SOURCE_NAME	Source table, view or function name.
SOURCE_COL UMN_NAME	Source table/view column name. If the source name is FUNCTION, the function name is entered. If the source name is CONSTANT, the value of the constant is entered. If the source name is CALCULATION, the calculation is entered.
SOURCE_ COLUMN_NUM BER	Distinguishes between source columns that have the same names.
LOCAL_IND	Indicates whether the row is a local or baseline version.
BUSINESS_NAM E	Descriptive name for the column in the source.
BUSINESS _DEFINITION	Source column defined in business terms.
BUSINESS _ACRONYM	Acronym for the source column, if it has one.
SOURCE_FORM	Source system form name from which the data was captured.
CALCULATION_ FORMULA	Any calculations that are applied to create the data in the target column.
SORT_ORDER	Column order in the table or view. It is determined by numbering the columns in alphabetical order.

Column	Description
ACTIVITY DATE	Date the meta data was changed.
ACTIVITY USER	User who changed the meta data.

Target Meta Data Tables

The following meta data tables store information about the target of Banner ODS data, Banner ODS reporting views.

Target Table (WMT_TARGET)

Column	Description
SYSTEM_ID	Unique ID for Banner ODS.
SUBJECT_AREA _ID	Unique ID for the subject area.
PARENT_OBJEC T TYPE	This column is used in Banner EDW only.
I_IIPE	In the case of Banner EDW, the parent object type is STAR. Not used in Banner ODS.
PARENT_OBJEC	This column is used in Banner EDW only.
T_NAME	In Banner EDW, this identifies the star to which the target belongs.
TARGET_TYPE	Stores whether this is a Banner ODS table or view. Currently, reporting and composite view information is available.
	Sample values for Banner ODS are REPORTING VIEW and COMPOSITE VIEW.
	Sample values for the EDW are DIMENSION TABLE, FACT TABLE, and STAR.
TARGET_NAME	Table or view name.
TARGET_ BUSINESS_NAM E	Target descriptive name.
TARGET_ BUSINESS_ DEFINITION	Target business purpose.
BUSINESS_DAT A_STEWARD	Person or department responsible for the data in the target.

Column	Description
LOCAL_IND	Indicates whether the row is a local or baseline versions.
ACTIVITY_DAT E	Date the meta data was changed.
ACTIVITY_USER	User who changed the meta data.
TARGET_KEY_ COLUMN	Describes how the data is to be returned when extracted, with any information and/or comments specific to this particular set of data.
TARGET_REC_C ONDITIONS	Columns used in report filters and queries that return the best performance for the specified reporting view. These conditions are not mandatory, but recommended for performance. You may retrieve data from the reporting views using different criteria.

Target Column Table (WMT_TARGET_COLUMN)

Column	Description
SYSTEM_ID	Unique ID for Banner ODS.
SUBJECT_AREA _ID	Unique ID for the subject area.
PARENT_OBJEC	This column is used in Banner EDW only.
T_TYPE	In Banner EDW, the parent object type is STAR.
PARENT_OBJEC	This column is used in Banner EDW only.
T_NAME	In Banner EDW, this identifies the star to which the target belongs.
TARGET_TYPE	Stores whether this is a Banner ODS table or view. Currently, reporting view information is available. Sample values for Banner ODS are REPORTING VIEW and COMPOSITE VIEW.
TARGET_NAME	Table or view name.
TARGET_COLU MN_NAME	Target column name.
LOCAL_IND	Indicates whether the row is a local or baseline version.
BUSINESS_NAM E	Descriptive name for the column in the target.

Column	Description
BUSINESS_ DEFINITION	Defines the target column in business terms. This is the comment on column in the relational database data dictionary in your target system.
DATABASE_DA TA_TYPE_LENG TH	Comes from the relational database data dictionary in Banner ODS. This is stored in the meta data tables, not just the relational database data dictionary, so that it is easily available in one place with the rest of the meta data.
BUSINESS_DAT A_TYPE_LENGT H	Used when writing reports for formatting purposes. The business data type may be character, integer, float, etc. It also contains the length of the data.
	Example
	The relational database data type and length for the internal ID may be varchar(63), but the business data type and length is 8-digits. Even though the database allows for a width up to 63 characters, the column will never be more than eight.
DOMAIN_VALU ES_DESC	Description of the valid values that a column can contain. It could be a list of codes and code descriptions.
PUBLISH_IND	Indicates whether to publish the column information to meta data reports so users can use the meta data for reporting purposes. It may not be published because the column contains sensitive information. The column may also contain technical information like a key that would not be used in a report.
SORT_ORDER	Physical order of the columns in the table or view from the relational database data dictionary.
ACTIVITY_DAT E	Date the meta data was changed.
ACTIVITY_USER	User who changed the meta data.

Source and Target Meta Data Tables

The following meta data tables store information about the source and target of the data. This includes meta data about the source systems and Banner ODS.

-

System Table (WMT_IA_SYSTEM)

Column	Description
SYSTEM_ID	Unique ID for a system.
SYSTEM_NAME	Administrative source or Banner ODS solution system name.
SYSTEM_DESC	Administrative source or Banner ODS solution system description.
SYSTEM_DBMS	Database management system software, Oracle for example, used to implement the source or target system.
ACTIVITY_DAT E	Date the meta data was changed.
ACTIVITY_USER	User who changed the meta data.

Subject Area Table (WMT_SUBJECT_AREA)

Column	Description
SYSTEM_ID	Unique ID for the system.
SUBJECT_AREA _ID	Unique ID for the subject area.
SUBJECT_AREA _DESC	Advancement, Student or Human Resources, for example.

System Map Table (WMT_SYSTEM_MAP)

Column	Description
SOURCE_SYSTE M_ID	Source system unique ID.
SOURCE_TYPE	Identifies whether the source is a table, view, or function. Sample source types are TABLE, REPORTING VIEW, and FUNCTION.
TARGET_SYSTE M_ID	Banner ODS.
TARGET_TYPE	Stores whether this is a Banner ODS table or view. Currently, reporting and composite view information is available. Sample values for Banner ODS are REPORTING VIEW and COMPOSITE VIEW.

Column	Description
ACTIVITY_DAT E	Date the meta data was changed.
ACTIVITY_USER	User who changed the meta data.

Source to Target Map Table (WMT_SOURCE_TO_TARGET_MAP)

Column	Description
SOURCE_SYSTE M_ID	Source system unique ID.
SOURCE_ SUBJECT_AREA _ID	Subject area unique ID.
SOURCE_TYPE	Identifies whether the source is a table, view or function. Sample source types are TABLE, REPORTING VIEW and FUNCTION.
SOURCE_NAME	Source table, view or PL/SQL function name.
SOURCE_COLU MN_NAME	Source column name from the source table or view, if the source is a table or view. If the source name is FUNCTION, the function name is entered. If the source name is CONSTANT, the value of the constant is entered. If the source name is CALCULATION, the calculation is entered.
SOURCE_COLU MN_NUMBER	Distinguishes between source columns that have the same names.
SOURCE_LOCAL _IND	Indicates whether the row is a local or baseline version.
TARGET_SYSTE M_ID	Banner ODS unique ID.
TARGET_ SUBJECT_AREA _ID	Subject area unique ID.
PARENT_OBJEC T TYPE	This column is used in Banner EDW only.
I_IIFE	In Banner EDW, the parent object type is STAR.
PARENT_OBJEC T NAME	This column is used in Banner EDW only.
	In Banner EDW, this identifies the star to which the target belongs.

Column	Description
TARGET_TYPE	Stores whether this is a Banner ODS table or view. Currently, reporting and composite view information is available.
	Sample values for Banner ODS are REPORTING VIEW and COMPOSITE VIEW.
	Sample values for Banner EDW are DIMENSION TABLE, FACT TABLE, and STAR
TARGET_NAME	Table or view name.
TARGET_COLU MN_NAME	Column name in the target reporting view.
TARGET_LOCAL _IND	Indicates whether the row is a local or baseline version.
TARGET_SOURC E_COUNT	Count indicates how many sources there are for a target.
LOCAL_IND	Indicates whether the row is a local or baseline version.
ACTIVITY_USER	User who changed the meta data.
ACTIVITY_DAT E	Date the meta data was changed.

Reporting Meta Data Views

The following views exist in the meta data repository, and are owned by the user IA_ADMIN.

View	Description
WMV_SOURCE	Lists all information associated with sources and source columns.
WMV_SOURCE_ TO_TARGET_M AP	Lists all information associated with sources, targets, and source and target columns.
WMV_TARGET	Lists all information associated with targets and target columns.

Each view joins a specific combination of the data stored within the meta data tables. You can use these views to query and report the meta data information. They provide easier access to the meta data in the same way that Banner ODS reporting views provide access to the data in Banner ODS tables.

Source Meta Data View (WMV_SOURCE)

View	Description
SYSTEM_NAME	Administrative source or Banner ODS solution system name.
SYSTEM_DESC	Administrative source or Banner ODS solution system description.
SUBJECT_AREA _DESC	Advancement, Student or Human Resources, for example.
SOURCE_TYPE	Identifies whether the source is a table, view or function. Sample source types are TABLE, REPORTING VIEW and FUNCTION.
SOURCE_NAME	Source table, view or PL/SQL function name.
SOURCE_ BUSINESS_ NAME	Source descriptive name.
SOURCE_ BUSINESS_ DEFINITION	Source business purpose description.
SOURCE_COLU MN_NAME	Source column name from the source, if the source is a table or view. Function name if the source is a function.
BUSINESS_ DEFINITION	Target column description in business terms.
CALCULATION_ FORMULA	Any calculations that are applied to create the data in the target column.
SORT_ORDER	Column order in the table or view. It is determined by numbering the columns in alphabetical order.
BUSINESS_NAM E	Column name in the source.
BUSINESS_ACR ONYM	Source column acronym, if it has one.
SOURCE_FORM	Source system form name from which the data was captured.
LOCAL_IND	Indicates whether the row is a local or baseline version.

Source to Target Map Meta Data View (WMV_SOURCE_TO_TARGET_MAP)

View	Description
TARGET_SYSTE M_NAME	Solution system name.
TARGET_SYSTE M_DESC	Solution system description.
TARGET_ SUBJECT_AREA _DESC	Advancement, Student or Human Resources, for example.
PARENT_OBJEC	This column is used in Banner EDW only.
T_TYPE	In the case of Banner EDW, the parent object type is STAR.
PARENT_OBJEC	This column is used in Banner EDW only.
T_NAME	In the case of Banner EDW this identifies the star to which the target belongs.
TARGET_TYPE	Stores whether this is a Banner ODS table or view. Currently Reporting Views information is available.
	A sample value for Banner ODS is REPORTING VIEW.
	Sample values for Banner EDW are DIMENSION TABLE, FACT TABLE and STAR.
TARGET_NAME	Table or view name.
TARGET_ BUSINESS_ NAME	Target descriptive name.
TARGET_ BUSINESS_ DEFINITION	Target business purpose.
BUSINESS_DAT A_STEWARD	Person or department responsible for the data in the target.
TARGET_COLU MN_NAME	Target column name.
TARGET_COLU MN_BUSINESS_ NAME	Target column descriptive name.
TARGET_COLU MN_BUSINESS_ DEF	Target column description in business terms. This is the comment on column in the relational database data dictionary in your target system.

3-149

View	Description
DATABASE_DA TA_TYPE_LENG TH	Comes from the relational database data dictionary in Banner ODS. This is stored in the meta data tables, not just the relational database data dictionary, so that it is easily available, in one place with the rest of the meta data, for meta data users.
BUSINESS_DAT A_TYPE_LENGT H	Used when writing reports for formatting purposes. The business data type may be character, integer, float, etc. It also contains the length of the data.
	Example:
	The relational database data type and length for an internal ID may be varchar(63), but the business data type and length is eight digits. Even though the database allows for a width up to 63-characters, the column will never be more than eight.
DOMAIN_VALU ES_DESC	Description of the valid values that a column can contain. It could be a list of codes and code descriptions.
PUBLISH_IND	A flag that indicates whether to publish the column information to meta data reports so users can use the meta data for reporting purposes. It may not be published because the column contains sensitive information. The column may also contain technical information like a key that would not be used in a report.
TARGET_SORT_ ORDER	Columns physical order in the table or view from the relational database data dictionary.
TARGET_LOCAL _IND	Indicates whether the row is a local or baseline version.
SOURCE_SYSTE M_NAME	Solution system name.
SOURCE_SYSTE M_DESC	Solution system description.
SOURCE_ SUBJECT_AREA _DESC	Advancement, Student or Human Resources, for example.
SOURCE_TYPE	Identifies whether the source is a table, view or function. Sample source types are TABLE, REPORTING VIEW and FUNCTION.
SOURCE_NAME	Source table, view or function name.

View	Description
SOURCE_BUSIN ESS_NAME	Source descriptive name.
SOURCE_BUSIN ESS_DEFINITIO N	Business purpose of the source.
SOURCE_COLU MN_NAME	Source column name from the source, if the source is a table or view. Function name if the source is a function.
SOURCE_COLU MN_BUSINESS_ NAME	Column in the source descriptive name.
SOURCE_COLU MN_BUSINESS_ DEF	Source column described in business terms.
BUSINESS_ ACRONYM	Source column acronym, if it has one.
CALCULATION_ FORMULA	Any calculations that are applied to create the data in the target column.
SOURCE_SORT_ ORDER	Column order in the table or view. It is determined by numbering the columns in alphabetic order.
SOURCE_FORM	Source system form name from which the data was captured.
SOURCE_LOCAL _IND	Indicates whether the row is a local or baseline version.

Target Meta Data View (WMV_ TARGET)

View	Description
SYSTEM_NAME	Administrative source or Banner ODS solution system name.
SYSTEM_DESC	Administrative source or Banner ODS solution system description.
SUBJECT_AREA _DESC	Advancement, Student or Human Resources, for example.
PARENT_OBJEC	This column is used in Banner EDW only.
T_TYPE	In the case of Banner EDW, the parent object type is STAR.

View	Description
PARENT_OBJEC T_NAME	This column is used in Banner EDW only.
	In the case of Banner EDW this identifies the star to which the target belongs.
TARGET_TYPE	Stores whether this is a Banner ODS table or view. Currently, Reporting and Composite View information is available.
	Sample values for Banner ODS are REPORTING VIEW and COMPOSITE VIEW.
	Sample values for Banner EDW are DIMENSION TABLE, FACT TABLE, and STAR.
TARGET_NAME	Table or view name.
TARGET_ BUSINESS_ NAME	Target descriptive name.
TARGET_ BUSINESS_ DEFINITION	Target business purpose.
BUSINESS_ DATA_ STEWARD	Person or department responsible for the data in the target.
TARGET_ COLUMN_ NAME	Column name in the target.
BUSINESS_NAM E	Descriptive name for the column in the target.
BUSINESS_ DEFINITION	Target column in business terms. This is the comment on column in the relational database data dictionary in your target system.
DATABASE_DA TA_TYPE_LENG TH	Comes from the relational database data dictionary in Banner ODS. This is stored in the meta data tables, not just the relational database data dictionary, so that it is easily available in one place with the rest of the meta data, for meta data users.

View	Description
BUSINESS_DAT A_TYPE_LENGT H	Used when writing reports for formatting purposes. The business data type may be character, integer, float, etc. It also contains the length of the data.
	Example:
	The relational database data type and length for an internal ID may be varchar(63), but the business data type and length is 8-digits. Even though the database allows for a width up to 63 characters, the column can never be more than 8.
DOMAIN_VALU ES_DESC	Description of the valid values that a column can contain. It could be a list of codes and code descriptions.
PUBLISH_IND	Indicates whether to publish the column information to meta data reports so users can use the meta data for reporting purposes. It may not be published because the column contains sensitive information. The column may also contain technical information like a key that would not be used in a report.
SORT_ORDER	Columns physical order in the table or view from the relational database data dictionary.
LOCAL_IND	Indicates whether the row is a local or baseline version.

Web Tailor Administration

The Enterprise Administrative application uses SunGard Higher Education's Web Tailor application to build its look and feel. Web Tailor delivers customizable global Web rule definitions and procedures, customizable menus, menu items, graphics and text definitions.

From the Administrative Tool, use the Web Tailor Administration menu item to access the Web Tailor options. The tasks under this menu item allow you to customize various aspects of the Administrative Tool. Other sections of this chapter include references to the various Web Tailor options that you may want to customize. To learn more about Web Tailor, refer to the "*Web Tailor User Guide*."

Functions

.

Web Tailor lets you build the look, feel, and unique personality of all your institution's web applications, so you can personalize your institution's interface to the world. Web

3-153

Tailor delivers customizable global web rule definitions and procedures, customizable menus, menu items, graphics and text definitions.

The Web Tailor functions are available from the Web Tailor Menu, except for Change Security Question and Change your PIN, which are found on the Personal Information menu. A list of the remaining functions appears below:

- Web Menus and Procedures
- Menu Items
- Information Text
- User Roles
- Web Rules
- Web Modules
- Global User Interface Settings
- Web Tailor Parameters
- Graphic Elements
- Login Return Location
- Web Tailor Overrides
- LDAP Administration

A brief description of each function appears below:

Web Menus and Procedures

This function allows you to define the menus that will appear on your institution's web pages for the different self-service applications, and specify the procedures behind them.

Menu Items

This function allows you to define the items that will appear on the menus on your institution's web pages.

Information Text

This function allows you to add or customize Information Text (Info Text). Info Text can be:

- Instructions on how to use a page
- Help for the page
- Error messages

User Roles

This function allows you to change the role or roles to which a person has been assigned.

Web Rules

This function allows you to define certain rules for your institution's web pages. For example, you can identify the number of minutes a person can be inactive before they are timed out, or specify the format for the date and time information that appears on your pages.

Web Modules

This function allows you to modify a specific self-service application, such as Accounts Receivable, Student Self-Service, Web Tailor Administration, etc.

Global User Interface Settings

This function allows you to set up rules that will apply to your institution's web pages as a whole. You can specify:

- Header information
- The location URL of CSS that control the pages' look-and-feel
- The location URL of CSS that control the look-and-feel of your Help text
- The location URL of where your Help text files are stored

칠 Note

SunGard Higher Education recommends that you use Info Text as your Help text.

- Images that represent errors and warnings
- An image that indicates that a field is required

Web Tailor Parameters

This function allows you to customize parameters used in Web Tailor processing, such as the maximum length of PINs. You must exercise great care when modifying these parameters.

Graphic Elements

This function allows you to specify the images that will be available to be used on your web pages. For each image, you can specify its name, the directory where it is located, its height and width, etc.

Login Return Location

Use this function to specify the page you would like to be displayed when a user is timed out, then logs back in.

Web Tailor Overrides

This page allows you to replace certain procedures and functions with your own under certain circumstances. This is necessary because you may have a stand-alone product you would like to use with the self-service products, and you need to use some of the procedures and functions in the other system. If an override is defined, that code will be run instead of the Web Tailor code.

LDAP Administration

This function allows you to override the settings on the Enterprise PIN Preferences Form (GUAPPRF) in Banner General and use an LDAP server to authenticate user logons instead of the Web Tailor logic.

Changing the Security Question

This function allows your end users to change the security question and answer that they can use to access their account if they forget their user ID and PIN.

Changing a PIN

This function enables users to update their PINs.



A typical data model indicates what information is in a database, how the information can be used, and how the items in the database relate to each other.

Banner Operational Data Store (Banner ODS) is comprised of over 300 reporting views containing data across seven subject areas applicable to higher education; Accounts Receivable, Advancement, Common, Finance, Financial Aid, Human Resources and Student.

Because of the size and scope of the Banner ODS data model, reporting views are grouped into logical "business concepts" to better illustrate the various business uses or reporting opportunities within the Banner ODS. These data models depict the reporting views contained in each business concept and how the reporting views, and the data within these reporting views, is related to each other.

The data models (Entity Relationship Diagrams or ERDs) in this chapter incorporate most of the reporting views available in the Banner ODS, and illustrate business concepts within and across all Banner ODS subject areas. However, this is not an inclusive representation as additional business concepts could be conceived and supported by the Banner ODS. There may also be alternative associations between the reporting views within any given data model depending on the type of report you are running.

Entity Relationship Diagrams (ERD)

The most widely used method for representing a data model is the Entity Relationship Diagram (ERD). This chapter uses ERDs to represent the logical relationships between the reporting views within a given Banner ODS business concept. Each ERD represents a business concept. The entities within each ERD correspond to the reporting views associated with that business concept. They don't include all the columns in the reporting views. They only display the primary key columns.

The following legend explains the relationships used in the business concept ERDs.

ERD Relationship Legend

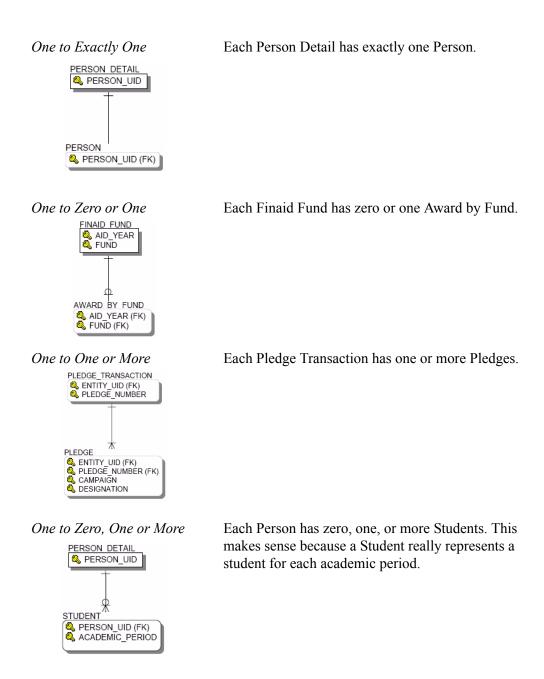
The legend contains three categories:

- Identifying Relationships
- Optional Non-Identifying Relationships
- Special Relationships

An example and description of each category is displayed below:

Identifying Relationships

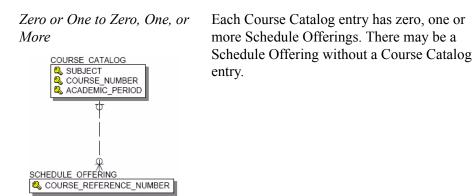
Most relationships in the business concept ERDs are identifying relationships. Identifying relationships are represented by a solid line. An identifying relationship is a relationship between two entities in which an instance of a child entity is identified through its association with a parent entity, which means the child entity is dependent on the parent entity for its identity and cannot exist without it. The primary key attributes migrate from a parent entity to a child entity, so the primary key of the child has attributes from the parent entity primary key in it. These are called foreign keys, and they are marked with the characters (FK) beside them.



April 2009

Optional Non-Identifying Relationship

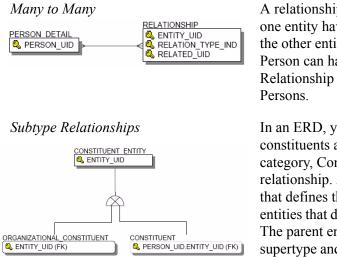
Non-identifying relationships are represented by a dashed line. A non-identifying relationship is a relationship between two entities in which an instance of the child entity is not identified through its association with a parent entity. This means the child entity is not dependent on the parent entity for its identity and can exist without it. In an optional non-identifying relationship, the attributes that are migrated into the non-key area of the child entity are not required in the child entity. Therefore, nulls are allowed in the foreign key.



Special Relationships

Special relationships are logical relationships that don't use foreign keys.

4-4



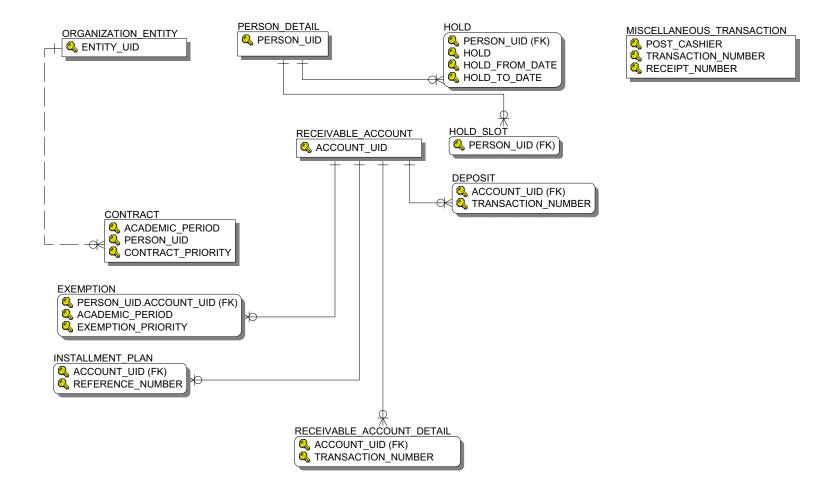
A relationship between two entities where instances in one entity have zero, one, or more related instances in the other entity. In the example ERD relationship, each Person can have many Relationships, and each Relationship can be related to many (actually two) Persons.

In an ERD, you can show that organizational constituents and constituents are part of a larger category, Constituent Entity, by creating a subtype relationship. A subtype relationship connects an entity that defines the category and two or more additional entities that define each of the elements of the category. The parent entity of the category is considered the supertype and each child entity is considered a subtype.

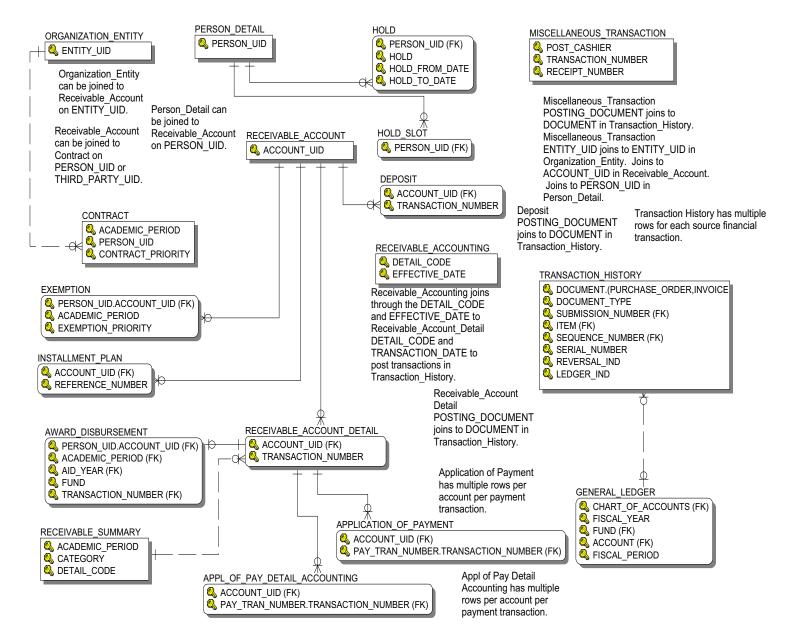
4-5

Accounts Receivable

Receivable Customer

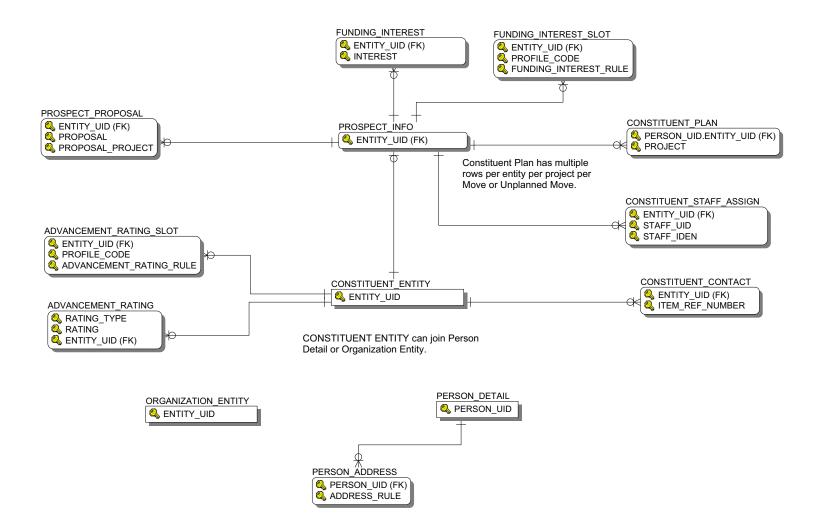


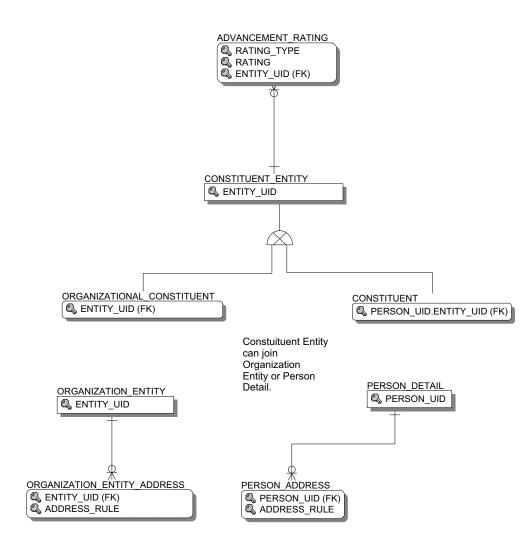
Receivable Revenue



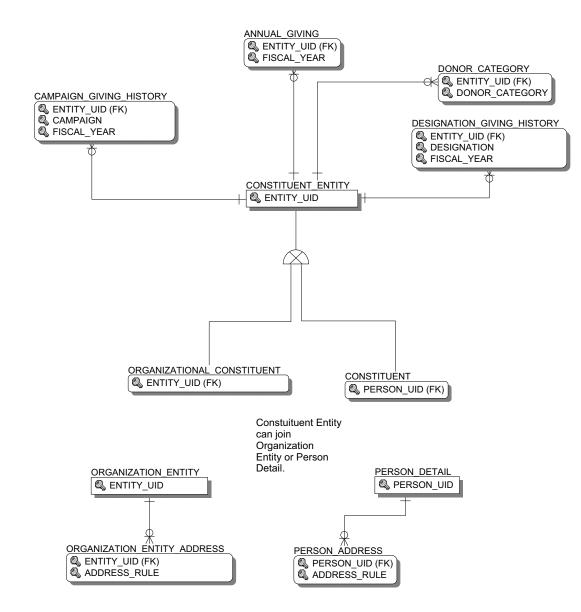
Advancement

Advancement Prospect

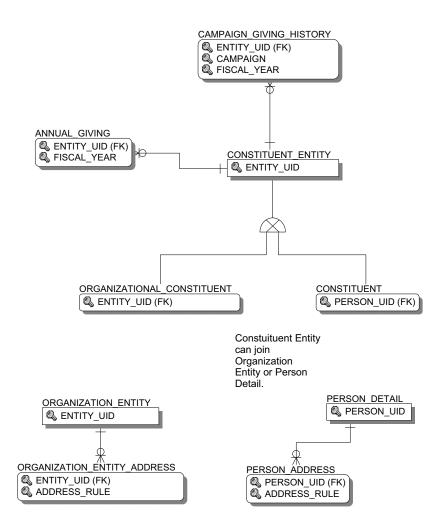




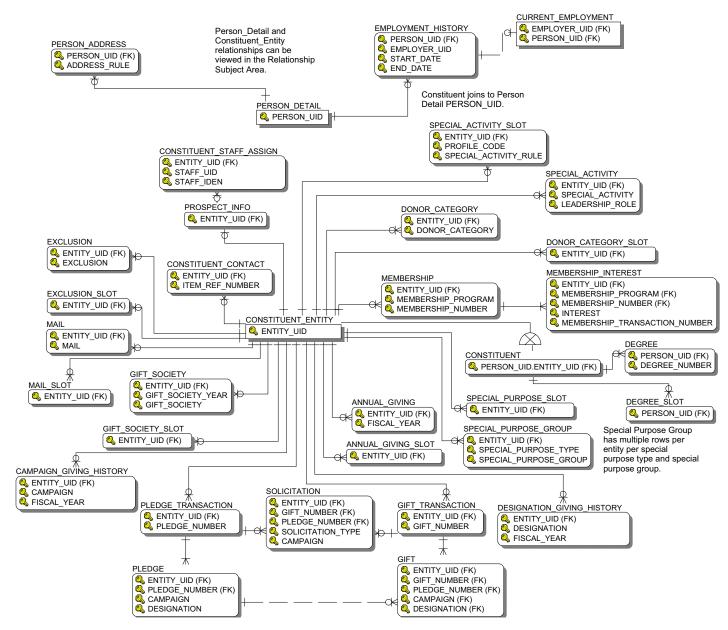
Annual Giving



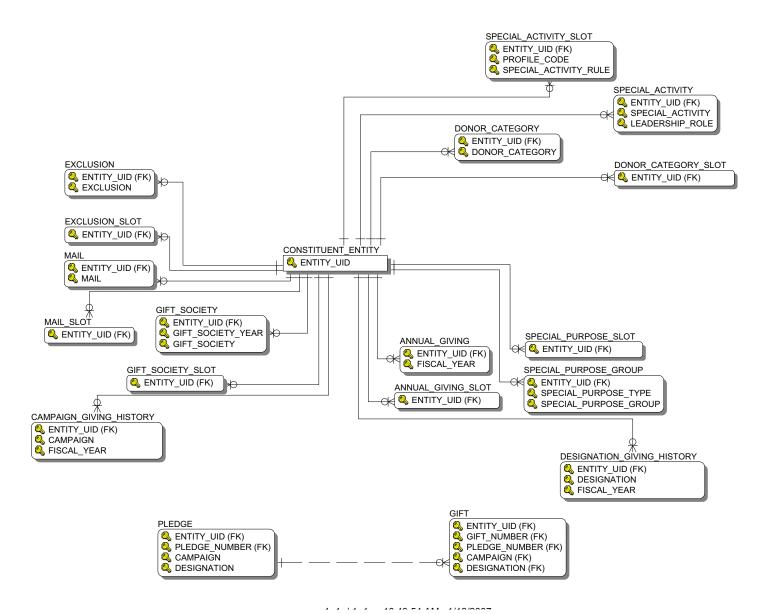
Campaign Giving History



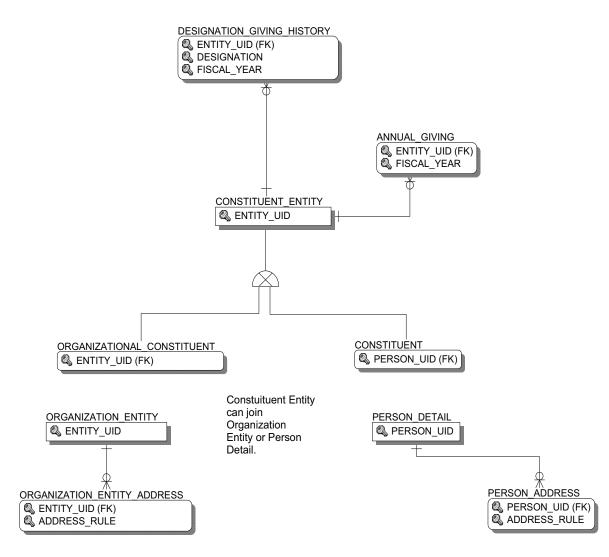
Constituent



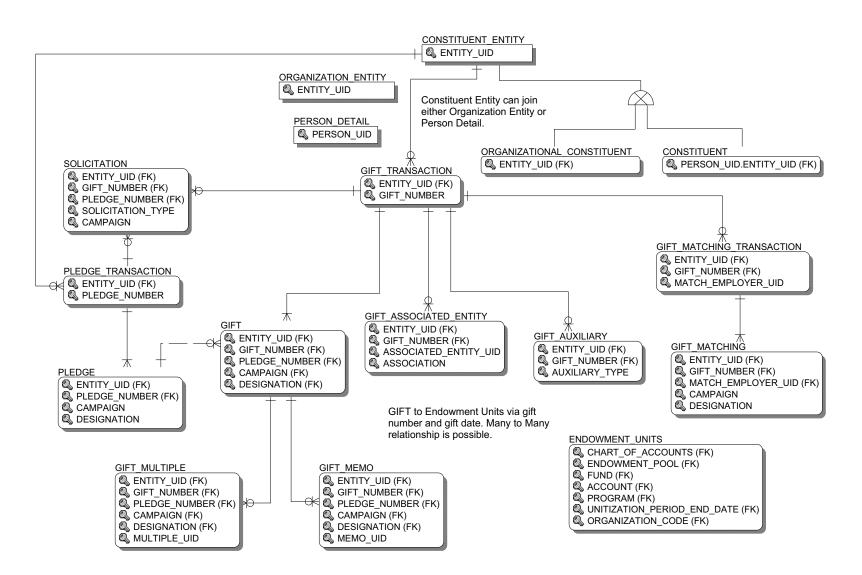
Constituent Entity



Designation Giving History



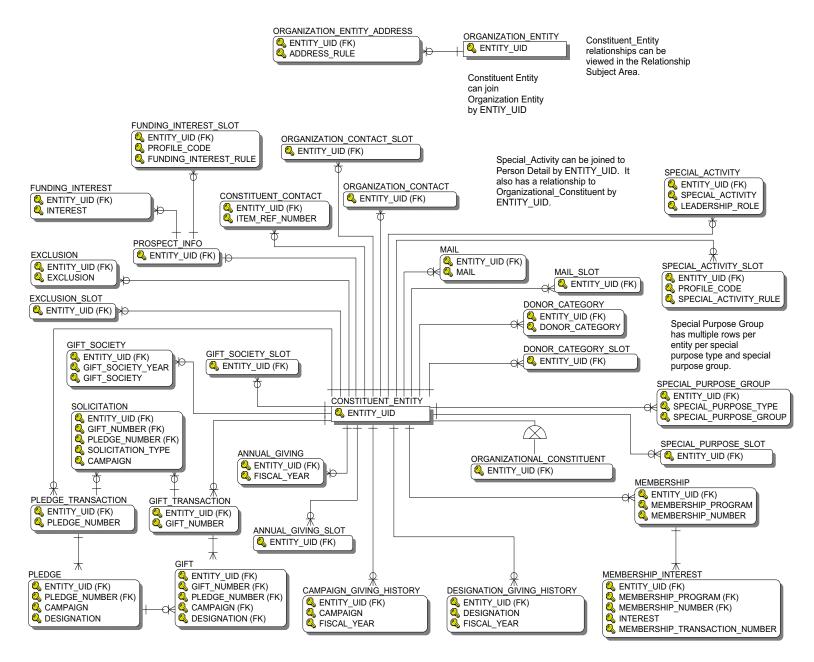
Gift



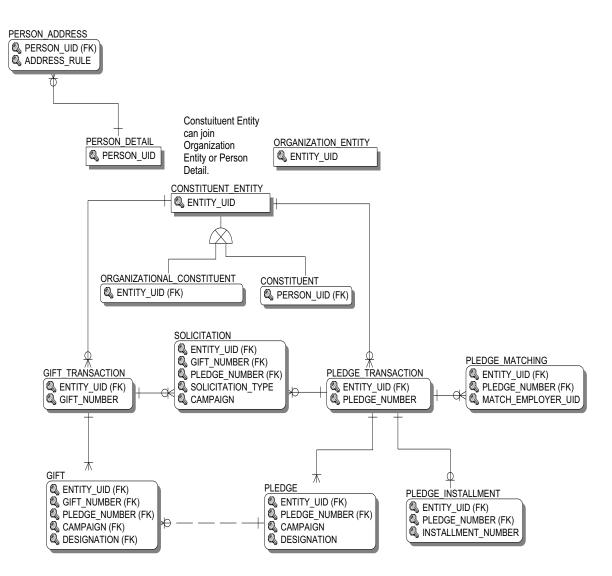
. . . .

- -- -- --- ------

Organizational Constituent

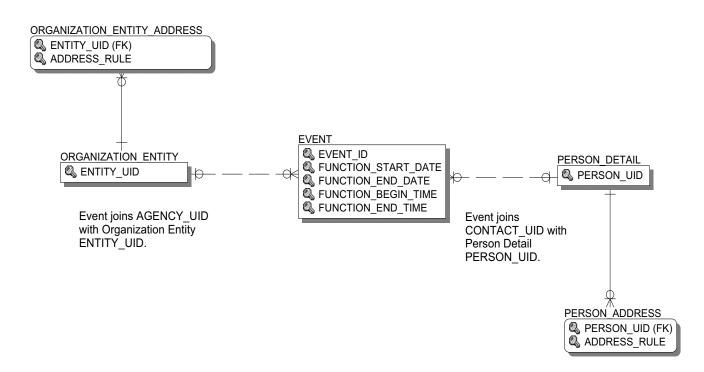


Pledge

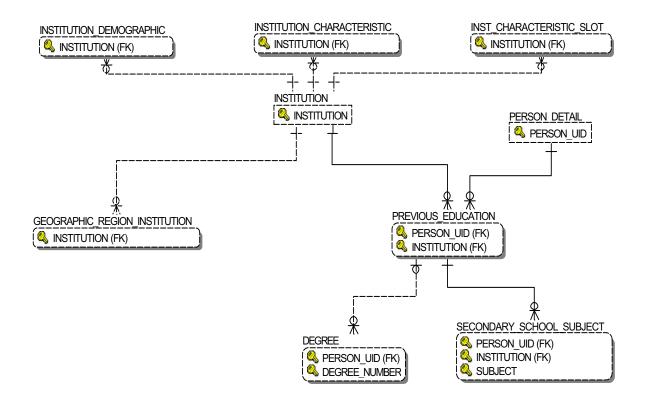


Common

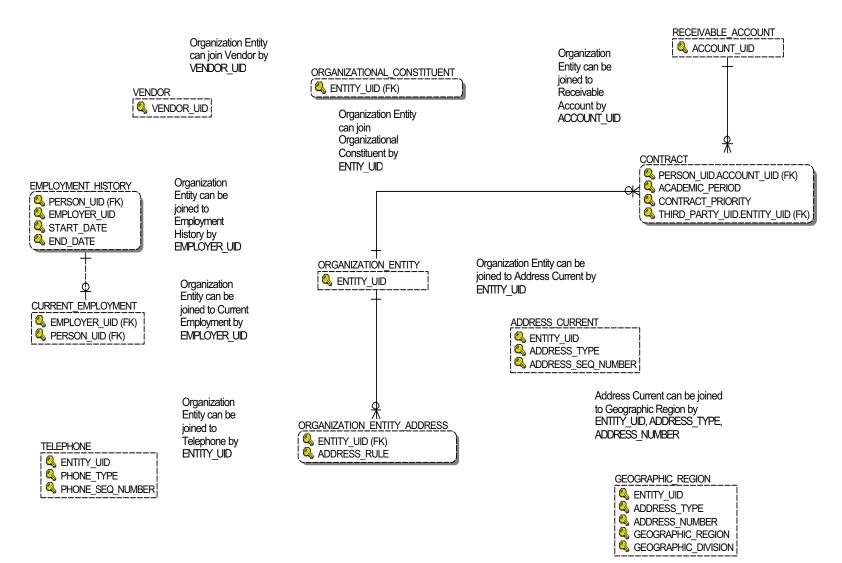
Event



Institution



Organization Entity

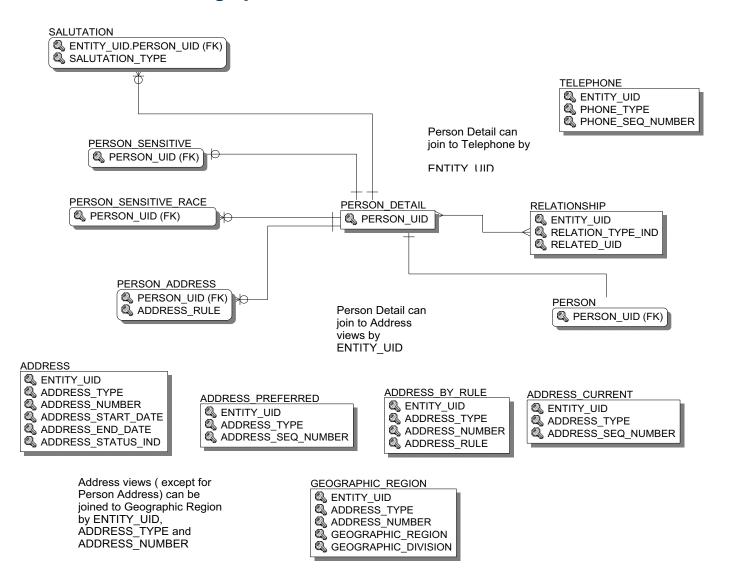


Banner Operational Data Store 8.1 Handbook Data Models

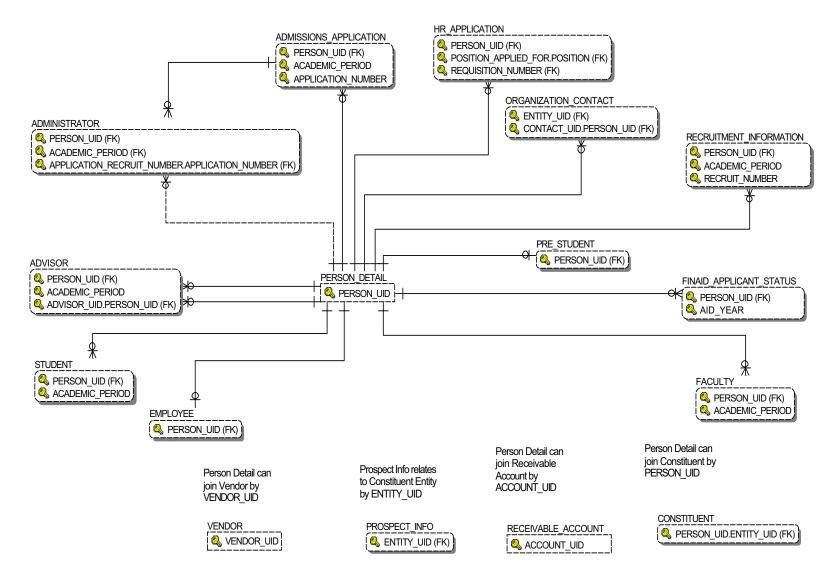
4-20

April 2009

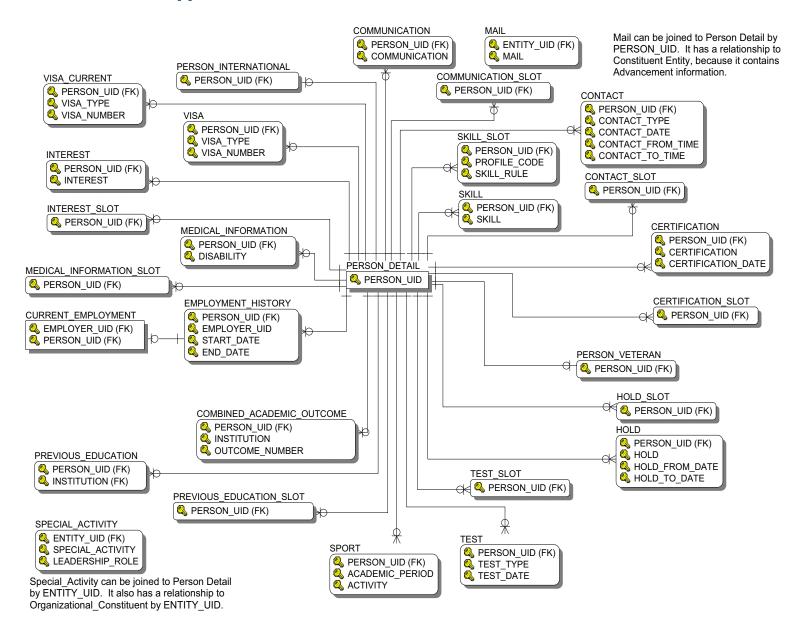
Person Demographic



Person Role

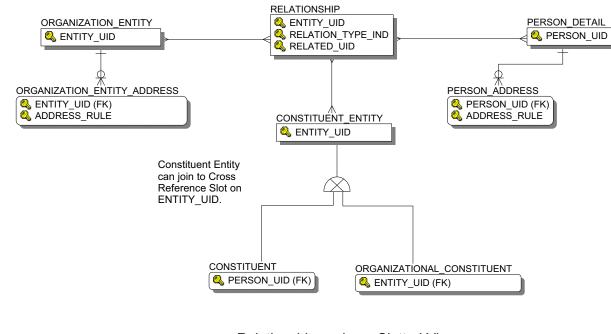


Person Supplemental



Relationship

Relationships using a Relationship Type



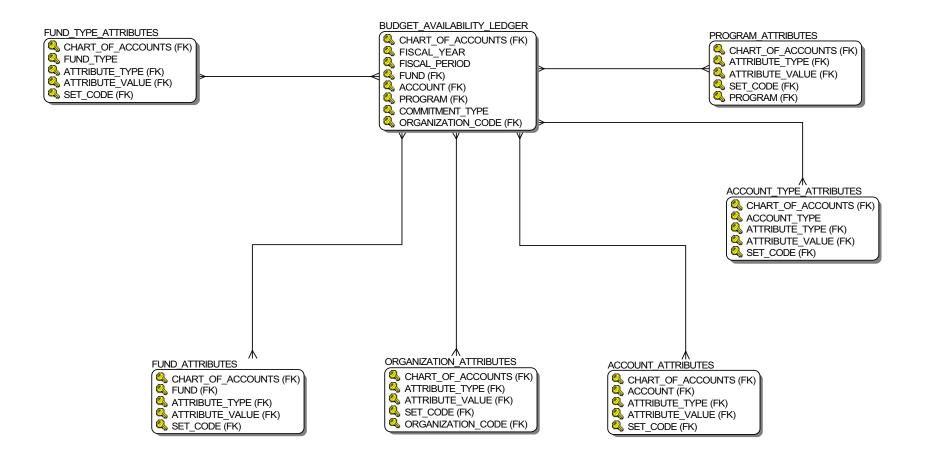
Relationships using a Slotted View

Organization	CROSS_REFERENCE_SLOT
Entity can join to Cross Reference Slot on	CTITY_UID CTOFILE_CODE CROSS_REFERENCE_RULE

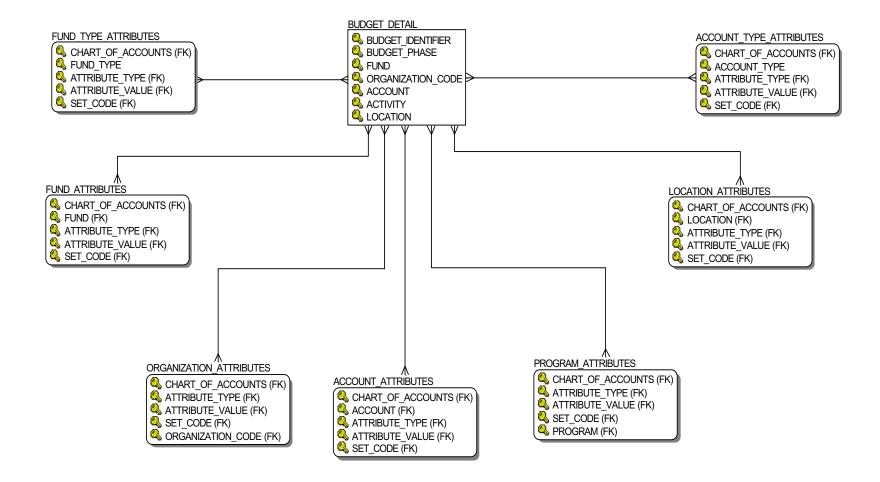
Person Detail can join to Cross Reference Slot on PERSON_UID.

Finance

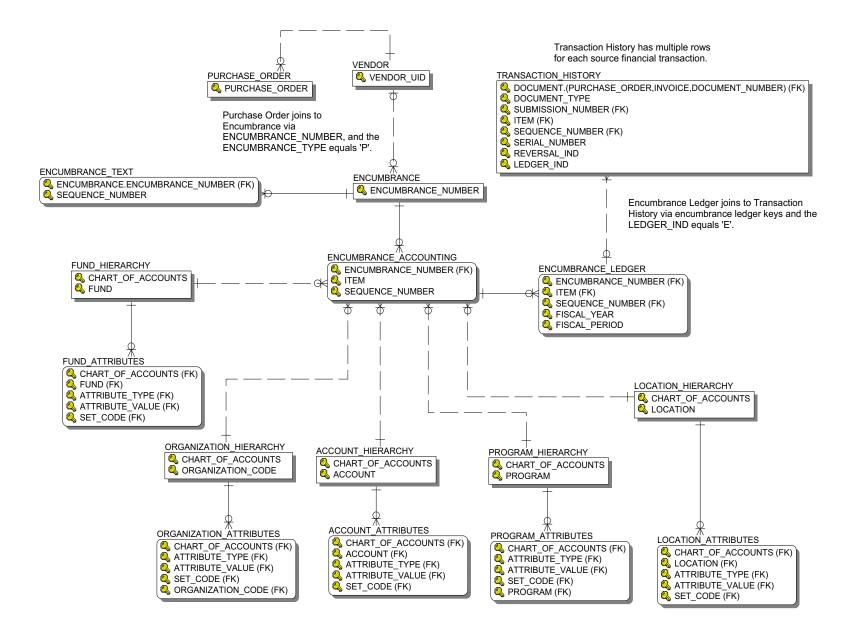
Budget Availability Ledger



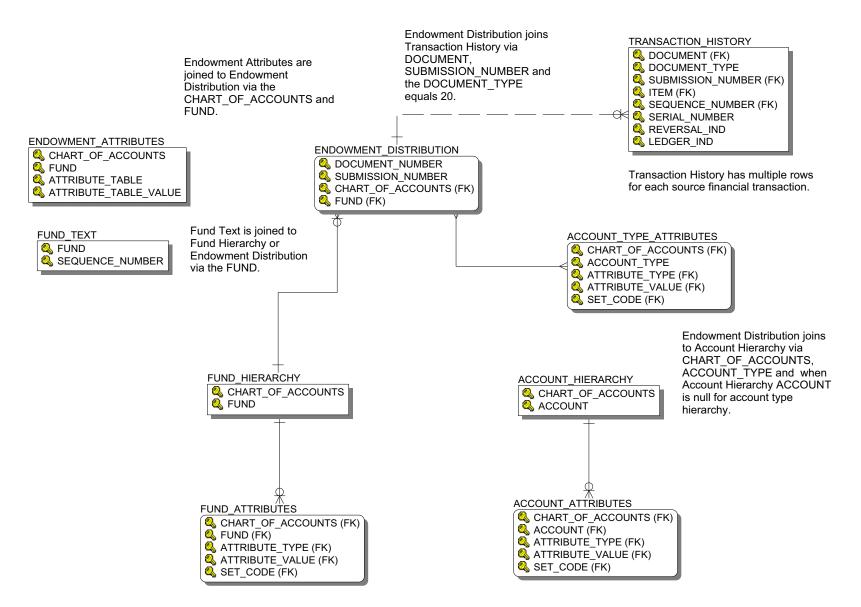
Budget Detail



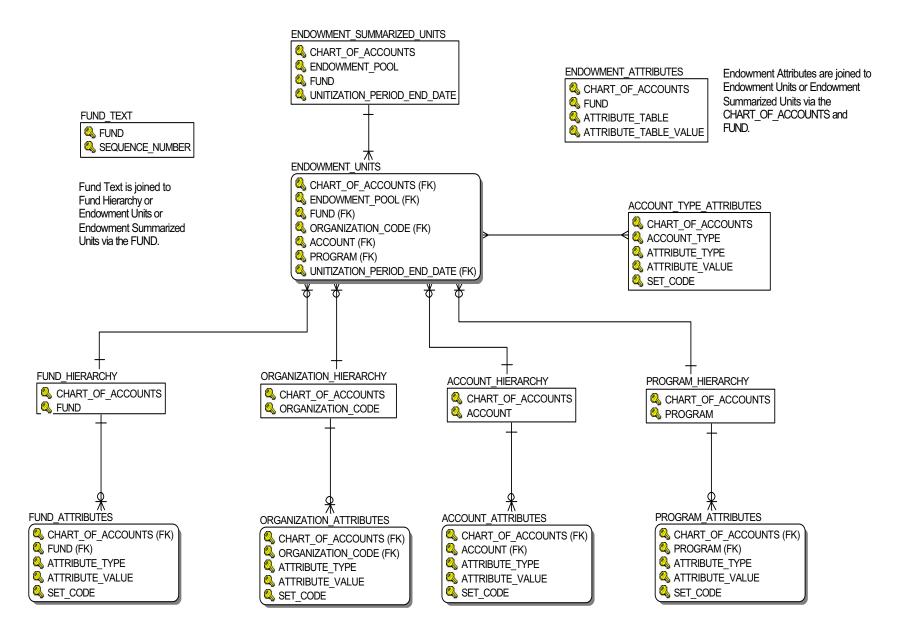
Encumbrance



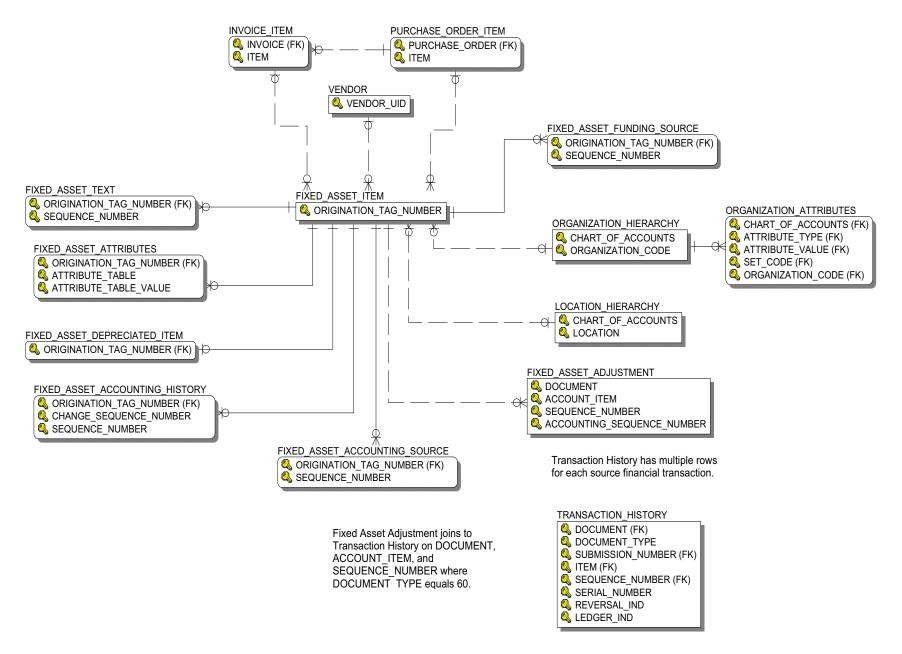
Endowment Distribution



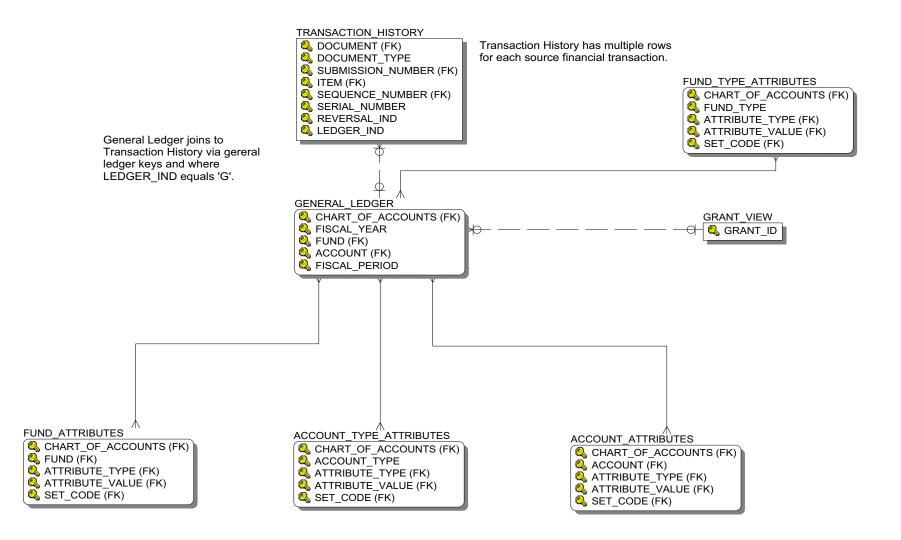
Endowment Units



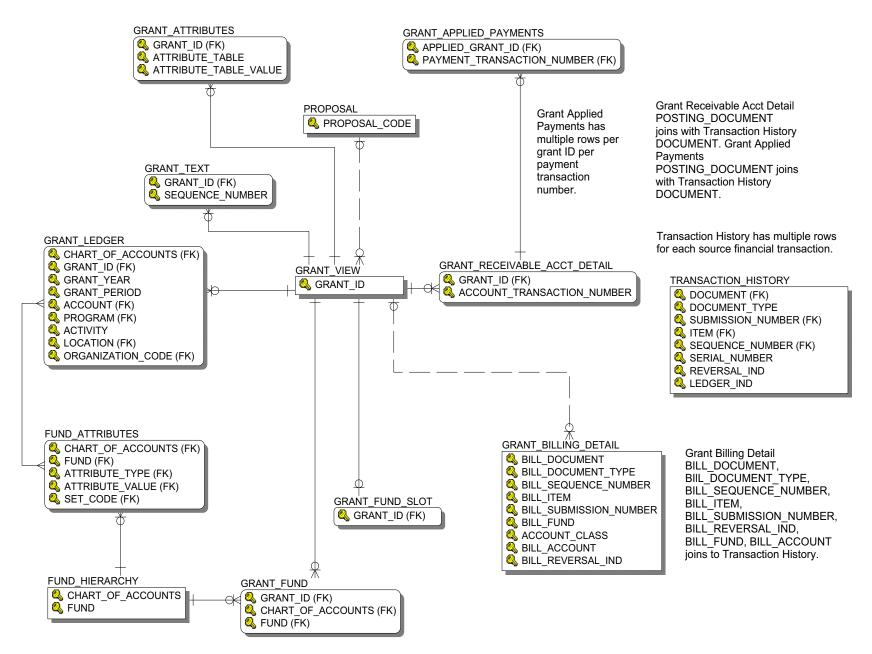
Fixed Asset



General Ledger

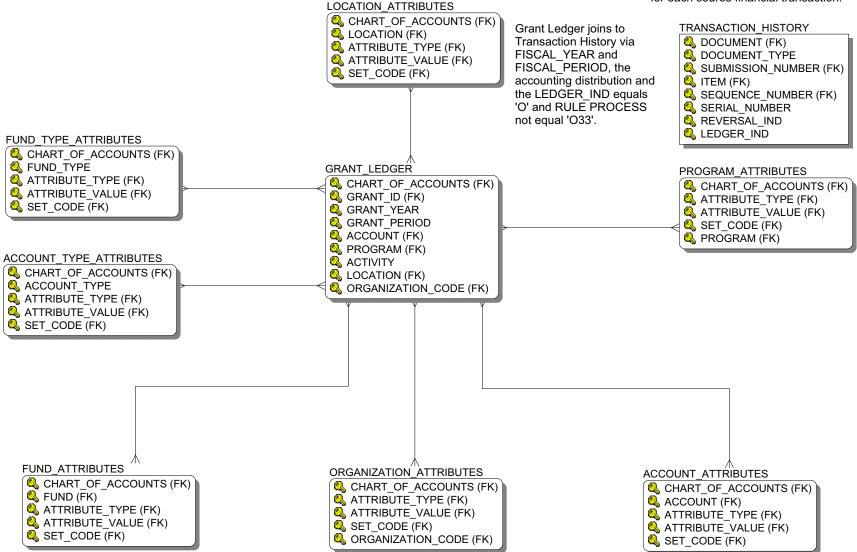


Grant and Project

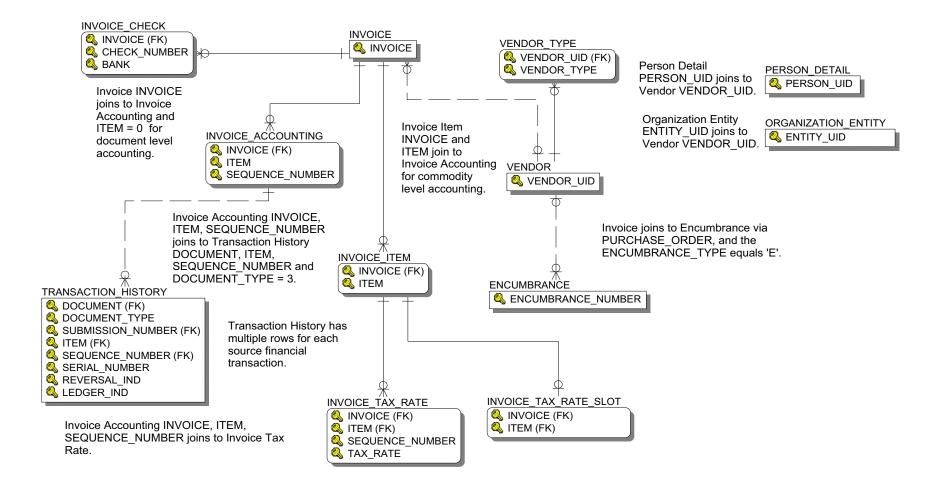


Grant Ledger

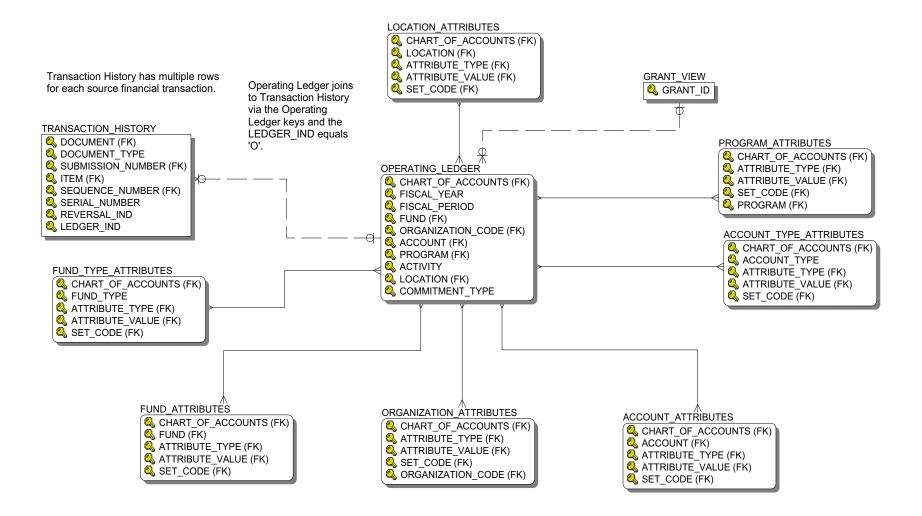
Transaction History has multiple rows for each source financial transaction.



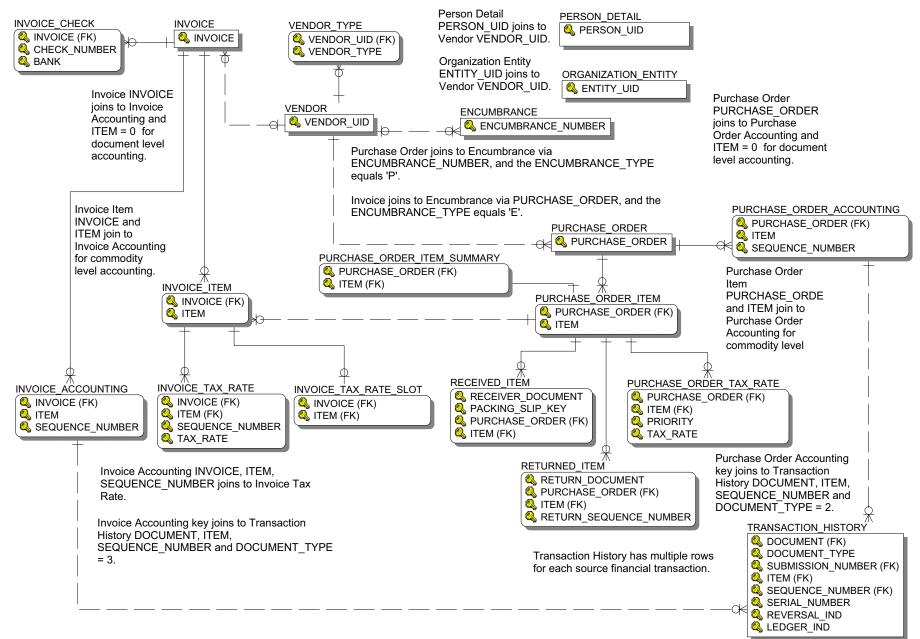
Invoice Payable



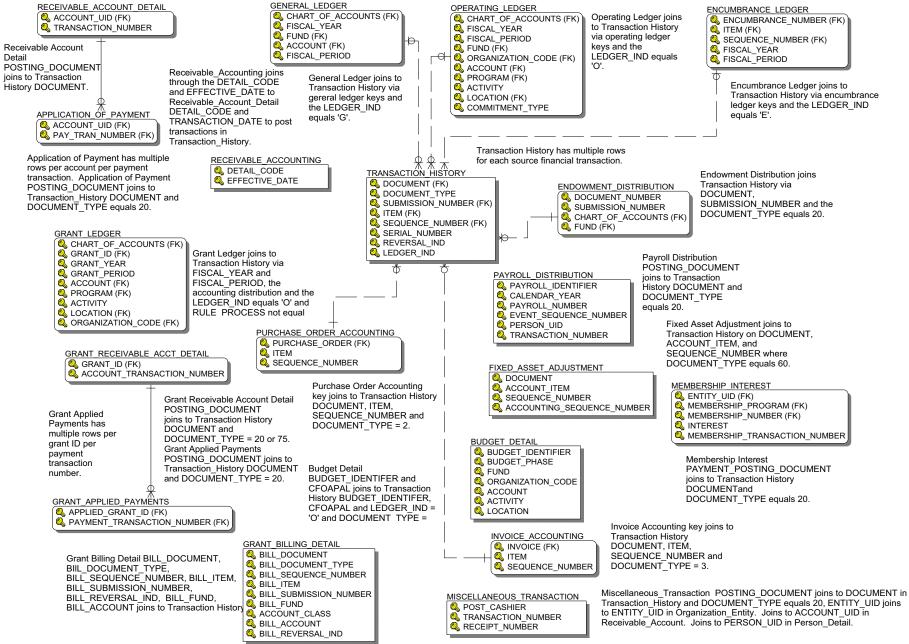
Operating Ledger



Purchasing Payable

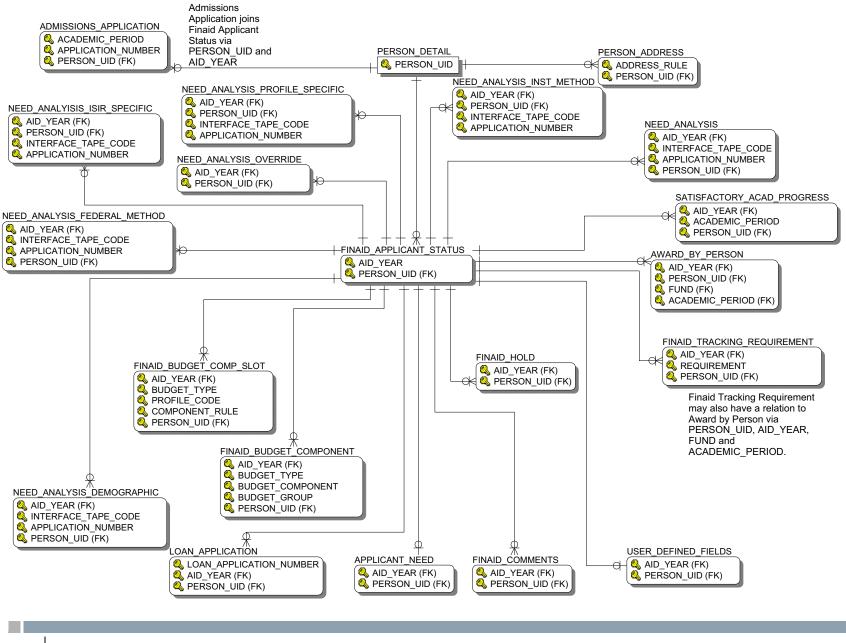


Transaction History

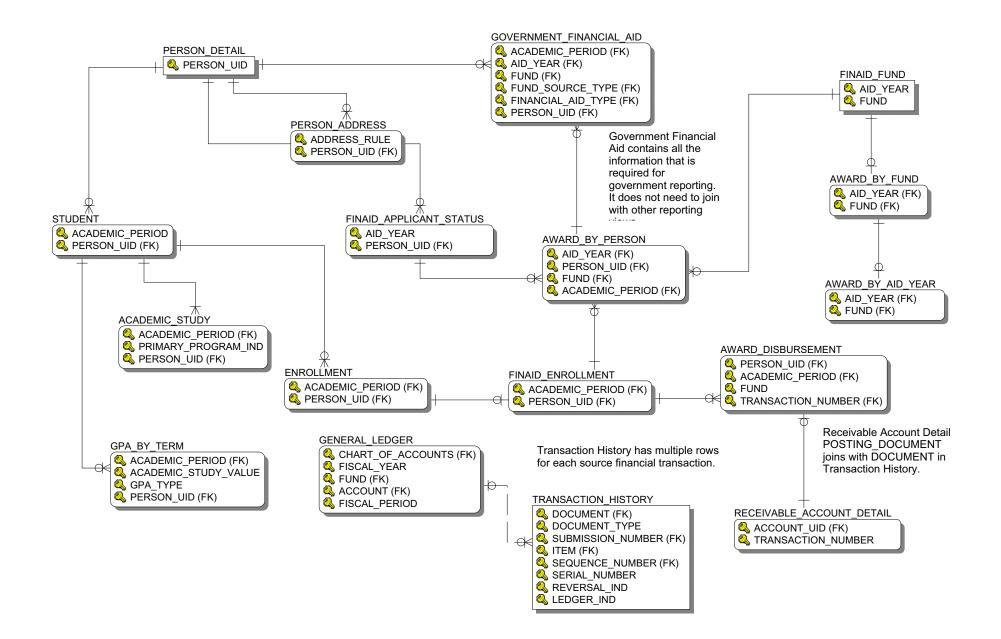


Financial Aid

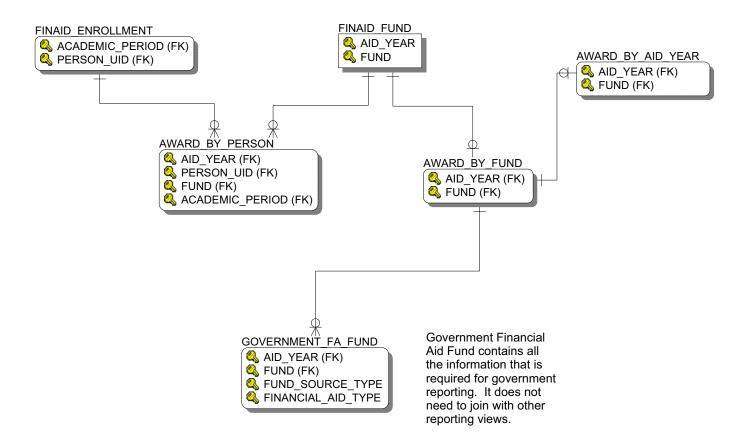
Financial Aid Application



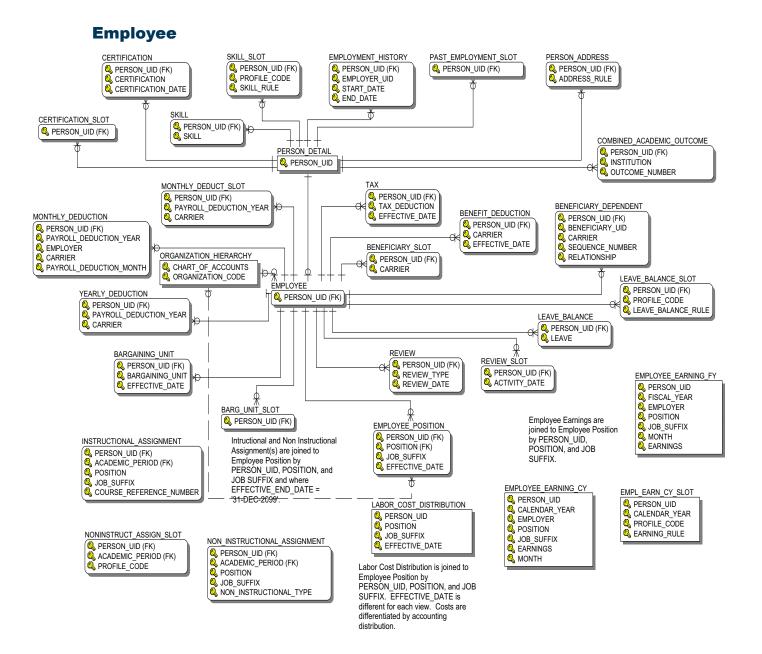
Financial Aid Award and Disbursement



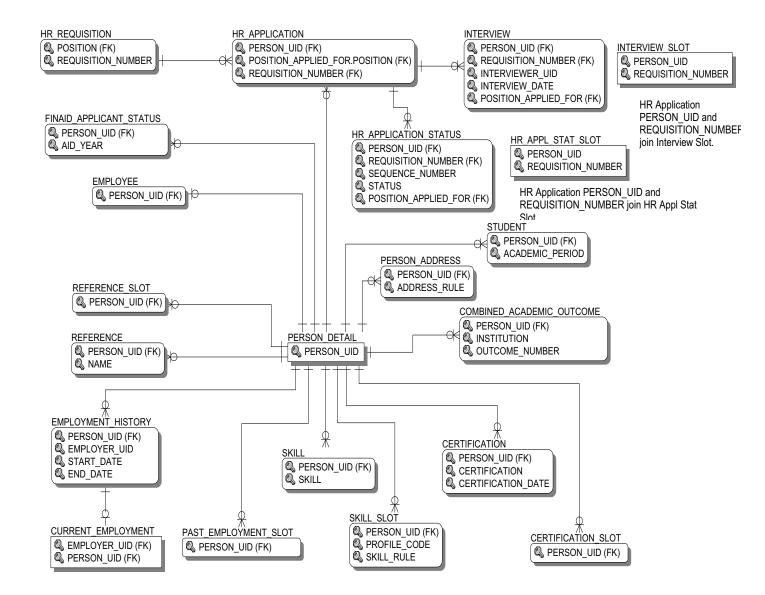
Financial Aid Fund



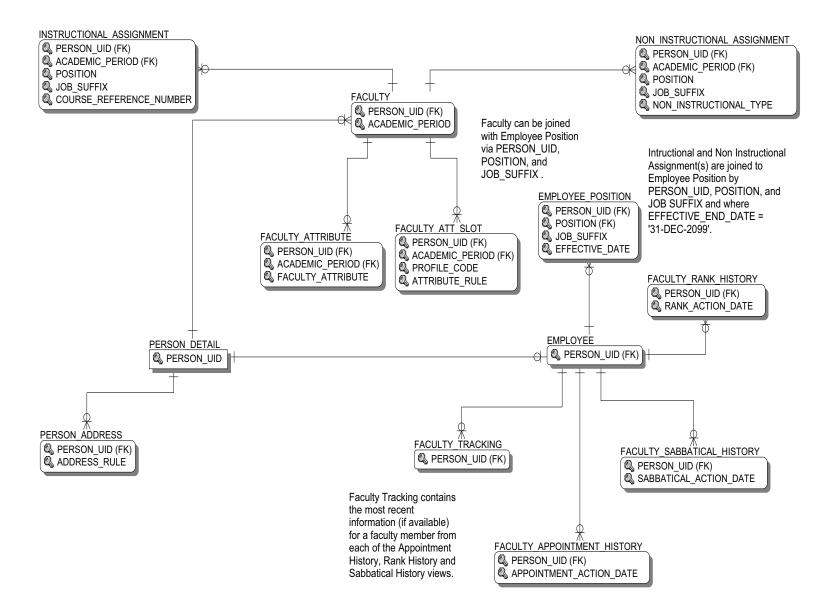
Human Resources



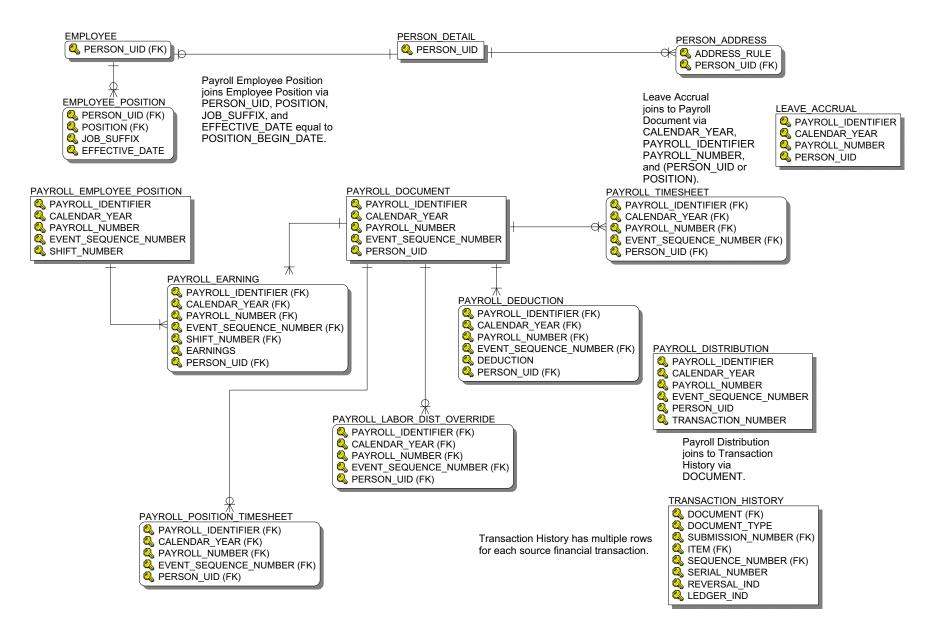
Human Resource Application



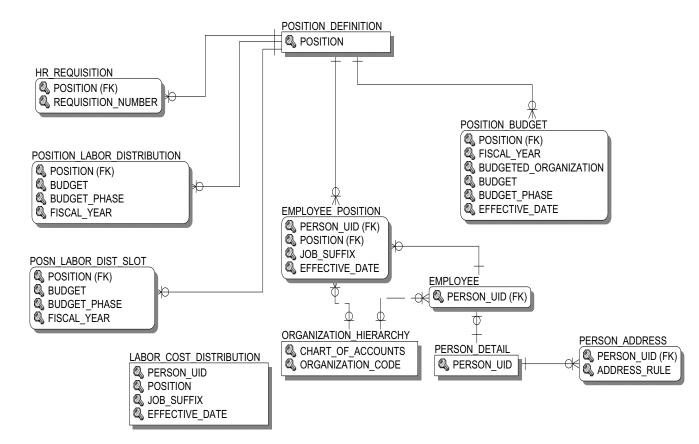
Human Resource Faculty



Payroll



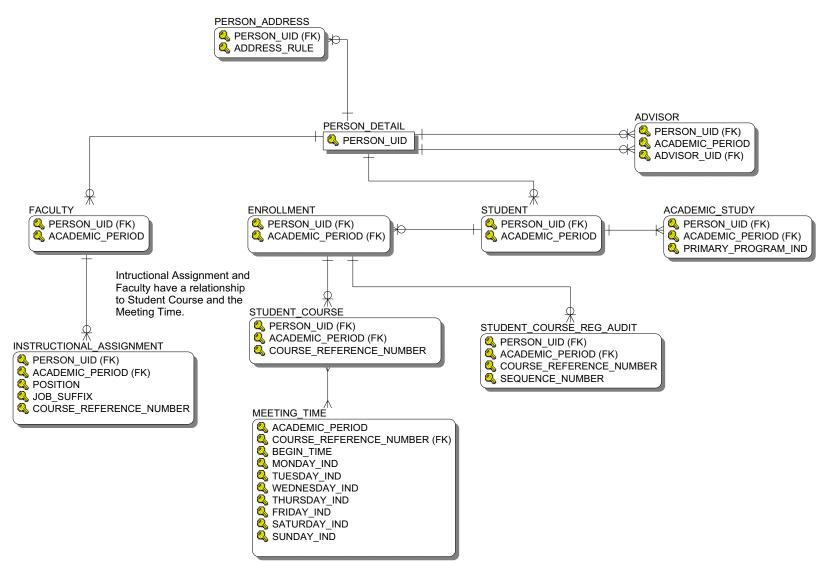
Position



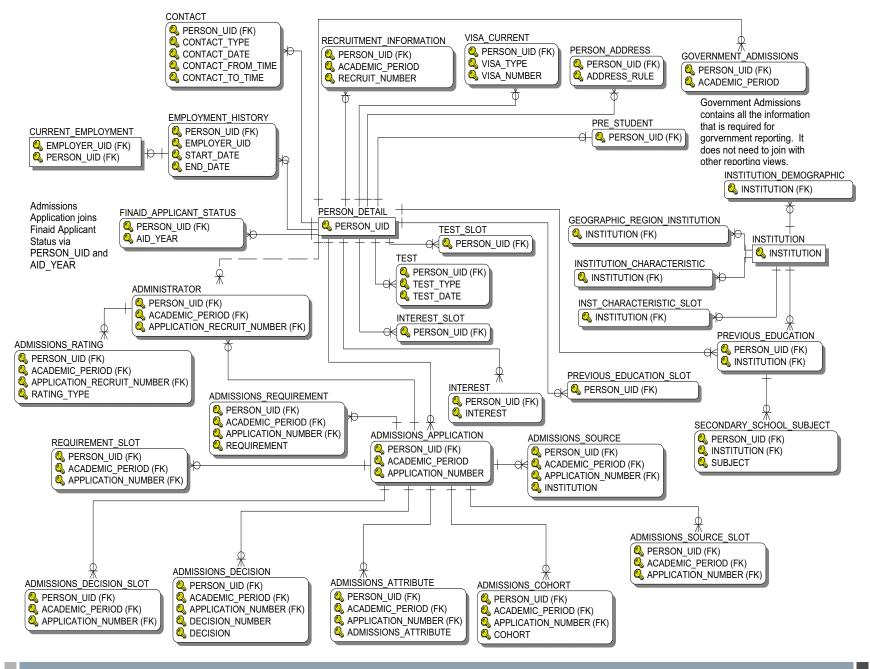
Labor Cost Distribution is joined to Employee Position by PERSON_UID, POSITION, and JOB SUFFIX. EFFECTIVE_DATE is different for each view. Costs are differentiated by accounting distribution.

Student

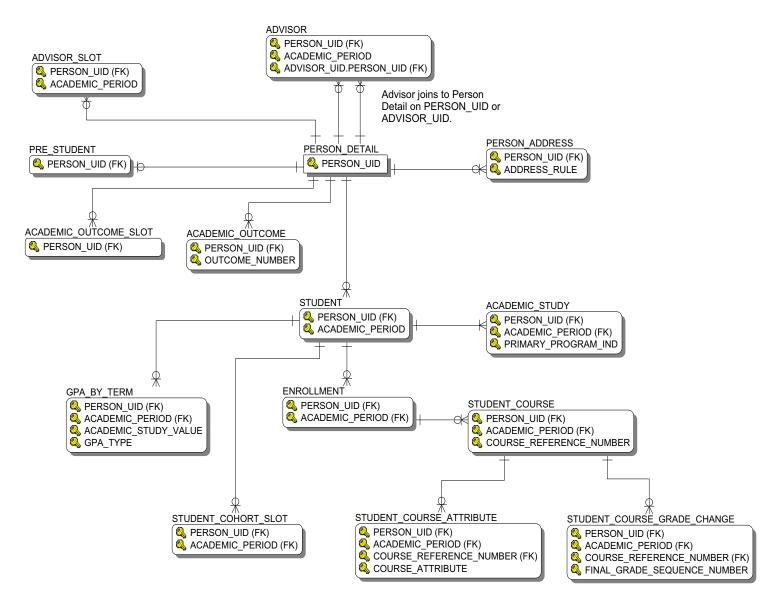
Active Registration



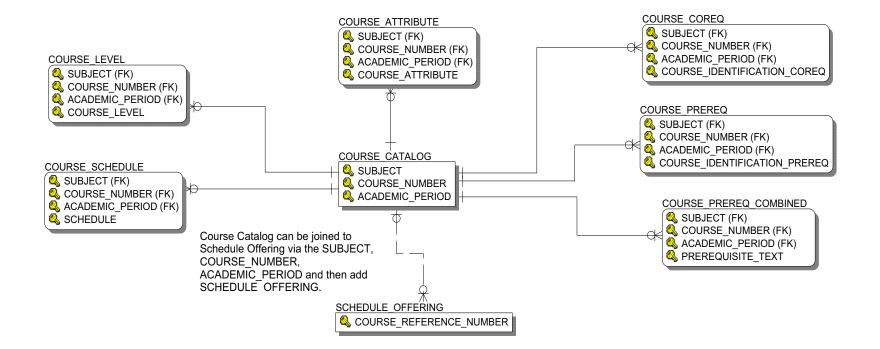
Admissions Application



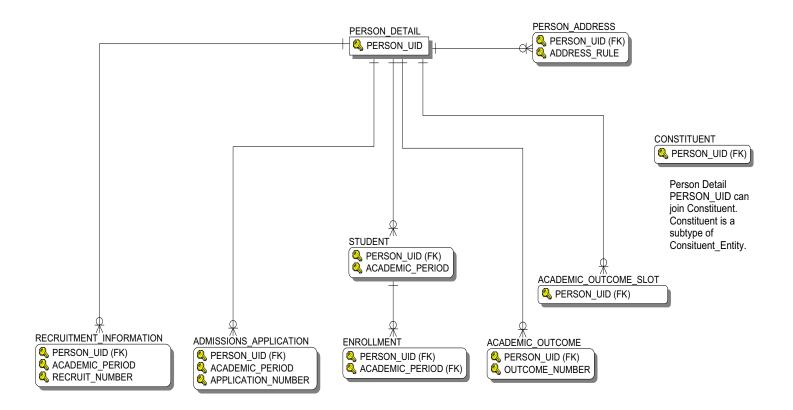
Advisor Student List



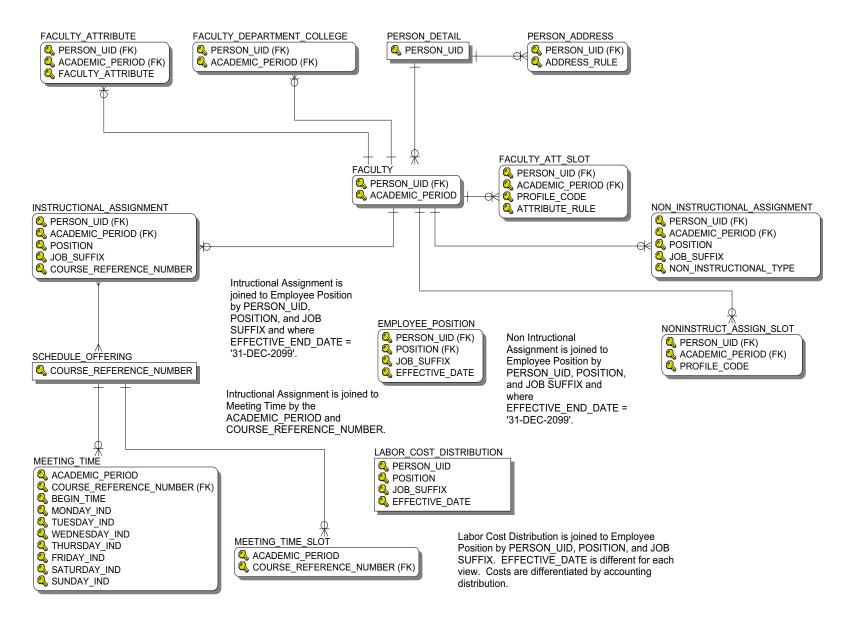
Course Catalog



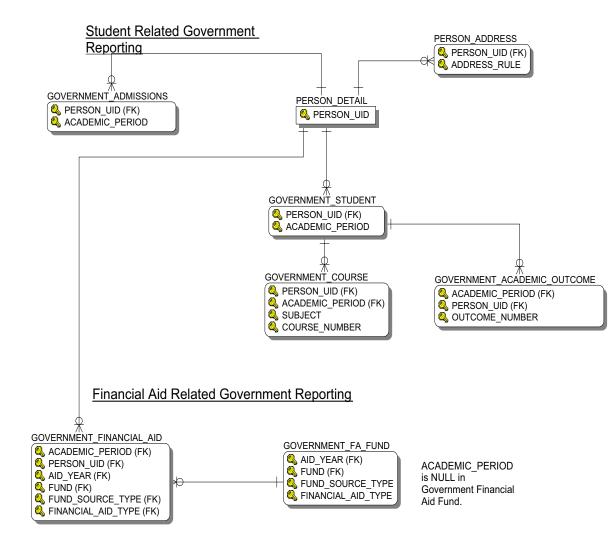
Enrollment Management



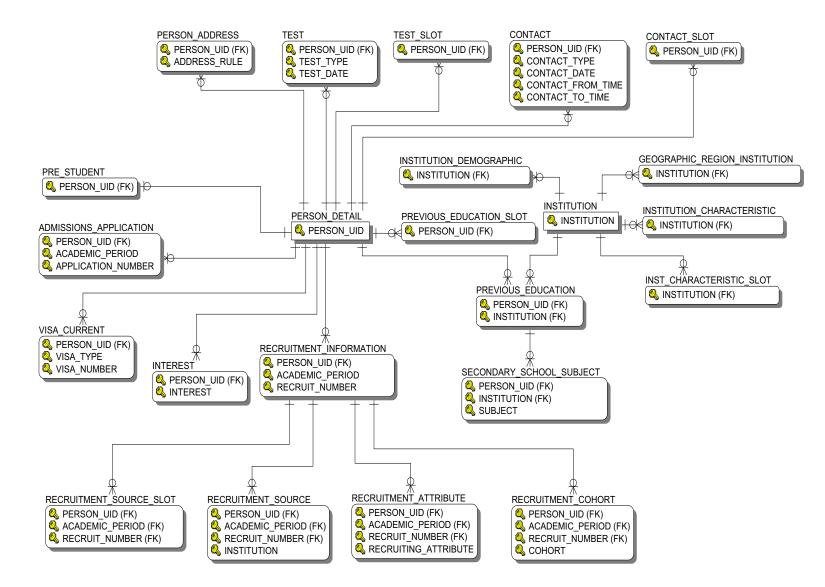
Faculty Assignment



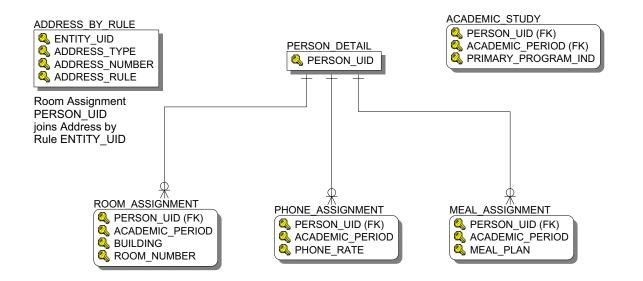
Government Reporting



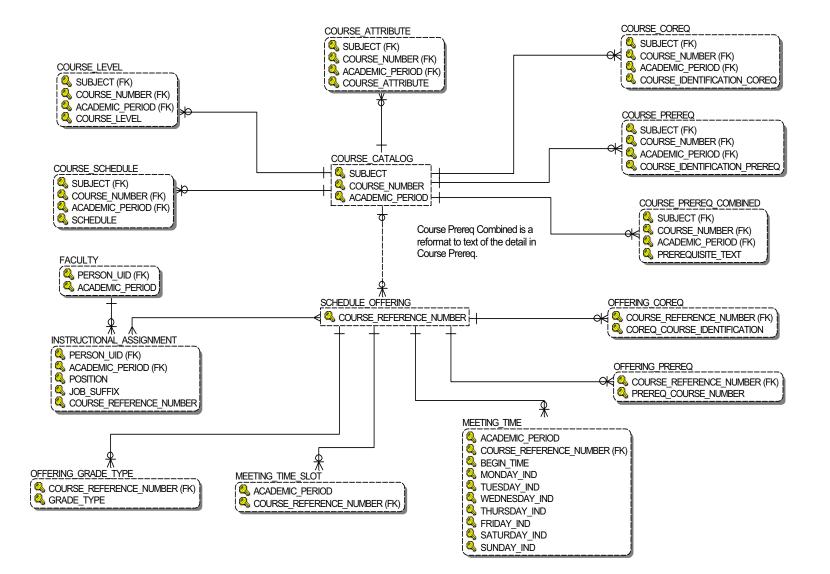
Recruitment Information



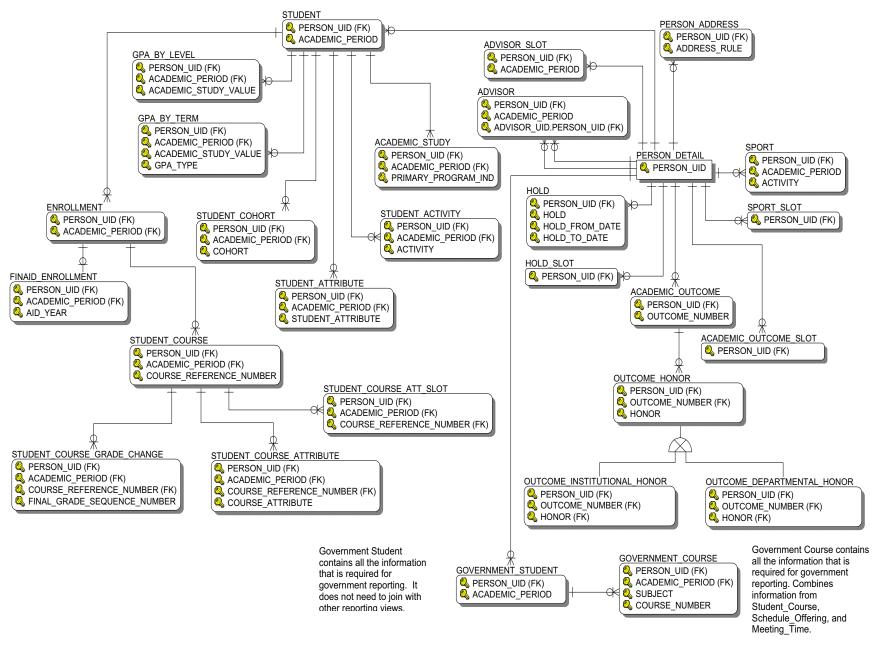
Residential Life



Schedule Offering



Student Detail



Data from your source system database (for example, Student, Human Resources, Finance, etc.) is used to populate Banner ODS composite tables, and can be retrieved in reports using the Banner ODS reporting views. Use the Administrative UI to maintain and view meta data reports for each composite view (data on the source system used as an intermediate step to produce the composite tables and reporting views) and reporting view. The meta data reports enable you to look at the information about the composite or reporting view definition, and the column business definitions by either target, composite or reporting view, or by source administrative system sources.

For additional information on how to view meta data for the composite views or reporting views, refer to the Administrative User Interface chapter, <u>"Composite View Meta Data" on page 3-138</u> section. For additional information on how to maintain meta data for the composite or reporting views, and to maintain sources and source columns, refer to the chapter on Administrative User Interface, <u>"Meta Data" on page 3-115</u>.

List of Value Views

A list of values (LOV) contains a list of predefined values for a reporting view column in a report. For example, a list of values for Academic Period might contain the values Fall 2006, Spring 2007, and Summer 2007. You use lists of values in parameters or conditions for a report. When used in parameters or conditions, lists of values enable you to select predefined values rather than enter arbitrary values in a text field.

The Banner ODS has a database schema called ODSLOV that owns the list of value views. Most, but not all, of the views are based on the MGT_VALIDATION composite table. (At least one view is based on an MGRSDAX rule.) MGT_VALIDATION is loaded using Oracle Warehouse Builder (OWB) from validation tables (or in some cases static lists of values) in Banner. Validation tables loaded into MGT_VALIDATION from Banner have been identified as lists of values that have views assigned to them. (Not all the MGT_VALIDATION validation tables have been created as LOV views.) Each view has the columns TABLE_NAME, VALUE, and VALUE_DESC. TABLE_NAME is the name of Banner validation table. VALUE and VALUE_DESC are values, or codes, and descriptions for the values. Some of the views also have QUALIFIER, and QUALIFIER_DESC. QUALIFIER is used to group values by a common attribute. For example, it can be Chart of Accounts, Academic Period or a Banner PIDM. QUALIFIER_DESC is a description for the QUALIFIER. Qualifier description is only populated when the qualifier is an Academic Period. For example, it can be Chart of Accounts, Academic Period or a Banner PIDM. QUALIFIER_DESC is a description for the QUALIFIER.

The list of value view provides one place to define the predefined values for a column in reporting views. For example, the LOV_ACADEMIC_PERIOD view contains a list of values that is used by Academic Period columns in many reporting views - such as ACADEMIC_OUTCOME, ACADEMIC_STUDY, etc. By creating the predefined list in one view and using it for all the columns in the reporting views that require a predefined list of Academic Periods, the Banner ODS provides a simple to understand and use mechanism for creating parameters and conditions. If there were a different list of Academic Periods for every Academic Period column in every reporting view in the Banner ODS, there would be hundreds of different predefined lists of values that would be difficult for end users to understand and information technology departments to maintain.

The list of value view also provides fast access when producing the predefined values. If lists of values were created by selecting distinct values from the reporting views, more rows would be read to produce the list. This can result in unacceptable query times in reports when generating lists for parameter prompts and conditions.

ODSLOV list of value views are used in Self Service Reporting (SSR), the Banner ODS Cognos ReportNet model and Oracle Discoverer End User Layer. How these views are used is described in the SSR and Third Party Reporting Tools chapters.

The following table provides information about the list of value views in the ODSLOV schema.

List of Value View Name	Table Name	Table Name	Has Chart of Accounts Qualifier	Has PIDM Qualifier	Has Academic Period Qualifier	Uses EFFECTIVE_ DATE and NEXT_ CHANGE_D ATE logic	Uses PIDM as Value
LOV_ACADEMIC_PERIOD	STVTERM	STVTERM					
LOV_ACADEMIC_STANDING	STVASTD	STVASTD					
LOV_ACADEMIC_TITLE	ACADEMIC_TITLE	PERBFAC					
LOV_ACADEMIC_YEAR	STVACYR	STVACYR					
LOV_ACCOUNT_ATTRIBUTE_SET	ACCOUNT_SET_CODE	FTVATTS, FTRACTA	Х				
LOV_ACCOUNT_ATTRIBUTE_TYPE	ACCOUNT_ATTRIBUTE_TYPE	FTVATTT, FTRACTA	Х				
LOV_ACCOUNT_ATTRIBUTE_VALU E	ACCOUNT_ATTRIBUTE_VALUE	FTRATTV, FTRACTA	Х				

List of Value View Name	Table Name	Table Name	Has Chart of Accounts Qualifier	Has PIDM Qualifier	Has Academic Period Qualifier	Uses EFFECTIVE_ DATE and NEXT_ CHANGE_D ATE logic	Uses PIDM as Value
LOV_ACCOUNT_CLASS	ACCOUNT_CLASS	FTVSDAT	Х			Х	
LOV_ACCOUNT_LEVEL_1	ACCOUNT_LEVEL_1	FTVACCT	Х				
LOV_ACCOUNT_LEVEL_2	ACCOUNT_LEVEL_2	FTVACCT	Х				
LOV_ACCOUNT_LEVEL_3	ACCOUNT_LEVEL_3	FTVACCT	Х				
LOV_ACCOUNT_LEVEL_4	ACCOUNT_LEVEL_4	FTVACCT	Х				
LOV_ACCOUNT_POOL	ACCOUNT_POOL	FTVACCT	Х				
LOV_ACCOUNT_TYPE_ATTR_SET	ACCOUNT_TYPE_SET_CODE	FTRATYA, FTVATTS	Х				
LOV_ACCOUNT_TYPE_ATTR_TYPE	ACCOUNT_TYPE_ATTR_TYPE	FTVATTT, FTRATYA	Х				
LOV_ACCOUNT_TYPE_ATTR_VALU E	ACCOUNT_TYPE_ATTR_VALUE	FTRATTV, FTRATYA	Х				
LOV_ACCOUNT_TYPE_LEVEL_1	ACCOUNT_TYPE_LEVEL_1	FTVATYP	Х				
LOV_ACCOUNT_TYPE_LEVEL_2	ACCOUNT_TYPE_LEVEL_2	FTVATYP	Х				
LOV_ACTIVITY	STVACTC	STVACTC					
LOV_ACTIVITY_CATEGORY	STVACCG	STVACCG					
LOV_ACTIVITY_TYPE	STVACTP	STVACTP					
LOV_ADDRESS_TYPE	STVATYP	STVATYP					
LOV_ADMISSIONS_ATTRIBUTE	STVATTS	STVATTS					
LOV_ADMISSIONS_POPULATION	STVADMT	STVADMT					
LOV_ADMISSIONS_RATING_TYPE	STVRATP	STVRATP					
LOV_ADVANCEMENT_FUND	ATVFUND	ATVFUND					
LOV_ADVISOR_NAME_LFMI	ADVISOR_NAME_LFMI	SGRADVR					Х
LOV_ADVISOR_TYPE	STVADVR	STVADVR					
LOV_AID_FUND	RFRBASE	RFRBASE					

List of Value View Name	Table Name	Table Name	Has Chart of Accounts Qualifier	Has PIDM Qualifier	Has Academic Period Qualifier	Uses EFFECTIVE_ DATE and NEXT_ CHANGE_D ATE logic	Uses PIDM as Value
LOV_AID_YEAR	ROBINST	ROBINST					
LOV_APPLICATION_DECISION	STVAPDC	STVAPDC					
LOV_APPLICATION_STATUS	STVAPST	STVAPST					
LOV_ASSIGNMENT_GRADE	ASSIGNMENT_GRADE	NBBPOSN					
LOV_ASSIGNMENT_PAY_ID	PTRPICT	PTRPICT					
LOV_ASSIGNMENT_SALARY_GROU P	NTRSGRP	NTRSGRP					
LOV_AWARD_CATEGORY	STVACAT	STVACAT					
LOV_BENEFIT_CATEGORY	PTRBCAT	PTRBCAT					
LOV_BENEFIT_DEDUCTION	PTRBDCA	PTRBDCA					
LOV_BLOCK_SCHEDULE	STVBLCK	STVBLCK					
LOV_BUDGET	FTVOBUD	FTVOBUD	Х				
LOV_BUDGET_GROUP	RTVBGRP	RTVBGRP					
LOV_BUDGET_PHASE	FTVOBPH	FTVOBPH	Х				
LOV_BUILDING	STVBLDG	STVBLDG					
LOV_CALENDAR_MONTH	CALENDAR_MONTH	STATIC (01,02,03,04,05, 06,07,08,09,10,1 1,12))					
LOV_CAMPAIGN	AFBCAMP	AFBCAMP					
LOV_CAMPAIGN_TYPE	ATVCMTP	ATVCMTP					
LOV_CAMPUS	STVCAMP	STVCAMP					
LOV_CERTIFICATION	PTRCERT	PTRCERT					
LOV_CHART_OF_ACCOUNTS	FTVCOAS	FTVCOAS				х	
LOV_COHORT	STVCHRT	STVCHRT					

List of Value View Name	Table Name	Table Name	Has Chart of Accounts Qualifier	Has PIDM Qualifier	Has Academic Period Qualifier	Uses EFFECTIVE_ DATE and NEXT_ CHANGE_D ATE logic	Uses PIDM as Value
LOV_COLLECTION_AGENCY_NAME	COLLECTION_AGENCY_NAME	TBRCOLC					Х
LOV_COLLEGE	STVCOLL	STVCOLL					
LOV_COMMODITY	FTVCOMM	FTVCOMM				start date term date	
LOV_CONTRACT_NUMBER	CONTRACT_NUMBER	NBRJOBS					
LOV_CONTRACT_TYPE	CONTRACT_TYPE	STATIC (P,S,O)					
LOV_COUNTY	STVCNTY	STVCNTY					
LOV_COURSE_ATTRIBUTE	STVATTR	STVATTR					
LOV_COURSE_IDENTIFICATION	COURSE_IDENTIFICATION	STVTERM, SCBCRSE			Х		
LOV_COURSE_REFERENCE_NUMBE R	COURSE_REFERENCE_NUMBER	STVTERM, SSBSECT			Х		
LOV_CURRENT_TIME_STATUS	STVTMST	STVTMST					
LOV_DEPARTMENT	STVDEPT	STVDEPT					
LOV_DESIGNATION	ADBDESG	ADBDESG					
LOV_DISTRICT_DIVISION	GTVDICD	GTVDICD					
LOV_DIVISION	STVDIVS	STVDIVS					
LOV_DONOR	ATVDONR	ATVDONR					
LOV_EARNINGS	PTREARN	PTREARN					
LOV_EDUCATIONAL_GOAL	STVEGOL	STVEGOL					
LOV_EDUCATIONAL_LEVEL	STVEDLV	STVEDLV					
LOV_EEO_SKILL	PTVESKL	PTVESKL					
LOV_EMPLOYEE_CLASS	PTRECLS	PTRECLS					
LOV_EMPLOYEE_GROUP	PTVEGRP	PTVEGRP					

List of Value View Name	Table Name	Table Name	Has Chart of Accounts Qualifier	Has PIDM Qualifier	Has Academic Period Qualifier	Uses EFFECTIVE_ DATE and NEXT_ CHANGE_D ATE logic	Uses PIDM as Value
LOV_EMPLOYEE_STATUS	EMPLOYEE_STATUS	STATIC (A,B,L, F,P,T)					
LOV_EMPLOYER	PTREMPR	PTREMPR					
LOV_EMPLOYER_CATEGORY	ATVJOBC	ATVJOBC					
LOV_EMPLOYER_INDUSTRIAL_TYP E	ATVSICC	ATVSICC					
LOV_EMPLOYMENT_STATUS	ATVEMPS	ATVEMPS					
LOV_ENROLLMENT_STATUS	STVESTS	STVESTS					
LOV_ETHNICITY	STVETHN	STVETHN					
LOV_FINANCE_ACCOUNT	FTVACCT	FTVACCT	Х			х	
LOV_FINANCE_ACCOUNT_TYPE	FTVATYP	FTVATYP	Х			х	
LOV_FINANCE_ACTIVITY	FTVACTV	FTVACTV	Х			х	
LOV_FINANCE_FUND	FTVFUND	FTVFUND	Х			х	
LOV_FINANCE_FUND_TYPE	FTVFTYP	FTVFTYP	Х			х	
LOV_FINANCE_LOCATION	FTVLOCN	FTVLOCN	Х			х	
LOV_FINANCE_ORGANIZATION	FTVORGN	FTVORGN	Х			Х	
LOV_FINANCE_PROGRAM	FTVPROG	FTVPROG	Х			х	
LOV_FINANCIAL_MANAGER	FINANCIAL_MANAGER	FTVFUND		Х			
LOV_FISCAL_PERIOD	FTVFSPD	FTVFSPD	Х			start date	
LOV_FISCAL_YEAR	FTVFSYR	FTVFSYR	Х			start date	
LOV_FOREIGN_CURRENCY	GTVCURR	GTVCURR				Х	
LOV_FUND_ATTRIBUTE_SET	FUND_SET_CODE	FTVATTS, FTRFNDA	Х				
LOV_FUND_ATTRIBUTE_TYPE	FUND_ATTRIBUTE_TYPE	FTVATTT, FTRFNDA	Х				

List of Value View Name	Table Name	Table Name	Has Chart of Accounts Qualifier	Has PIDM Qualifier	Has Academic Period Qualifier	Uses EFFECTIVE_ DATE and NEXT_ CHANGE_D ATE logic	Uses PIDM as Value
LOV_FUND_ATTRIBUTE_VALUE	FUND_ATTRIBUTE_VALUE	FTRATTV, FTRFNDA	Х				
LOV_FUND_LEVEL_1	FUND_LEVEL_1	FTVFUND	Х				
LOV_FUND_LEVEL_2	FUND_LEVEL_2	FTVFUND	Х				
LOV_FUND_LEVEL_3	FUND_LEVEL_3	FTVFUND	Х				
LOV_FUND_LEVEL_4	FUND_LEVEL_4	FTVFUND	Х				
LOV_FUND_LEVEL_5	FUND_LEVEL_5	FTVFUND	Х				
LOV_FUND_POOL	FUND_POOL	FTVFUND	Х				
LOV_FUND_SOURCE	RTVFSRC	RTVFSRC					
LOV_FUND_TYPE	RTVFTYP	RTVFTYP					
LOV_FUND_TYPE_ATTR_SET	FUND_TYPE_SET_CODE	FTVATTS, FTRFTYA	Х				
LOV_FUND_TYPE_ATTR_TYPE	FUND_TYPE_ATTR_TYPE	FTVATTT, FTRFTYA	Х				
LOV_FUND_TYPE_ATTR_VALUE	FUND_TYPE_ATTR_VALUE	FTRATTV,FTR FTYA	Х				
LOV_FUND_TYPE_LEVEL_1	FUND_TYPE_LEVEL_1	FTVATYP	Х				
LOV_FUND_TYPE_LEVEL_2	FUND_TYPE_LEVEL_2	FTVATYP	Х				
LOV_GENDER	GENDER	STATIC (M,F,N)					
LOV_GEOGRAPHIC_AREA	STVGEOR	STVGEOR					
LOV_GRADE_TYPE	STVGMOD	STVGMOD					
LOV_GRANT	FRBGRNT	FRBGRNT	Х			term date	
LOV_HOLD	STVHLDD	STVHLDD					
LOV_HR_APPLICATION_STATUS	PTRAPPS	PTRAPPS					
LOV_INCOME_LEVEL	ATVINCM	ATVINCM					

List of Value View Name	Table Name	Table Name	Has Chart of Accounts Qualifier	Has PIDM Qualifier	Has Academic Period Qualifier	Uses EFFECTIVE_ DATE and NEXT_ CHANGE_D ATE logic	Uses PIDM as Value
LOV_INSTALLMENT_PLAN	INSTALLMENT_PLAN	TBBISTC					
LOV_INSTRUCTIONAL_METHOD	GTVINSM	GTVINSM					
LOV_INSTRUCTOR_NAME	INSTRUCTOR_NAME	STVTERM, SPRIDEN, SIRASGN		Х		Х	
LOV_INTERNAL_ACCOUNT_TYPE	INTERNAL_ACCOUNT_TYPE	FTVSDAT	Х			Х	
LOV_INTERNAL_FUND_TYPE	INTERNAL_FUND_TYPE	FTVSDAT	Х			Х	
LOV_INTERVIEW_STATUS	STVINTV	STVINTV					
LOV_JOB_LEAVE_CATEGORY	PTRLEAV	PTRLEAV					
LOV_JOB_SUFFIX	JOB_SUFFIX	STATIC (0,00,01,02,03)					
LOV_LEADERSHIP_ROLE	STVLEAD	STVLEAD					
LOV_LEAVE_OF_ABSENCE_REASO N	PTRLREA	PTRLREA					
LOV_LEGACY	STVLGCY	STVLGCY					
LOV_LEVEL	STVLEVL	STVLEVL					
LOV_LOCATION_LEVEL_1	LOCATION_LEVEL_1	FTVLOCN	Х				
LOV_LOCATION_LEVEL_2	LOCATION_LEVEL_2	FTVLOCN	Х				
LOV_LOCATION_LEVEL_3	LOCATION_LEVEL_3	FTVLOCN	Х				
LOV_LOCATION_LEVEL_4	LOCATION_LEVEL_4	FTVLOCN	Х				
LOV_MAIL	GTVMAIL	GTVMAIL					
LOV_MAJOR	STVMAJR	STVMAJR					
LOV_MARITAL_STATUS	STVMRTL	STVMRTL					
LOV_MEAL_PLAN	STVMRCD	STVMRCD					
LOV_MEETING_TYPE	GTVMTYP	GTVMTYP					

List of Value View Name	Table Name	Table Name	Has Chart of Accounts Qualifier	Has PIDM Qualifier	Has Academic Period Qualifier	Uses EFFECTIVE_ DATE and NEXT_ CHANGE_D ATE logic	Uses PIDM as Value
LOV_NATION	STVNATN	STVNATN					
LOV_NATIVE_LANGUAGE	STVLANG	STVLANG					
LOV_ORGANIZATION_ATTR_SET	ORGANIZATION_SET_CODE	FTVATTS, FTRORGA	Х				
LOV_ORGANIZATION_ATTR_TYPE	ORGANIZATION_ATTR_TYPE	FTVATTT, FTRORGA	Х				
LOV_ORGANIZATION_ATTR_VALU E	ORGANIZATION_ATTR_VALUE	FTRATTV, FTRORGA	Х				
LOV_ORGANIZATION_LEVEL_1	ORGANIZATION_LEVEL_1	FTVORGN	Х				
LOV_ORGANIZATION_LEVEL_2	ORGANIZATION_LEVEL_2	FTVORGN	Х				
LOV_ORGANIZATION_LEVEL_3	ORGANIZATION_LEVEL_3	FTVORGN	Х				
LOV_ORGANIZATION_LEVEL_4	ORGANIZATION_LEVEL_4	FTVORGN	Х				
LOV_ORGANIZATION_LEVEL_5	ORGANIZATION_LEVEL_5	FTVORGN	Х				
LOV_ORGANIZATION_LEVEL_6	ORGANIZATION_LEVEL_6	FTVORGN	Х				
LOV_ORGANIZATION_LEVEL_7	ORGANIZATION_LEVEL_7	FTVORGN	Х				
LOV_ORGANIZATION_POOL	ORGANIZATION_POOL	FTVORGN	Х				
LOV_ORG_FINANCIAL_MANAGER	ORG_FINANCIAL_MANAGER	SPRIDEN, FTVORGN		Х			
LOV_OUTCOME	STVDEGC	STVDEGC					
LOV_OUTCOME_STATUS	STVDEGS	STVDEGS					
LOV_PACKAGING_GROUP	RTVPGRP	RTVPGRP					
LOV_POSITION	NBBPOSN	NBBPOSN					
LOV_POSITION_CHANGE_REASON	PTRJCRE	PTRJCRE					
LOV_POSITION_CLASS	NTRPCLS	NTRPCLS					
LOV_POSITION_DEFERRED_PAY	PTRDFPR	PTRDFPR					

List of Value View Name	Table Name	Table Name	Has Chart of Accounts Qualifier	Has PIDM Qualifier	Has Academic Period Qualifier	Uses EFFECTIVE_ DATE and NEXT_ CHANGE_D ATE logic	Uses PIDM as Value
LOV_POSITION_LOCATION	PTRJBLN	PTRJBLN					
LOV_POSITION_STATUS	POSITION_STATUS	STATIC (A,C,F,I)					
LOV_POST_CODE	GTVZIPC	GTVZIPC					
LOV_POST_SECONDARY_SCHOOL	POST_SECONDARY_SCHOOL	STVSBGI					
LOV_PREF_CLASS	PREF_CLAS	APBCONS					
LOV_PRIM_DISABILITY	STVDISA	STVDISA					
LOV_PRINCIPAL_INVESTIGATOR	PRINCIPAL_INVESTIGATOR	FRBGRNT		Х			
LOV_PROGRAM	SMRPRLE	SMRPRLE					
LOV_PROGRAM_ATTR_SET	PROGRAM_SET_CODE	FTVATTS, FTRPRGA	Х				
LOV_PROGRAM_ATTR_TYPE	PROGRAM_ATTR_TYPE	FTVATTR, FTRPRGA	Х				
LOV_PROGRAM_ATTR_VALUE	PROGRAM_ATTR_VALUE	FTRATTV, FTRPRGA	Х				
LOV_PROGRAM_CLASSIFICATION	STVCIPC	STVCIPC					
LOV_PROGRAM_LEVEL_1	PROGRAM_LEVEL_1	FTVPROG	Х				
LOV_PROGRAM_LEVEL_2	PROGRAM_LEVEL_2	FTVPROG	Х				
LOV_PROGRAM_LEVEL_3	PROGRAM_LEVEL_3	FTVPROG	Х				
LOV_PROGRAM_LEVEL_4	PROGRAM_LEVEL_4	FTVPROG	х				
LOV_PROGRESS_EVALUATION	STVPREV	STVPREV					
LOV_PROJECT	ATVPROJ	ATVPROJ					
LOV_PROSPECT_STATUS	ATVPRST	ATVPRST					
LOV_RATING	ATVRATE	ATVRATE					
LOV_RATING_TYPE	ATVRTGT	ATVRTGT					

List of Value View Name	Table Name	Table Name	Has Chart of Accounts Qualifier	Has PIDM Qualifier	Has Academic Period Qualifier	Uses EFFECTIVE_ DATE and NEXT_ CHANGE_D ATE logic	Uses PIDM as Value
LOV_RECEIVABLE_CATEGORY	TTVDCAT	TTVDCAT					
LOV_RECEIVABLE_CONTRACT	RECEIVABLE_CONTRACT	STVTERM, TBBCONT			Х		
LOV_RECEIVABLE_DELINQUENCY	TTVDELI	TTVDELI, TBBACCT					
LOV_RECEIVABLE_DETAIL_CODE	TBBDETC	TBBDETC					
LOV_RECEIVABLE_EXEMPTION	RECEIVABLE_EXEMPTION	STVTERM, TBBEXPT			Х		
LOV_RECEIVABLE_SOURCE	TTVSRCE	TTVSRCE					
LOV_RECRUITER	STVRECR	STVRECR					
LOV_REGISTRATION_REASON	STVRGRE	STVRGRE					
LOV_REGISTRATION_STATUS	STVRSTS	STVRSTS					
LOV_RESIDENCY	STVRESD	STVRESD					
LOV_REVIEW_TYPE	PTVREVT	PTVREVT					
LOV_SCHEDULE_TYPE	STVSCHD	STVSCHD					
LOV_SECONDARY_SCHOOL	SECONDARY_SCHOOL	STVSBGI					
LOV_SITE	STVSITE	STVSITE					
LOV_SOLICITATION_TYPE	ATVSOLC	ATVSOLC					
LOV_SOLICITOR_TYPE	ATVSOLT	ATVSOLT					
LOV_SOURCE_BACKGROUND	STVSBGI	STVSBGI					
LOV_STATE_PROVINCE	STVSTAT	STVSTAT					
LOV_STUDENT_CLASS	STVCLAS	STVCLAS					
LOV_STUDENT_POPULATION	STVSTYP	STVSTYP					
LOV_STUDENT_STATUS	STVSTST	STVSTST					
LOV_SUBJECT	STVSUBJ	STVSUBJ					

List of Value View Name	Table Name	Table Name	Has Chart of Accounts Qualifier	Has PIDM Qualifier	Has Academic Period Qualifier	Uses EFFECTIVE_ DATE and NEXT_ CHANGE_D ATE logic	Uses PIDM as Value
LOV_SUB_ACADEMIC_PERIOD	STVPTRM	STVPTRM					
LOV_TERMINATION_REASON	PTRTREA	PTRTREA					
LOV_TEST	STVTESC	STVTESC					
LOV_TEST_RULE	TEST	MGRSDAX_ INTERNAL_ CODE_GROUP					
LOV_TRACKING_GROUP	RTVTGRP	RTVTGRP					
LOV_VENDOR_TYPE	FTVVTYP	FTVVTYP				start date term date	
LOV_VETERAN_CATEGORY	STVVETC	STVVETC					
LOV_VISA	STVVTYP	STVVTYP					
LOV_WITHDRAW_REASON	STVWRSN	STVWRSN					
LOV_WORKER_COMPENSATION_ CLASS	РТVWКСР	PTVWKCP					

5 Third Party Reporting Tools



A critical factor in determining the success of a reporting solution is the existence of a well defined and useful meta data layer. The meta data layer enables relationships to be defined between objects in the database, and enables additional filtering or formatting that would be useful to the average end user.

Cognos 8 Business Intelligence and Oracle Business Intelligence Discoverer meta data layers are delivered as part of the Banner Operational Data Store (Banner ODS). Cognos 8 Business Intelligence meta data layers are delivered as part of the Banner Enterprise Data Warehouse (Banner EDW). Relationships between the reporting views in the Banner ODS or between the dimension and fact tables in the Banner EDW are included in these meta data layers for the supported reporting tools. The meta data layer, therefore, provides the joins used by the database to connect the views or database tables, and the end user does not need to define that relationship when creating queries or reports when using these tools.

The Banner ODS defined reporting meta data contains reporting view and column definitions within the reporting views and manages columns that are number data type (whether to aggregate them or to treat them as identifiers). It can contain hierarchies for drilling into aggregate number columns at different levels, and lists of values (LOV's) for which you can create drop-down lists in prompts and filters for queries on the reporting views. The Banner EDW reporting meta data defines not only the database column definitions and how to aggregate measures, but it also provides a presentation view of the data to facilitate end-user reporting.

In Cognos 8 Business Intelligence, the reporting meta data is called the Cognos 8 Business Intelligence Framework Manager Model. In Oracle Business Intelligence Discoverer, the reporting meta data is called the End User Layer (EUL).

Cognos 8 Business Intelligence

Framework Manager models

Databases are typically designed to store data captured through business processes. Therefore, the stored data is usually not easily accessible for reporting and making enterprise decisions in business terms. Because of this, data requires metadata, the 'data about data', so that it can be effectively retrieved for analysis and reporting. The Cognos

Framework Manager tool allows the data in the database to be redefined to answer business questions.

Cognos is designed to deliver centralized metadata via the Framework Manager model. The Framework Manager model provides a common definition in business terms that adds value across an organization. The database is redefined so that the metadata can be published in a package made available through the Cognos Connection to the Cognos BI reporting tools (Report Studio, Query Studio, and Analysis Studio) to answer business questions.

The Framework Manager model presents the data using business terms and definitions. This enables you to use, build, and modify your own reports and enables consistent understanding and use of data and metrics across the institution. The logical relationships between data are defined within the model to enable complete data integration so that you spend less time gathering and organizing data.

Metadata Layers

When changes to an existing model are required, Framework Manager (FM) is able to identify the impact to existing reports. This enables an institution to implement system improvements to manage model changes proactively without having to rewrite reports. Framework Manager provides the ability to 'layer' metadata as a means to insulate end users from changes made to the underlying data sources and/or relationships.

The FM model delivered as part of the Banner ODS solution seeks to exercise this flexibility most effectively by utilizing two layers to manage the metadata content. The delivered content is organized into a database view and business view. Details of each are as follows:

Database View

The database view is the layer into which Framework Manager imports all database objects. There is no difference in the database view and the database itself. It contains all of the Banner ODS Reporting Views including all List of Value Views coming from the ODSLOV schema.

Business View

The business view layer is used to organize content around a specific business process or processes. Objects from the database view are referenced and relationships among all of them are defined to support the associated business process. The content defined within the business view is as follows:

- 51 Business Concepts with relationships between the various Reporting Views are defined. These joins define the SQL generated behind the scenes by the various Cognos BI Reporting Tools.
- A link back to the Data View Reporting views which can be used to create custom sql and queries outside of the Business Concepts. If a particular Business Concept

cannot be used to efficiently produce a query to answer your business question, the Database View could be used to create reports and custom queries.

Packages

A package is a subset of data designed to support a specific group of users' reporting needs. Packages may contain content designed within Framework Manager. They are the means by which Query Studio, Report Studio, and Analysis Studio are able to access data within Cognos. They are essentially the data sources used for reporting and analysis.

Lists of Values

A list of values (LOV) is a set of valid values for a column in an Banner ODS reporting view. List of value views are contained within the ODSLOV schema within the Banner ODS. The LOV views obtain their information from the Banner ODS composite table called MGT_VALIDATION. The meta data layers are shipped containing lists of values to be used for drop-down lists or filters in queries and reports. The views contained within the ODSLOV schema provide the data which populates these lists of values. See the ODSLOV List of Values section in <u>Chapter 4, "Data Models"</u> for the complete list of ODSLOV list of value views. The values exist in Cognos 8 Business Intelligence with the exact same names as the LOV views, but without the underscores.

There is a Business view in Cognos 8 Business Intelligence that contains a model query subject for each of the ODSLOV views. The business view and area are called "List of Values".

Prompts

Lists of values query subjects in Cognos 8 Business Intelligence that can be used to create lists for prompts in the report writing component of Cognos 8 Business Intelligence Report Studio. There is an additional list of values query subject in the Cognos 8 Business Intelligence model called All Values LOV. This query subject contains all the lists of values in the MGT_VALIDATION table. If there is a list of values in the MGT_VALIDATION table for which there is no ODSLOV view, you can use this query subject to create a list for a prompt in Report Studio.

Filters

You can filter information from reporting views in the Banner ODS using objects in the reporting tool meta data. In Cognos 8 Business Intelligence these objects are called filters.

The tables on the following pages identify which filters are set up in the Cognos 8 Business Intelligence model. There are two tables because there are two different kinds of filters used in Cognos 8 Business Intelligence – embedded and stand-alone. Embedded filters only use one query subject. Stand-alone filters are created in Framework Manager independent of a specific query subject. A section on each type of filter appears in this chapter.

Each column heading used in the tables is described below:

Cognos 8 Business Intelligence Object	Definition
Filter Name	Cognos 8 Business Intelligence filter name for the filter on the reporting view.
Business View	logical grouping of Banner ODS Reporting Views.
Filter Expression	Expression used to generate a WHERE clause when querying the reporting view.

Embedded Filters

The Cognos 8 Business Intelligence model uses embedded filters when you use a filter with only one query subject. They are created in our model query subjects.

Filter Name	Business View	Filter Expression
Invoice Document Type	Purchasing Payable	Transaction History.DOCUMENT_TYPE = 3
Purchasing Document Type	Purchasing Payable	Transaction History.DOCUMENT_TYPE = 2
Endowment Distribution Document Type	Endowment Distribution	Transaction History.DOCUMENT_TYPE = 20
Fixed Asset Adjustment Document Type	Fixed Asset	Transaction History.DOCUMENT_TYPE = 60
Encumbrance Ledger Indicator	Encumbrance	Transaction History.LEDGER_IND = 'E'
General Ledger Indicator	General Ledger	Transaction History.LEDGER_IND = 'G'
	Receivable Revenue	Transaction History.LEDGER_IND = 'G'
Operating Ledger Indicator	Grant Ledger	Transaction History.LEDGER_IND = 'O'
	Operating Ledger	Transaction History.LEDGER_IND = 'O'
Constituent Spouse	Constituent	RELATIONSHIP.SPOUSE_STATUS = 'A'
Supervisor	Employee	Employee.PERSON_UID = Employee Position.SUPERVISOR_UID and Person Detail.PERSON_UID = Employee Position.SUPERVISOR_UID

Stand-alone Filters

Stand-alone filters are created in Framework Manager independent of a specific query subject. They are included in Banner ODS packages along with the query subjects for the reporting views to make them available to your users. They can then be used in reports to

filter a query subject one way or another, depending on whether or not they are dragged into the report.

Business View	Filter Name	Filter Expression
Invoice Payable	Commodity Level Accounting Record	Invoice Accounting.ITEM = Invoice Item.ITEM
Invoice Payable	Document Level Accounting Record	Invoice Accounting.ITEM = 0
Invoice Payable	Invoice Check Bank = Invoice Accounting Bank	Invoice Check.BANK=Invoice Accounting.BANK
Invoice Payable	Not Cancelled Check	Invoice Check.CANCEL_IND IS NULL
Purchasing Payable	Invoice Check Bank = Invoice Accounting Bank	Invoice Check.BANK=Invoice Accounting.BANK
Purchasing Payable	Invoice Commodity Level Accounting Record	Invoice Accounting.ITEM = Invoice Item.ITEM
Purchasing Payable	Invoice Document Level Accounting Record	Invoice Accounting.ITEM = 0
Purchasing Payable	Not Cancelled Check	Invoice Check.CANCEL_IND IS NULL
Purchasing Payable	PO Commodity Level Accounting Record	Purchase Order Accounting.ITEM = Purchase Order Item.ITEM
Purchasing Payable	PO Document Level Accounting Record	Purchase Order Accounting.ITEM = 0
Transaction History	Endowment Distribution Document Type	Transaction History.DOCUMENT_TYPE = 20
Transaction History	Fixed Asset Adjustment Document Type	Transaction History.DOCUMENT_TYPE = 60
Transaction History	Invoice Document Type	Transaction History.DOCUMENT_TYPE = 3
Transaction History	Purchasing Document Type	Transaction History.DOCUMENT_TYPE = 2
Transaction History	Encumbrance Ledger Indicator	Transaction History.LEDGER_IND ='E'
Transaction History	General Ledger Indicator	Transaction History.LEDGER_IND ='G'
Transaction History	Operating Ledger Indicator	Transaction History.LEDGER_IND ='O'

Cognos 8 Security Integration

Cognos Authorization and Fine-Grained Access

In a security context, authorization refers to permissions or defining "who can see what." Cognos provides a complete infrastructure to define rules regarding "object" permissions (the ability to see folders or reports) as well as "data" permissions (which rows or columns of data individual users or groups are permitted to see). Cognos picks up it's list of users

5-5

and groups from the authentication providers defined at a given site, and maintains it's own list of data permissions internally.

Data permissions can also be defined within the Banner Performance Reporting and Analytics (BPRA) database using the Fine-Grained Access (FGA) facility which allows for centralized maintenance of those rules for any non-Cognos based access as well. A typical Cognos configuration uses a single database connection (using a single Oracle username and password) for the BPRA database which does not allow for use of the BPRA FGA feature. However, it is also possible to configure Cognos to use multiple database connections, which then use the BPRA Fine-Grained Access rules.

Cognos and BPRA Authorization

Authorization enables you to create logins so that each user can access the same data source while still allowing them to use the fine-grained access rules already defined for them in the Administrative User Interface. Authorization could be used to set up more general Oracle users whose associated fine-grained access rules might apply to a type of report writer as opposed to a single person. Multiple Cognos users or roles could then be set up to secure the actual Cognos content (reports, dashboards, etc.), and then matched with data source signons which would provide the means to secure the actual data contained in the database.

For existing users, you would remove or disable the extra users so that as each user performs a query, their fine-grained access rules would be used. This should be done because their signon would be using their actual Oracle username to access the database.

1. Open Cognos Connection.

2. Click Launch.



3. Click Cognos Administration.

4. Click the **Configuration** tab.

The named data source connections display. The connections provide detailed connectivity information as to where to retrieve data.

5. Click one of the data sources to view the possible servers on which source data may reside.

In the screen samples, we have chosen the Banner EDW data source. By default, the defined server connection has the same name as the data source connection. (See the navigation bread crumbs at the top of the screen.)

Data Source Conne	Directory > Cognos	G	X 🖻 🔍
Content Administration			
🖬 Distribution Lists and (Entries: 1 - 31 📀	
Printers	□	Modified 🗢	Actions
Styles	CMM Sunagrd	June 10, 2008 12:56:38 PM	🖀 <u>More</u>
Portlets	CMM TESTING SOURCE	January 29, 2009 12:49:36 PM	More
Dispatchers and Servi		August 8, 2008 12:02:46 PM	More
	PM Admissions Counselor Cube	June 13, 2008 10:07:37 AM	🖆 More

6. Navigate to the next layer of detail to define what users connect to this data source.

Again, as with the server connection name, the user connection name is inherited by the data source connection unless otherwise specified.

7. Click the Set Properties icon in the Actions column.

□ ≑ Name ▲	Modified \$	Actions
🗆 윕 EDW	August 8, 2008 12:02:46 PM	More
Last refresh time: February 13, 2009 12:06:46 PM		N

8. Click the Signon tab.

Set properties - EDW			<u>Help</u> ×
General Signon Permissions Edit the signon and select the users, groups, and roles that can use it.			
Signon: <u>Edit the signon</u>			
	Entries: 1	- 1	
□ > Name			Туре
□ > Name □ &> Everyone			Type Group

9. Click the **Edit the signon...** link to view or change the Oracle username and password for this connection.

Enter the signon - EDW	
Enter the user ID and password for the signon.	
User ID:	
EDWMGR	
Password:	

Confirm Password:	
•••••	
OK Cancel	

In this case you'll see the Banner EDW data source connection defined with a username of EDWMGR, which would have access to all data.

Let's say, for example, that your institution has two Cognos users: John Doe and Bob Smith. You would like to make use of the Oracle fine-grained access (FGA) rules that are already defined for these two users in your Administrative User Interface. Accomplishing this is a simple matter of defining two different logins to the Banner EDW data source that is proprietary to each user.

- **10.** To create a new connection for the Banner EDW data source, return to the user connection screen within the Cognos Administration.
- **11.** Click the New Signon icon.

<u>Status</u> <u>Se</u>	curity Configuration	•
Data Source Conne	Directory > <u>Cognos</u> > <u>EDW</u> > EDW	8 🕺 🗈 🛍 🗙 🖅 🔍
Content Administration		
🖬 Distribution Lists and (Entries: 1 - 1 💽 I I I E
Printers	□ ♦ Name ▲	Modified Actions
Styles	🗆 🚯 EDW	August 8, 2008 12:02:46 PM 🛛 📸 More
Min <u>Sches</u>	Last refresh time: February 13, 2009 11:09:15 AM	

12. Create a signon for John Doe and call the signon "JDOE".

13. Click Next.

You are prompted for the Oracle username and password that will be used for this signon.

Specify a signon - New Signon wizard
Enter the user ID and password for the new signon.
User ID:
DOE Password:
Confirm Password:
••••••
Cancel < Back Next > Finish

14. Enter the information, then click Next.

You are prompted for which Cognos users can access this signon.

15. Add JDOE to the list of users able to use this signon.

16. Click **OK**.

Select entries (Navigate) - New signon	Help ×
Navigate the folders, search, or type the names of t entries you want and click the arrow button to updat	
Available entries Directory > Cognos Image: Show users in the list Entries: 1 - 22 Image: Show users in the list	Selected entries Entries: - ●
Image: Name Image: Nam Image: Name <tr< td=""><td>No entries.</td></tr<>	No entries.
Anonymous Anonymous Authors Gig Consumers Gig Controller Administrators Gig Controller Administrators	Remove
Controller Users Data Manager Authors dif Directory Administrators dif Everyone	
OK Cancel	

17. Click Finish.

You'll see that now there is a second signon for the Banner EDW data source.

18. Repeat the above steps for Bob Smith.

You'll end up with three distinct signons for Banner EDW.

□ + Name ▲	Modified \$	Actions
🗆 🚯 BSMITH	February 13, 2009 11:46:07 AM	More
🗆 🚯 EDW	August 8, 2008 12:02:46 PM	More
🗆 🗿 JDOE	February 13, 2009 11:44:14 AM	More
Last refresh time: February 13, 2009 11:46:07 AM		

At this point, if you logged in as John Doe, and ran a query within Cognos, you would be prompted for what signon to use. (John or Bob) This would not be an ideal situation, because you would be prompted for which connection to use each time you accessed Cognos, and the Banner EDW signon is not FGA secured. You, therefore, would want to remove John or Bob's access to the Banner EDW signon, delete the signon, or disable it.

5-9

How to view or change what users have access to a signon was detailed previously. Deleting a signon is a straight forward activity. You select a signon and delete it. Disabling a signon is most likely the preferred method so that the overall Banner EDW signon is retained, but simply not active. This is a simple matter of checking the **Disable this entry** check box within the general properties of the signon.

Set properties - JDOE	<u>Help</u> ×
General Signon Permissions Specify the properties for this entry.	
Type: Signon Owner: Anonymous I Disable this entry	Location: Directory > Cognos > EDW > EDW > EDW
	Created: February 13, 2009 11:44:14 AM Modified: February 13, 2009 11:44:14 AM Icon: ① Standard <u>Edit</u>
The name, screen tip and description are shown for the sele Language: English (United States)	cted language.
Name: JDOE Screen tip:	Description:

Once this signon is disabled, the signons John and Bob will be the only two active signons. Therefore, if John Doe now signs into Cognos and performs a query, he will no longer be prompted to choose a signon (because he does not have permission to use the Bob signon) and his FGA rules would be enforced on his query because his signon is using his actual Oracle username of JDOE to access the database. Likewise, if Bob Smith signs into Cognos and performs a query, his FGA rules will be enforced because his signon is using his Oracle username of BSMITH.

To put this into more practical application, one might set up more general Oracle users within the data warehouse whose associated FGA rules might apply more broadly to a type of report writer as opposed to a single person. Multiple Cognos users or roles could then be set up to secure the actual Cognos content (reports, dashboards, etc.), and matched with data source signons which would provide the means to secure the actual data contained in the database.

For additional detailed information on Cognos security, see the <u>Cognos Administration</u> <u>and Security Guide</u>, "Data Management" chapter, Create a Data Source section.

Luminis Authentication (Single Signon)

Authentication is the process of logging into a secured application. This section describes integrating Authentication considerations when using Cognos 8 BI with BPRA solutions using the Sungard Higher Education Luminis portal.

Usually Luminis and Cognos are configured to require users to enter a username and password to access their content. And usually, these credentials are stored and maintained separately. This requires users to log in once for Luminis and then again for Cognos every time you use Cognos within the Luminis Portal. However, this dual log-in problem can be avoided by configuring Luminis to perform Single Signon (SSO) into Cognos. Luminis provides various techniques to accomplish SSO with external applications, but the simplest is their Generic Connector Framework (GCF). (This is documented extensively in the Luminis SDK / Generic Connector Framework Implementation Guide), but basically what happens after setting up a GCF is this:

- The user sees a Cognos 8 BI link in a Luminis page and clicks it.
- The first time a user clicks a Cognos link within Luminis they are prompted for their Cognos username/password.
- Luminis passes that through to Cognos. If it authenticates, Luminis redirects that link to the appropriate Cognos page.
- Luminis also stores that Cognos username/password, so that for future attempts, the user doesn't have to enter anything. Luminis automatically passes through the username/password and authenticates the user for them.

An important consideration regarding Cognos security is that, unlike other applications, Cognos does not have it's own security infrastructure. That is, it does not have it's own "user store" (where it stores usernames/passwords). Instead, it interfaces with standard security providers (such as LDAP, NTLM, Windows Active Directory, etc.) so that users can re-use existing security setups without having to duplicate them. This is fully documented in the Cognos Setup/Install documentation, as well as various other Cognos extensibility documents. So this provides an opportunity to re-use an existing user store, so that clients only have to enter/remember a single username/password.

Combining reusing an existing user store for Cognos authentication with the Luminis GCF construct simplifies SSO because users can re-use existing usernames/passwords and (after an initial Luminis session) not have to re-enter credentials to access Cognos from Luminis. The only exception to this is when their password changes. They wll have to re-enter it in Luminis once.

Luminis also supports different user stores as well. By default, Luminis uses it's default LDAP implementation (the SunOne Directory server) as the location where it stores security credentials, but it can also be configured to use other external systems (such as Windows Domain, or other LDAP implementations). This flexibility regarding authentication storage between Luminis and Cognos provides the client the ability to centralize their authentication processes, which can further help with the SSO process.

Determining where to store security credentials is a client-specific choice, but for SSO illustration purposes, this documention describes how to implement that using the default Luminis LDAP implementation. Some of the concepts are applicable to other configurations as well and are noted.

Setting up Luminis Single Signon to Cognos using Luminis LDAP Authentication

These steps were written for Cognos Business Intelligence 8.3 and Luminis 4.0.2. Later releases may follow the same steps. Refer to the release-specific versions of each product's associated documentation for more details.

All sample configuration files referenced can be found in the luminis_sso folder, under the ods\reports\cognos_8 folder in the ODS source tree.

In Cognos:

1. Configure an LDAP authentication namespace in Cognos to point to the Luminis LDAP instance. The properties page for the new namespace should look similar to the screen capture:

×		os Configuration - maldevm12	Friday February
Eile Edit View Acti	ons <u>H</u> elp		harrowneed and a second s
Explorer	LuminisLDAP - Namespace	- Resource Properties	
🛃 Local Configuratio	Name	Value	
🕈 🔚 Environment	Type	LDAP	1.
Logging Ele	* Namespace ID	Luminis LDAP	
e the Cognos 8	Host and port	slcsup61.sungardhe.com:389	
Cognos 8	* Base Distinguished Name	ou=People,o=slcsup61.sct.com,o=cp	
Portal Servic	User lookup	Quid=\${userID}	
🕈 🔚 Security	Use external identity?	🔞 True	
🕈 🖥 Authenticati	External identity mapping	uid=\${environment("REMOTE_USER")),ou=People,o=slcsup61.s	ct.com,o=c
Cognos	Bind user DN and password	*******	
🖞 Cryptogra	Size limit	-1	
Cognos	Time out in seconds	-1	
Cognos App	Use bind credentials for search?	False	
🕈 🔚 Data Access	Allow empty password?	False	
💡 🌆 Content Mai	Unique identifier	dn	
CMM	Data encoding	UTF-8	
Cognos Plan	SSL certificate database		
Contribut	Advanced properties	<click button="" edit="" the=""></click>	
	Folder mappings (Advanced)		
	Object class	🔞 organizationalunit,organization	
	Description	description	
	Name	😫 ou,o	
	Group mappings (Advanced)		
	Object class	groupofuniquenames	
	This property is used only if you e a DN or a search filter to locate a ENVIRONMENT_VARIABLE_NAME")	ate a user in the LDAP directory server. enable the "Use External identity" property. This mapping is used to user in the LDAP directory server. All instances of "\$(environment(" ' in this string are replaced by the value of the environment variable	e provided
	by the web server. If the string do	es not begin with an open parenthesis, the result of the substituti	on is

The majority of the default settings for an LDAP namespace can be retained with the following exceptions (as noted in the screen above, either with a red asterisk or a yellow circle icon):

NameValue

Property Name	Property Value
Namespace ID	A unique name for the namespace - can be whatever you choose
Host and port	Needs to point to the Luminis machine and LDAP listener port
Base Distinguished Name	Ou=People, o= <machine>,o=cp</machine>
User lookup	uid=\$(userID)
Use external identity?	True
External identity mapping	uid=\${environment("REMOTE_USER")},ou=People, o= <machine>,o=cp</machine>
Bind user DN and password	user="cn=Directory Manager" password= <luminis ldap<br="">pw></luminis>

Under Folder mappings(advanced):

Property Names	Property Value
Object Class	organizationalunit, organization
Name	ou,o

- 2. Once configured, disable the Anonymous Login property in the default Cognos namespace. (Your Cognos content now requires login.)
- 3. Place a copy of the Luminis pickup.html file in the document root location of the Cognos web/application server, where it can be accessed from the Luminis machine.

In Luminis:

1. Place a copy of the cognos.xml, cognos.properties and cognos.config files from the distribution in the GCF connector configuration folder, specifically:

Luminis IV

\$CP_ROOT/webapps/cpipconnector/WEB-INF/config

Luminis III

\$CP_ROOT/products/sso(or gcf)/config

2. Edit the cognos.properties file and update the values of the following fields to represent your Cognos installation:

5-13

Field	Description
cognos.externalSystem URL	Point to the main URL for your Cognos environment.
cognos.pickup.remoteur l	Point to the copy of the file you placed in the Cognos environment in step $\underline{3}$ of the previous section.

3. Edit the cognos.properties file only if Cognos and Luminis are not authenticating to the same LDAP to allow the credentials to be entered the first time a person selects the link:

```
cognos.cpipconnector.getconfig.createonlogin = 0
cognos.cpipconnector.getconfig.usePDSCredentials = false
```

4. Edit the cognos.config file and make sure the property:

es.cognos.configURL

points to your Luminis installation.

- 5. Edit the cpipconnector.properties file and append cognos.properties to the end of the property.files line toward the top of the file.
- 6. Perform the following configuration. Import the configuration parameters within cognos.config into the Luminis configuration:

configman -i cognos.config

7. Alter the es.systems parameter to include the cognos connector:

configman -g es.systems This gets the current list of connectors

configman -s es.systems "<current list> cognos"

- 8. Restart Luminis to reload the cache with the new configuration values.
- 9. Build a channel using a portal admin account and the following URL:

```
http://<Site Luminis Server>/cp/ip/login?sys=cognos&url=${urlPass}
```

or

refer to the next section "Setting up Cognos Channels in Luminis" on page 5-15.

10. Once these changes have been made, restart Luminis, or at least the cpipconnector service.

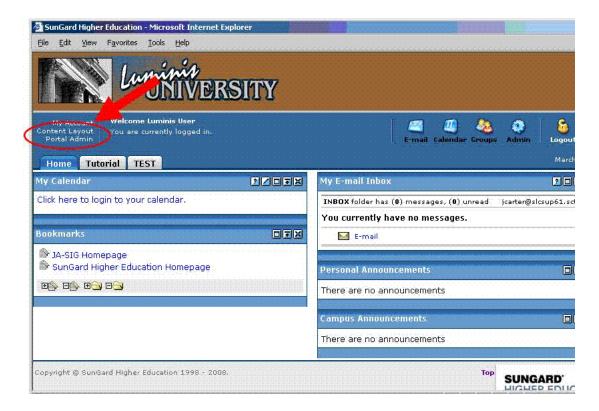
This explains how to configure Luminis and Cognos to share a username/password using Luminis's LDAP implementation. However, both Luminis and Cognos can be configured to use other authentication sources, even potentially different ones. When they are configured to use the same source, then the password information can be maintained in a single place. If they point to different sources, Luminis can store the username/password information and then it can be configured to prompt the user to re-enter the password whenever it changes.

For more information on configuring a Luminis GCF implementation, refer to the Luminis SDK / Generic Connector Framework Implementation Guide.

Further information about configuring Cognos security can be found in the Cognos Configuration and Installation Guide (chapter 11: "Configuring Cognos 8 Components to Use an Authentication Provider").

Setting up Cognos Channels in Luminis

Once SSO has been established, you can create links to Cognos within Luminis. Typically, this is accomplished using channels within the Luminis tabs. This process is documented in the "Luminis SDK/Channel Developer Guide". The end result is to be able to display Cognos content within Luminis, such as in the example screen below:



The simplest way to set up the links is using CPIP Inline Frames, which can then be defined for an entire tab, or as a column (portion) of a specific tab. These tabs can then be associated with a Luminis fragment definition, which can then be rolled out to specific

Luminis users, or audiences (based on Luminis role). The key is to define which Cognos content should be displayed within a channel. That is done by capturing the actual URL used to access the Cognos content, and defining that in the cognos.xml file as a variable, which can then be referenced in the Luminis channel definition URL.

For example, consider the following URL definition that is delivered in the cognos.xml file delivered (in the luminis_sso folder in the Banner ODS source tree):

```
<SET a:symbol="urlPass" a:value= "${properties.externalSystemURL}/
${properties.cognosSystemID}/cgi-bin/
cognos.cgi?b_action=xts.run&m=portal/cc.xts&gohome=&ui=" /
>
```

This defines a CPIP variable called urlPass which points to the base Cognos URL for Congos Connection viewer.

통 Note

Notice the use of the es.externalSystemURL and es.cognosSystemID variables, which are defined in the properties file for the cognos CPIP definition. This convention allows you to parameterize commonly used portions of URL definitions.

Also notice the conversion of all ampersand characters to the URLencoding equivalent. This is required for proper parsing of the URL in the XML syntax.

This variable "urlPass" can now be used when referencing Cognos via a Luminis channel definition, as per:

http://<Site Luminis Server>/cp/ip/login?sys=cognos&url=\${urlPass}

which points to the Cognos Connection viewer (based on the definition of urlPass). By defining CPIP variables in the XML file to point to the desired Cognos reports/pages you wish to expose in Luminis, you can then create Luminis channels using those variables.

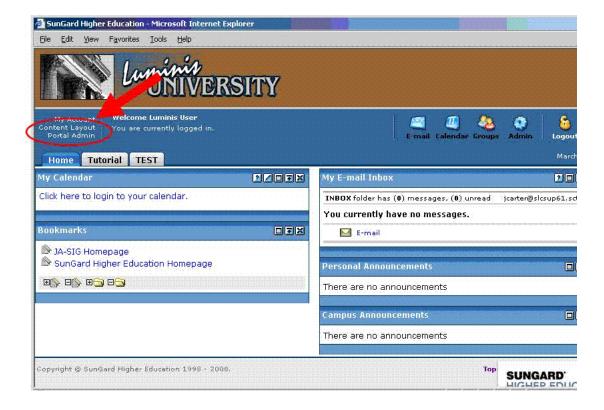
A series of example Cognos URLs are delivered as variables in the cognos.xml file (urlPass, cogURL1, cogURL2, cogDash1 - cogDash4). These demonstrate the ability to define various Cognos content (reports) that can be viewed specifically using a Luminis channel, and these can be modified/updated/deleted as needed. Note that these URL values need to be URL-encoded when they are stored in the XML file for proper parsing by Luminis.

Putting This All Together

Now we will use all the pieces of what we have defined so far to create a basic Luminis channel to display the standard Cognos Connection viewer application. To start, assume a

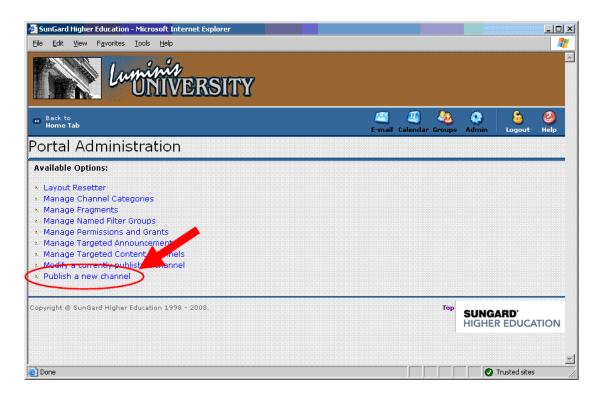
new user is defined in Luminis (who has Luminis Administrative privileges, in order to administer the portal and content layout).

1. Click the **Portal Admin** link to define the channel.



5-17

2. Select Publish a new channel.



3. Select Inline Frame as the Channel type.

Back Home				E-m	🚺 🛄 🥈	🕹 🔮 oups Admin	Logout Help
han	inel Manager						
Workfle	ow:	General Settings	Channel Controls	Categories	Aud	lience	Review
Channe	I Type: Select the type	of channel to add by click	ing a radio button in the o	ption column			
Option	Channel Type	Description					
с	Custom		vs the publication of chann h channels with only one c			Publishing Do	cument). It is
0	Applet	Displays a java applet.					
c	CPIP Inline Frame	The Inline Frame channel can be used to render a CPIP enabled HTML page within a frame. This channel does not work correctly in prowsers older than Internet Explorer 5 and Netscape 6.					
с	CPIP Web Proxy	This is a unannel for incorporating dynamic HTML or XML application via CPIP Single Sign On. Web Proxied applications have rany limitations on their content. The application should ideally produce XHTML.					
С	Image	splays an image with	optional caption and subc	caption.			
c	Inline Frame	Renders an HTML page within an internal frame. Not supported in browsers older than Internet Explorer 5 and Netscape 6.					
с	JSP Model II	This is a channel for pr	esenting content generate	ed using Java Server Pages	5.		
с	Portlet	Adapter for JSR-168 Portlets					
С	RSS (Rich Site Summary)	Renders content provided in the popular RSS (Rich Site Summary) format.					
0	Universal RSS	Enhanced RSS channel. Uses the ROME library for generating and publishing RSS and Atom feeds.					
C	Web Proxy	Incorporates a dynamic HTML or XML application.					
с	XML Transformation	Transforms an XML document into a fragment of markup language given a set of XSLT stylesheets specified in a uPortal stylesheet list (SSL) file.				ified in a uPortal	

4. Click Next

5. Enter the title, names, and description information for the channel.

jie <u>E</u> dit <u>V</u> iev	
Channe	l Manager
Workflow:	Channel General Inline Channel Categories Audience Review Type Settings parameters Controls Categories Audience Review
Settings: Co	mplete the Settings form below
Options	General Settings
?	Channel Title:[example - StockCharts] CognosConnection
?	Channel Name:[example - StockCharts] Cognos Connection
?	Channel Functional Name:[example - stock-charts] Cognos Connection Channel
?	Channel Functional Name Accessible Only: 🗌
9	Channel Description: The basic Cognos connection window.
?	Channel Timeout: 5000 milliseconds (1000 = 1 second)
?	Channel Secure:
	< Back Next > Review Cancel
	Trusted sites

6. Click Next.

7. Enter the URL for this channel, which is the CPIP definition described earlier: http://<Site Luminis Server>/cp/ip/login?sys=cognos&url=\${urlPass}

Include the CPIP variable "urlPass" which points to the desired Cognos content.

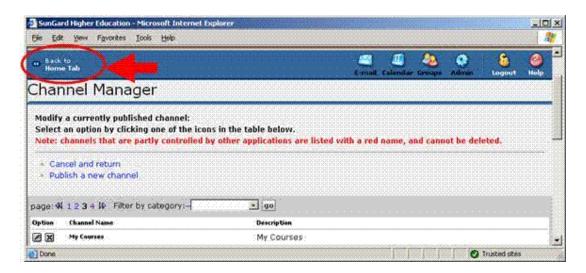
실 SunGard H	ligher Educa	on - Microsoft Internet Explorer	1
<u>F</u> ile <u>E</u> dit	<u>V</u> iew F <u>a</u> vori	s Iools Help	
Chann	el Mai	ager	1
Workflow	Channel Type	General Inline Frame Channel Categories Audience Review Parameters	
		ers: Enter the URL of the page you want to render in an inline frame. Be aware that inline ted in some browsers, in which case this channel will render a link to open the page in a new General Settings	
2	,	URL: [example -http://www.udel.edu/uPortal] http://slcsup61.sct.com/cp/ip/login?sy	
?		Frame Height (pixels):	
		<pre>< Back Next > Review Cancel</pre>	
e		Trusted sites	

- 8. Click Next.
- 9. Click Next to accept the default values for Channel Controls.
- **10.** Select a category (or categories) for the channel to be associated with.
- 11. Click Next.

(The category is used to locate channels when searching for them later)

- **12.** Click **Next** to accept the default values for Audience.
- **13.** Click **Finished** to publish this channel.

14. Click the **Back to Home Tab** link in the upper left-hand side of the screen to return to the main Luminis page.

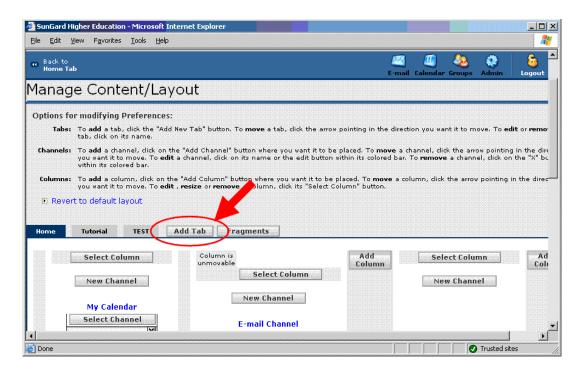


The next step is to associate this channel with a tab on the portal.

15. Click the **Content Layout** link

🚰 SunGard Higher Education - Microsoft Internet Explorer	
<u>Eile E</u> dit <u>V</u> iew F <u>a</u> vorites <u>I</u> ools <u>H</u> elp	N 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997
Luninin INIVERSITY	
ity Account welcome Luminis User Content Layout You are currently logged in. Portal Admin	🖾 🖉 🎨 🊱 E-mail Calendar Groups Admin Logout Help
Home Tutorial TEST	March 3, 2009
My Calendar 2003	X My E-mail Inbox 207X
Click here to login to your calendar.	INBOX folder has (0) messages, (0) unread jcarter@slcsup61.sct.com
	You currently have no messages.
Bookmarks 🛛 🖬	🔀 🖂 E-mail
JA-SIG Homepage	
SunGard Higher Education Homepage	Personal Announcements
	There are no announcements
	Campus Announcements
	There are no announcements
Copyright © SunGard Higher Education 1998 - 2008.	Top SUNGARD
ê	

16. Click the Add Tab button to create a new tab.



- 17. Enter the name for this Tab as Cognos Connection.
- 18. Click Submit.

SunGard Higher Education - Microsoft Internet Explorer	
<u>Eile E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp	
Luminin Lumining	
40 Back to Home Tab	🖾 💷 🍇 🔅 🔓 E-mail Calendar Groups Admin Logout
Manage Content/Layout	
Steps for adding this new tab:	
1. Name the tab: Cognos Connection	
2. Select the type:	
• Traditional O Framed - URL:	(i.e. http://www.theInternet.com)
3. Select a position for the tab:	
Home Tutorial TEST 🕫	
4. Submit the choices: Submit	
■ Cancel and return	۲ ۲
Cone Cone Cone Cone Cone Cone Cone Cone	Trusted sites

19. Select the new Cognos Connection tab.

20. Click the **New Channel** button:

🔁 SunGard Higher Education - Microsoft Internet Exp	lorer	
file Edit Yew Favorites Iools Help		27
Manage Content/Layout		
Options for modifying this tab:		
Make this the default "Active Tab" (the tab	that is selected when you log into the portal?	
Rename the tab: Cognes Connection	Rename	
Change tab type:		
🕫 Traditional 🕜 Framed - URL:	(i.e. http://www.theInternet.com) Change	
• Delete this tab		
Cancel and return		
Nome Tutorial TEST Cognos Co	nnection Add Tab Fragments	
Add	Tab has no columns Colum	
	New Channel	
Done .	O Trusted sites	4

- 21. Select the channel by first entering the category (or Select All)
- **22.** Click **Go**.
- **23.** Select the channel from the listbox.

24. Click **Add Channel**:

SunGard Higher Education - Microsoft Elle Edit View Favorites Tools Help			
Lumini	A VERSITY		
Back to Home Tab		E-mail Calendar Groups	🏟 🔓 🥝 Admin Logout Help
Manage Content/La	yout		
Warning: Steps for adding a new channel: L Select a category: Cother go	2. Select a channel: Category:Other Name Nuevo TCC Recruiting Admissions Performance - FinAid rss feed simp	 Deshboard	
	3. Add the selected channel:	_ (Add Channel
Cancel and return			
Copyright @ SunGard Higher Education 15	198 - 2008.	Тор	SUNGARD HIGHER EDUCATION
e Done			Trusted sites

- 25. Click the Back to Home Tab link to return to the main Luminis page,
- **26**. Click the new **Cognos Connection** tab to see the new channel.

5-25

You will see the authenticated user in both Luminis and Cognos, with the name coming from the common user store (Luminis LDAP):

🚰 SunGard Higher Education - Microsoft Internet Explorer		
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp		🦧
Luminin Lumining		<u>_</u>
My Account Content Layout Portal Admin Home Tutorial TEST Cognos Connection	E-mail Calendar G	wups Admin South Help March 3, 2009
Financial Aid		
Cognos Connection	of 🖬 📃 🗖 🗟	▼ त ▼ i ▼ <u>Launch</u> ▼ ? ▼
Public Folders My Folders		
Public Folders	🏢 # 🖆 👹 🔡 😫 • 🈫	👪 🐰 📭 🛍 🗙 🖻 💏 👘
	Entries: 1	- 8 💿 14 44)> > 1
□ Name ♦	Modified 😂	Actions
🖂 🍘 🛚 CMM Sungard	February 18, 2009 11:42:51 AM	😁 🚱 💈 <u>More</u>
🗂 🛅 Data Validation	October 23, 2008 10:12:11 AM	More
EDW Packages	June 9, 2008 7:34:57 AM	More
🗂 🛅 Enterprise Data Warehouse Analytical Pages	June 29, 2006 3:51:59 PM	More
Enterprise Data Warehouse Analytical Reports	February 11, 2009 1:34:52 PM	More
Performance Management Packages	January 29, 2009 9:54:27 AM	More
SGHE Recruiting Admissions Performance	June 19, 2008 7:52:14 PM	More
e Done		Trusted sites

Following the same basic process, any Cognos pages can be deployed within Luminis, such as in the example screen below:



This screen is using the Cognos URL for the "Director of Financial Aid Dashboard", which is defined in the cognos.xml file as:

```
<SET a:symbol="cogURL2" a:value="${properties.externalSystemURL}/
${properties.cognosSystemID}/cgi-bin/
cognos.cgi?b_action=dashboard&amp;pathinfo=/cm&amp;frag-
header=true&amp;path=storeID(%22i04AD276242AF47B680223538F724B06C%22)&
amp;ui=h1h3h4" />
```

so that the channel definition of this is then:

http://<Site Luminis Server>/cp/ip/login?sys=cognos&url=\${cogURL2}

In the Cognos URL definition, note the use of the path=storeID parameter to refer to the Cognos object (the dashboard report) to display. This ID number is unique within a given Cognos installation so it can be advisable to use the actual search path for the object instead of the object ID when referencing it in the URL. The search path for a page/object is found in the Properties dialog, which is available in the Cognos Connection navigator interface.

Further Cognos UI Customization

While the Cognos applications (Cognos Connection viewer, Studio applications, etc) can be embedded within a Luminis page using the channel concepts discussed, some of the Cognos UI features may be unneccessary and distract from the overall usability of the page. To address this issue, Cognos provides various URL-based parameters which can control some aspects of the UI for these applications. This section describes those parameters and describes a few examples of setting these up.

Consider again the Cognos URL used to launch the Cognos Connection viewer previously, that was defined in the cognos.xml file:

```
<SET a:symbol="urlPass" a:value= "${properties.externalSystemURL}/
${properties.cognosSystemID}/cgi-bin/
cognos.cgi?b_action=xts.run&amp;m=portal/cc.xts&amp;gohome=&amp;ui=" /
>
```

통 Note

Consider the use of the trailing "ui=" parameter in the URL above. Cognos supports using URL parameters to customize the appearance and functionality of the web pages displayed by the Cognos Connection/ Viewer interface. The "ui" parameter can take different values to display (or hide) various parts of the page. For example, ui=h1h2h3h4 will display all 4 header bars on a Cognos Connection page, whereas "ui=h1" would only display the first header bar. Similarly, the "frag-header" dparameter (=true/false) can be used to customize the appearance of Cognos dashboard reports displayed in Cognos connection. Following the technique described here, these values would get added to the URLs defined in the cognos.xml file, so they could then be referenced in Channel definitions.

For more information on these using these parameters, see the Cognos Administration and Security Guide (Chapter 29:Customizing the Functionality of Cognos 8).

Putting this into action, we can modify the Cognos Connection URL used earlier (defined in the cognos.xml as urlPass) as:

```
<SET a:symbol="urlPass" a:value= "${properties.externalSystemURL}/

${properties.cognosSystemID}/cgi-bin/

cognos.cgi?b_action=xts.run&m=portal/

cc.xts&gohome=&ui=h1h3h4" />
```

to see:

SunGard Higher Education - Mozilla Firefox		
Lie zur jew neury gournans tous gep		
My Account Welcome Luminis User Content Layout You are currently logged in. Portal Admin	E-mail Calendar G	🍇 🤹 🔓 🥹 roups Admin Logout Help
Home Tutorial TEST Cognos Connection Financial Aid		March 5, 2009
CognosConnection		DIX
	Entries: 1	- 8 🔘 14 44)> 14
□ Name ≑	Modified ≑	Actions
🗂 😥 🛙 CMM_Sungard	February 18, 2009 11:42:51 AM	😭 😰 🖉 More
🗂 🛅 Data Validation	October 23, 2008 10:12:11 AM	More
🗖 🛅 EDW Packages	June 9, 2008 7:34:57 AM	More
🔲 🛅 Enterprise Data Warehouse Analytical Pages	June 29, 2006 3:51:59 PM	More
📋 🛅 Enterprise Data Warehouse Analytical Reports	February 11, 2009 1:34:52 PM	More
Performance Management Packages	January 29, 2009 9:54:27 AM	More
🔲 🛅 SGHE Recruiting Admissions Performance	June 19, 2008 7:52:14 PM	More
T C Testing	February 20, 2009 1:15:11 PM	More
(
Jone		

텛 Note

Luminis can be configured to cache certain internal configuration data (such as channel definitions) so you may need to restart Luminis in order for channel definition changes to take effect.

For additional details on defining Luminis channels and UI elements, see the Luminis SDK/Channel Development Guide.

Cognos Branch and Merge Functionality

Typically you do not need to modify the Framework Manager Master Project (sghe_pm) that is delivered with the Banner Operational Data Store since this is not a recommended practice. However, if you do make changes to the master project, you need to implement a process that maintains your institution's changes before you upgrade to a new release of Banner Operational Data Store.

If you do need to modify the Framework Manager Master Project, use the branch and merge functionality described in the following sections. The following high level steps outline the best process to use.

- 1. Keep the original Framework Manager model (the master project) untouched and branch at least two layers from that delivered model.
- **2.** Use the first branch of the master model as your production model. This branch reflects the delivered baseline model plus your institution's specific changes.

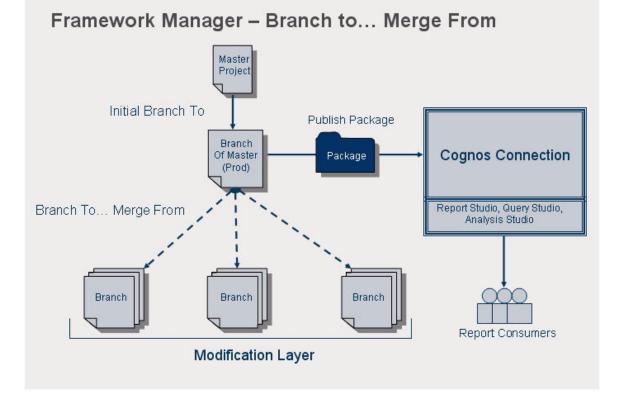
3. Create additional branches of the model and use them as working copies of the production project environment.

Creating multiple working branches allows more than one modeler to work on the same project simultaneously, each in their own working area.

- **4.** Work through your institution's specific changes and enhancements in one of the working model branches.
- **5.** When you're satisfied with the changes or enhancements in the working model, merge the changes back into the production branch (the first branch from the master model.)

Cognos Framework Manager can compare the .log files of two models to determine whether they are derived from the same model and what changes have been made to them. This allows you to merge a working model branch with the production model branch and move only the desired changes into the production model. Using this process lets you maintain the audit trail of changes to your production model.

6. When you're ready to make these changes available to all users, publish any package from the production project branch where changes were merged.



Branch Process

If you need to modify the Framework Manager Master Project (sghe_pm) that is delivered with the Banner Operational Data Store, use the following steps to create two branch layers of the original project.

- 1. Open the delivered master project, sghe_pm, in Framework Manager.
- 2. Select **Project>Branch To...**to create a branch copy of this project.
- 3. Enter a **Project name** and the **Location** where you want to save the branch copy.
 - When creating the first branch, or production model, you may want to give it a name like "production" or "sghe_pm_prod."
 - When creating additional or working branches, you may want to give them a name like "sghe_pm_mod1" and "sghe_pm_mod2."

Create Branch Project	×
Project name:	
sghe_pm Prod	
Location: C:\My Projects\sghe_pm Prod	
Project to be created	
C:\My Projects\sghe_pm Prod\sghe_pm Prod.cpf	
L	OK Cancel <u>H</u> elp

- 4. Click OK.
- 5. Click **OK** again in the warning window.

Use this first branch layer of the master model as your production model.

6. Repeat Steps <u>2</u> - <u>5</u> as many times as needed to create additional branch copies of the master model.

These branch layers will be the modification layers or working models where you can make changes to the model.

7. Select File>Close to close the Master Project (sghe_pm.).

When you complete these steps, there are at least two branch models that are identical to the original master model. Merge changes from the modification branch layers back into the production branch so that the production branch eventually reflects the delivered baseline model plus your institution's specific changes.

Merge Process

After you have made changes to a modification layer, use the following steps to merge the changes into the production layer.

- 1. Open the production model in Framework Manager.
- 2. Select Project>Merge From...to begin the merge process.
- **3.** Navigate to the location of the modification project. This is the working branch model that you want to merge into the production model.
- 4. Click Open.
- **5.** Select the actions that you want Framework Manager to perform during the merge. Leave any actions that you do not want to take place deselected.

Perform the Merge		
Perform the Merge Transaction list:].[test]" to "".	
✓ Uncheck dependent transactions Transaction details:	<u>R</u> un	Step
	<u>lose</u>	Help

- 6. Click **Run** to launch the entire merge process.
 - or

Click **Step** to go through the merge process one action at a time.

Framework Manager compares the log files of each project to determine the differences.

7. Review the log entries in the Transaction details area of the Perform Merge window.

Perform the Merge	
Transaction list Image: Second Seco	
Transaction details:	Step
	Help

8. Click Accept to apply all of the changes in the log.

or

Select desired changes from the list in the log and click **Accept** to apply only selected changes.

or

Click **Revert** to deny any changes to the model and return to the original production model.

9. Select File>Save to save the merged changes in the production model.

Create a New Package

Work through your institution's specific changes and enhancements in one of the working model branches.

When you're satisfied with the changes or enhancements in the working model, merge the changes back into the production branch (the first branch from the master model.)

1. Open a modification project model where you will make the package changes.

통 Note

If you have not already created a modification branch layer of the production model, follow the steps in the section <u>"Branch Process" on page 5-31</u> to create a branch layer before you continue with these steps.

- 2. Right-click on Packages in the Project Viewer and select Create>Package.
- 3. Enter a Name for the new package.
- 4. Click Next.
- 5. Choose From the project and select which model objects you want to include in the package by selecting, deselecting, or hiding Query Subjects.

Choices are inherited by an objects' children, so if you deselect a top level option it deselects the entire structure below that object.

통 Note

Do not choose the **Using existing packages** option if you are creating a new Functional Package.

- Click the plus sign (+) next to Presentation View to show its children options.
- Click the red X to select the Managed Applicants business concept.

Create Package - Define objects			
Define the objects you want to include in this package			
O Using existing packages			
From the project			
Performance Management Database View Business View Presentation View Analyze Enrollment Funnel Snapshot - Manage Applicants Snapshot - Analyze Enrollment Funnel Snapshot - Analyze Enrollment Funnel			
<u>H</u> elp Cancel < <u>B</u> ack <u>N</u> ext > <u>F</u> inish			

6. After you have selected everything you want the package to include, click Next.

5-35

7. Select your database from the **Selected function sets** column if you want to include its functions in the package.

This selection tells the report writer which database functions to use in the package.

Create Package - Select Function Lists		
Select the set of functions that will be availab		
Available function sets:	Selected function sets:	
	DB2 Informix MSAccess Oracle Redbrick SAPBW SQLServer Sybase Teradata	
Define Quality of Service		
<u>H</u> elp Cancel	< <u>B</u> ack <u>N</u> ext > <u>F</u> inish	

8. Click Finish.

9. Click No when prompted whether you want to open the Publish Package wizard.

You do not want to publish your newly created package at this time because you need to merge it first.

- 10. Select File>Save to save the project.
- **11.** Select **File>Close** to close the project.

When you are ready to merge the new package into the production branch model, follow the steps in the section <u>"Merge Process" on page 5-32</u>.

Transaction History Tracking Process

In Framework Manager, you can view and play back actions performed on the project. An action log is an XML file that contains a set of transactions. Each transaction has a sequence number and one or more actions. The action log file is stored in the project folder.

For example, you make changes to a project in a test environment. When it is time to move the project to production, you can use log files to play back every action, or series of actions, that you performed in the test environment to create an identical project in the production environment. Similarly, as an alternative to branching and merging projects one might want to track a series of customizations applied to a project to enable the identical customizations to be applied to an upgraded version of that model.

There are two action log files. The log.xml file contains all the transactions that have been run and saved in the project. This file is created the first time you save the project and exists until you delete the project. The temporary file contains transactions that have been run during the current session, but not saved. The temporary file is deleted when you close the project.

View and Save Transaction History

You can view the transaction history in an action log file and then save it as a script.

1. From the Project menu, click View Transaction History.

💡 Tip

To make the dialog box larger, double-click the caption. Double-click again to restore the dialog box to its original size.

2. Click the transaction numbers that you want.

💡 Tip

To view the details of a transaction, click the plus sign (+) next to a transaction number.

- 3. Click Save as Script.
- 4. Type a name for the file.
- 5. Click Save. Do not save the file in the logs folder.
- 6. Click Close.

Play Back Transactions From a Log File

You can choose to play back a specific transaction or a combination of transactions in a project or segment action log file.

When you play back transactions from a log file, the script player applies the commands in the log file to the contents of the existing model. Errors appear if objects created by the log file already exist in the model.

After the script in a log file has run successfully, a backup of the original project is created in the parent directory of the project. If you want to undo the transactions performed in the script, you can use the backup to restore the project to its original state.

You must disable or clear any commands that will conflict with the contents of the model. You can then run the script again.

- 1. From the Project menu, click Run Script.
- 2. Select the script you want, and click **Open**.
- 3. If you want to view the details of a transaction, click the transaction.
- 4. Set the starting or stop point that you want.
 - To set the starting point for running the script, select the script and then click **Set the starting point**. You can do this at any time to skip an instruction or run

instructions that have already been executed

To set a stop point for the script, select the script and then click Set the stop point
 Point

You can stop the script to make a manual fix and then start it again.

To remove the stop point, click **Remove the stop point**

5. Using the toolbar buttons, choose the run action that you want.

Buttons	Description
	Runs the script
	After an error is encountered, clicking this button attempts to re-execute the failed instruction.
E	Skips to the next transaction and runs the script to the end

[💡] Tip

Buttons	Description
6	Runs the selected transaction only
F	Skips to the next transaction and stops, but does not run any transactions

- 6. The project window is updated as the script is run.
- **7.** Fix any errors encountered by the script either by retargeting objects or modifying the temporary project as required.
- 8. When the script has completed, click **Accept** to accept the changes or click **Revert** to undo the changes.

통 Note

After you click **Accept** or **Revert**, you cannot use **Undo** and **Redo** for the current session.

Oracle Business Intelligence Discoverer (Banner ODS)

Delivered EULs

The structure of the business areas in the EUL is designed to mimic the Business Concepts delivered in the Cognos Framework Manager model. The EUL contains 51 organized Business Concepts which help users identify which reporting views to use when trying to write a report in a specific business area.

The older style EUL delivered in the Banner ODS 2.0 up to the Banner ODS 3.0 was also delivered for the Banner ODS 3.1. This EUL consists of just 3 Business Area. The main Business Area being the Banner ODS – Reporting Views that comprised all of the Banner ODS Reporting Views and their logical joins to other reporting views. This EUL has been synchronized with the subsequent Banner ODS releases and delivered so that existing reports written against this style EUL could continue to run without breaking in Banner ODS 3.1.Currently clients have the option of installing 1, both or none of these EULs.

Below are the scenarios that may help your institution decide which EUL to import moving forward:

Existing institutions that wrote reports against the EUL in Banner ODS 3.0 or earlier

• Import and continue to use the old style EUL and not import the new style EUL.

SunGard Higher Education will continue to support the old style EUL.

• Continue to use the old style EUL and also create a separate schema to import the new EUL.

In this scenario institutions can run their old reports against the older style EUL and create their new ones against the new EUL if they like the newer style EUL. In order for this scenario to happen 2 EUL schemas would need to be up and running. You cannot import both .eex files into the same EUL.

• Only import and use the new EUL.

This option would require institutions to potentially have to modify existing reports that were written against the old sty2le EUL.

Clients new to the Banner ODS can use either EUL, but SunGard recommends that you use the new style EUL to benefit from the additional functionality.

Lists of Values

A list of values (LOV) is a set of valid values for a column in a Banner ODS reporting view. List of value views are contained within the ODSLOV schema within the Banner ODS. The LOV views obtain their information from the Banner ODS composite table called MGT_VALIDATION. The meta data layers are shipped containing lists of values to be used for drop-down lists or filters in queries and reports. The views contained within the ODSLOV schema provide the data which populates these lists of values. See the ODSLOV List of Values section in <u>Chapter 4, "Data Models"</u> for the complete list of ODSLOV list of value views. The values also exist in Oracle Business Intelligence Discoverer and Cognos 8 Business Intelligence with the exact same names as the LOV views but without the underscores.

In Oracle Business Intelligence Discoverer there is a business area that contains folders for each of the ODSLOV views. The business view and area are called "List of Values".

Lists of Values – Item Classes

List of value folders in Oracle Business Intelligence Discoverer are used to create items classes in Oracle Business Intelligence Discoverer Administrator. Item classes are groups of items that share some similar properties. An item class enables you to define item properties once, and then assign the item class to other items that share similar properties.

Example

The Academic Period LOV folder includes an item called Academic Period that describes each academic period. A similar item also called Academic Period is contained in the Academic Outcome folder.

To enable both items to share common properties (for example. a list of values), SunGard Higher Education created an item class from the list of value folder to define the properties, and applied it to both items. So, the list of values only had to be defined once from the ODSLOV view.

통 Note

You may notice that when using this approach there may be academic periods in the Academic Period LOV folder that are not in the Academic Outcome folder. However, accessing the list from the ODSLOV view is faster than accessing one created from the reporting view. If you need a list of values that exactly matches the values in the reporting view column, you can create an item class from a reporting view column similarly to how it was created from the ODSLOV views.)

Oracle Business Intelligence Discoverer end users use lists of values to display values or enter values in parameters and conditions.

A table of Oracle Business Intelligence Discoverer item classes that have been assigned to reporting view columns displays below. There are many more item classes that can be create from the list of value views. Below are the ones that are currently provided:

Item Class	Item Class	Item Class
Lov Academic Period.Value	Lov Division.Value	Lov Native Language. Value
Lov Academic Period.Value Description	Lov Division.Value Description	Lov Native Language.Value Description
Lov Academic Standing.Value	Lov Earnings.Value	Lov Organization Level 1. Value
Lov Academic Standing.Value Description	Lov Earnings. Value Description	Lov Organization Level 2. Value
Lov Academic Title.Value	Lov Educational Goal.Value	Lov Organization Level 3. Value
Lov Academic Year.Value	Lov Educational Goal.Value Description	Lov Organization Level 4. Value
Lov Academic Year.Value Description	Lov Eeo Skill.Value	Lov Organization Level 5. Value
Lov Account Class.Value	Lov Eeo Skill. Value Description	Lov Organization Level 6. Value
Lov Account Class.Value Description	Lov Employee Class.Value	Lov Organization Level 7. Value
Lov Account Level 1.Value	Lov Employee Group.Value	Lov Organization Pool.Value
Lov Account Level 2.Value	Lov Employee Group.Value Description	Lov Organization Pool.Value Description
Lov Account Level 3.Value	Lov Employee Status.Value	Lov Packaging Group.Value

Item Class	Item Class	Item Class
Lov Account Level 4.Value	Lov Employee Status.Value Description	Lov Packaging Group.Value Description
Lov Account Pool.Value	Lov Employer Category.Value	Lov Position Change Reason.Value
Lov Account Pool.Value Description	Lov Employer Category.Value Description	Lov Position Change Reason.Value Description
Lov Account Type Level 1.Value	Lov Employer Industrial Type.Value	Lov Position Class.Value
Lov Account Type Level 2.Value	Lov Employer.Value	Lov Position Class.Value Description
Lov Activity Category.Value	Lov Employer. Value Description	Lov Position Deferred Pay.Value
Lov Activity Category.Value Description	Lov Employment Status.Value	Lov Position Deferred Pay.Value Description
Lov Activity Type.Value	Lov Employment Status.Value Description	Lov Position Location.Value
Lov Activity Type.Value Description	Lov Enrollment Status.Value	Lov Position Location.Value Description
Lov Activity.Value	Lov Enrollment Status.Value Description	Lov Position Status.Value
Lov Activity.Value Description	Lov Fiscal Period.Value	Lov Position Status.Value Description
Lov Address Type.Value	Lov Fiscal Year. Value	Lov Position.Value
Lov Address Type.Value Description	Lov Foreign Currency.Value	Lov Pref Class.Value
Lov Admissions Attribute.Value	Lov Foreign Currency.Value Description	Lov Pref Class.Value Description
Lov Admissions Attribute.Value Description	Lov Fund Level 1. Value	Lov Prim Disability.Value
Lov Admissions Population.Value	Lov Fund Level 2. Value	Lov Prim Disability.Value Description
Lov Admissions Population.Value Description	Lov Fund Level 3. Value	Lov Program Classification.Value
Lov Advisor Name Lfmi.Value	Lov Fund Level 4. Value	Lov Program Classification.Value Description
Lov Advisor Type.Value	Lov Fund Level 5.Value	Lov Program Level 1.Value
Lov Advisor Type.Value Description	Lov Fund Pool.Value	Lov Program Level 2. Value
Lov Aid Year.Value	Lov Fund Pool.Value Description	Lov Program Level 3. Value
Lov Aid Year. Value Description	Lov Fund Source.Value	Lov Program Level 4. Value
Lov Application Status.Value	Lov Fund Source.Value Description	Lov Program.Value
Lov Application Status.Value Description	Lov Fund Type Level 1. Value	Lov Program. Value Description

Item Class	Item Class	Item Class
Lov Assignment Grade.Value	Lov Fund Type Level 2.Value	Lov Progress Evaluation.Value
Lov Assignment Pay Id.Value	Lov Fund Type.Value	Lov Progress Evaluation.Value Description
Lov Assignment Pay Id.Value Description	Lov Fund Type.Value Description	Lov Project.Value
Lov Assignment Salary Group.Value	Lov Gender.Value	Lov Project. Value Description
Lov Assignment Salary Group.Value Description	Lov Gender.Value Description	Lov Prospect Status.Value
Lov Award Category.Value	Lov Grade Type.Value	Lov Rating Type.Value
Lov Award Category.Value Description	Lov Grade Type.Value Description	Lov Rating Type.Value Description
Lov Benefit Category.Value	Lov Grant. Value Description	Lov Rating.Value
Lov Benefit Category.Value Description	Lov Hold.Value	Lov Rating.Value Description
Lov Block Schedule.Value	Lov Hold.Value Description	Lov Recruiter.Value
Lov Block Schedule.Value Description	Lov Income Level.Value	Lov Recruiter. Value Description
Lov Budget Group.Value	Lov Income Level.Value Description	Lov Registration Reason.Value
Lov Budget Group.Value Description	Lov Installment Plan.Value	Lov Registration Reason.Value Description
Lov Budget Phase.Value	Lov Installment Plan.Value Description	Lov Registration Status.Value
Lov Budget Phase.Value Description	Lov Instruction Method.Value	Lov Registration Status.Value Description
Lov Budget. Value	Lov Instruction Method.Value Description	Lov Residency.Value
Lov Building.Value	Lov Instructional Method.Value	Lov Residency. Value Description
Lov Building.Value Description	Lov Instructional Method.Value Description	Lov Review Type.Value
Lov Campaign Type.Value	Lov Instructor Name.Value	Lov Review Type.Value Description
Lov Campaign Type.Value Description	Lov Internal Account Type.Value	Lov Schedule Type.Value
Lov Campaign.Value	Lov Internal Account Type.Value Description	Lov Schedule Type.Value Description
Lov Campus.Value	Lov Internal Fund Type.Value	Lov Secondary School.Value
Lov Campus.Value Description	Lov Internal Fund Type.Value Description	Lov Site.Value
Lov Certification.Value	Lov Job Leave Category.Value	Lov Site.Value Description
Lov Certification.Value Description	Lov Job Leave Category.Value Description	Lov State Province.Value

Item Class	Item Class	Item Class
Lov Chart Of Accounts.Value	Lov Job Suffix.Value	Lov State Province.Value Description
Lov Chart Of Accounts.Value Description	Lov Leadership Role.Value	Lov Student Population.Value
Lov Cohort.Value	Lov Leadership Role.Value Description	Lov Student Population.Value Description
Lov Cohort.Value Description	Lov Leave Of Absence Reason.Value	Lov Student Status.Value
Lov Collection Agency Name.Value	Lov Leave Of Absence Reason.Value Description	Lov Student Status.Value Description
Lov College.Value	Lov Legacy.Value	Lov Sub Academic Period.Value
Lov College.Value Description	Lov Legacy. Value Description	Lov Sub Academic Period.Value Description
Lov Commodity.Value	Lov Location Level 1. Value	Lov Subject. Value
Lov Commodity.Value Description	Lov Location Level 2.Value	Lov Subject.Value Description
Lov Contract Number. Value	Lov Location Level 3. Value	Lov Termination Reason.Value
Lov Contract Type.Value	Lov Location Level 4.Value	Lov Termination Reason.Value Description
Lov Contract Type.Value Description	Lov Mail.Value	Lov Test Rule.Value
Lov County.Value	Lov Mail. Value Description	Lov Test.Value
Lov County.Value Description	Lov Major. Value	Lov Test. Value Description
Lov Course Attribute.Value	Lov Major. Value Description	Lov Tracking Group.Value
Lov Course Attribute.Value Description	Lov Marital Status.Value	Lov Tracking Group.Value Description
Lov Course Identification.Value	Lov Marital Status.Value Description	Lov Vendor Type.Value
Lov Course Reference Number.Value	Lov Meal Plan.Value	Lov Vendor Type.Value Description
Lov Current Time Status.Value	Lov Meal Plan. Value Description	Lov Veteran Category.Value
Lov Current Time Status.Value Description	Lov Meeting Type.Value	Lov Veteran Category.Value Description
Lov Department.Value	Lov Meeting Type.Value Description	Lov Worker Compensation Class.Value
Lov Department.Value Description	Lov Nation.Value	Lov Worker Compensation Class.Value Description
Lov Designation.Value	Lov Nation. Value Description	

Conditions

Information from reporting views in the Banner ODS can be filtered using objects in the reporting tool meta data layer. In Oracle Business Intelligence Discoverer, they are called conditions.

The table at the bottom of this section identifies which conditions are set up in the Oracle Business Intelligence Discoverer EUL.

Oracle Business Intelligence Discoverer	
Object	Definition
Condition Name	A name for the condition on the reporting view.
Formula	An expression that is used to generate a where clause when querying the Reporting View.
Folder Name	An Oracle Business Intelligence Discoverer folder that
	represents a Banner ODS Reporting View.
Business Area	A logical grouping of Banner ODS Reporting Views.
Optional vs. Mandatory	If a condition is optional, it is visible in Oracle Business Intelligence Discoverer Plus and can be added to a workbook. If
	it is mandatory, it is invisible, and always applied to a folder.

Condition Name	Formula	Folder Name	Business Area	Optional vs. Mandatory
Endowment Distribution Document Type	Document Type = 20	Transaction History	Endowment Distribution	Optional
			Transaction History	Optional
Fixed Asset Adjustment Document Type	Document Type = 60	Transaction History	Fixed Asset	Optional
			Transaction History	Optional
Invoice Document Type	Document Type = 3	Transaction History	Invoice Payable	Optional
			Transaction History	Optional
Purchasing Document Type	Document Type = 2	Transaction History	Purchasing Payable	Optional
			Transaction History	Optional
Encumbrance Ledger Indicator	Ledger Indicator = 'E'	Transaction History	Encumbrance	Optional
			Transaction History	Optional
General Ledger Indicator	Ledger Indicator = 'G'	Transaction History	General Ledger	Optional

5-45

Condition Name	Formula	Folder Name	Business Area	Optional vs. Mandatory
			Receivable Revenue	Optional
			Transaction History	Optional
Operating Ledger Indicator	Ledger Indicator = 'O'	Transaction History	Grant Ledger	Optional
			Operating Ledger	Optional
			Transaction History	Optional
Status = 'A'	Status = 'A'	Employee	Benefit Deduction	Mandatory
Status Disposition = 'U'	Status Disposition = 'U'	Hr Application	Human Resource Application	Mandatory
			Person Role	Mandatory

Date Hierarchies

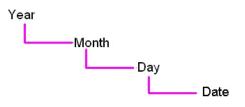
Hierarchies are logical relationships between items that enable you to drill up and down to view more or less detail. To analyze information effectively, Oracle Business Intelligence Discoverer end users should:

- Drill down to see more detail. The Year to Month to Day to Date, for example.
- Drill up to see how the detail contributes to information at a higher level. The Date to Day to Month to Year, for example.

통 Note

Oracle Business Intelligence Discoverer automatically creates default date hierarchies against date items when you import a reporting view into the End User Layer (EUL) using Oracle Business Intelligence Discoverer Administrator. However, these default date hierarchies can cause performance issues. Oracle Business Intelligence Discoverer adds additional date items to a folder with default date hierarchies, using a function to populate the values returned for these items. This keeps queries that include these date items from using any indexes on the folder. Therefore the SunGard Higher Education date hierarchy replaces the Oracle Business Intelligence Discoverer default date hierarchies.

The EUL uses the CALENDAR_DATE_HIERARCHY reporting view to specify time periods needed for the hierarchy. Below is an example of the calendar date hierarchy used in the EUL.



A number of date folders are provided based on the CALENDAR_DATE_HIERARCHY reporting view. Each folder has a hierarchy defined on it. The table below lists the date folders in the Oracle Business Intelligence Discoverer EUL.

Date Folder	Date Folder
Award Status Date	Origination Tag Number Date
Birth Date	Package Completion Date
Collection Date	Pledge Date
Current Time Status Date	Pool Termination Date
Date Added Date	Position Begin Date
Deceased Date	Position Vacancy Date
Document Date	Posting Date
Enrollment Status Date	Profile Date
Function Start Date	Project Start Date
Highest Gift Amount Date	Purchase Order Date
Immigration Status Date	Rating Date
Income Spend End Date	Related Birth Date
Invoice Date	Related Deceased Date
Latest Decision Date	Start Date
Military Separation Date	Target Ask Date
Most Recent Gift Date	Tenure Date
Most Recent Pledge Date	Transaction Date
Operating Date	Visa Start Date

The EUL joins a date in a folder created for a typical reporting view to the date item in the date folder. The date is then accessible along with date items for Year, Month, and Day from the date folder. Drill up or down on these items to view more detail or a more generalized view of the information. The date folders are sometimes used in more than one business area.

The table below displays the date folders in the Oracle Business Intelligence Discoverer EUL by business area:

Business Area	Date Folder
Active Registration	Current Time Status Date
	Enrollment Status Date
Admissions Application	Latest Decision Date
Advancement Prospect	Target Ask Date
Advancement Rating	Rating Date
Annual Giving	Highest Gift Amount Date
Constituent	Most Recent Gift Date
	Most Recent Pledge Date
Constituent Entity	Birth Date

Business Area	Date Folder
Employee	Profile Date
Endowment Distribution	Income Spend End Date
Endowment Unit	Pool Termination Date
Enrollment Management	Current Time Status Date
	Enrollment Status Date
Event	Function Start Date
Faculty Assignment	Tenure Date
Financial Aid Application	Package Completion Date
Financial Aid Award and Disbursement	Award Status Date
Fixed Asset	Origination Tag Number Date
Gift	Deceased Date
	Posting Date
Government Reporting	Visa Start Date
Grant and Project	Project Start Date
Human Resource Application	Position Vacancy Date
Human Resource Faculty	Tenure Date
Invoice Payable	Invoice Date
Organizational Constituent	Most Recent Gift Date
	Most Recent Pledge Date
Payroll	Document Date
Person Demographic	Birth Date
	Deceased Date
	Immigration Status Date
	Military Separation Date
Person Role	Birth Date
	Deceased Date
	Immigration Status Date
	Military Separation Date
Person Supplemental	Birth Date
	Deceased Date
	Immigration Status Date
	Military Separation Date
Pledge	Deceased Date
	Pledge Date
	Posting Date
Position	Position Begin Date
Purchasing Payable	Invoice Date
	Purchase Order Date
Receivable Customer	Collection Date
Receivable Revenue	Operating Date

_

_

_

Date Folder
Date Added Date
Related Birth Date
Related Deceased Date
Birth Date
Deceased Date
Immigration Status Date
Military Separation Date
Start Date
Start Date
Transaction Date

5-49



6 Business Concepts

Business concepts are used to organize the data available for different reporting requirements. A business concept shows the relationships between the data supporting a set of business processes. Because different business processes often require different perspectives on data, the relationships among the supporting database objects need to change based on the analysis being performed.

The Banner ODS solution is designed to take advantage of Cognos Framework Manager's ability to use database objects in multiple models. Each model is referred to as a namespace. In a Framework Manager namespace, database objects are defined as Cognos metadata query subjects. In that namespace the relationships between the different query subjects focus around a central or primary fact table query subject. All other query subjects are related to each other through the central or primary fact table. All data analysis and reporting completed using the business concept uses the central fact table to filter and determine what data to retrieve.

Banner ODS Business Concepts

The following table lists the business concept and primary reporting view or database table for each business concept within the Banner ODS. These concepts are listed by subject areas. A subject area loosely corresponds to a SunGard Higher Education Banner product. When you write a report, use filters on the primary reporting view rather than the other reporting views whenever possible.

Subject Area	Business Concepts	Primary Fact Table at the center of Banner ODS Business Concepts
Accounts Receivable	Receivable Customer	RECEIVABLE_ACCOUNT
	Receivable Revenue	RECEIVABLE_ACCOUNT_DETAIL
Advancement	Advancement Prospect	PROSPECT_INFO
	Advancement Rating	ADVANCEMENT_RATING

Subject Area	Business Concepts	Primary Fact Table at the center of Banner ODS Business Concepts
	Annual Giving	ANNUAL_GIVING
	Campaign Giving History	CAMPAIGN_GIVING_HISTORY
	Constituent	CONSTITUENT
	Constituent Entity	CONSTITUENT_ENTITY
	Designation Giving History	DESIGNATION_GIVING_HISTORY
	Gift	GIFT_TRANSACTION
	Organizational Constituent	ORGANIZATIONAL_CONSTITUENT
	Pledge	PLEDGE_TRANSACTION
Common	Event	EVENT
	Institution	INSTITUTION
	Organization Entity	ORGANIZATION_ENTITY
	Person Demographic	PERSON_DETAIL
	Person Role	PERSON_DETAIL
	Person Supplemental	PERSON_DETAIL
	Relationship	RELATIONSHIP
Finance	Budget Availability Ledger	BUDGET_AVAILABILITY_LEDGER
	Budget Detail	BUDGET_DETAIL
	Encumbrance	ENCUMBRANCE_ACCOUNTING
	Endowment Distribution	ENDOWMENT_DISTRIBUTION
	Endowment Units	ENDOWMENT_UNIT
	Fixed Asset	FIXED_ASSET_ITEM
	General Ledger	GENERAL_LEDGER
	Grant and Project	GRANT_VIEW
	Grant Ledger	GRANT_LEDGER
	Invoice Payable	INVOICE_ITEM
	Operating Ledger	OPERATING_LEDGER
	Purchasing Payable	PURCHASE_ORDER_ITEM
	Transaction History	TRANSACTION_HISTORY
Financial Aid	Financial Aid Application	FINAID_APPLICANT_STATUS
	Financial Aid Award and Disbursement	AWARD_BY_PERSON

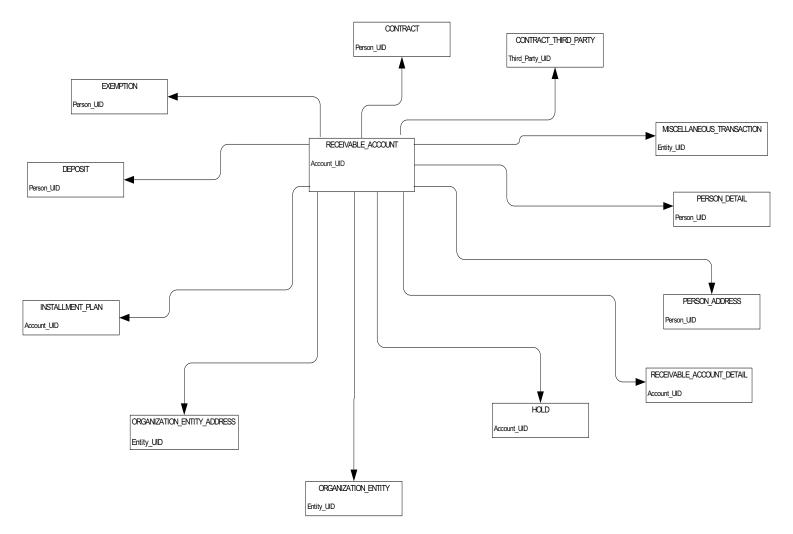
Subject Area	Business Concepts	Primary Fact Table at the center of Banner ODS Business Concepts
	Financial Aid Fund	AWARD_BY_FUND
Human Resources	Employee	EMPLOYEE
	Human Resource Application	HR_APPLICATION
	Human Resource Faculty	FACULTY
	Payroll	PAYROLL_DOCUMENT
	Position	POSITION_DEFINITION
Student	Active Registration	ENROLLMENT
	Admissions Application	ADMISSIONS_APPLICATION
	Advisor Student List	STUDENT
	Course Catalog	COURSE_CATALOG
	Enrollment Management	ENROLLMENT
	Faculty Assignment	FACULTY
	Government Reporting	GOVERNMENT_STUDENT, GOVERNMENT_FINANCIAL_AID, GOVERMENT_ADMISSIONS
	Recruitment Information	RECRUITMENT_INFORMATION
	Residential Life	PERSON_DETAIL
	Schedule Offering	SCHEDULE_OFFERING
	Student Detail	STUDENT

Diagrams

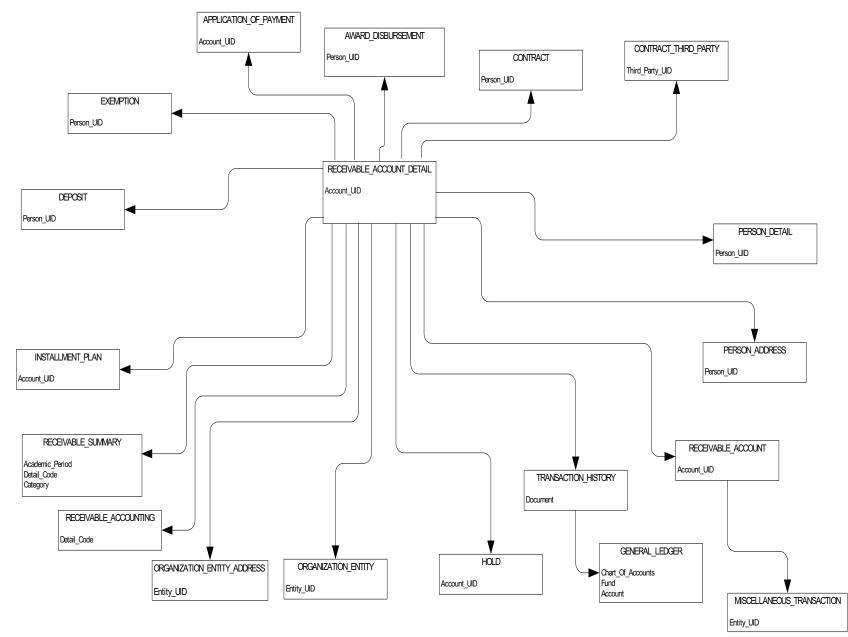
The relationships in the reporting tool meta data for Cognos 8 Business Intelligence and Oracle Business Intelligence Discoverer are the same. Below are the diagrams that show the relationships for the business concepts defined in the Banner ODS. There is one diagram for each business concept. The diagrams are grouped by subject areas such as Accounts Receivable, Advancement, etc.

Accounts Receivable

Receivable Customer

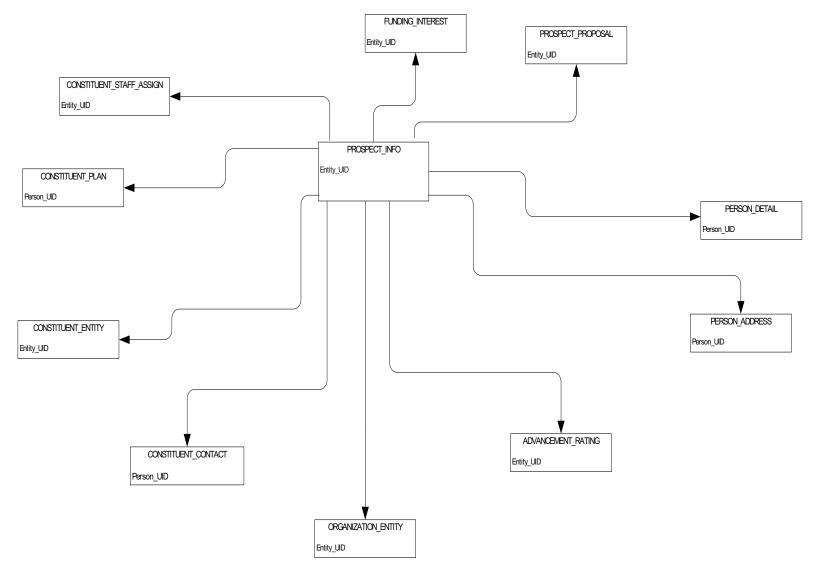


Receivable Revenue

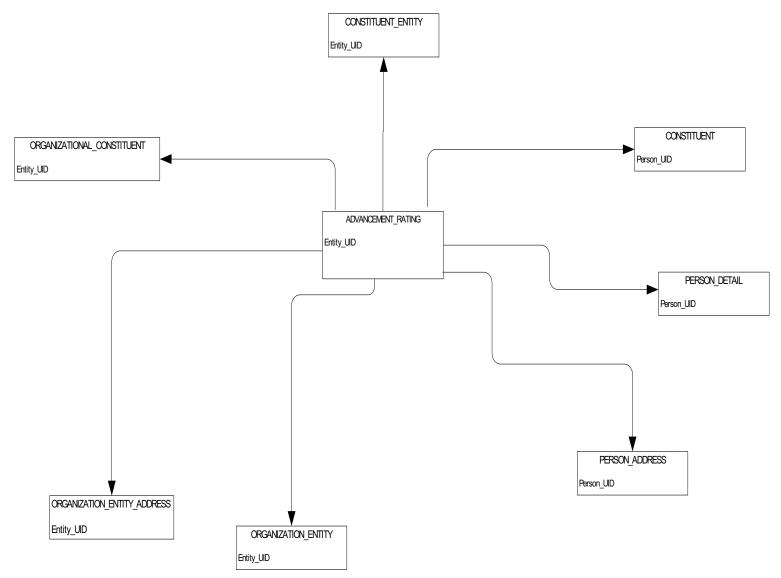


Advancement

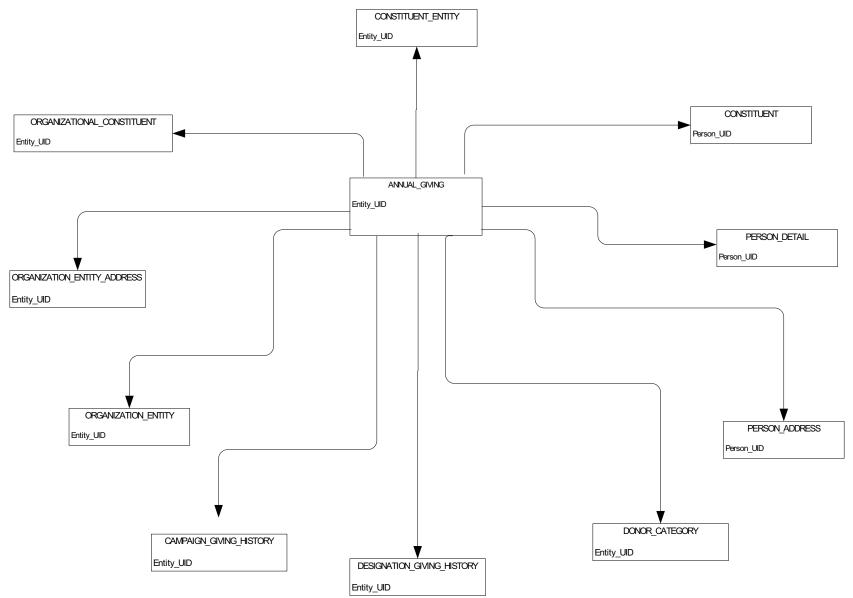
Advancement Prospect



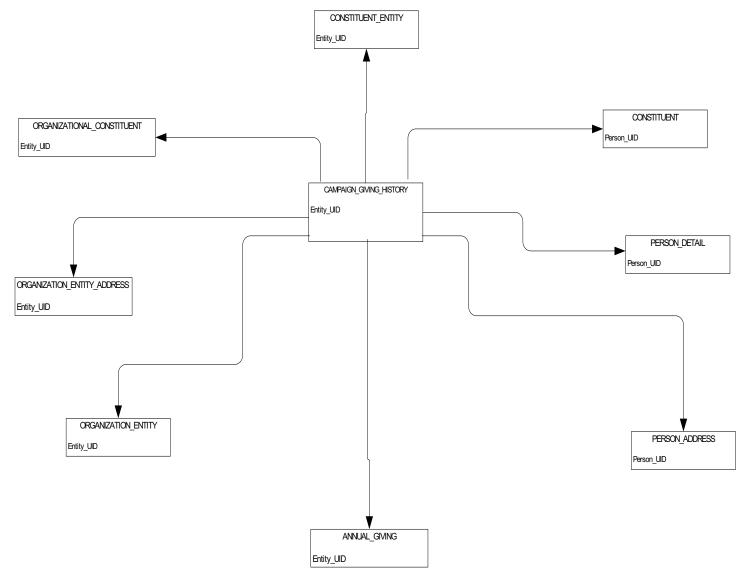
Advancement Rating



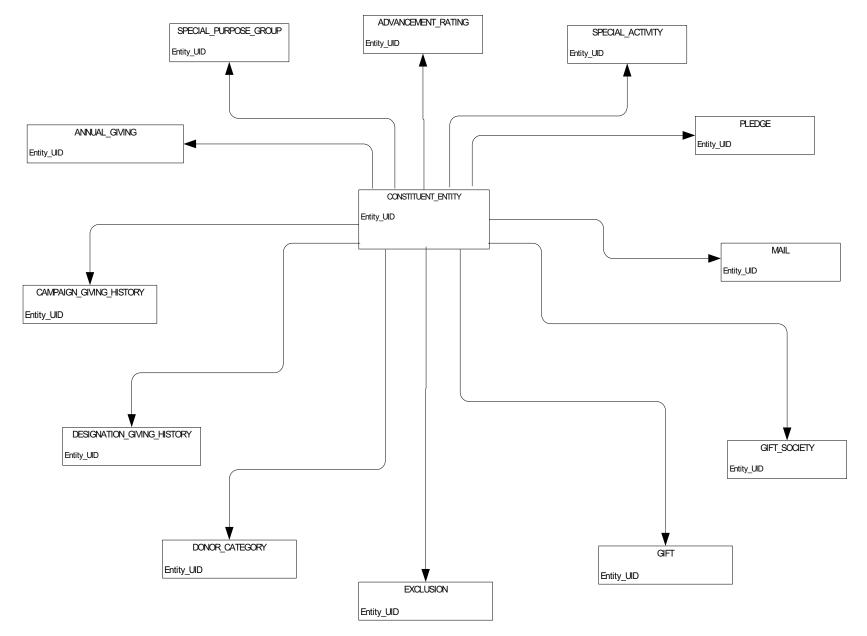
Annual Giving



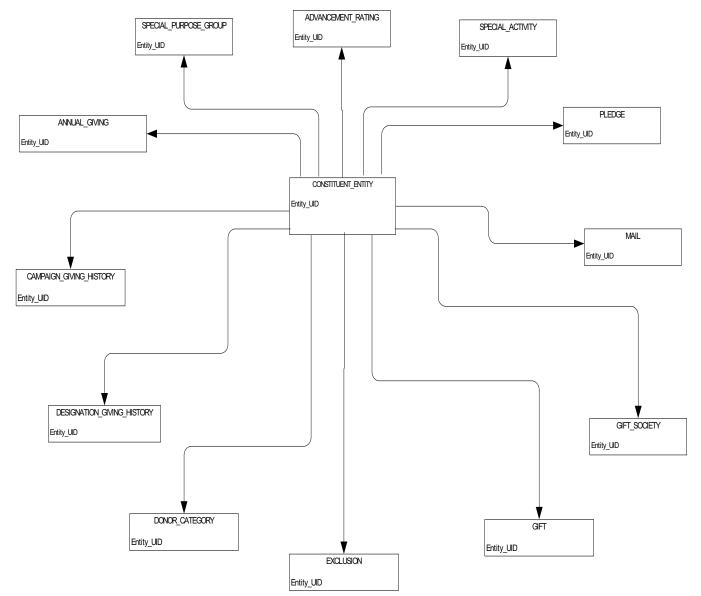
Campaign Giving History



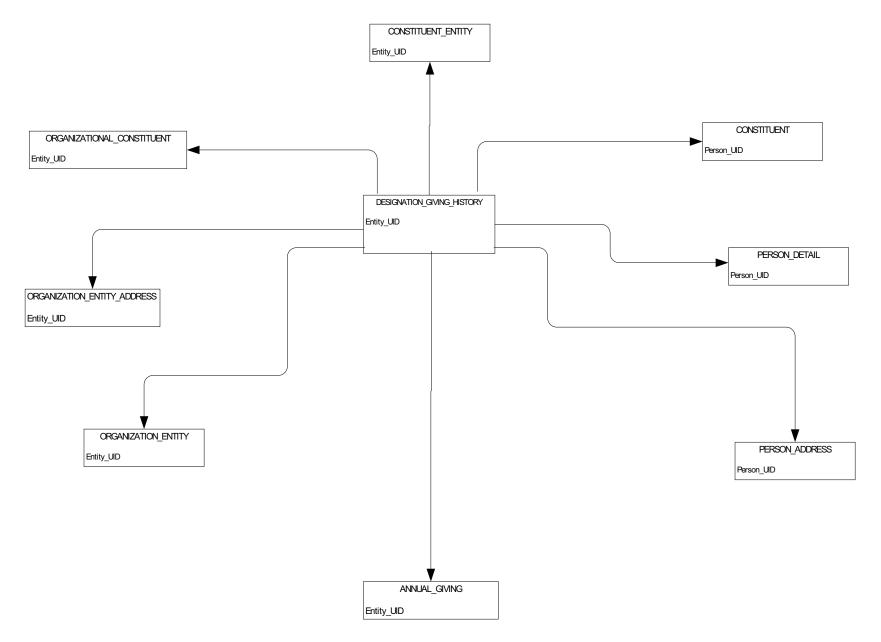
Constituent



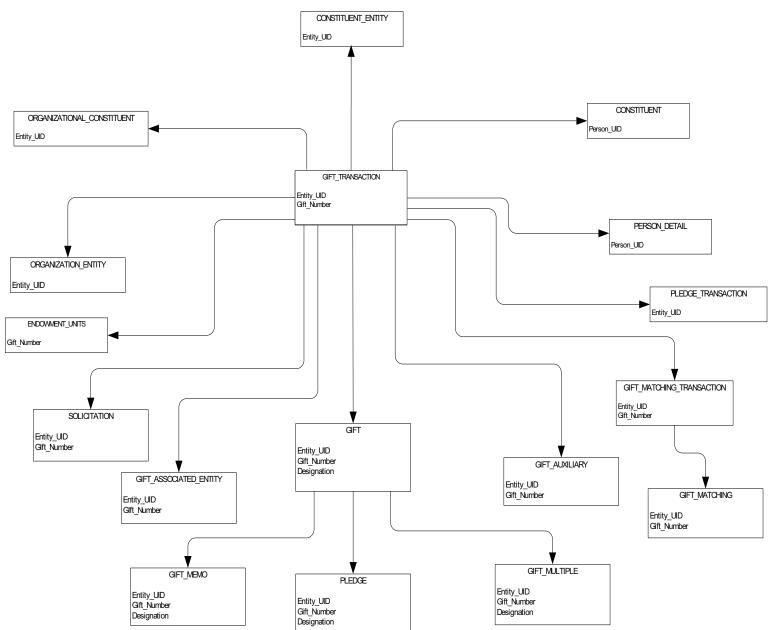
Constituent Entity



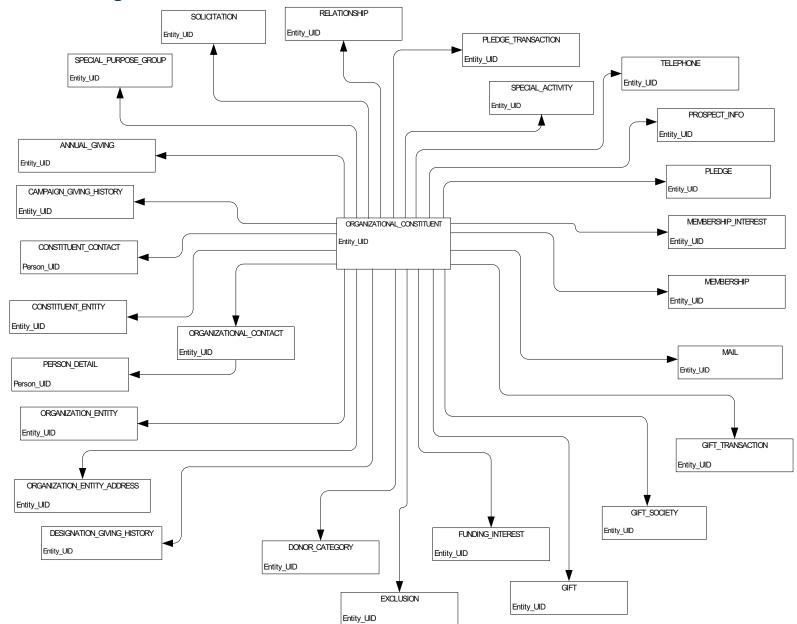
Designation Giving History



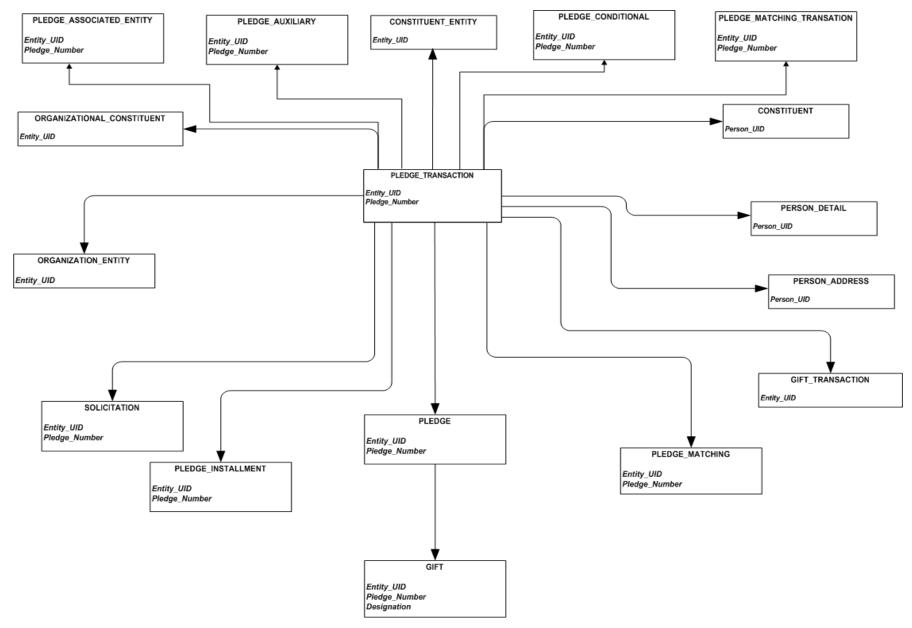
Gift



Organizational Constituent



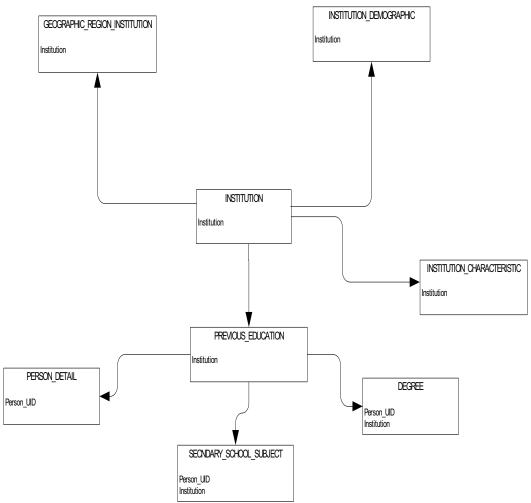
Pledge



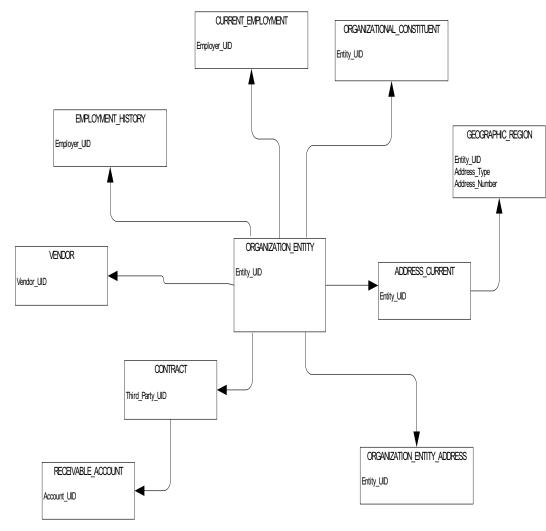
Common

Event PERSON_DETAIL Person_UID PERSON_ADDRESS Person_UID PERSON_ADDRESS Person_UID

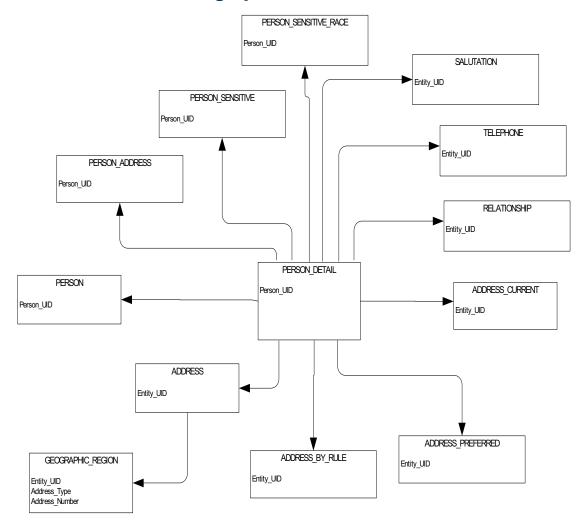
Institution



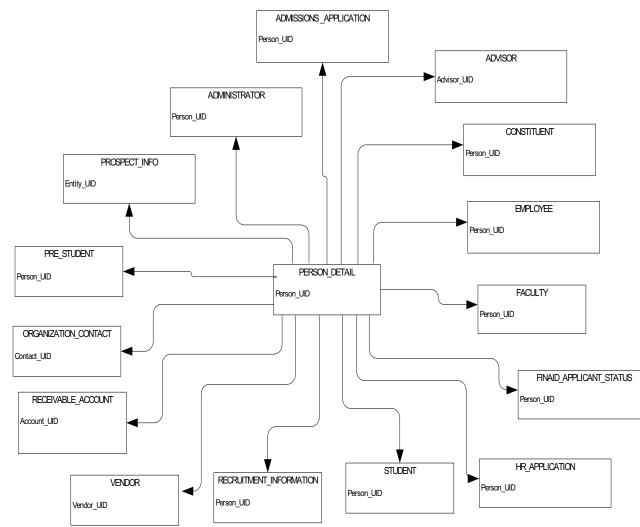
Organization Entity



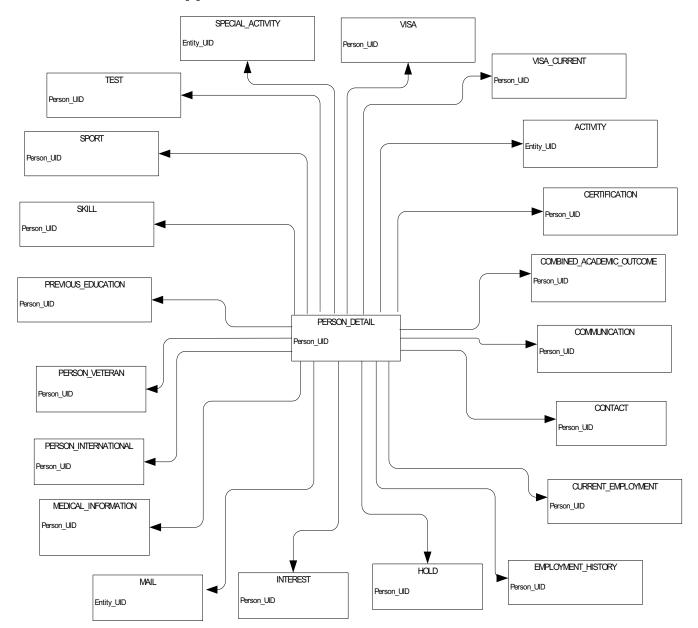
Person Demographic



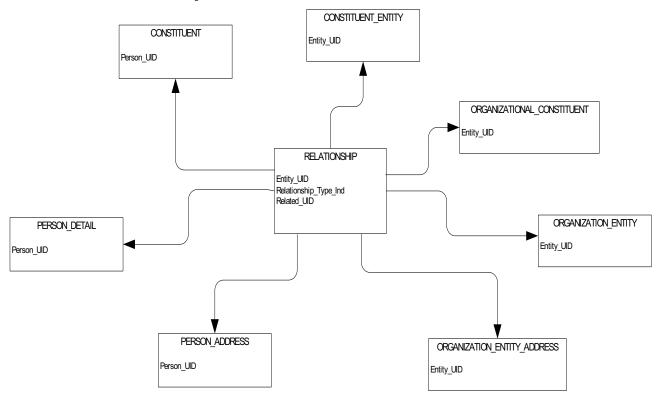
Person Role



Person Supplemental



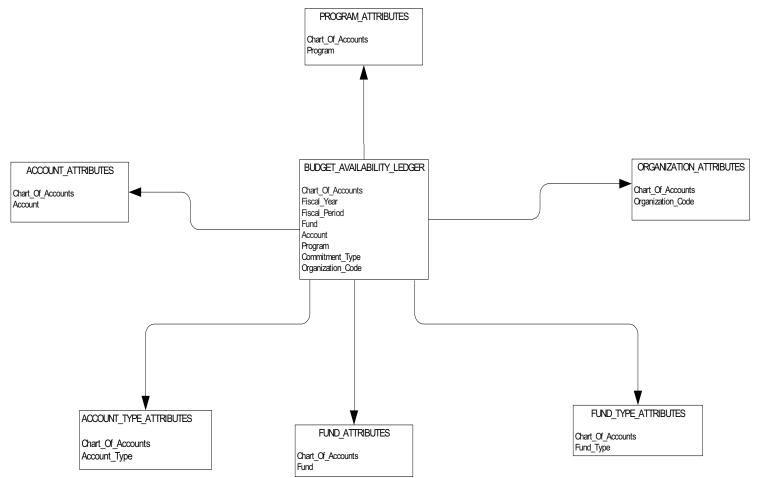
Relationship



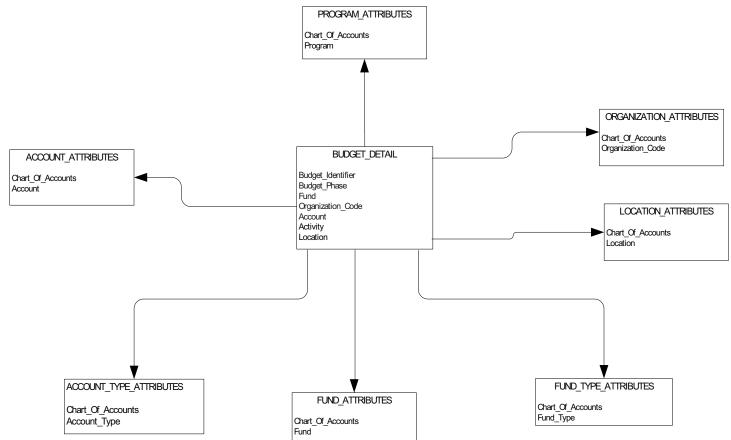
April 2009

Finance

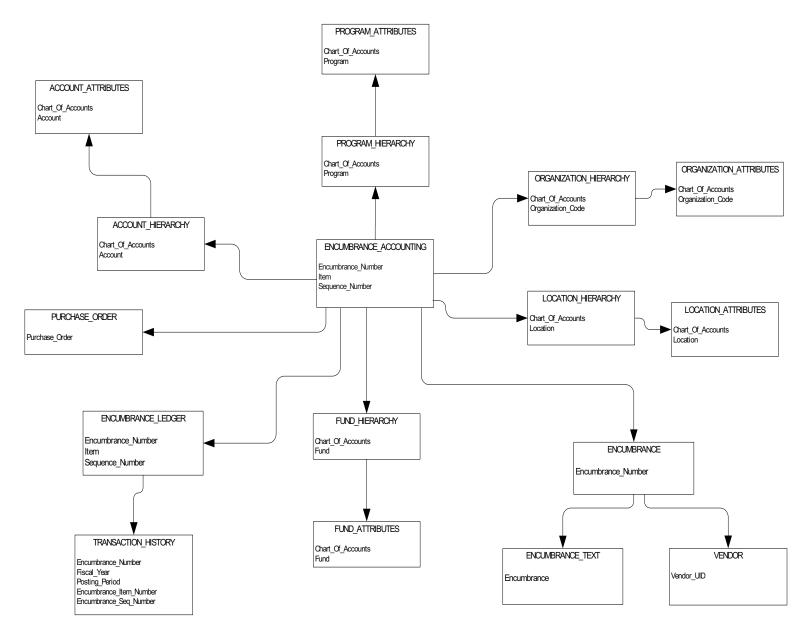
Budget Availability Ledger



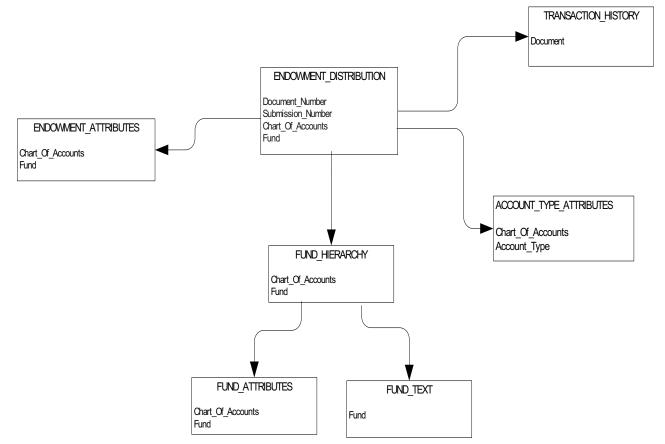
Budget Detail



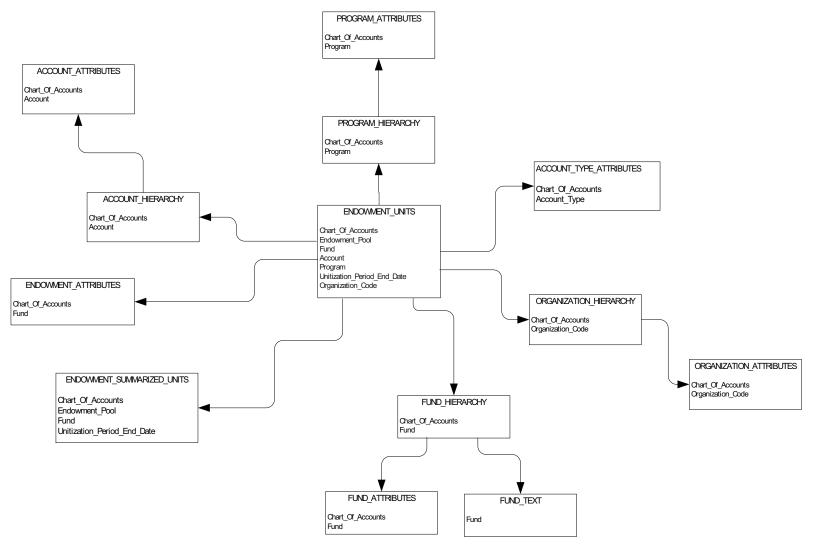
Encumbrance



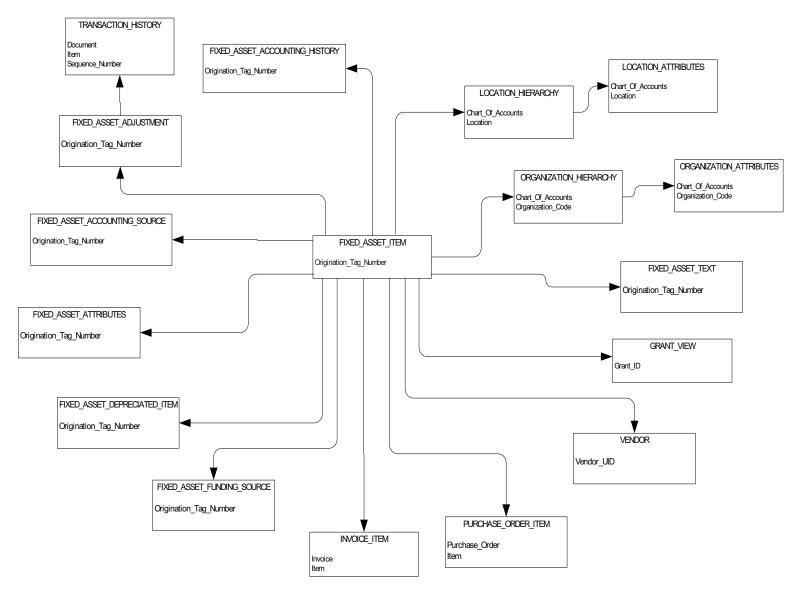
Endowment Distribution



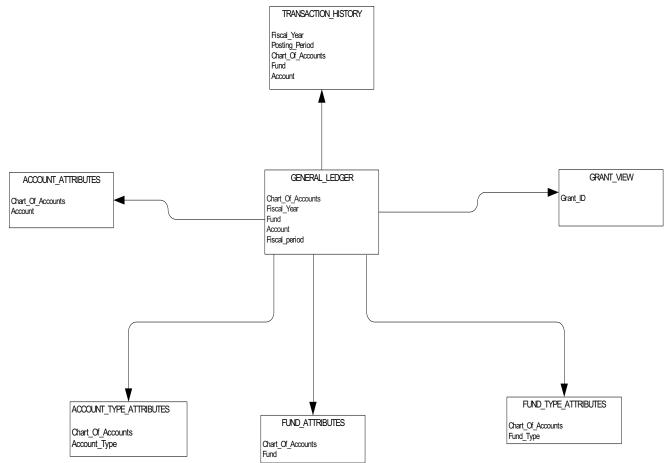
Endowment Units



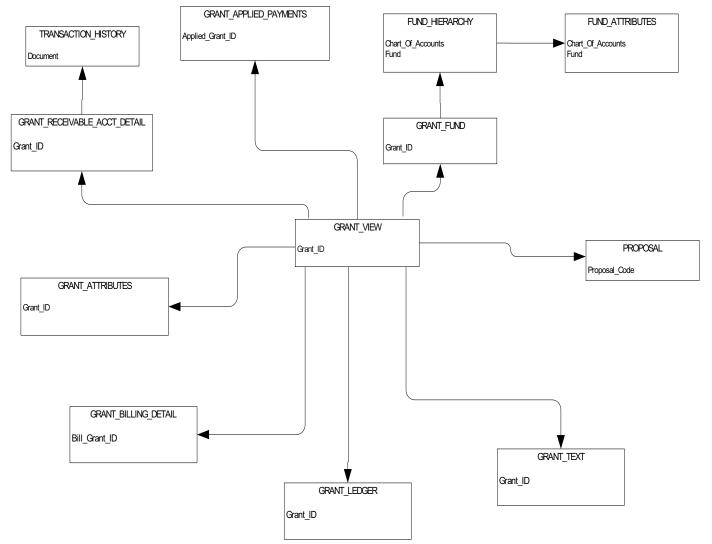
Fixed Asset



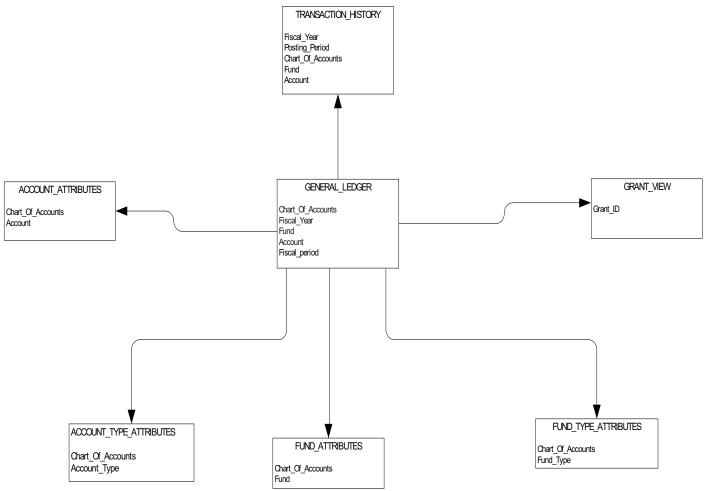
General Ledger



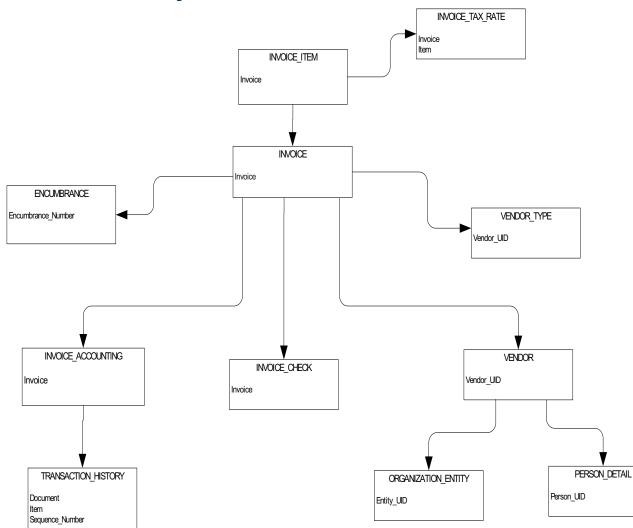
Grant and Project

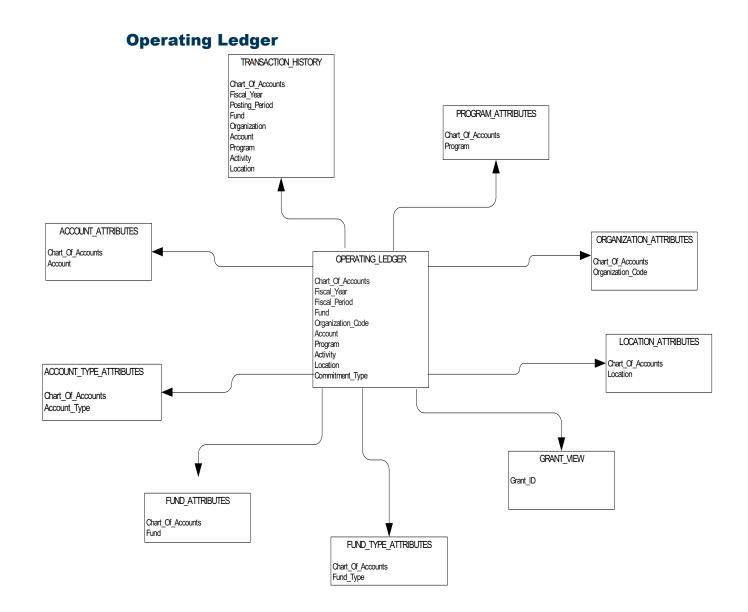


Grant Ledger

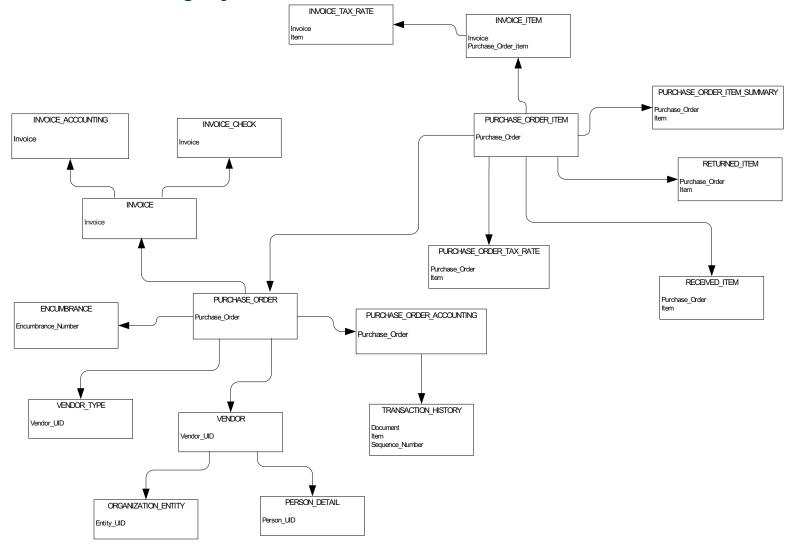


Invoice Payable

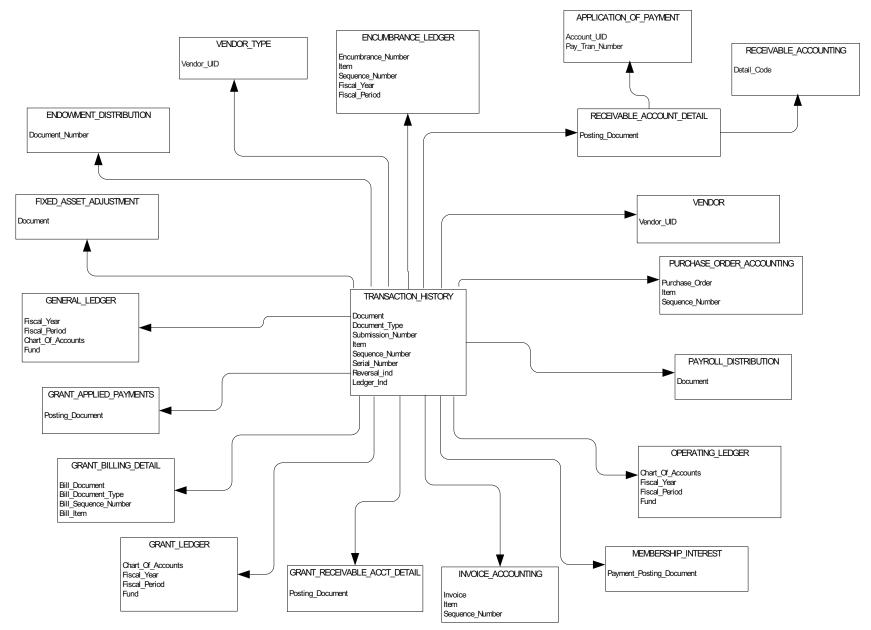




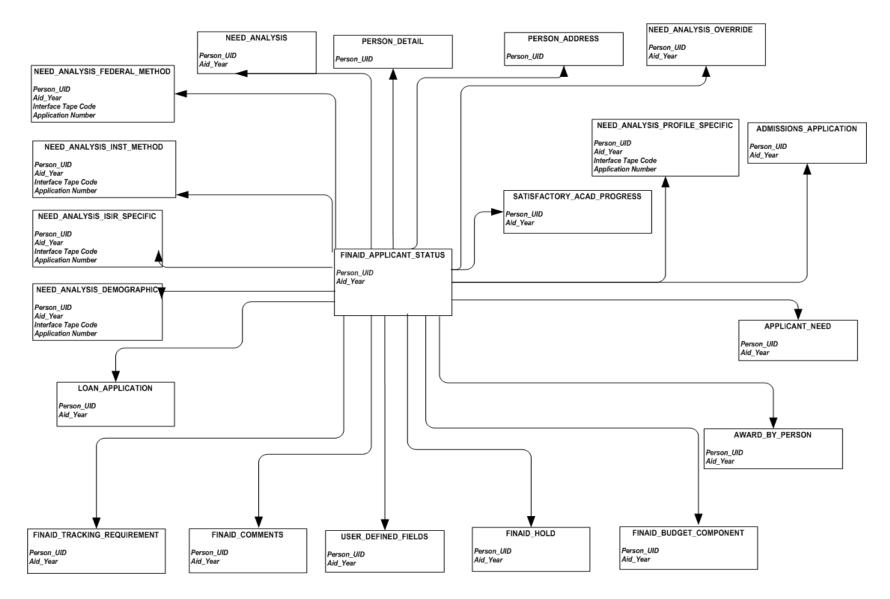
Purchasing Payable



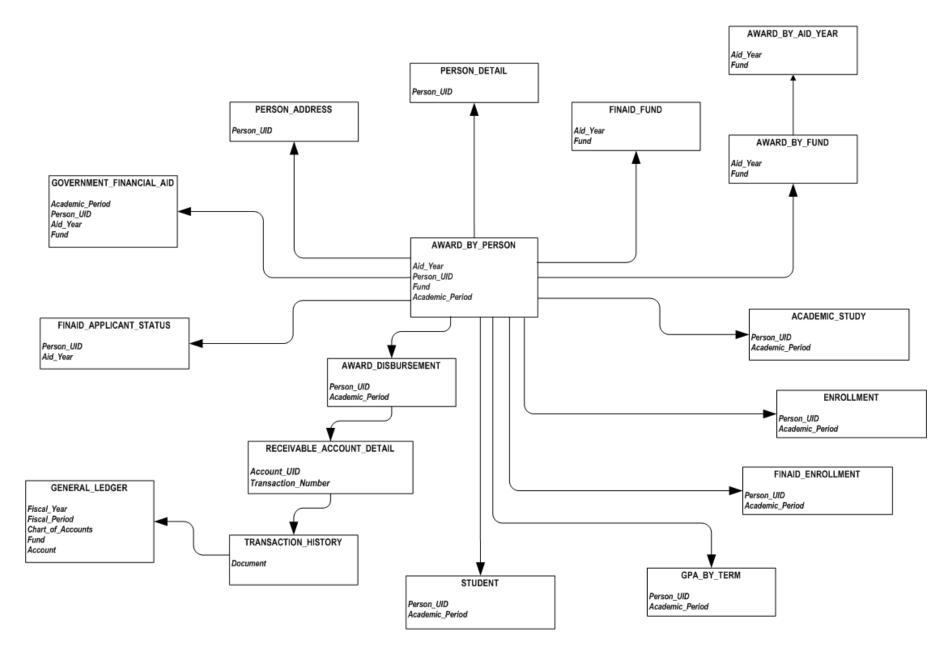
Transaction History



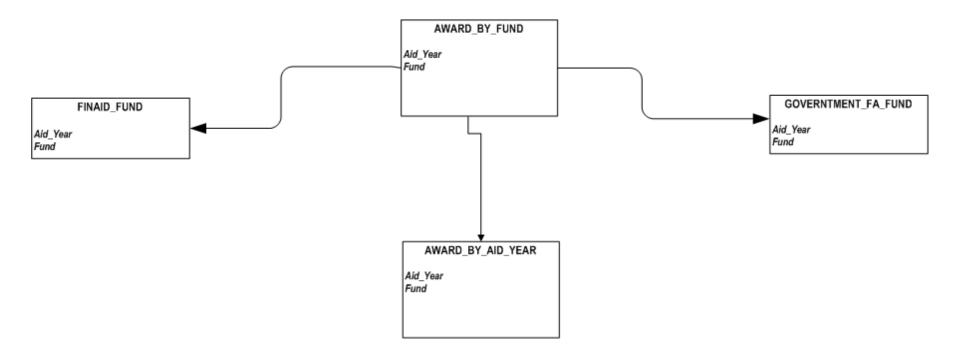
Financial Aid Application



Financial Aid Award and Disbursement

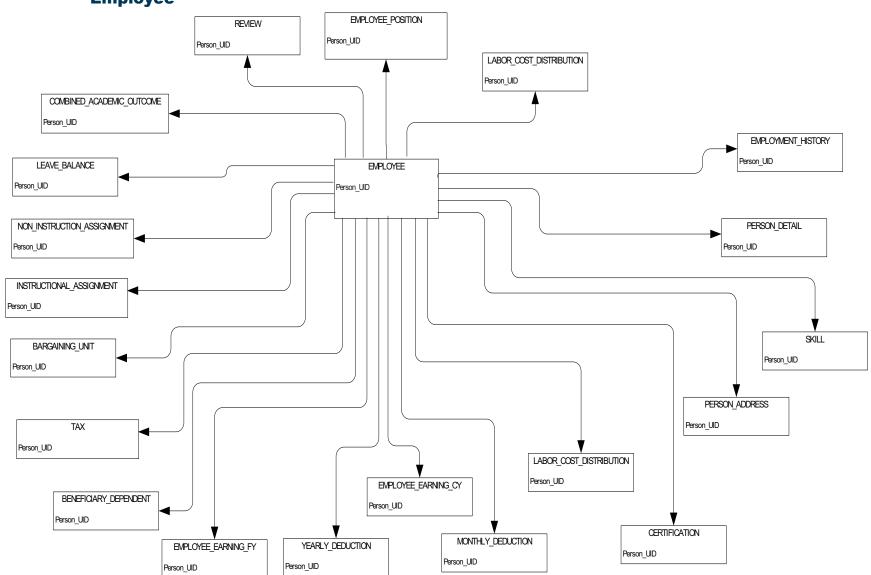


Financial Aid Fund

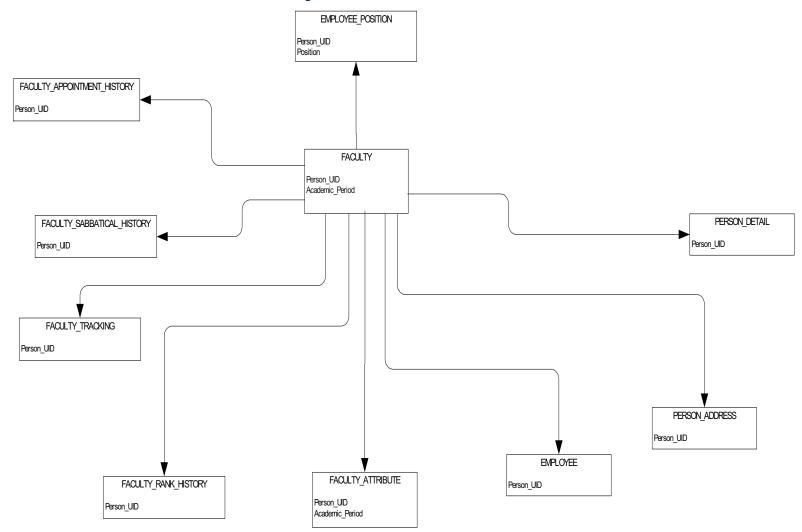


Human Resources

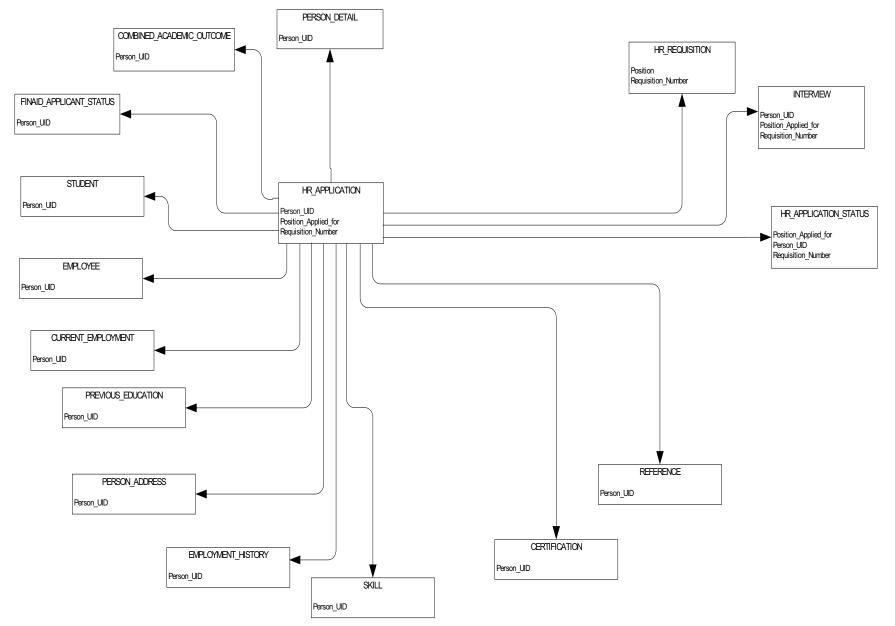
Employee



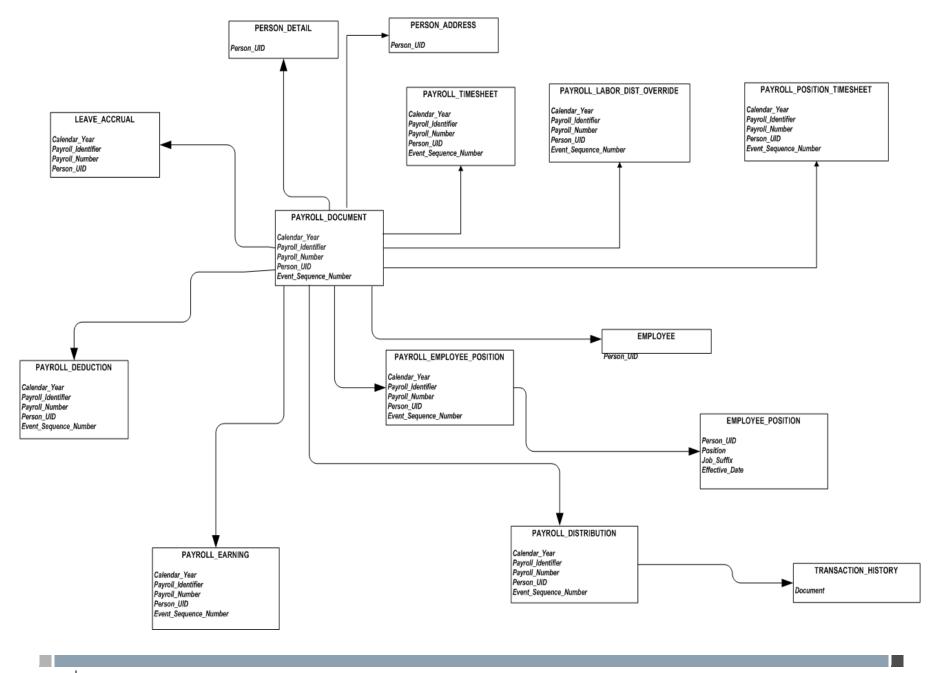
Human Resource Faculty



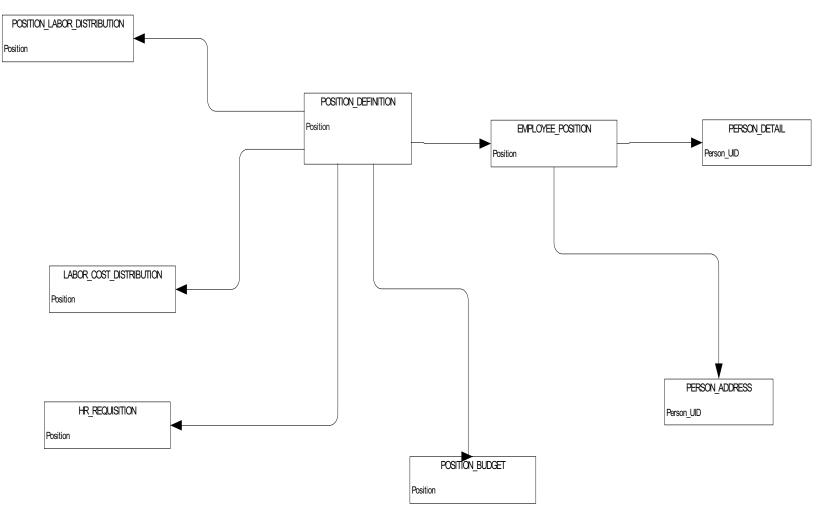
Human Resource Application



Payroll

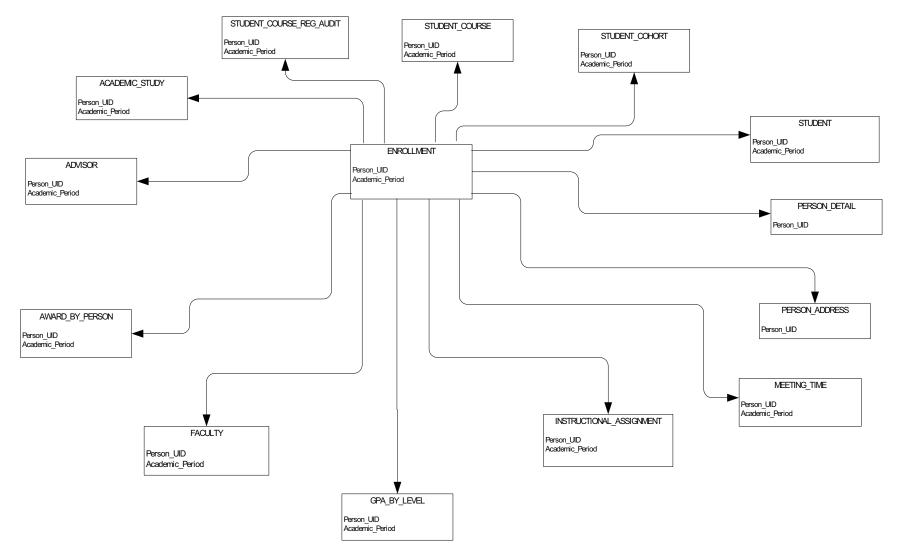


Position

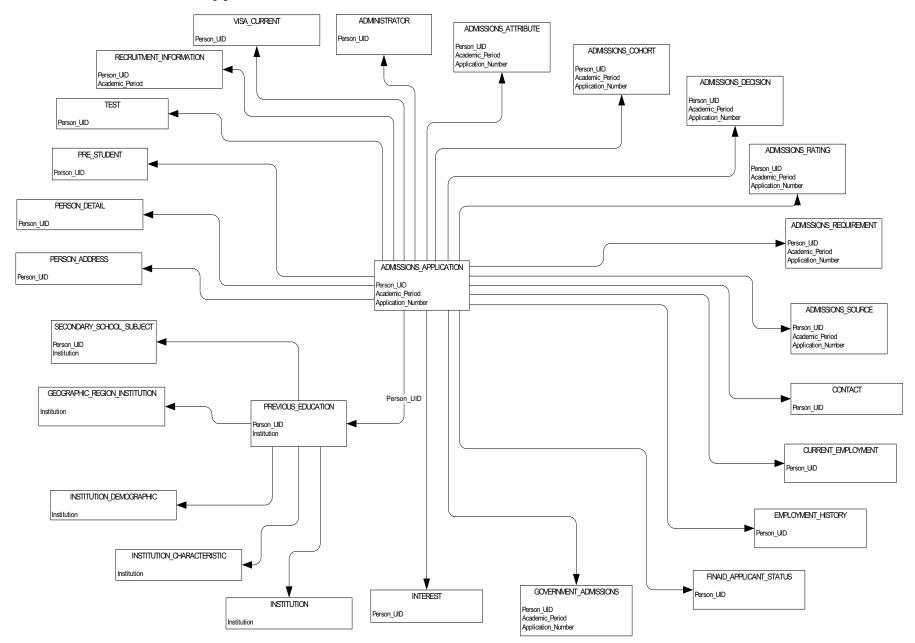


Student

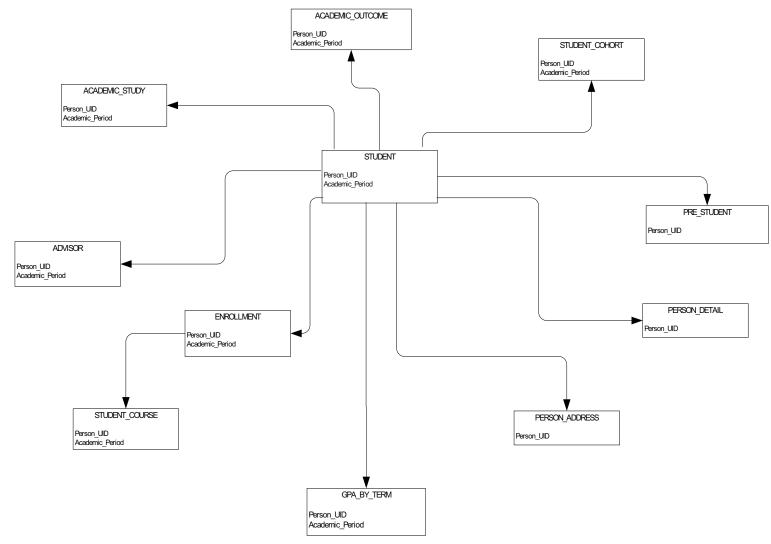
Active Registration



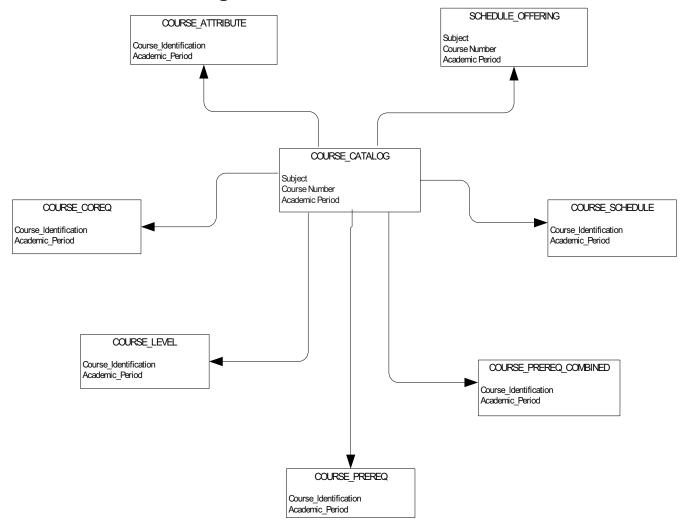
Admissions Application



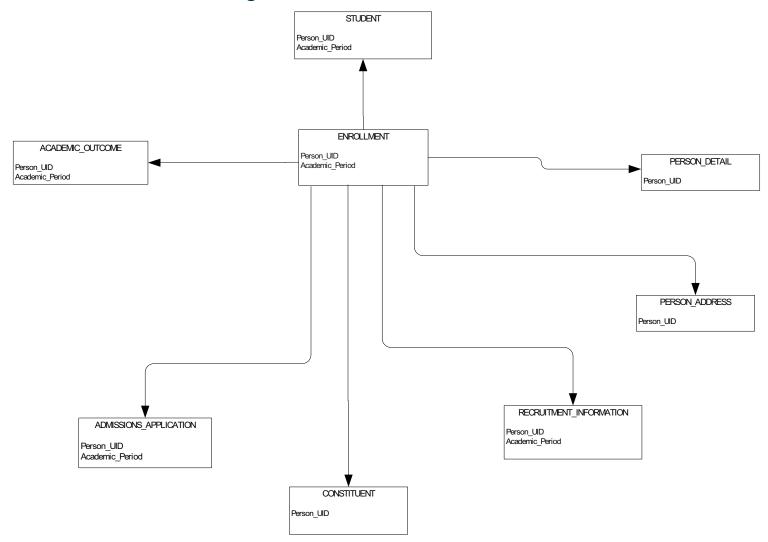
Advisor Student List



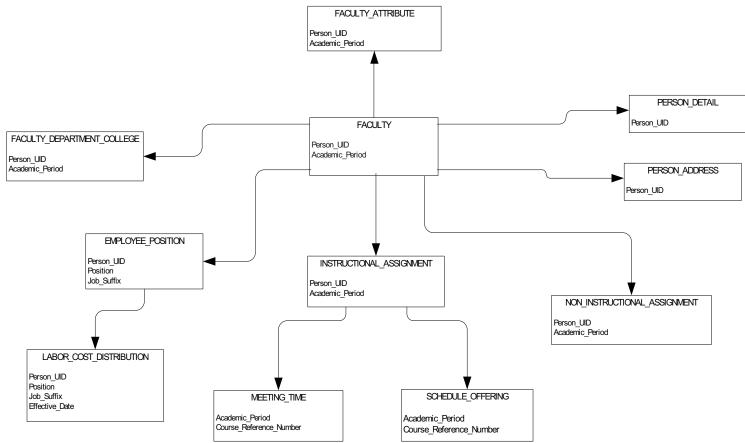
Course Catalog



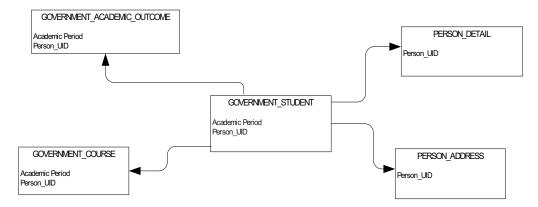
Enrollment Management

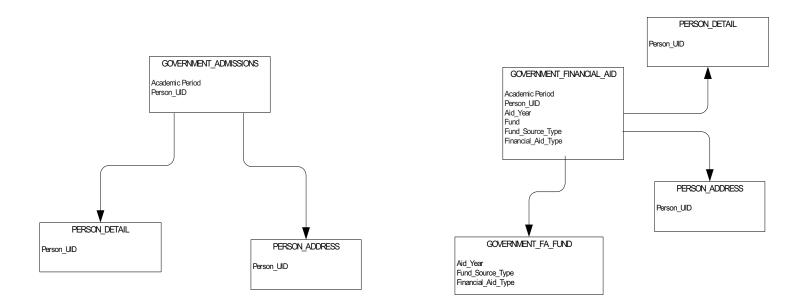


Faculty Assignment

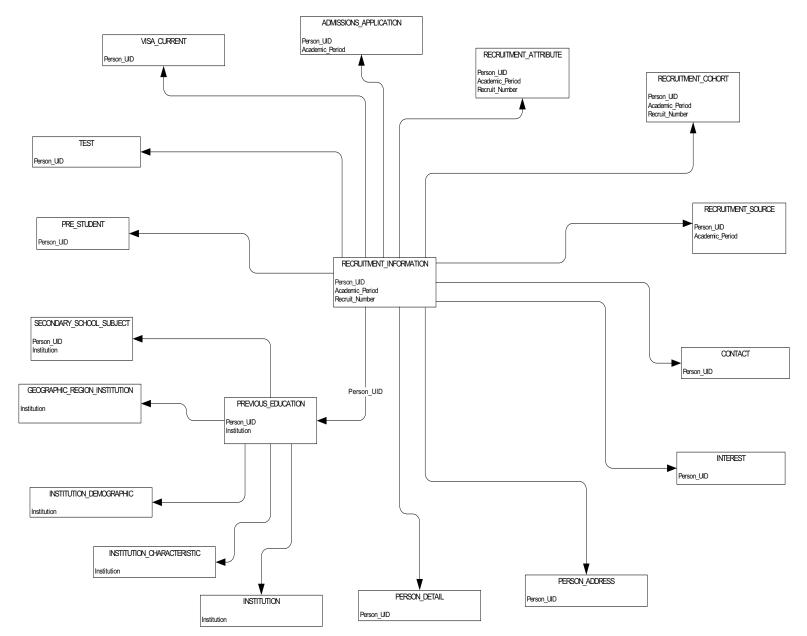


Government Reporting

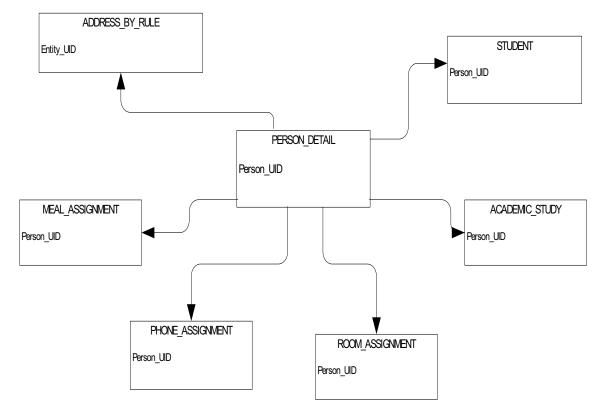




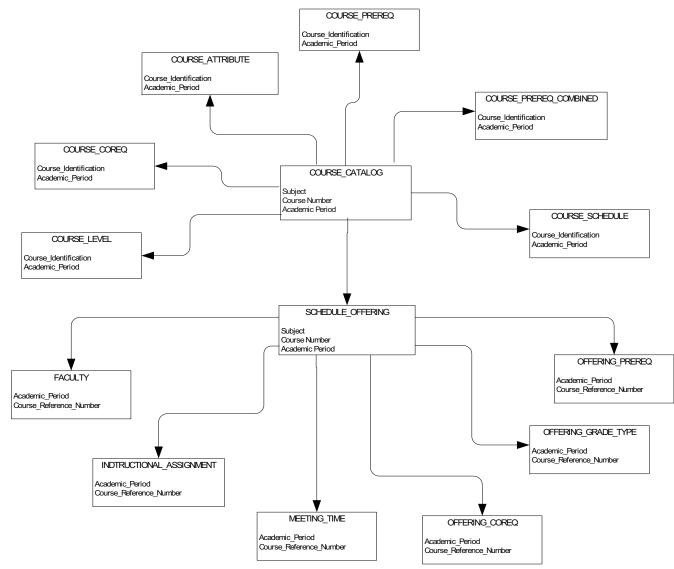
Recruitment Information



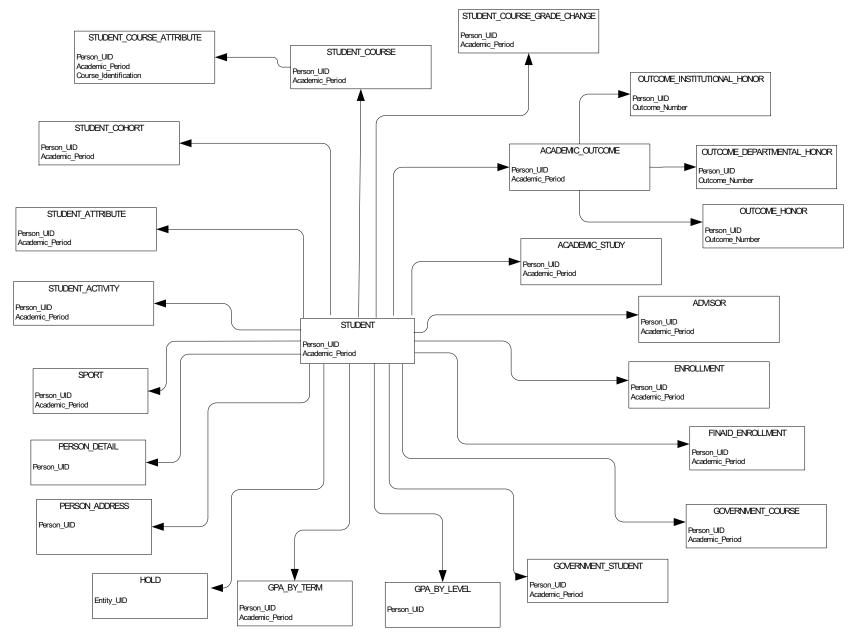
Residential Life



Schedule Offering



Student Detail



April 2009

7 Self-Service Reporting

Self-Service Reporting (SSR) provides simple, ad hoc access to information within Banner ODS.

SSR is delivered with report templates that provide examples of various common data retrieval needs across your institution. Each report template is based on the functional data relationships set forth in the Business Concept Diagrams found in Banner ODS published meta data. The template design for SSR uses a Filter - List - Detail approach. This approach includes a Search Criteria page where you select the various filters for executing a query, a List page that displays the results of that query, and a Detail Reports page where you access additional information specific to any individual result on the List page.

The information on the List and Detail Reports pages can be viewed online or exported to a .csv file (Microsoft Excel format, for example) or XML file for printing or additional manipulation. The Email icon enables you to send email to everyone on the List page. If you select an individual address from the List page, you can send email to that individual. Optionally, the search criteria may be saved as a Search Rule.

You can save a set of defined search criteria filters for a report template as a search rule for future use. For select templates, you can also save the unique primary identifier(s) for your List page results to Banner ODS as a population to use in custom reports developed with your third party reporting tool.

The following tasks are available to help you create a self-service report:

- View, select and execute search criteria
- View, sort, email or export the List results
- View, sort or export Detail reports
- Create, view, rename, change criteria for, or delete a Search Rule

For a Search Rule, optionally save the unique primary identifier(s) for a result set to Banner ODS using Population Selection

Before you can use the SSR, you *must* set up security. SSR requires authentication and authorization access to your Oracle database security. See the <u>"Security" on page 7-38</u> section at the end of this chapter for additional information.

통 Note

By default, SSR uses Oracle user accounts for authentication and authorization. If you choose to use this default, then SSR will adhere to all Business Profiles and Fine Grain Access Security rules established for your Banner ODS users. Therefore, the data results returned for any SSR

7-1

report template mirror the accessible data as defined for that SSR/Banner ODS user. If an SSR report template uses a particular Banner ODS Reporting view to which a user has been denied access via your Oracle Access Controls, then the entire report template is not accessible to the user.

Navigation Quick Reference

All SSR web pages use the same basic navigation techniques. The following table describes each navigation feature. You may want to print this page until you become familiar with how to navigate throughout the web pages.

This navigation	Does this
View this Population Selection icon	Used to maintain Banner ODS populations.
	• When selected from the top right corner of the home page: Opens the View Search Rules window showing all search rules with existing Banner ODS populations, for all templates.
	• When selected from the View Search Rules window, it opens the Population Detail window for the specified search rule.
Home link	Returns you to the Home page.
Help link	Opens the help pages.
Breadcrumbs	Located at the top of the page, below the tabs. These indicate the levels you passed through to arrive at the current page.
	<i>Example</i> Home>Student Templates>Advisor's Student Search Criteria>Advisor's Student List
	Select any breadcrumb level to return to that level.
Subject Area tabs at the top	To access a different subject area, select that tab at the top of the page.

This navigation	Does this
Headings that are underlined	On the Search Criteria page, select any headings that are underlined (for example, any of the individual search criteria filter headings) to open the online help window. The help contains either instructional or meta data related information.
	On the List and Detail Reports pages, any underlined column headings can be selected to resort the results in ascending or descending order.
Go to Search Rule icon	Select to load, view or maintain an existing search rule. Opens the View Search Rules window showing all existing search rules for the report template in context.
Save Search Rule and Run Population Selection icon	Select to save a new, or resave an existing search rule. Opens the Save Search Rule window with optional save/refresh Banner ODS population functionality.
Search button	Executes a query based on the selected search criteria filters.
Reset Search button	Resets all search criteria filters to their default state.
Show link	Displays filters for any search criteria category.
Hide link	Hides all sets of grouped search criteria categories.
>	Shows or hides an individual set of grouped search criteria filters for a report template.
Show SQL button	Select to view the actual SQL used to execute a query on the Search Criteria page.
	Select from the Detail Reports page to view the actual SQL used to generate the detail reports on the Detail Reports page.
	Note: This button only appears if you have been granted access. See the "Customize Parameters" section of the SSR Installation Guide to allow or deny access for all users or individual users.
View Detail icon	Opens the Detail Reports page for the displayed list results or the Search Rule Detail window.

7-3

Search Criteria Page

The Search Criteria page is the filter portion of a report template. You can use this page to review and select the filters or search criteria on which to report.

Filters are grouped into logical search criteria categories. Each filter label is hyperlinked to Banner ODS meta data providing reporting view and column source information for each filter.

When you access a report template, it opens in its default state with a Search Rule setting of none. You can create a new query by selecting the desired search criteria filters, or load a previously saved query (see <u>"Search Rules" on page 7-9</u> section). When finished, select the **Search** button to execute the query.

The Search Criteria page retains all defined filters as long as the report template is within a current session (moving between Search Criteria, List and Detail Reports pages). This allows you to easily alter or add search criteria. If you want to execute a different query, select the **Reset Search** button to clear all filter selections and return the Search Criteria page to its default settings or load a different Search Rule.

🂡 Tip

To select multiple, random values from a list box, select the first value, then hold down the **Ctrl** key while selecting the remaining values.

To select multiple values in sequence from a list box, select the first criteria then hold down the **Shift** key and select the last criteria.

A list box with a (defaulted) value of 'ALL' means the filter is ignored, unless a value/values are selected.

For Range filters, leaving either range blank acts as a wildcard.

The following options are available from the Search Criteria pages:

- View and select the desired search criteria filters and execute a query
- Save, load, modify or delete search rules and optionally save, refresh or delete Banner ODS Populations for the template in context (See the <u>"Search Rules" on</u> <u>page 7-9</u> section)
- View the SQL used to execute a defined query and generate the List Page report

Recommended and Required Search Criteria

Some report templates include a Recommended Search Criteria category that contains the filters most commonly selected when using a particular template. These may also include

one or more 'required' filters. A required filter must be selected to execute a query. Examples of required filters are Academic Periods or Chart of Accounts.

통 Note

Required filters are preceded with an asterisk.

Dependant Search Criteria Filters

Several report templates contain one or more list of values (LOV) filters that must be manually populated after you select a required filter. To load these filters for use in your query, choose your value(s) for the required filter and select the **Populate Search Criteria for...** button. You need to reload these filters any time you change the corresponding required filter for a new query. See the <u>"Report Templates" on page 7-18</u> section for additional information.

통 Note

In their default state, dependant filters will display the following: "Select [required filter name] and Populate."

List of Values Search Criteria Filters

The list of values (LOV) search criteria filters found in the various SSR reporting templates contain a set of valid values for a corresponding column in a Banner ODS reporting view. These filters are generated from a series of LOV views contained within the ODSLOV schema within Banner ODS. The ODSLOV views obtain their information from Banner ODS composite table called MGT_VALIDATION, which in turn is populated with validation table values found in your Banner database.

Since these LOV filters are sourced from your Banner validation tables, querying on certain values may produce no results, if those value(s) are not currently associated with any records in your Banner ODS database.

Show SQL

Select the **Show SQL** button to view the actual SQL used to execute a query on the Search Criteria page, and to display the SQL in a pop-up window. This button only appears if you have been granted access. See the "Customize Parameters" section of the SSR Installation Guide to allow or deny access for all users or individual users.

List Page

The List page shows the results of the query that was executed on the Search Criteria page, and includes a predefined set of information for each result. The following procedures can be performed from this page:

7-5

- View and sort the results
- Export the List page report as a .csv file (Microsoft Excel format, for example) or an .xml file (except for the Employee List page)
- Send emails
- Save, load, modify or delete search rules and optionally save, refresh or delete Banner ODS Populations for the template in context (See the<u>"Search Rules" on</u> <u>page 7-9</u> section)
- Change the 'Records Per Page' display setting
- Display the Search Criteria used to generate the List page results
- Access the Detail Reports page

Export

List results can be saved to format, print or further manipulate in another reporting tool by exporting the results as a .csv file (Microsoft Excel format, for example) or an .xml file. Select the **Excel** icon (for a .csv file) or the **XML** icon (for another application). The File Download window opens. Indicate whether you want to save or open the file.

통 Note

Some List page reports contain significantly more columns of information when they are exported to .csv and .xml files than are viewable on the web page. Review the "Report Templates" section for information specific to each template.

Email

The email option enables you to send an email message to any individual on the List page, or to send an email to the entire list. Each option is explained below:

Individual

To send an email to an individual on the List page, select the email address link in the **Email Address** column for that person. Your local email program opens with the individual's email address already entered.

Entire List

To send an email to the entire list, select the envelope icon at the top of the List page. The SSR email utility opens. All recipient email addresses (the individuals on the list report) load into the **Blind Copy** field to ensure that recipients' cannot see the other email addresses on the distribution list. If you have set up each SSR user as an APEX user, then

the user's email address loads into the **To** field. If you are not using the APEX user accounts, the user must manually enter (their) email address in the **To** field.

Sort

Any underlined column in the list report can be used to toggle between sorting the results in ascending or descending order. Select the column name by which you want to sort. An up arrow appears if the column is sorting in ascending order. A down arrow appears if the column is sorting in descending order.

Records Per Page (Display Setting)

The List page displays the total count of all records found for any given query as well as a "Records Per Page" display setting. This setting indicates the maximum number of records to be displayed on the List page.

If the total records returned for a query exceeds the Records Per Page display setting, a sequence of pagination links appear above the List results page. You must select the pagination link to retrieve the (next) set of results. If the total records returned for a query is less than the Records Per Page display setting, all records appear in the List results page.

This feature helps query performance, or more specifically, the amount of time it takes to render the results for HTML display. The delivered default display setting is 100 records per page. This default setting can be changed at the institution level. You may also change the display setting for your current session by selecting the **Records Per Page** hyperlink.

통 Note

This display setting applies to the HTML List page only. The .csv/.xml export and Banner ODS Population features save all results, as applicable.

Access Detail Reports

Each report template provides detail reports for all results displayed on the List page. To drill to the Detail Reports page, select \bigcirc in the left column for any result on the list report.

통 Note

For the Finance templates (in addition to the View Detail icon) you can also drill into the respective detail reports by clicking the hyperlinked amount totals in the result set.

Detail Reports Page

The Detail Reports page displays all reports for the result selected from the List page. The following procedures can be performed from this page:

- Review the detail reports for the result selected from the List page and select a different detail report
- Export a detail report as a .csv file (Microsoft Excel format, for example)
- View the SQL used to generate the detail reports

Detail Reports Drop-down List

The Detail Reports page has a drop-down list located at the top of the page. Use this list to select and display any individual detail report.

Sort

Any underlined column in a detail report can be used to toggle between sorting the results in ascending or descending order. Select the column name by which you want to sort. An up arrow appears if the column is sorting in ascending order. A down arrow appears if the column is sorting in descending order.

Export

Detail reports can be saved as a .csv file to format, print or further manipulate in another reporting tool. Select the Excel icon. The File Download window opens. Indicate whether you want to save or open the file.

🗟 Note

On the Detail Reports page, only reports with an Excel icon can be exported. This option is provided for any report that can display more than one row of information.

Some Detail reports may contain more columns of information when they are exported than are viewable on the web page. Review the "Report Templates" on page 7-18 section for details about each template.

Query Search Criteria

Self-Service Reporting (SSR) provides ad hoc access to information within Banner ODS. You can use the report templates to access commonly retrieved data from across your

institution. Each report template is based on the functional data relationships set forth in the Business Concept Diagrams found in Banner ODS published meta data.

You can query search criteria on a one time basis or saved as a search rule for future reuse. See <u>"Search Rules" on page 7-9</u> for additional information.

- 1. Select a business area from the Home page.
- 2. Select a template.
- 3. Select your search criteria filters From the Search Criteria page.

The Search Criteria page opens. Use this page to review and select the filters or search criteria on which to report.

For additional information on how to move throughout the SSR pages, see the "Navigation Quick Reference" on page 7-2.

4. Click Search.

The List page opens showing the results of the query that was executed on the Search Criteria page. It includes a predefined set of information for each result. From this point, you can continue to:

- · View, select and execute search criteria
- View, sort, email or export the List results
- View, sort or export Detail reports

Search Rules

Self-Service Reporting (SSR) enables you to select information that you frequently search on within a template (called search criteria filters), then name and save the filters as a search rule under a user-defined name. This makes it easy to reuse sets of search criteria filters.

통 Note

You can only access the search rules that are saved under your user name.

You also have the option to indicate whether to create/refresh Banner ODS populations each time you save a search rule. See <u>"Banner ODS Populations" on page 7-14</u> for additional information.

Create and Save a Search Rule

Use this procedure to save groups of search criteria that you want to reuse. Search rules can be created from the Search Criteria page or from the List page.

Populations can also be created for search rules. See <u>"Banner ODS Populations" on page 7-14</u> for additional information on Banner ODS populations.

- 1. Select a business area from the Home page.
- 2. Select a template.
- **3.** Select your search criteria filters from the Search Criteria page.
- 4. Click . (The Save Search Rule and Run Population Selection icon is also available from the List page.)
- 5. Enter the name of the search rule,
- 6. (optional) Select the Create/Refresh Banner ODS Population check box to save the Banner ODS population for this search rule.

See <u>"Banner ODS Populations" on page 7-14</u> for additional information on Banner ODS populations.

Solution Note

Populations cannot be saved for the Finance templates.

7. Click Save.

Load a Search Rule

Use this procedure to load and display a different search rule. Search rules can be loaded from the Search Criteria page or from the List page. (If a population exists for the search rule, then the page can also be accessed using the View this Population Selection icon (So on the Home page. See <u>"Banner ODS Populations" on page 7-14</u> for additional information.)

- **1.** Select a business area from the Home page.
- 2. Select a template.
- Click from the Search Criteria page. (The Go to Search Rule icon is also available from the List page.)
- 4. Select the search rule to load.

The Search Criteria page returns automatically with the search rule loaded.

Update a Search Rule

Update a search rule after you have changed or added search criteria filters for an existing rule, and want to save those changes.

- 1. Select a business area from the Home page.
- 2. Select a template.
- 3. Click 🔁 from the Search Criteria page. (The Go to Search Rule icon is also available from the List page.)
- 4. Select the search rule you want to update.

The screen returns to the Search Criteria page with the rule loaded.

- 5. Change the search criteria filters.
- 6. Click []. (The Save Search Rule and Run Population Selection icon is also available from the List page.)

The Save a Search Rule window opens.

 (optional) Select the Create/Refresh Banner ODS Population check box. See <u>"Banner ODS Populations" on page 7-14</u> for additional information on Banner ODS populations.

통 Note

If the existing search rule has a population saved to Banner ODS, you *must* select the **Create/Refresh Banner ODS Population** check box to update and refresh the population. If this box is not selected for an existing search rule, any previously saved population is deleted. See <u>"Banner ODS Populations" on page 7-14</u> for additional information on Banner ODS populations.

칠 Note

Populations cannot be saved for the Finance templates.

8. Click Save.

Save as Another Search Rule (Save As)

Use this procedure to create a new search rule with the same search criteria as an existing search rule, but with a different name.

- 1. Select a business area from the Home page.
- 2. Select a template.
- 3. Click 🔁 from the Search Criteria page. (The Go to Search Rule icon is also available from the List page.)
- 4. Select the search rule you want to load and save under a different name.

The screen returns to the Search Criteria page with the rule loaded.

5. Click []. (The Save Search Rule and Run Population Selection icon is also available from the List page.)

The Save a Search Rule window opens.

- **6.** Enter the new name.
- (optional) Select the Create/Refresh Banner ODS Population check box. See <u>"Banner ODS Populations" on page 7-14</u> for additional information on Banner ODS populations.

통 Note

If the existing search rule has a population saved to Banner ODS, you *must* select the **Create/Refresh Banner ODS Population** check box to also save a population for this rule. See <u>"Banner ODS Populations" on page 7-14</u> for additional information on Banner ODS populations.

통 Note

Populations cannot be saved for the Finance template.

8. Click Save.

Rename a Search Rule

Use this procedure to change the name of an existing search rule. You do not have to load the search rule to rename it.

Search rules are renamed from the Search Rule Detail window which can be accessed from the View Search Rules window. If a population exists for the search rule, then the

page can also be accessed from the Home page. (See <u>"Banner ODS Populations" on page 7-14</u> for additional information.)

- 1. Select a business area from the Home page.
- 2. Select a template.
- Click from the Search Criteria page. (The Go to Search Rule icon is also available on the List page.)
- **4.** Click Q to open the Search Rule Detail window.

칠 Note

If the rule has a population, you can also click the significant from the Home page to open the View Search Rules window. See <u>"Banner ODS</u> Populations" on page 7-14 for additional information.

- 5. Enter the new name in the **Rule Name** field.
- 6. Click Rename.

The search rule is saved under the new name.

Delete a Search Rule

Use this procedure to delete an existing search rule. Search rules are deleted from the View Search Rules window or from the Search Rule Detail window. (If a population exists for the search rule, then the page can also be accessed from the Home page. See <u>"Banner ODS Populations" on page 7-14</u> for additional information.)

통 Note

If you delete a search rule with Banner ODS a Banner ODS population, you also delete the populations.

- 1. Select a business area from the Home page.
- **2.** Select a template.
- Click from the Search Criteria page. (The Go to Search Rule icon is also available from the List page.)
- 4. Use any of the following methods from the View Search Rules window:
 - Click **Delete** to remove the search rule
 - Click \bigcirc to delete the search rule from the Search Rule Detail window

5. From the corresponding Detail window, click **Delete** and indicate that you want to delete the rule.

The search rule is deleted.

Banner ODS Populations

Banner ODS populations are predefined primary identifier(s) found within List page results that can be saved to Banner ODS to populate reports developed using a third party reporting tool. (See <u>"Use Populations with Banner ODS" on page 7-17</u> for information on retrieving population detail from the ODS_Population reporting view in Banner ODS.)

Below is a list of Banner ODS population characteristics:

- Finance report templates cannot save populations.
- Banner ODS population is optional, and can be disabled when SSR is installed
- Populations are associated with a search rule.
- A search rule must be created before you can create a Banner ODS population for that rule. (See <u>"Create and Save a Search Rule" on page 7-10</u> for additional information.)
- Only one population is allowed per search rule
- Populations can be used for custom reporting with other reporting tools against the Banner ODS.
- Populations cannot be reused within SSR.

Create Banner ODS Populations

Use this procedure to create populations for a search rule. You can create populations while you are creating the search rule, or from any page or window that contains a icon.

Prerequisites

A search rule must be created before you can create Banner ODS populations for that rule. See <u>"Create and Save a Search Rule" on page 7-10</u> for additional information.

Create a Population with a Search Rule Loaded

- 1. Select a business area from the Home page.
- 2. Select a template.

- Click from the Search Criteria page. (The Go to Search Rule icon is also available from the List page.)
- 4. Select the search rule to load.

The Search Criteria page returns automatically with the search rule loaded.

- 5. Click i on the Search Criteria page. (The Save Search Rule and Run Population Selection icon is also available from the List page.)
- 6. Select the Create/Refresh Banner ODS Population check box.
- 7. Click Save.

The population is added to the selected search rule.

Create a Population without a Search Rule Loaded

- 1. Select a business area from the Home page.
- 2. Select a template.
- Click from the Search Criteria page. (The Go to Search Rule icon is also available from the List page.)
- 4. Select sin the **Populations Details** column that corresponds to the search rule for which you want to create a population.

The number next to the sindicates the number of rows of populations available for that search rule. If this number is zero, then a **Create** button displays on the Banner ODS Population Detail window. (If rows are available, then the displayed buttons are **Refresh**, **Delete** and **SQL** display.)

5. Click Create.

A population is created for the search rule.

Refresh (Update) Banner ODS Populations

Use this procedure to refresh a population because information has been added or removed (for example, alumni were added). Three possible ways to refresh your populations appear below.

Prerequisites

At least one population must exist for a search rule. See <u>"Create Banner ODS</u> <u>Populations" on page 7-14</u> for additional information.

7-15

Refresh with a Search Rule Loaded

- 1. Select a business area from the Home page.
- 2. Select a template.
- 3. Click 🔁 from the Search Criteria page. (The Go to Search Rule icon is also available from the List page.)
- 4. Select the search rule to load.

The Search Criteria page returns automatically with the search rule loaded.

- 5. Click on the Search Criteria page. (The Save Search Rule and Run Population Selection icon is also available from the List page.)
- 6. Select the Create/Refresh Banner ODS Population check box.
- 7. Click Save.

The population is refreshed for the selected search rule.

Refresh without a Search Rule Loaded

- **1.** Select a business area from the Home page.
- **2.** Select a template.
- Click from the Search Criteria page. (The Go to Search Rule icon is also available from the List page.)
- **4.** Click the State that corresponds to the search rule whose population you want to refresh.
- 5. Click Refresh.

The population is refreshed (updated).

Refresh from the Home page

- 1. Click () in the upper right hand corner of the page.
- 2. Click the State or responds to the search rule whose population you want to refresh.
- 3. Click Refresh.

The population is refreshed (updated).

Delete a Banner ODS Population

Use this procedure to delete a population associated with a search rule.

통 Note

Deleting the population does not delete the associated search rule.

Two possible methods of deleting a population appear below.

Delete with a Search Rule not Loaded

- 1. Select a business area from the Home page.
- 2. Select a template.
- Click from the Search Criteria page. (The Go to Search Rule icon is also available from the List page.)
- 4. Click the 🖄 that corresponds to the search rule whose population you want to delete.
- 5. Click Delete.

The population is deleted.

Delete from the Home page

- 1. Click () in the upper right hand corner of the Home page.
- 2. Click the (3) that corresponds to the search rule whose population you want to delete.
- 3. Click Delete.

The population is deleted.

Use Populations with Banner ODS

Banner ODS populations contain the predefined primary identifier(s) for the List page results of any given report template query. These populations can be saved to Banner ODS and used for generating reports developed using a third party reporting tool. (See <u>"Banner ODS Populations" on page 7-14</u> for additional information.)

Banner ODS contains a schema called SSRMGR. The tables in this schema store search rule and population data. A view in this schema, called ODS_POPULATION, contains the unique identifiers for each saved population along with the distinguishing characteristics of the corresponding search rule and user.

The search rule parameters below are required to retrieve a population from the ODS_POPULATION view for reporting purposes. They are used in the sql statement to retrieve the desired population.

- TEMPLATE_NAME
- RULE_NAME
- USER_ID

The **SQL** button in the Banner ODS Population Detail window generates a SQL statement containing these parameters that can be used to retrieve a saved population from the ODS_POPULATION reporting view.

Access from the View Search Rules Page

- 1. Select a business area from the Home page.
- 2. Select a template.
- Click from the Search Criteria page. (The Go to Search Rule icon is also available from the List page.)
- 4. Click the Solution you want to select.
- 5. Click SQL.

The unique identifiers for the saved population and the characteristics of the corresponding search rule and user display. You can use this information to create additional reports.

Access from the Home page

- 1. Click () in the upper right hand corner of the Home page.
- 2. Click the (3) that corresponds to the search rule whose population you want to select.
- 3. Click SQL.

The unique identifiers for the saved population and the characteristics of the corresponding search rule and user display. You can use this information to create additional reports.

Report Templates

This section contains the following information for each delivered report template:

- Search criteria
- List reports
- Detail reports
- Notes

Accounts Receivable Report Templates

Use the Accounts Receivable report template to obtain reports from Receivable Customer.

Receivable Customer

Use this report template to:

- Obtain a list of students or organizations and their current balances
- Obtain a list of students or organizations that have transactions that meet a specific transaction category within an academic period
- Determine which students that have holds on their accounts or have bills due within a specific date range
- Obtain a list of students or organizations that have a range of current amounts dues on their account
- Determine current balances of accounts where students are in specific programs, departments, degrees and majors
- Determine the contracts or exemptions with which a student is associated or an organization is associated
- Review all charges and payments on a students or organization's account
- Review the accounting information sent to Finance for all charges, payments, and application of payments for a selected student or organization

Search Criteria

Required Search filters: At least one Academic Period

Recommended Search filters: Category Detail Code, or Source

Search Criteria Notes

Certain list of values (LOV) search criteria filters in this template require the selection of one or more Academic Periods to display a specific list of values for that filter. To load these filters to use in your query, choose the desired Academic Period(s) and select the **Populate Search Criteria for Academic Period(s) Selected** button. You need to reload these filters any time you change the Academic Period(s) for a new query.

List

This list report provides one set of results based on the entered search criteria. Data includes ID, name, current amount due, account balance, delinquency, hold count, non-sufficient funds count, collection agency count and city, state/province, postal code, county, nation, telephone, and address type for a preferred address.

Additional information applicable to the List page for this report template is available using the following:

- Export Options: More fields of information are provided with the exportable .csv and .xml files than are viewable on the List page.
- Banner ODS Population: A population saved for this template includes the distinct Entity UIDs for your query result set.

Detail Reports

The following detail information can be accessed for any student or organization on the list report as appropriate:

- Current Addresses
- Other Phone Numbers
- Current Internet Address
- Receivable Summary By Category
- Receivable Summary
- Customer Account Details
- Customer Account Detail Accounting
- Customer Accounting Summary
- Application of Payment Detail Accounting
- Application of Payment Detail Accounting Summary
- Receivable Tax Detail History
- Receivable Tax Detail History Summary
- Deposit History
- Deposit History Summary
- Contract History
- Exemption History
- Installment Plan History
- Collection Agency Assignment

• Holds

Notes

The Receivable Customer reporting template provides a broad array of query opportunities. Performance, or the time it takes to retrieve a list of results, may vary based on the complexity of your query or the size of a potential result set.

Advancement Report Templates

Use the Advancement report template to obtain reports from Advancement Person.

Advancement Person

Use this report template to:

- Locate constituents in a particular geographic area
- Analyze participation or giving trends
- Profile or segment your constituent population

Search Criteria

Required Search filters: None

Recommended Search filters: None

List

This list report provides one set of results based on the entered search criteria. Data includes ID, name, spouse name, various constituent indicators, email address and the city, state/province, postal code, county, nation, telephone, and address type for a preferred address.

Additional information applicable to the list page for this report template is available using the following:

- Export Options: More fields of information are provided with the exportable .csv and .xml files than are viewable on the List page. These include the Entity UID and formatted (preferred) mailing address.
- Banner ODS Population: A population saved for this template includes the distinct Entity UIDs for your query result set.

Detail Reports

Access the following detail information for any individual on the list report:

7-21

- Constituent Detail
- Current Addresses
- Other Phone Numbers
- Current Internet Address
- Demographics
- Medical Information
- Veteran Status
- Employment History
- Relationships
- Degree Summary
- Activities and Leadership Roles
- Donor Categories
- Giving History
- Membership
- Mailings
- Exclusions

Notes

The Advancement Person reporting template provides a broad array of query opportunities. Performance, or the time it takes to retrieve a list of results, may vary based on the complexity of your query or the size of a potential result set.

Finance Report Templates

Use the Finance report templates to obtain financial reports from the General Ledger or Operating Ledger.

General Ledger

Use this report template to:

- Quickly determine if your fund is in balance
- Obtain an asset balance at any fund level
- Obtain fund reports by financial manager or principal investigator
- Create a general ledger report by specific reporting attributes

• Roll up general ledger balances to a higher level within fund and/or account hierarchy

Search Criteria

Required Search filters: At least one Chart of Accounts and at least one Fiscal Year

Recommended Search filters: Fiscal Period

Search Criteria Notes

Certain list of values (LOV) search Criteria filters in this template require you to select one or more charts to display a specific list of values for that filter. To load these filters to use in your query, choose the desired Chart(s) and select the **Populate Search Criteria for Chart(s) Selected** button. You need to reload these filters any time you change the Chart(s) for a new query.

When including fund, fund type, account or account type attributes, and not selecting specific attributes as a filter, the lines displayed on the List Page may occur more than once for each unique combination of fund and account. This is based on the number of attributes assigned to each fund, fund type, account, and/or account type within the source system. When the lines are not unique for each fund and account, this affects the total of the amounts displayed in the General Ledger List Summary Report. To avoid duplicate lines, select the specific attributes on which you wish to report.

Working with Roll Fund or Roll Account Search Criteria

Leave the radio button defaulted to *E* and select a specific level value to report on all funds that report to a specific level fund or fund type, as well as to report on all accounts that report to a specific level account or account type.

If you choose one of the level radio buttons, the list report totals the amounts to that level and displays it at that level. The lower levels no longer display as columns in the list report.

Example for level 1

You might choose to list amounts for all level 1 fund types with all their level 2 account types.

If you choose one of the level radio buttons and choose specific fund level values, fund type level values, account level values, or account type level values, the list report displays the selected values with the amounts totaled for that unique combination of selected filters.

Example for level 2

You might choose *Restricted* for a fund type level 2. Select the radio button of 1 for Roll Fund Type and choose Roll Account Type Level 2 with the values. This

generates a list report of amounts totaled to the Restricted Fund Level 1 for all account type level 2 values.

If you select the roll radio button for any level other than *E*, the fund and account being rolled to will display in the fund and account column in the General Ledger list report.

List

The General Ledger List report is dynamically built according to selected search criteria to support reporting attributes and roll-up features. This prevents the normal sort feature from being used. Thus, you will not see any underlined columns in the List report for sorting.

This list report provides two sets of results based on the entered search criteria:

General Ledger List: Data includes beginning balance, current actual and ending balance for each fund and account or selected levels of fund and account and /or reporting attributes.

General Ledger List Summary: Provides a summary of all fund and account amounts displayed in the General Ledger List with a beginning balance, current actual, and an ending balance.

Additional information applicable to the list page for this report template is available using the following:

• Export Options: More fields of information are provided with the exportable .csv and .xml files than are viewable on the List page.

Additionally, when a List report is generated using the roll-up feature, more rows are exported with the CSV or XML file than what is viewable online. This is because the online version summarizes information such as chart columns from the general ledger for display on the List page. The data in the export file is not summarized; but instead includes each detail line that meets the queried search criteria.

• Banner ODS Population: Not available for finance report templates.

Detail Reports

These reports provide full access to supporting detail for any general ledger line on the list report:

- General Ledger Line: detail report includes one or more detail general ledger lines with report totals. Multiple detail general ledger lines may exist if a search was performed for a report roll-up.
- Transaction Detail: report lists information supporting the general ledger line(s). This data includes the fund, organization, account, program, activity, and location

as well as field code, journal type, journal description, and source document key information.

• Transaction Detail Total

More fields of information are provided with the exportable .csv file detail reports than are viewable on the web page.

Notes

- The General Ledger reporting template provides a broad array of query opportunities. Performance, or the time it takes to retrieve a list of results, may vary based on the complexity of your query or the size of a potential result set.
- The only transaction detail lines that currently display are those that directly update the general ledger. Thus, operating ledger transaction detail and encumbrance ledger transaction detail do not display within this report.

Operating Ledger

Use this report template to:

- Obtain departmental reports by department financial manager
- Obtain reports by financial manager or principal investigator
- Quickly determine departmental budget available balance
- Create a departmental report by reporting attributes
- Roll up operating ledger available balances to a higher level within organization, fund, account, and program and/or location hierarchy
- Obtain a list of all expense or revenue transactions

Search Criteria

Required Search filters: At least one Chart of Accounts and one Fiscal Year

Recommended Search filters: Fiscal Period

Search Criteria Notes

Certain list of values (LOV) search Criteria filters in this template require the selection of one (or more) Charts to display a specific list of values for that filter. To load these filters to use in your query, choose the desired Chart(s) and select the **Populate Search Criteria for Chart(s) Selected** button. You need to reload these filters any time you change the Chart(s) for a new query.

When including fund, fund type, account, account type, organization, or program attributes, and not selecting specific attributes as a filter, the lines displayed on the List

Page may occur more than once for each unique combination of organization, fund, account, program, activity and location. This is based on the number of attributes assigned to each accounting distribution element within the source system. When the lines are not unique for each FOAPAL combination, this affects the total of the amounts displayed in the Organization Budget Status Summary Report. To avoid duplicate lines, select the specific attributes on which you wish to report.

Working with Roll Search Criteria

Leave the radio button defaulted to E, and select a specific level value to report on all organizations that report to a specific level organization, specific level fund or fund type, specific level account or account type, specific level program, as well as to report on all locations that report to a specific level location.

If you select one of the level radio buttons, the list report totals the amounts to that level and displays it at that level. The lower levels no longer display as columns in the list report.

Example

You might choose to list amounts for all level 1 organizations with all their level 2 account types.

If you choose one of the level radio buttons and choose specific organization level values, fund level values, fund type level values, account level values, account type level values, program level values, or location level values, the list report displays the selected values with the amounts totaled for that unique combination of selected filters.

Example

You might choose *Restricted* for a fund type level 2. Select the radio button of *1* for Roll Fund Type and choose *Roll Account Type Level 2* with the values. This generates a list report of amounts totaled to the Restricted Fund Level 1 for all account type level 2 values.

If you select the roll radio button for any level other than *E*, the organization, and/or fund, and/or account, and/or program, and/or location being rolled to displays in their respective columns in the Organization Budget Status list report.

List

This list report provides results based on the entered search criteria:

Organization Budget Status List: Current Period Activity. Year-to-date remaining balance, year-to-date adjusted budget, year-to-date activity, and year- to-date commitments for each accounting distribution or selected levels of the accounting distribution and/or reporting attributes.

Organization Budget Status Summary: Provides a summary by organization only of the chart, fiscal year and period, current period activity, year-to-date remaining balance, year-to-date adjusted budget, year-to-date activity, and year-to-date commitments displayed in the Organization Budget Status List. The report total takes into consideration the normal balance of the account summarized within the department. If the normal balance of an account is a C for credit, the amount is multiplied by a -1, and then added into the summary total.

Suppress Zero Activity Detail Report Lines: To control the number of lines that appear in the Operating Ledger Lines Detail Reports page, select *Yes* from the **Suppress Zero Activity Detail Report Lines** drop-down list. The operating ledger lines that do not have current activity are not listed on the Detail Reports page. If you select *No*, then all operating ledger lines that support the selected List line display regardless of activity. This feature is useful when a List report was requested at a roll-up level, then listing the supporting operating ledger lines on the Detail Reports page. There may be hundreds of departments that had no activity for the period. Reporting to a higher level organization and listing them on the Detail Report page makes it difficult to view the organizations that did have activity.

Additional information applicable to the list page for this report template is available using the following:

• Export Options: More fields of information are provided with the exportable .csv and .xml files than are viewable on the List page.

Additionally, when a List report is generated using the roll-up feature, more rows are exported with the CSV or XML file than what is viewable online. This is because the online version summarizes information such as chart columns from the operating ledger for display on the List page. The data in the export file is not summarized; but instead includes each detail line that meets the queried search criteria.

• Banner ODS Population: Not available for finance report templates.

Selecting Current Period Detail or Fiscal Year to-date Detail: A detail report can only be created for the current period selected by selecting the bolded amount under the **Curr Prd Activity** column. To obtain a detail report of all fiscal periods up to and including the current period, select the bolded amount under the **YTD Remaining Balance** column. If you select the latter amount, the number of lines in your detail report will increase. This is another reason why the **Suppress Zero Activity Detail Report Lines** drop-down list defaults to *Yes*.

통 Note

The Organization Budget Status List report is dynamically built according to selected search criteria in order to support reporting attributes and rollup features. This prevents the normal sort feature from being used. Thus, you will not see any underlined columns in the List report for sorting.

Detail Reports

These reports provide full access to supporting detail for any Organization Budget Status line on the list report:

- The Operating Ledger Lines detail report includes one or more detail operating ledger lines with current period activity and report totals. If the normal balance of the line's account is a 'C'redit, the amount displayed is multiplied by a -1. Thus a positive amount may display in the List Report, but that same amount may display as a negative in the Detail Report. This is to ensure the Report Totals are correct by considering the normal balance of the various accounts.
- The Transaction Detail report lists information supporting the operating ledger line(s). This data includes the fund, organization, account, program, activity, and location as well as journal type, journal description, and source document key information. The amount of the transaction is multiplied by a -1 if the normal balance of the account is a 'C'redit. To allow for improved reconciliation between the transaction detail and the operating ledger lines, the field code is broken out into respective amount columns that updated the operating ledger. Thus, if the transaction had a field_code of '04', the amount is displayed in the **Curr Prd Encumbrances** column. The breakdown of field code is as follows:
 - 01 = Curr Prd Adopted Budget
 - 02 = Curr Prd Budget Adjustments
 - 03 = Curr Prd Activity
 - 04 = Curr Prd Encumbrances
 - 05 = Curr Prd Budget Reservations
 - 06 = Curr Prd Accumulated Budget
 - 07 = Curr Prd Temporary Budget

Notes

- The Operating Ledger reporting template provides a broad array of query opportunities. Performance, or the time it takes to retrieve a list of results, may vary based on the complexity of your query or the size of a potential result set.
- The only transaction detail lines that currently display are those that directly update the operating ledger. Thus, general ledger transaction detail and encumbrance transaction detail do not display within this report. If an Operating Ledger line was selected that did not have any current activity, no transaction detail lines will display.

Financial Aid Report Templates

Use the Financial Aid report template to obtain Financial Aid Award and Disbursement reports.

Financial Aid Awards

Use this report template to:

- Determine who has been awarded a specific Financial Aid fund (or group of funds) during a particular Academic Period (or group of Academic Periods)
- Determine who has had financial aid disbursed during a particular academic period (or group of academic periods)
- Determine the status of a particular award (or group of awards) during a particular academic period (or group of academic periods)
- Answer demographic questions about the populations of students awarded financial aid during a particular academic period (or group of academic periods)

Search Criteria

Required Search filters: At least one Academic Period

Recommended Search filters: Fund, Fund Source Type, Financial Aid Type

List

This list report provides one set of results based on the entered search criteria. Data includes ID, name, academic period, financial aid information, student status information email address and the city, state/province, postal code, county, nation, telephone, and address type for a preferred address.

Additional information applicable to the list page for this report template is available using the following:

- Export Options: More fields of information are provided with the exportable .csv and .xml files than are viewable on the List page. These include the Entity UID and formatted (preferred) mailing address.
- Banner ODS Population: A population saved for this template will include the distinct combinations of Entity UIDs and Academic Periods for your query result set.

Detail Reports

The following detail information can be accessed for any student on the list report:

- Current Addresses
- Other Phone Numbers
- Current Internet Address
- Applicant Status

- Award By Person
- Award Disbursement
- Academic Study
- Enrollment Information
- Financial Aid Enrollment
- Academic Information
- Academic Standing
- Satisfactory Academic Progress
- Holds
- Demographics
- Medical Information
- Veteran Status
- International Details

Notes

The Financial Aid Awards reporting template provides a broad array of query opportunities. Performance, or the time it takes to retrieve a list of results, may vary based on the complexity of your query or the size of a potential result set.

Human Resources Report Templates

Use the Human Resources report template to obtain employee reports.

Employee

Use this report template to:

- Analyze employee demographics
- Download contact, demographic and primary position information about an employee
- Look up detailed information about a particular employee

Search Criteria

Required Search filters: None

Recommended Search filters: Employee Status, Employee Class, Leave Category, and Benefit Category.

List

This list report provides one set of results based on the entered search criteria. Data includes ID, name, demographic and employee status information, email address and the city, state/province, postal code, county, nation, telephone, and address type for a preferred address.

Additional information applicable to the list page for this report template is available using the following:

- Export Options: More fields of information are provided with the exportable .csv and .xml files than are viewable on the List page.
- Banner ODS Population: A population saved for this template will include the distinct Entity UIDs for your query result set.

Detail Reports

The following detail information can be accessed for any employee on the list report:

- Current Addresses
- Other Phone Numbers
- Current Internet Addresses
- Benefits (Current Year)
- Beneficiaries
- Leave Balances
- Bargaining Units
- Certifications
- Skills
- Tax Deductions (Current Year)
- Review History
- Position History
- · Earning History
- Demographics
- Medical Information
- Veteran Status
- International Details
- Employment History

Notes

- The Human Resources reporting template provides a broad array of query opportunities. Performance, or the time it takes to retrieve a list of results, may vary based on the complexity of your query or the size of a potential result set.
- Do not use this report template if you expect to retrieve information pertaining to an employee's secondary position(s).

Student Report Templates

Use the Student report templates to obtain reports relating students to Advisors, students applying for admission or student enrollment.

Advisor's Students

Use this report template to:

- Retrieve information for specific advisees when meeting with a group of advisees
- Identify a group of students that fit a set of criteria to contact that group of students, such as:
 - Students within an advising type responsibility
 - Students from a geographic region (Nation, State/Province)
 - · Students who are international students
 - · Students in academic difficulty
 - Students receiving financial assistance
 - Review the assignments made to a group of advisors

Search Criteria

Required Search filters: At least one Academic Period and the student grouping you wish to see. This will be the group of students currently assigned to an advisor, the group that has never been assigned to an advisor or the group that does not have a current advisor assignment.

Recommended Search filters: Varies based on the group to be reviewed by the advisor.

Search Criteria Notes

Certain list of values (LOV) search criteria filters in this template require the selection of one (or more) Academic Periods to display a specific list of values for that filter. To load these filters to use in your query, choose the desired Academic Period(s) and select the Populate Search Criteria for Academic Period(s) Selected button. You will need to reload these filters any time you change the Academic Period(s) for a new query.

List

This list report provides one set of results based on the entered search criteria. Data includes ID, name, academic period, assigned advisor, summary student information, email address and the city, state/province, postal code, county, nation, telephone, and address type for a preferred address.

Additional information applicable to the list page for this report template is available using the following:

- Export Options: More fields of information are provided with the exportable .csv and .xml files than are viewable on the List page. These include the Entity UID, formatted (preferred) mailing address and Advisor UID.
- Banner ODS Population: A population saved for this template will include the distinct combinations of Entity UIDs and Academic Periods for your query result set.

Detail Reports

The following detail information can be accessed for any student on the list report:

- Current Addresses
- Other Phone Numbers
- Current Internet Address
- Student Advisor(s)
- Academic Study
- Enrollment Information
- Academic Information
- Academic Standing
- Holds
- Student Courses
- Student Course Grades
- Student Course Attributes
- Student Course Meeting Times
- Demographics
- Medical Information
- Veteran Status
- International Details

- Activities
- Latest Secondary School
- Latest Post Secondary School
- Test Scores
- Employment History

Notes

- The Advisor's Students reporting template provides a broad array of query opportunities. Performance, or the time it takes to retrieve a list of results, may vary based on the complexity of your query or the size of a potential result set.
- The Advisor's Students List can be used to download the contact and summary information for the selected group of students advised.
- The Advisor's Students List is designed to retrieve the students being advised for a specified academic period. Therefore, you would not use this to retrieve all the students ever advised by a specific advisor.
- Selection must include one of the following groups of students:
 - Currently assigned to an advisor
 - Never been assigned to an advisor
 - Does not have a current advisor assigned.
- Search Criteria filters in this template require an Academic Period to display a specific list of values for that filter. To load these filters to use in your query, select or change to the desired Academic Period and select the Populate Search **Criteria** button.
- Detail reports display data for the students selected for all academic period independent of the academic period in the selection criteria.

Admissions Application

Use this report template to:

- Identifying admissions applications that are complete and ready for review
- Monitor application status and review admission application details
- Compile details of applicants matching a set of criteria for further review
- Track admissions application decisions by college and or department

Search Criteria

Required Search filters: At least one Academic Period

Recommended Search filters: None

List

This list report provides one set of results based on the entered search criteria. Data includes ID, name, academic period, student level, application complete indicator, program, degree, college, major, department, campus, site, enrolled indicator, latest decision, email address and the city, state/province, postal code, county, nation, telephone, and address type for a preferred address.

Additional information applicable to the list page for this report template is available using the following:

- Export Options: More fields of information are provided with the exportable .csv and .xml files than are viewable on the List page. These include the Entity UID and formatted (preferred) mailing address.
- Banner ODS Population: A population saved for this template will include the distinct combinations of Entity UIDs and Academic Periods for your query result set.

Detail Reports

The following detail information can be accessed for any student on the list report:

- Current Addresses
- Other Phone Numbers
- Current Internet Address
- Admissions Application
- Application Academic Study
- Admissions Rating
- Admissions Decisions
- Application Deposit Detail
- Financial Aid Information
- Admissions Attributes
- Admissions Cohorts
- Admissions Requirements
- Additional Information Counts
- Recruitment Information Detail
- Application Additional Information

- Demographics
- Medical Information
- Veteran Status
- International Details
- Latest Secondary School
- Latest Post Secondary School
- Test Scores
- Employment History

Notes

- The Admission's Application reporting template provides a broad array of query opportunities. Performance, or the time it takes to retrieve a list of results, may vary based on the complexity of your query or the size of a potential result set.
- Multiple persons at the institution will need to review the data supplied by an applicant for admission and this report template is primarily to pull together for that administrator, reviewer, rater, all the data stored in the system for the applicant into a concise report of the information.
- While multiple academic periods may be used for selection criteria, it is recommended that the admissions applications be looked at for a single academic period at a time. This would correspond to normal application business processing.

Enrolled Students

Use this report template to:

- · Review student enrollments by academic period and program attributes
- Track student course registration activity
- Retrieve a list of students registered in courses with missing scheduling details

Search Criteria

Required Search filters: At least one Academic Period

Recommended Search filters: None

Search Criteria Notes

Certain list of values (LOV) search criteria filters in this template require the selection of one (or more) Academic Periods to display a specific list of values for that filter. To load these filters to use in your query, choose the desired Academic Period(s) and select the

Populate Search Criteria for Academic Period(s) Selected button. You will need to reload these filters any time you change the Academic Period(s) for a new query.

The Student Course Search Criteria filters are for course registrations at your institution only. Transfer courses are excluded from queries.

List

This list report provides one set of results based on the entered search criteria. Data includes ID, name, academic period, sub-academic period, enrollment status, current time status, total credits, enrolled, registered and deceased indicators, email address and the city, state/province, postal code, county, nation, telephone, and address type for a preferred address.

Additional information applicable to the list page for this report template is available using the following:

- Export Options: More fields of information are provided with the exportable .csv and .xml files than are viewable on the List page. These include the Entity UID and formatted (preferred) mailing address.
- Banner ODS Population: A population saved for this template will include the distinct combinations of Entity UIDs and Academic Periods for your query result set.

Detail Reports

The following detail information can be accessed for any student on the list report:

- Current Addresses
- Other Phone Numbers
- Current Internet Address
- Academic Study
- Enrollment Information
- Academic Information
- Academic Standing
- Holds
- Student Courses
- Student Course Meeting Times
- Demographics
- Medical Information
- Veteran Status

• International Details

Notes

- The Student Course reporting template provides a broad array of query opportunities. Performance, or the time it takes to retrieve a list of results, may vary based on the complexity of your query or the size of a potential result set.
- Search Criteria filters in this template require an Academic Period to display a specific list of values for that filter. To load these filters to use in your query, select or change to the desired Academic Period(s) and select the Populate Search Criteria button.
- The Student Course Search Criteria filters and the Registered Courses Detail report do not included transfer course information (STUDENT_COURSE records where TRANSFER COURSE IND = Y are excluded).
- Detail reports containing Academic Period based information are for the Academic Period in context for the row selected from the List page.

Self-Service Reporting Configuration Parameters

See the "Customize Parameters" section of the Self-Service Reporting Installation Guide for steps on how to set up Administrative User Interface parameters used within SSR.

Security

There are various security options available for SSR. This section discusses authentication and authorization access to your Oracle database. It does not cover security configuration such as firewall placement or securing your application server. Information on those topics is available from Oracle at the Oracle Application Express (APEX) home page: http://www.oracle.com/technology/products/database/application_express/index.html.

APEX first performs application authentication. This determines whether a user has access to an application, such as SSR. To determine which components a user has access to, APEX performs authorization.

APEX provides several methods for authentication. You can choose from a series of preconfigured authentication schemes, copy an existing scheme from another APEX application that you have already developed, or create your own custom authentication scheme. A description of the various methods appears below:

• Oracle Account Security

The default SSR security method uses Oracle accounts. If you are already using Oracle accounts for security at your reporting layer, particularly if you have implemented Fine Grained Access in Banner ODS, this option may be the simplest way to implement SSR, and would allow you to bring up SSR without adding to your security maintenance.

• APEX Built-in Authentication

If you have already set up security in Banner ODS for a reporting tool such as Oracle Business Intelligence Discoverer or ReportNet, you may want to establish a similar security scheme for SSR. User accounts for SSR are created and maintained using the APEX Administrative User Interface.

• Use an Existing Security Scheme

If you have already created your own APEX application and have devised your security scheme to govern it, you may be able to use that same security scheme for SSR.

Create Your Own Custom Authentication Scheme

APEX provides a wizard creates an authentication scheme from scratch.

• Other Security Options

APEX enables you to integrate SSR with an LDAP server or with Oracle's Single Sign-On technology.

For more information on authentication, refer to the Oracle Application Express User's Guide release 2.2 (Oracle document B28550-01).

Oracle Account Security

Authentication

The default SSR security method uses Oracle accounts. If you are already using Oracle accounts for security at your reporting layer, particularly if you have implemented Fine Grained Access in Banner ODS, this may be the simplest way to implement SSR, and would allow you to bring up Self-Service Reporting (SSR) without adding to your security maintenance.

APEX runs on the PL/SQL module of Oracle's Application Server. The PL/SQL module uses a database access descriptor (DAD) and a SQL*Net connection to log into your Oracle database. The default APEX URL, http://localhost/pls/apex, includes the default APEX DAD "apex". The APEX DAD stores a username and password with which to log into the database. However, to use Oracle account security you need to configure the DAD so that it does not store a user name and password. The user is prompted for these values. The user name is then made available in the APEX substitution variable called APP_USER.

Authorization

The SSRMGR.SCK_COMMON package includes the F_getSSRPermissions function which uses the Oracle User ID to determine which SSR reporting templates that each user is authorized to access.

The function call for F_getSSRPermissions is located in the SSR application on Page 1 for all report templates, then again in a "Branch" on each report template page to prevent access to the page via a bookmark or URL manipulation.

Navigate to Page 1:

- 1. Log into APEX as an SSR Workspace Administrator.
- 2. Select Application Builder.
- 3. Select the SSR application.
- 4. Navigate to the Page Definition for page 1.
- 5. The call to F_getSSRPermissions is located in "SET_PERMISSIONS" under "Processes" in the "Page Rendering" column. Each call to F_getSSRPermissions sets permission for a single report template. F_getSSRPermissions calls F_getSSRPermissionsViewList to retrieve the list of views for which a user must be granted SELECT permission in order to run a given report template.

If you add or delete a report template or add or delete any views for a report template, you *must* change SSRMGR.SCK_COMMON.F_getSSRPermissions and/or F_getSSRPermissionsViewList.

SSR is delivered with scripts which can be used to issue the grants that are required to access each of the SSR report templates. These scripts are located in the ssr/security install directory.

Add Security for a New Report Template

- 1. Log into APEX as an SSR Workspace Administrator using the URL format: http:// hostname:port/pls/database_access_descriptor/f?p=4550:1
 - *hostname* is the name of the system where Oracle HTTP Server is installed.
 - *port* is the is the port number assigned to Oracle HTTP Server. In a default installation, this number is 7777. For more information, see "Accessing the Oracle Application Express Login Page" in the APEX Installation Guide.
 - *database_access_descriptor* describes how Oracle HTTP Server connects to the database server so that it can fulfill an HTTP request. The default value is *apex*.
 - The remainder of the URL indicates to display the login page for a Workspace Administrator.

- 2. You will now be presented with the APEX Login page. Login using "SSR" as the Workspace and use the administrator ID and password.
- 3. Select Application Builder.
- 4. Select the SSR application.
- 5. Navigate to the Page Definition for page 1.
- 6. In the "Items" section, add a new Item for the new report template. For example, an existing security Item is P1_STU_ADVISOR_STUDENT.
- 7. In the "Processes" section at the bottom of the "Page Rendering" column, select "SET_PERMISSIONS".
- 8. Using the existing code as an example, add the code to set the value of the new Item you just created. Note that permissions are set for each template and for each menu group, i.e., Student, Advancement, etc. and that you need to add code to set the permission for the new report template and add code to set the permission for the new report template will appear.
- **9.** Edit the function SSRMGR.SCK_COMMON. F_getSSRPermissionsViewList, using the existing code as an example, add the new report template name and associated list of views. Compile SSRMGR.SCK_COMMON.

Delete Security for a Report Template

- 1. To login to SSR and locate page 1, follow the first 5 instructions in the above section, "Add Security for a New Report Template".
- 2. In the "Processes" section at the bottom of the "Page Rendering" column, select "SET_PERMISSIONS".
- 3. Comment out references to the item associated with the report template.
- 4. Navigate to the Page Definition for the Search Criteria page in the Report Template for which you are modifying security. In the "Branches" section at the bottom of the "Page Processing" column, delete the security "Branch" to page 1 from the report template.

Change the List of Views for a Report Template

- 1. Edit the function SSRMGR.SCK_COMMON. F_getSSRPermissionsViewList.
- 2. Change the list of views associated with the template(s) you are changing.
- **3.** Compile SSRMGR.SCK_COMMON.

APEX Built-in Authentication

If you have already set up security in Banner ODS for a reporting tool such as Oracle Business Intelligence Discoverer or ReportNet, you may want to establish a similar security scheme for SSR. This is accomplished using the APEX Administrative User Interface.

Change the Authentication Scheme

- 1. Log into APEX as an SSR Workspace Administrator using the URL format: http:// hostname:port/pls/database_access_descriptor/f?p=4550:1
 - 1.1. *hostname* is the name of the system where Oracle HTTP Server is installed.
 - **1.2.** *port* is the jort number assigned to Oracle HTTP Server. In a default installation, this number is 7777. For more information, see "Accessing the Oracle Application Express Login Page" in the APEX Installation Guide.
 - **1.3.** *database_access_descriptor* describes how Oracle HTTP Server connects to the database server so that it can fulfill an HTTP request. The default value is *apex.*
 - **1.4.** The remainder of the URL indicates to display the login page for a Workspace Administrator.
- 2. You will now be presented with the APEX Login page. Login using "SSR" as the Workspace and use the administrator ID and password.
- 3. Select Application Builder.
- 4. Select the SSR application.
- 5. Select "Edit Attributes".
- 6. Select "Security".
- 7. Select "Define Authentication Schemes."
- 8. On the right side of the page, select "Change Current"
- 9. Change the value of "Available Authentication Schemes" to "Application Express".
- **10.** On the confirmation page, select "Make Current."

Application Express User Account Authentication

APEX performs authentication and authorization using information stored in its own tables. The user accounts are those that are created in the SSR workspace. You can set up user accounts one of two ways.

- 1. Create a user account through the APEX Administrator interface:
 - **1.1.** Login to APEX as an APEX Administrator.
 - 1.2. Select "Manage Workspaces".
 - **1.3.** Select "Manage Developers and Users".
 - **1.4.** Select the "Create" button.
 - **1.5.** Enter the required information and when done select either the "Create" button or the "Create and Create Another" button.
- 2. Create a user account through the APEX Workspace Administrator interface:
 - 2.1. Login to APEX as an SSR Workspace Administrator.
 - **2.2.** On the Home page, select the link "Manage Application Express Users" in the "Administration" box on the right side of the page.
 - 2.3. Select "Create End User".
 - **2.4.** Enter the information except for "User Groups" and when done select either the "Create" button or the "Create and Create Another" button.

Create User Groups

Authorization is accomplished by assigning end users to User Groups. Create a User Group for each SSR Report Template:

- 1. Login to APEX as an SSR Workspace Administrator.
- 2. On the Home page, select the link "Manage Application Express Users" in the "Administration" box on the right side of the page.
- **3.** Select "Create Group" and create a group for each of the following Report Templates. Be sure to enter each name **exactly** as listed below:
 - Admissions Application
 - Advancement Person
 - Advisor Student Listing
 - Employee

- Enrolled Students
- Financial Aid Awards
- General Ledger
- Operating Ledger
- Receivable Customer

Application Express User Account Authorization

Authorization is accomplished by assigning end users to User Groups. SSR is delivered with a User Group defined for each Report Template. To assign end users to SSR User Groups:

- 1. Login to APEX as an SSR Workspace Administrator.
- 2. On the Home page, select the link "Manage Application Express Users" in the "Administration" box on the right side of the page.
- 3. Select "Existing Users".
- 4. Select a user from the list.
- **5.** Under "User Groups", select the appropriate User Groups for that user and select "Apply Changes".

칠 Note

Be certain to assign all User Groups to all users who are listed as Developers and/or Workspace Administrators.

Change the Authentication Scheme application item

An APEX application item, or global variable, called "F1_SECURITY_TYPE" has been created to direct the SSR permissions function, SCK_COMMON.F_getSSRPermissions, to use either Oracle User Account Security or Application Express User Account Security. To change the value of this item:

- 1. From the SSR Workspace Administrator Home page, select "Application Builder".
- 2. Select the SSR application.
- 3. Select "Shared Components".
- 4. In the section called "Logic", select "Application Items".
- **5.** At the bottom of the page, select the arrow next to "Existing Application Level Computations". That will display the list of application items.

- 6. Select the edit icon in column 1 to edit F1_SECURITY_TYPE.
- **7.** In the "Computation" attribute change the value of "ORACLE" to "APEX" and select "Apply Changes".

Refer to the Oracle Application Express User's Guide release 2.0 (Oracle document B16373-01) for additional details.

Other Security Options

Oracle allows you to configure the SSR application as a partner application with the Single Sign-on (SSO) infrastructure using Oracle Internet Directory (OID). To learn more about this option, visit the Oracle APEX Home Page URL (noted at the beginning of this section), select the link to "How-To's," then select from the various papers available in the "Security" section.

Any LDAP server can be used for APEX authentication. In the Shared Components section of the SSR application, APEX provides a wizard which allows you to define the access parameters to your LDAP server. The wizard assumes that the server already exists and that it can respond to a SIMPLE_BIND_S call for credentials verification. Refer to the same above-mentioned "Security" section at the Oracle Web site.

APEX also allows you to use an existing authentication scheme of your own, or to create a new one. To implement a custom scheme, you must provide a PL/SQL function returning a Boolean value that APEX will execute before processing each page request. As with the setup for an LDAP server, APEX provides a wizard in the Shared Components of the SSR application with which to define a custom authentication scheme.

7-45





Indexes are added based on the reporting needs of the Banner ODS tables as well as performance for the incremental refresh process. For tracking and documentation purposes, a listing of the delivered indexes is stored in the IA_ADMIN.MGBINDX table. This table is populated using the following query for a release:

SELECT &sysid, x.table_name, x.index_name, column_name ,uniqueness, descend,column_position,&relno, 'NO',SYSDATE, 1 FROM user_indexes x, user_ind_columns y WHERE x.table_name = y.table_name AND x.index_name = y.index_name AND x.table_name LIKE 'M%' AND x.table_name NOT IN (SELECT DISTINCT table_name FROM all_tab_columns WHERE column_name LIKE '%FREEZE_EVENT%') ORDER BY x.table_name, x.index_name, column_position;

The MGBINDX table is also used in the Banner ODS Checks and Balances process to verify that baseline indexes are valid and present. If your institution has created additional indexes, the differences are reported in the control report as warnings. To have your new indexes included in the Banner ODS Checks and Balances process, insert the new index information into the IA_ADMIN.MGBINDX table using SQL (refer to the MGBINDX_DATA_ODS.SQL script in the dbscripts directory for a syntax example). Set the LOCAL_IND = 'YES' to identify this as your institution's index. The local records in this table will be preserved with future upgrades. We recommend that baseline rows are *not* deleted from MGBINDX.

The Banner ODS metadata also uses the delivered indexes when documenting the Recommended Search Columns. The script *update_recsearchconds.sql* (in the dbscripts/ utility_scripts directory) is used to generate that information based on the actual indexes in the database. If additional local indexes are added, it is recommended that this script is rerun (from the IA_ADMIN account) so the list of Recommended Search Columns accurately reflects the database.

8-1





Attribute

A building block of information within a view. Many of the attributes in a view come directly from fields in the source database. Other attributes are derived from database fields either through calculations or the logic defined in a function.

Base View

A view of a primary or secondary composite table, which. A base view is used to add fields not extracted from the source database, or ERP, but required for the view, such as counts or other function-based values. In addition, the base view serves to insulate the user from changes to the architecture of the composite tables. Any changes to the underlying table can be handled through the creation of the base view.

The Banner ODS builds all access to data via the base views

Business Intelligence

A term adopted within the technology industry to represent a broad category of applications for gathering, storing, analyzing, and providing access to data to help users make better business decisions. Applications within a business intelligence environment allow users to monitor the operations and financial soundness of the institution – they may preserve the organization's fiscal history, display its current state, and forecast future results using business intelligence data.

Change File

A file that captures and records key information about the updates, additions, and deletions of data in a master file. The creation of the Change File starts the incremental refresh process in the Banner ODS.

Change Tables

In Banner, Oracle tables that capture key information when data is changed. Change tables drive the incremental refresh of the Banner ODS process. They identify which information needs to be updated in the Banner ODS.

Cleansing

The process of translating, decoding, or resolving anomalies within source information that resides in Banner Operational Data Store.

G-1

Composite Table

A table within the Banner ODS that groups information from the source system's database tables to form the foundation from which views will be built.

Composite View

Views within Banner that contain the information that will be extracted into the Banner ODS. The ETL process pulls the information from the composite views into the composite tables of the Banner ODS.

Control report

In the Banner ODS, a report generated after a refresh process that indicates the status of the refresh. The report identifies whether the refresh process was successful, the elapsed time of the refresh, and any errors that might have occurred.

CSV

Comma Separated Values file. CSV is a normal format for files as they are downloaded or exported from an application. A CSV file can be opened and manipulated in common tools like Microsoft Excel.

Cube

A cube is a multidimensional data structure used to store presorted information that has been aggregated based on an underlying data relationship. Data structured in this way can be quickly processed and analyzed, because multiple dimensions can be examined at one time.

Customer Support Center

The Customer Support Center is our centralized support site where clients can access support resources for SunGard Higher Education (SGHE) products, and where they can go for support of UDC solutions. The support center itself is not part of the Unified Digital Campus.

Data

Recording facts or instructions on a storage medium for communication, retrieval, processing, or presentation.

Data Element

The smallest individual component part of data. A field's literal, technical name.

Data Link

A reference to a remote database, located on a completely different system from the local database.

Data Mart

A subset of a data warehouse that is designed for a particular subject area or branch of the organization's business, such as for the Admissions or Human Resource areas. Data marts are typically built and controlled by a single department in an organization.

Data Model

A map that displays the data elements that are included in the Banner ODS, and the transition of each data element from its origin in the ERP database to its location in the Banner ODS composite tables and views and Banner EDW star schemata.

Data Store

Also called Banner Operational Data Store (Banner ODS). A place that stores significant types and pieces of information for an organization, in a format that promotes ease of retrieval and analysis. Banner Operational Data Store (Banner ODS) facilitates operational ad hoc reporting by gathering, transforming, and storing data. The Data Store deals with information that is transactional in nature. It's short-lived, and may be here today and gone tomorrow. See Data Warehouse.

Data Transformation

The process of converting pieces of raw data into information that is logical, such as by decoding production data and merging information from multiple sources and formats.

Data Warehouse

Also called Enterprise Data Warehouse (Banner EDW). An informational database that stores data provided and shared by multiple databases. It enables an institution to keep "time slices" of data over time, over history, stored for easy retrieval and comparison. The data warehouse is an extension of the Data Store, which is the primary source of aggregated and detailed data. Partner applications can also be used to feed detailed data into the Banner EDW through the Banner ODS. The data warehouse is separated from the transaction stores, offering scalable performance, product independence and a streamlined extraction process to support the reporting, query or uses of the data warehouse.

Of an Enterprise Data Warehouse (Banner EDW) an institution can ask the question, "How are we doing this month as compared to last month?" See Data Store.

Denormalized

Describes data that does not conform to any "normalized" form. Normalized data is data in its simplest format, without redundant attributes or keys. Data is normalized for ease when transporting it to another environment, or retrieving it for reporting purposes.

G-3

Dimension

A structural attribute of data that consists of pieces of information of a similar type. A Geography dimension, for example, may contain data about regions, countries, cities, states. A time dimension contains year, month, day and hour members. A multidimensional data structure allows data to be organized and analyzed in a concise, efficient way.

Dimension Table

A table that contains all the attributes (dimensions) or characteristics that describe observations and their associated measures (related numbers).

Characteristics of the people, places, or things represented in the data are stored in the dimension tables. One row represents a unique combination of the characteristics in a particular dimension table. The unique combination is assigned a surrogate (sequential) key.

Dynamic Data

Data that is automatically updated every time something changes in the Oracle database.

Banner EDW (Banner Enterprise Data Warehouse)

See Data Warehouse.

Enterprise Resource Planning (ERP)

ERP is the term used to describe the transactional system. It's the combination of the major components of these systems (Student, Financial Aid, Human Resource, Finance, and Alumni/Advancement). It provides the core of information for the Banner ODS and the EDW.

Extract, Transform and Load (ETL)

In managing databases, Extract, Transformation, Load (ETL) refers to three separate functions combined into a single programming tool.

The Extract function reads the data from a specified source database, and extracts a desired subset of data. Next, the Transformation function works with the acquired data, using rules or lookup tables, or creating combinations with other data to convert it to the desired state. Finally, the Load function writes the resulting data (either all of the subset or just the changes) to a target database, which may or may not previously exist.

The ETL process is used to populate Banner Operational Data Store (Banner ODS) from the source database. Another set of ETL processes is used to populate the enterprise data warehouse (Banner EDW) from Banner Operational Data Store (Banner ODS).

ETL Map Package Parameter

In the Administration tool, a parameter used to group mappings together into a job.

Facts/Measures

Numbers that are related to the attributes. Facts and measures (the terms are synonymous) generally represent counts, sums or percentages and other ratios. They may be stored and retrieved. They may be calculated from stored measures as the query is executed. Examples of facts/measures are total enrollment, or the number of employees, or the amount of all gifts to the institution.

Fact Table

A table that contains measures or numerical information used to perform an analysis.

Detailed Fact tables store the most granular level detail in the data warehouse, and support information audit when linked to the source database. Summary Fact tables provide faster responses for queries.

Fine Grained Access

Terminology used by Oracle to identify how security can be applied to different tables and views. The Banner ODS use fine grained access security to manage user profile access.

Freeze Process

A process maintained within the Administration tool that allows you to identify what file(s) to capture at a specific moment in time, or "freeze," and store inside the Banner ODS as new tables for later access. You can use the freeze process to create ad hoc or scheduled "snapshot" database tables.

Function

A small piece of code that uses specified logic to get information from the source database that isn't stored as a single field. For example, "Age" may not be stored as a field. Using a function that subtracts birth date from today's date and then determines whether the birth month has passed, Age can be provided as an attribute in a view.

The Banner ODS is designed to use functions where practical to calculate values, or determine the location of information within the Presentation Views.

Grant, Revoke and Privileges

While DDL statements such as Grant and Revoke can't be used directly in PL/SQL, they do have an effect on which SQL statements are legal. In order to Insert or Delete information on an Oracle table, you need permission. Permissions are manipulated via the Grant and Revoke SQL commands.

G-5

Job Killer

Gives you the ability to stop a process while it is running using the JOB KILLER parameter.

Key Attribute

Attributes that determine the level of information returned by the view. It is important for you to know the level at which information in a view is returned. For example, key attributes can determine whether a view returns one row of information for each person per condition, or simply one row for each person.

Incremental Refresh

Data in the Banner ODS is updated, or refreshed, at predetermined intervals of time. Only the data that has changed in the source database since the last refresh is updated.

Information

Data that human beings assimilate and evaluate to solve problems or make decisions.

Mapping

The activity of associating elements in the source system with their corresponding elements in the Banner ODS. When you run a job (schedule a process via the Administration Tool), it calls the related mappings and loads or updates the data defined by them.

The Banner ODS includes two main categories of mappings:

- LOAD mappings: load data from the source system into the Banner ODS. These mapping names have the prefix LOAD_.
- REFRESH mappings: update the Banner ODS with data that has changed in the source database. Mappings in this category have the prefix UPDATE_ or DELETE_.

Typically, these mappings exist in pairs. To completely refresh the data, run the DELETE mapping followed by its associated UPDATE mapping.

SunGard Higher Education delivers the Banner ODS with hundreds of mappings already defined. LOAD and REFRESH mappings exist for each composite table in the Banner ODS. To make them easier to work with, they are organized into groups by product areas. This gives you the ability to run one job that includes a group of mappings, say all of the Finance-related mappings, at one time. You can also run a single mapping, if desired.

Master Instance

The database where production data are located. This is also the location where the snapshot logs are run. The master instance is also called the master database or the production database.

Measure/Fact

See Facts/Measures.

Meta data

Literally, data about data. Descriptions of what kind of information is stored where, how it is encoded, how it is related to other information, where it comes from, and how it is related to your institution. The information describes data and other structures, such as objects, business rules, and processes.

Multidimensional Cube

See Cube.

Multidimensional Database

A Database Management System (DBMS) optimized to support multi-dimensional data.

Normalize

See Denormalized.

ODBC

Open Database Connectivity. A product is considered to be ODBC complaint if it allows you to access a relational database in a client/server environment. An example would be using your PC in your office to retrieve information in a database stored in another location.

Online Analytical Processing (OLAP)

Dynamic, multi-dimensional analysis of historical data which supports activities such as:

- · Calculating across dimensions and through hierarchies
- Analyzing trends
- Drilling up and down through hierarchies
- Rotating to change the dimensional orientation

Banner Operational Data Store (Banner ODS)

See Data Store.

Banner ODS Instance

The database where all the Banner ODS functions, composite tables, and views are run.

OLAP

Online Analytical Processing. OLAP enables you to perform multi-dimensional analysis by allowing you to drill up, down, across and through information to see varying levels of detail.

Oracle Data Dictionary

Oracle stores information about the structure of the database in the Oracle data dictionary. The data itself is located in other areas and the data dictionary describes how the actual data is organized. The dictionary consists of tables and views that you can query in the same way you query any other database tables or views (the views are owned by Oracle user SYS).

Oracle Warehouse Builder (OWB)

OWB is the ETL tool used to extract data from the ERP and move it to composite tables in the Banner ODS. It is also the tool used to extract the data from the Banner ODS and load it into the Banner EDW.

It is designed to move and transform data, develop and implement data warehouses, perform meta data management, or create and manage Oracle databases and meta data. In addition to its graphical user interface (GUI), Warehouse Builder provides an API in the form of Oracle MetaBase Plus (OMB Plus), where all Warehouse Builder functionality can be accessed using the OMB Scripting Language.

Package

A collection of functions and/or procedures that are managed and owned by a single object.

Physical Table

A table where data is actually stored in a database.

PL/SQL

The 3GL Oracle procedural language extension of SQL. PL/SQL enables you to mix SQL statements with procedural constructs. PL/SQL combines the ease and flexibility of SQL with the procedural functionality of a structured programming language, such as IF...THEN, WHILE, and LOOP. Even when PL/SQL is not stored in the database, applications can send blocks of PL/SQL to the database rather than individual SQL statements, thereby reducing network traffic. With PL/SQL, you can define and execute PL/SQL program units such as procedures, functions, and packages. PL/SQL is interpreted and parsed at runtime; it does not need to be compiled.

Presentation View

A view that joins together multiple base views to make the information easier to access and report from. The primary purpose of a presentation view is to eliminate the

need to join base views, and add in display defaults when present. The presentation view invokes Oracle's fine grained access to ensure proper access to data by a user.

Presentation View and Reporting View are synonymous terms.

Primary Composite Table

A composite table that manages its stored data using a "unique row per key" format. Typically, these tables are the owners of data, and are supported by secondary composite tables.

Privilege: Object vs. System

An object privilege allows an operation on a particular object (such as a table). A system privilege allows operations on an entire class of objects.

Procedure

A database object that is designed to perform a designated process. A procedure is similar to a function -- it is written using rules that are typically difficult for a report developer to create within a reporting tool. The primary difference between a procedure and a function is that a procedure is used to update data in the database whereas functions can only return values.

The Banner ODS uses procedures within the ETL process of populating the Composite Tables.

Reporting Views

See Presentation View.

Relational Online Analytical Processing (ROLAP)

A form of Online Analytical Processing (OLAP) that performs dynamic multidimensional analysis of data stored in a relational database rather than in a multidimensional database (which is usually considered the OLAP standard).

Role Based Security

Security provided within the Banner ODS that permits you to control who can access reporting information based on each person's role at the institution. The Banner ODS uses Oracle's fine grained access to implement its security.

Secondary Composite Table

A composite table that manages its information on a "many per key" format. Typically, these tables are used to support primary composites because the data can be associated with a specific value within the primary composite tables.

A secondary composite view is also referred to as a repeating view. It is a building block that contains a defined set of data that has an unlimited number of records in the ERP. It is passed through a display rule filter that slots a limited number of the repeating items for use in reporting. It is usually used in combination with other base composite views, but it may be used alone.

Slotted View A view that brings back user-defined information from the source database rather than all information.

Source Code

The all_source, dba_source, and user_source views contain the source code for stored procedures, functions, packages, and package bodies. Trigger source code is in the all_triggers, dba_triggers, and user_triggers views. If the stored object is wrapped, these views contain the encoded source rather than clear text.

통 Note

Within the Banner ODS DED, when you view source code, you see the encoded source.

Star Join

An optimal, denormalized form of organizing data to access a group of people, usually a department. Star joins are usually associated with data marts.

Star Schema

A standard technique for designing the tables of a data warehouse. It is a collection of related database objects, including logical structures such as tables, views, sequences, stored procedures, synonyms, indexes, clusters, and database links.

Star schemata are made up of fact tables, dimension tables and surrogate or calculate keys.

Fact tables each join to a larger number of independent dimension tables. The tables may be partially denormalized for performance, but most queries still need to join in one or more of the star tables.

A schema is owned by a database user and has the same name as that user; relational schemata are grouped by database user ID.

Synonym

A renaming of a table reference, similar to an alias for a select list item. A synonym is a data dictionary object and is created by the CREATE SYNONYM DDL statement.

Table

The object within the database where data is stored in a row and column format.

Translating Code

A code that associates a code in the source database with different code values in the Banner EDW. A translating code can translate one-to-one, or by range. More than one code in the source database can be associated with one code in the Banner EDW.

Trigger

Triggers are used to populate the change tables which aid in the incremental refresh process.

View

A grouping of information, also called "logical view." A view is "logical" because the information in the view is grouped in a logical order, putting related information in the same section of the view. For instance, in the people-related views, you find all the name information together at the beginning of the view, followed by personal, biographical, and demographic information.

Most of the information in a view comes from fields within the source database tables. Some information is calculated from database fields or retrieved using an Oracle function. A single view can include up to 255 pieces of information, called attributes.

G-11







A

access detail reports 7-7 accounts receivable SSR report templates 7-19 add comments to reporting views 3-125 Administrative UI data access 3-51 admissions application detail reports 7-35 list 7-35 notes 7-36 search criteria 7-34 admissions application SSR report template 7-34 advancement person detail reports 7-21 list 7-21 notes 7-22, 7-36 search criteria 7-21 advancement SSR report templates 7-21 advisor's students 7-32 list 7-33 notes 7-34 search criteria 7-32

B

baseline meta data 3-118 business profiles 3-18, 3-19, 3-20, 3-22 associate profile with a user 3-23 associate user with a profile 3-24 set up 3-17, 3-18, 3-19, 3-20, 3-21, 3-22 view 3-24

С

checks and balances (ODS) **3-90** Cognos ReportNet lists of values **5-3**, **5-40** composite tables **1-12**, **1-13** control report **3-97** control reports **3-95** delete **3-96** error messages **3-97** create and save a search rule **7-10** create ODS populations **7-14** create users and PINS **3-3** cross reference chart **3-8** customized scheduled processes **3-68**

D

data models ODS 4-1 ODS Entity Relationship Diagrams 4-1 delete a search rule 7-13 delete an ODS population 7-17 delete ODS populations from home page 7-17 with search rule loaded 7-17 detail reports access 7-7 detail reports page 7-8 drop-down list 7-8 export 7-8 sort 7-8 display rule cross reference internal group and internal code 3-8 display rule information in published meta data 3-8 display rules creating a new rule 3-10 cross reference chart 3-8 duplicate 3-14 reload 3-14 set up 3-5 updating an existing rule 3-13 duplicate display rules 3-14

1-1

Ξ

email entire list 7-6 individual 7-6 email notification 3-105 employee 7-30 detail reports 7-31 list 7-31 notes 7-32 search criteria 7-30 enrolled students 7-36 detail reports 7-37 list 7-37 notes 7-38 search criteria 7-36 Entity Relationship Diagrams 4-1 entity relationship diagrams 4-1 legend 4-3 ERD relationship legend 4-2, 4-3 ERDs 4-1 error messages 3-97 checks and balances process (ODS) 3-98 freeze process 3-102 publish meta data (PUBLISH META DATA) 3-102 reconcile (RECONCILE JOB, RECONCILE_SINGLE_JOB) 3-103 ETL control group parameter 3-83 ETL map package parameter 3-78 ETL slot package parameter 3-82

F

finance SSR report templates 7-22 general ledger 7-22 financial aid awards 7-29 financial aid enrollment detail reports 7-29 list 7-29 notes 7-30 search criteria 7-29 financial aid SSR report templates 7-28 financial aid awards 7-29 freeze data adding a table/view to a data list 3-109 creating a new data list 3-107 editing or deleting a table/view from a data list **3-110** freezing a single ODS table/view **3-111** freezing multiple tables/views at the same time **3-112** freeze or update ODS recurring data **3-113**

G

general ledger 7-22 detail reports 7-24 expected uses 7-22 notes 7-25

H

human resources SSR report templates 7-30 employee 7-30

indexes 8-1 installed process parameter 3-73 adding 3-74 setting up 3-74

J

job parameter **3-76**

K

kill a job set up **3-64**

L

list of value views 4-57 list page 7-5 access detail reports 7-7 email 7-6 export 7-6 sort 7-7 lists of values Cognos ReportNet 5-3, 5-39, 5-40 load a search rule 7-10 local meta data 3-118

Μ

mappings add 3-132 delete 3-132 meta data 3-115 add mappings 3-132 add source column 3-126, 3-130 add source tables to a subject area 3-124, 3-129 add target column 3-126, 3-130 add target views to a subject area 3-124, 3-129 baseline and local 3-118 configure PUBLISH LOCATION and VIEW URL parameters 3-120 configure VIEW URL parameter 3-120 creating 3-118 delete local 3-127, 3-131 delete mappings 3-132 delete source column 3-126, 3-130 delete target column 3-126, 3-130 edit sources 3-123, 3-125, 3-128 edit target 3-123, 3-125, 3-128 parameter set up for publishing reports 3-119 publish for entire subject area 3-135 publish for one source or target 3-135 publish from command line 3-134, 3-136 reporting views 3-147 set up publish preferences 3-118 source and target tables 3-144 source tables 3-140 target tables 3-142 view 3-137 metamodel 3-138

N

navigation quick reference 7-2

0

ODS checks and balances **3-90** ODS daily update **3-113** ODS data models **4-1** ODS display rules **3-5** ODS populations **7-14**

create 7-14 create with search rule loaded 7-14 create without search rule loaded 7-15 delete 7-17 refresh (update) 7-15 refresh from home page 7-16 refresh without search rule loaded 7-16 use with the ODS 7-17 ODS updates specific dates and times 3-114 operating ledger 7-25 detail reports 7-28 list 7-26 notes 7-28, 7-30, 7-36 search criteria 7-25 oracle account security 7-39 authentication 7-39 Oracle warehouse builder runtime audit browser integration 3-104 integration setup 3-104 RAB authentication 3-105 overview 1-1 OWB mappings and slot packages 3-77

Ρ

parameter parameter 3-85 parameters change 3-55 delete 3-55 ETL control group 3-83 ETL map package 3-78 ETL slot package 3-82 installed process 3-73 job 3-76 maintain ODS 3-53 parameter 3-85 schedule a process 3-72 subprocess 3-74 password 3-3 PIN 3-3 policies for a single table 3-48 for all tables 3-47 policy management 3-47 set up for a single table 3-48 set up for all tables 3-47 populations, see ODS populations 7-14

1-3

predicates **3-46** publishing meta data all reports **3-136** by scheduling a process **3-136** from the Administrative UI **3-134** from the command line **3-136**

R

reconcile a single ODS table 3-89, 3-92, 3-93 reconcile multiple ODS tables 3-89, 3-91 records per page display settings 7-7 refresh (update) ODS populations 7-15 refresh from home page 7-16 refresh with search rule loaded 7-16 refresh without search rule loaded 7-16 rename a search rule 7-12 report ODS source change table counts 3-88 report templates 7-18 reporting self-service 7-1 third party reporting tools 5-1 reporting views 3-147, 4-57 add comments 3-125 reset Administrative user roles 3-4 runtime audit browser integration 3-104

S

save as another search rule 7-12 schedule a process 3-59 customized 3-68 customized scheduled processes 3-68 view and remove 3-61, 3-63 schedule a process parameters ETL Control Group 3-83 ETL map package 3-78 ETL slot package 3-82 job 3-76 parameter 3-85 subprocess 3-74 schedule multiple processes 3-61 search criteria dependant filters 7-5 list of values filters 7-5 recommended and required 7-4 search criteria page 7-4

search rules 7-9 create and save 7-10 load 7-10 rename 7-12 save as another rule 7-12 update 7-11 security add for a report template 7-40, 7-41 assign rules for each Oracle user 3-33 delete for a report template 7-41 predicates 3-46 requirements 3-26 rules in action 3-48 self-service reporting 7-38 security rules turn on and off 3-33 self-service reporting 7-1 detail reports page 7-8 list page 7-5 navigation quick reference 7-2 search criteria page 7-4 set up the ODS 3-52 set up users and PINS 3-3 slot packages 3-77 slotted tables 1-12, 1-13 updating in the ODS 1-12 SSR report template overviews 7-18 SSR report templates accounts receivable 7-19 advancement 7-21 finance 7-22 financial aid 7-28 human resources 7-30 receivable customer 7-19 student 7-32 student advisor's students 7-32 student SSR report templates 7-32 subprocess parameter 3-74 synchronize the ODS 3-52

T

third party reporting tools (ODS) 6-1

U

update a search rule 7-11

update populations 7-15 update/freeze recurring ODS data 3-113 use populations with the ODS access from the home page 7-18 access from view search rules page 7-18 user accounts 3-3 user ID 3-3 user ID 3-3 using populations with the ODS 7-17 utilities 3-88 checks and balances (ODS) 3-90 reconcile a single ODS table 3-89, 3-92, 3-93 reconcile multiple ODS tables 3-89, 3-91 report ODS source change table counts 3-88

V

view published meta data 3-137

W

WebTailor administration **3-153** WebTailor and security **3-2**

