

ODS and EDW Handbook

April 2007

ODS Release 3.1, EDW Release 1.4



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ODS and EDW

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Glossary

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Chapter 1 Overview

The Operational Data Store (ODS) and Enterprise Data Warehouse (EDW) allow 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.

The Operational Data Store (ODS) and Enterprise Data Warehouse (EDW) gather information from existing data sources, create consistent reporting definitions and reports, and present the information.

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

ODS and EDW Handbook, the following documentation is available:

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

Banner to ODS User Guide
system to the ODS. It also includes prerequisites that must be set up before loading data into the ODS. All composite views and a description of each composite view is provided.

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
Higher Education documentation for your source system.

Online Help

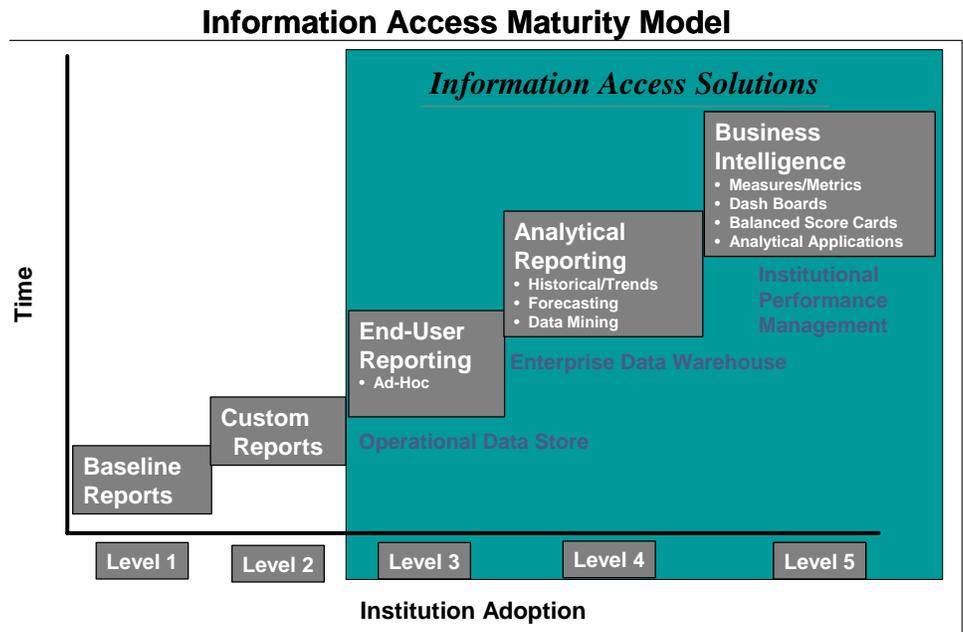
Help

Documentation

Select the “Information Access 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.

Information Access Maturity Model

The Information Access Maturity Model illustrates the typical progression of an institution’s information access needs from the time the solution is adopted through the proactive use of business intelligence applications. You no longer have to wait to secure the data you need, nor do you need to validate the data. The ODS and EDW satisfy levels 3 and 4 of the Information Access Maturity Model.



Level 1: Institutions early in the implementation process focus primarily on the adoption and implementation of baseline reports supplied by the administrative system.

Level 2: Institutions begin to identify specific reporting needs beyond those fulfilled with the administrative system’s baseline reports. To meet these needs, the

institution's IT department typically develops additional reports or performs customizations to the baseline reports.

Level 3: Institutions put power into the hands of end-users who need information through the adoption of self-service reporting tools. Core to this capability is the ODS that extracts data from your administrative system, making it much easier to access and generate consistent reports.

Level 4: Institutions at this level want to use their data not only for operational reporting, but also to generate insight into their business needs. Additionally, they want tools that support the decision-making process and business analysis that guide strategic planning such as forecasting and trend analysis. These more complex needs go beyond the capacity of the ODS and require enterprise and historical data, which are captured in an Enterprise Data Warehouse (EDW). The EDW formats data specifically for analytical processing, and analytical business intelligence tools help provide decision makers with the insight they seek.

Level 5: At the most advanced information maturity level, institutions expand their use of business intelligence tools and the EDW by creating new "knowledge applications" that provide key metrics and information tailored to the needs of managers and decision makers. These metrics are pushed to end users through the use of portal channels, dashboards, scorecards, notifications, and other easy-access delivery mechanisms.

Operational Data Store

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

The 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 Oracle Discoverer reporting tool to deliver an enterprise business area with many prejoined conditions to enhance operational and ad hoc reporting.

Why Use an Operational Data Store?

academic period; you can select specific data as of this date and use the data from

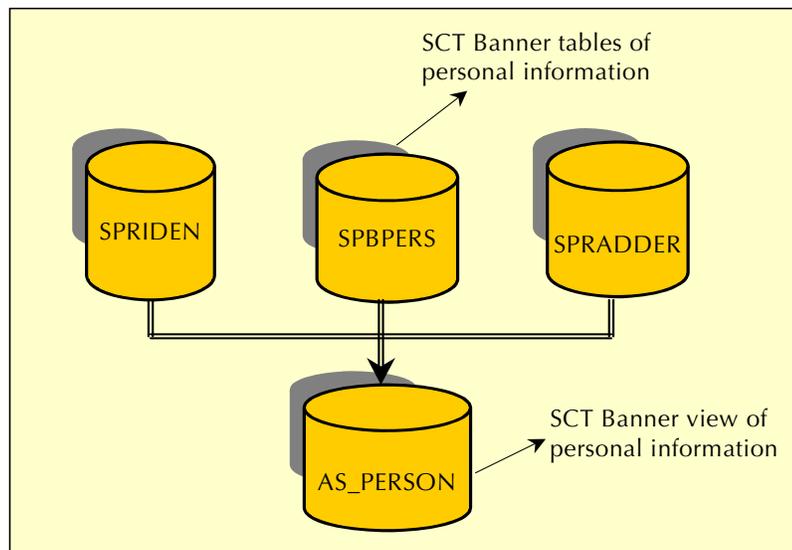
Data Store vs. Data Warehouse

compare enrollment numbers from 1990 through 2004 against GPAs by demographics, they would graph that information with specified drill-downs using the information within the EDW.

Enterprise Data Warehouse

The EDW enables decision makers at every level of the institution to have ready access to enterprise-wide analytical data so that they can proactively plan business activities. The EDW complements the ODS by providing historical snapshots of institutional metrics and measures to further support an aligned, data-driven strategic-planning and decision-making process. This complete solution pairs the industry-leading Cognos analytic tools with the EDW to significantly improve institutional effectiveness and decision making.

The EDW is integrated with the Online Analytical Processing (OLAP) capabilities of the Cognos toolset. The EDW includes prebuilt, pretested cubes that enable you to analyze key performance data from multiple perspectives with sub-second response time and without building custom data cubes on your own. The combination of prebuilt, higher education specific cubes and the powerful analytical capabilities provide immediate value making it easier to follow trends, spot anomalies, compare information, and make informed decisions about and for students, faculty, administrators, alumni, and other constituents.



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 the Banner database.

Extract, Transform and Load Process

The 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.

The ODS uses the ETL process to extract data from the source database, transform the data, and loads it into the ODS. All ETL activities are performed from within Oracle PL/SQL packages, and deployed into the 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.

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

During the initial load of the 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 the 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 the 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 the ODS composite tables.

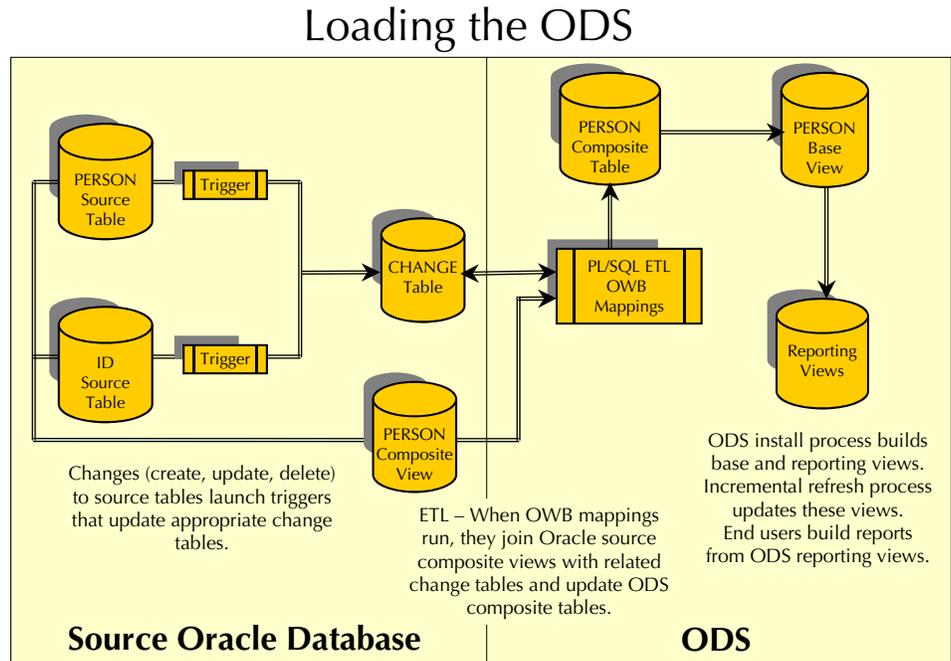
You can manage all data loads and updates. Fine grained access rules, meta data management, data display rules and freeze data processing are managed with the Administrative UI.

Source Oracle Database and ODS Components

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

Refresh) to make additions, deletions or changes in the 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 the ODS. The following chart illustrates these components. Each component is described in subsequent sections.



Source Tables

Source tables are the tables in the source information system from which data is extracted to load into the 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 the 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 the Banner tables and update the appropriate change tables.

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

There are three types of triggers that use three types of processing:

- **DRIVING:** Triggers on tables that are the ‘driver’ table in the composite view. These set DML parameters to Insert, Update, Delete and set the table name to the composite view name.
For Banner example, see ST_SPRIDEN_INSERT_ODS_CHANGE trigger.
- **ANCILLARY:** Triggers on tables that are “joined” tables in the composite view. These triggers do not have composite views based on them. These triggers set DML parameter to Update, and set the table name to the composite view name in which the data table is located. These transactions NEVER initiate an Insert or Delete.
For Banner example, see GT_GOREMAL_INSERT_ODS_CHANGE trigger.
- **COMPLEX DRIVING:** Triggers on tables that are both “driving” and “ancillary” triggers require special handling. These set DML parameters and table names the same as driving triggers, and also insert rows into other change tables with DML parameters and table names that match the Ancillary Trigger requirement.
For Banner example, see ST_SPRMEDI_INSERT_ODS_CHANGE trigger.

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 the 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.). The ODS has built and enabled triggers on all Banner tables that house information that is used in the ODS. Therefore, when one of the 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 the ODS that Banner has data waiting to be retrieved.

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.

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 the 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 the 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 the 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

<i>Column Name</i>	<i>Data Type</i>	<i>Column Comment</i>
SPRPCHG_TABLE_NAME	VARCHAR2(30)	Used to identify which composite view (and/or ODS table) is being populated by this specific row of data.

<i>Column Name</i>	<i>Data Type</i>	<i>Column Comment</i>
SPRPCHG_PIDM	NUMBER	The change table needs to hold as many keys as are required to manage DELETE and UPDATE of information into the 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>I</i> , <i>U</i> , or <i>D</i>).
SPRPCHG_PROCESS_ID	VARCHAR2(30)	Updated by the 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 ODS maintains triggers on all Banner tables used to incrementally refresh data into the ODS. Although the triggers are enabled on the actual Banner tables, they are referred to as ‘change table triggers’ because they populate the 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 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

Composite views exist in Banner and usually match the composite tables that exist in the ODS. During ETL, when you perform a refresh of 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 ODS. The composite views use packages to manage the functions built on the Banner database. There is one function package for each ODS module of information, i.e., Student, Finance, Advancement, etc.

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 the ODS, joined to Banner change tables, and to become the Incremental Refresh data extraction view.

Views are created and maintained in the BANINST1 schema. SELECT access to them is only granted to the ODSMGR schema in the Banner database. These views can only be accessed via the ODS through database links that connect from the ODS ODSMGR schema to the BANNER ODSMGR schema.

PL/SQL Scripts (OWB Mappings)

Information Access uses 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 the 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 the ODS.

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

- **LOAD** mappings: used to initially load the 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 the 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 the ODS based on keys in the composite view joined against rows in the corresponding change table.

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 the ODS. The OWB code generator lets you deploy and populate the ODS without manual coding, and integrates with the Oracle database and query tools.

ODS Composite Tables

Composite tables are the tables within the 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

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

Slotted tables store data values for a specific code related to a base table. For example, the TEST_SCORES_SLOTTED table in the ODS stores all valid Test Score values that were loaded from your source system to the ODS. When your end user creates a report against the 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 ODS data on a regular basis.

Updating Slotted Tables in the 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 the ODS. These views match the ODS composite tables element-for-element.

ODS Reporting Views

Data from each ODS composite table is presented in one or more reporting views. The ODS reporting views are the views that end users will use to create reports within the ODS. Users will 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 to the ODS. These recreated Object:Access views should *not* be used to create new reports from the ODS.

ODS Reporting Views

Data from each ODS composite table is presented in one or more reporting views. The ODS reporting views are the views that your users use to create reports within the 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 the 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 the Banner products.

Multi-Institution Functionality

The Multi-Institution Functionality (MIF) framework is available for all 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 the ODS.

Example

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

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

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

Information Access Administrative User Interface

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

- Preferences and Security - Use to manage Information Access security, set global preferences, and set up user accounts.
- Options - Use to control the processes to extract and load data into the ODS and EDW, 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 WebTailor 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.

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 the 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 the ODS that supports the reporting needs of the entire institution.

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

Report Templates

You can use the ODS with any third party reporting tool. The ODS is delivered with at least 25 report templates written against each module (Student, Financial Aid, Advancement, Human Resources and Finance — including Accounts Receivable). The report templates are just that “templates.” Use them as a starting point to build your own customized reports.

The templates use the Oracle Discoverer reporting tool, and use the reporting views within the ODS as their data source rather than the Object:Access structures. This provides consistent column names and compatible data structure between the provided report templates and any additional reports that your institution may create on its own. Any additional reporting tool that SunGard Higher Education supports in future releases will also go directly against the reporting views. SunGard Higher Education also provides an enterprise business area within the Discoverer reporting tool with join conditions established.

SunGard Higher Education provides report templates in the following tools: Microsoft Access, Cognos Impromptu, Brio Query and IBI WebFocus for the services datamart and the Datamart 1.0 releases. These report templates duplicate the Object:Access data structures within the Datamart. To allow for migration from the prior versions of the Datamart, the ODS release will continue to support these report templates.

The combination of the ODS and third party reporting tools can help you extract information from the database and easily format the data in the reports created.

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 ODS Composite table.

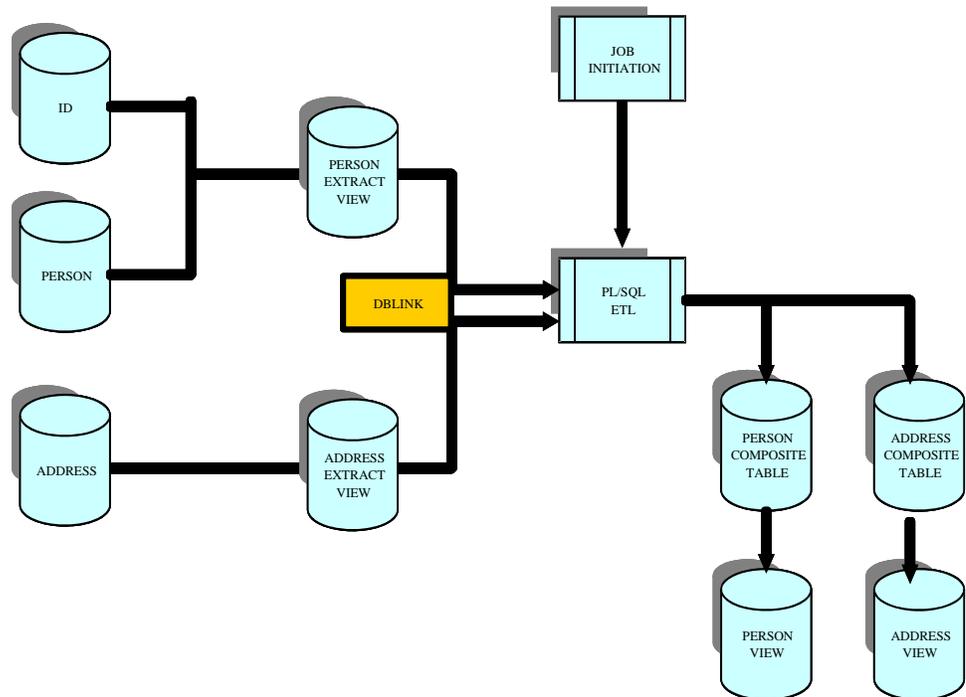
Typically, a complete load is run once, then the refresh process is run on a nightly basis to keep the ODS data in lynch.

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

A process flowchart of the ODS appears below:



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 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.

Incremental Refresh Process

The term “incremental refresh” identifies how data synchronization occurs between the source and target set of tables to ensure that accurate information is stored in the ODS. Information that has changed in the source system is captured and, through the use of ETL tool sets, is applied to the target system. During the process, the change tables bring over only the data that has changed, and the change tables are purged/deleted.

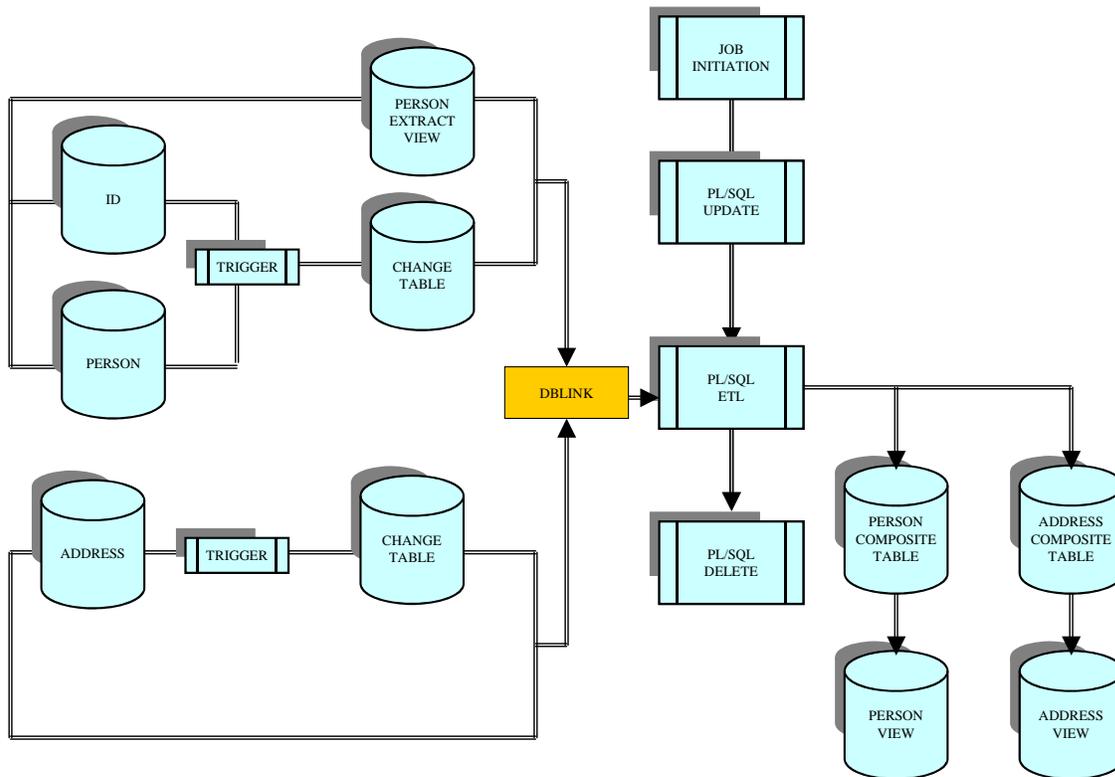
The Incremental Refresh process creates database triggers on the source Oracle database tables with a basic amount of business intelligence to insert key values and a change identifier of Insert, Update, or Delete (I, U, or D) into a composite change table. This composite change table becomes the driver for its associated composite view making incremental refresh possible.

Since this process tracks deletes, inserts, and updates, the change table also determines which records are deleted from the target composite table. In general, there is a one-to-one correspondence between each composite view and its associated change table. However, there are some instances (when the associated keys were identical) where change tables have been merged into one. This keeps the number of change tables to a minimum.

This approach is easy to maintain and has negligible impact upon the production environment. Although the database triggers contain a certain amount of business logic, the triggers only produce inserts into the composite change tables.

Typically, a complete load is run once, and then the Incremental Refresh process is run on a nightly basis to keep the data in lynch. An incremental refresh should be run when data in the source system has changed since the last time a refresh was run.

Incremental Refresh Process Flow



1. Submit the refresh job from the Administrative UI (Schedule a Process), to execute DELETE and UPDATE scripts for all processes identified in the job submitted.
2. Perform all PL/SQL script reads and updates of the source database via DBLINK, which accesses the ODSMGR schema.
3. Run all DELETE processes before UPDATES to set the update flag on records in source change tables.
4. Run PL/SQL DELETE process. This first flags all records for the associated change table(s) to identify the records to be processed. The process then deletes any records identified in the change tables as “deletes.”
5. Run PL/SQL UPDATE process. This performs an Oracle Insert command of the data retrieved in the composite view using keys in the associated change table.
6. Write data to or delete data from the ODS composite tables on separate database.
7. Repeat the cycle for all jobs submitted until complete.

8. Verify the log file for a successful load and completion of all jobs.

Load Process vs. Incremental Refresh Process

Occasionally, a lot of data has changed in the source system (such as via a data import, grade rolls at the end of an academic period, etc.), which creates a large volume of data in the Change tables. This can slow down the Incremental Refresh process. In these cases, it is more efficient to run the Load process instead of the Incremental Refresh process (for those affected tables). Determining when it is more efficient to run a load versus a refresh is somewhat subjective, and can differ between Composite views.

However, experience indicates that if the total number of rows in the Change table (for a particular Composite table) equals 15% or more of the total rows in the corresponding Composite view, then this is a good indicator of when a Load is more efficient than a Refresh.

The Report ODS Change Table Counts process (from the Administrative UI, select Select a Process> ODS Utilities> Select a Subprocess menu) can help you determine this because it calculates how many rows are in each of the source system Change tables for each ODS Composite table (or Load mapping).

Enterprise Data Warehouse Architecture

SunGard Higher Education designed the EDW and its associated event-based processing to capture point-in-time information for trend analysis and historical reporting.

The EDW is designed to work with the ODS as a source within the same environment. All data extraction, transformation and load (ETL) activities are performed by Oracle PL/SQL packages generated by Oracle Warehouse Builder (OWB) and deployed into stage and production warehouse schemas. As with the ODS, these packages are scheduled and run via the DBMS_JOBS queue in Oracle. You can submit and monitor the jobs within the Administrative UI.

The EDW source and target database instances reside in the same database, but are in different schemas. As the EDW loads, data is extracted from the ODS using pipelined table functions. Data is extracted based upon user defined parameters for a point-in-time slice of data. The extracted data is loaded into a staging area where data is cleansed based upon the institutional preferences.

The unique dimensional attribute combinations are then inserted into the dimension tables with a uniquely defined surrogate key. The facts of the extracted

data are then loaded into the fact table(s) along with the surrogate keys defining each record's unique combination of dimensional attributes.

To provide for data value security, the Administrative UI enables Oracle's fine grained access rules to be created and applied to the dimension tables and fact tables.

Oracle Warehouse Builder (OWB) Utilized to Perform ETL

The Oracle Warehouse Builder (OWB) 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 the ODS, and transform and configure the data to load into the EDW. The OWB code generator lets you deploy and populate the EDW without manual coding, and integrates with the Oracle database and query tools.

Administrative User Interface

The Administrative User Interface is web-based, using SunGard Higher Education's WebTailor. This Administrative UI is used for the execution and monitoring of ETL processes. Administrative functions include:

- Preferences and Security - Use to manage Information Access security, set global preferences, and set up user accounts.
- Information Access Options - Use to control the processes to extract, cleanse, and load data into the system, schedule a process, view control reports, view and/or remove scheduled processes, or maintain freeze data.
- Information Access Meta Data - Use to view and manage the meta data supporting the systems.
- New WebTailor 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.
- Cleansing - Use to maintain descriptions to be stored in the EDW, and to translate codes from the ODS to the EDW.

Cleansing

Data cleansing is the process of verifying ODS code values and possibly translating them to standardized code values in the EDW. The ETL mappings initially load code values and descriptions from the ODS into the EDW cleansing tables. Using the

Administrative UI, the data warehouse administrator can set up cleansing rules specific for the institution.

Some of the cleansing that can take place includes:

- Creating new EDW values based on ODS values
- Changing an ODS description value to a new value in the EDW
- Removing duplicate code values
- Creating ranges of ODS codes that become one code in the EDW
- Translating multiple ODS values into one EDW value and description
- Customizing the descriptions used in the EDW

For example, you might group student levels 'CE' and 'PR' for Continuing Education and Professional into one code 'PR' - Professional. Similarly, you could combine 'GR' and 'LW' for Graduate and Law into one 'GR' - Graduate code.

Star Schemas

Star schemas are a standard data modeling technique used in data warehousing. Star schemas improve response time by requiring very few joins for queries. Also, with a star schema measures are preaggregated and do not need to be calculated at query time.

The fact table is the primary table in the star that stores the numerical performance measurements of the business. It's where all amounts and counts are stored. For example, Total Credits is an enrollment fact that is stored in the Enrollment fact table.

Dimensions are the tables that contain descriptive attributes of business entities. In the query Total Credits by Program, Program is the dimension. Program is a dimension attribute of the Academic Study dimension table. There are typically many dimension tables associated with one fact table.

Cubes

Cubes are basically precalculated reports with data that you can rearrange and reformat. They provide the ability to manipulate predefined facts (measures) and dimensions (attributes) in various formats to provide different perspectives on an institution's business. Refer to the *Data Models* chapter of your Administration Guide for detailed star schema and cube information.

Using Cognos PowerPlay cubes as the user interface, you can browse data contained within each star schema in the EDW. This interface provides a predefined descriptive view of the information in the star schema that would otherwise require some understanding of a database query language to accomplish. The presorted

data loaded into the cube can be retrieved quickly and can permit multiple dimensions and measures to be selected and reviewed as desired.

Cognos PowerPlay Transformer provides the Cognos ETL equivalent of OWB for the loading of the Cognos cubes. Transformer provides the ability to define relationships within your data warehouse and pre-aggregate the measures presented to end users within the cubes.

EDW Load Process

Below is an overview of the steps used to move data from the ODS to the EDW.

Process Flow

1. Extract data from the ODS based upon parameters passed from the Administrative UI. This data is loaded into the INPUT table associated with the business area being loaded.
2. Load information within the INPUT table to the associated CLEAN table and run the cleansing process. The cleansing process uses values defined by the institution within the Administrative UI to manage descriptions and translate codes to then update them in the CLEAN table.
3. Data from the CLEAN table is then used to discern the unique combinations of dimensional attributes within the data extracted. New combinations of attributes are inserted into their associated dimension tables and assigned a surrogate key. The first dimension analyzed is the time dimension. If the combination of dimensional attributes within the time dimension already exists, the loading process halts unless the Replace Indicator checkbox is checked. This ensures that historical data is not overridden unless explicitly requested by an institution.
4. After loading the attributes into the dimension tables, join the CLEAN table with its various associated dimension tables to obtain the surrogate keys associated with each record. This data is loaded into the associated WKEYS table.
5. Run the FACT_DELETE mapping to delete records in the fact table for the defined time slice when the Replace Indicator checkbox is checked.
6. Load data from the WKEYS table into the fact table.

EDW Cleansing

“Cleansing” is the process of verifying ODS code values and possibly translating them to standardized code values in the EDW. Use cleansing to:

- Remove duplicate code values before loading them into the EDW.
- Translate a code value in the ODS to a new value in the EDW.
- Group together a range of ODS code values into one EDW value.
- Associate an effective date with code descriptions that may change over time.

EDW Architecture Components

Oracle Warehouse Builder

Generated Objects

LOCATION: used to identify which schemas and database locations are used to generate DBLINKS.

Mappings

- **INPUT:** loads ODS data into a staging INPUT table based upon parameters passed in the Administrative UI.
- **CLEAN:** passes data from the INPUT table to the CLEAN staging table and call the MGKDCLS.P_Cleanse_Input cleansing process.
- **DIM_TIME_UPDATE:** determines whether the extracted combination of time attributes exists within WDT_TIME. If the Replace Indicator checkbox is not checked, the load process halts. Otherwise, the EVENT_DATE will be updated within WDT_TIME for the event being run.
- **DIM_TIME_INSERT:** inserts a new record within WDT_TIME with an assigned surrogate key if the combination of time attributes constitutes a new event.
- **DIM_<dimension_name>:** inserts a new record within a given dimension table with an assigned surrogate key if the combination of dimensional attributes in the extraction does not already exist within the dimension table.
- **WKEYS:** joins the CLEAN table with its associated dimension tables in order to place the measures from the extraction and the associated surrogate keys into the WKEYS staging table.
- **FACT_DELETE:** deletes records in the fact table for the extraction event when the Replace Indicator checkbox is checked.
- **FACT_INSERT:** loads data from the WKEYS table into the fact table.

Enterprise Data Warehouse

Star Schema

- Dimension tables: used to store unique combination of descriptive attributes
- Fact tables: used to store the measures (amounts, counts, etc.)
- Staging tables: used as temporary storage of extraction information so that it may be manipulated with little or no effect to the actual star models.

Views

Views exist on top of each star schema as a means to load the Cognos cubes more effectively.

Cubes

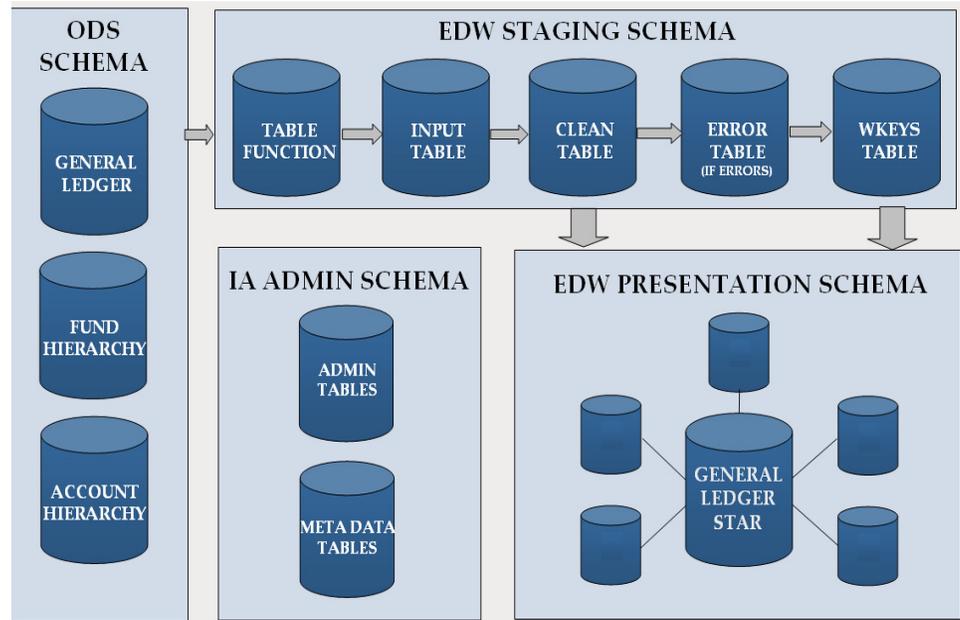
- At least one cube per star schema is created to provide OLAP capabilities within the EDW.
- One report per cube exists to provide a meaningful default view of data within a cube.

From ODS to EDW

The EDW stores data that is fed to it from the ODS. The data is stored on both primary storage and alternative storage. The data is cleansed and restructured to support queries, summaries, and analyses.

The ODS is a relational data model that is continually being incrementally refreshed from the OLTP. The EDW reorganizes, groups and summarizes the information from the ODS and allows you to freeze it at a specific point-in-time (event.) The Administrative UI schedules EDW load mappings to take place at scheduled times.

Below is a graphical representation of the ODS to EDW data flow.



The EDW resides on the same machine and database as the ODS, but resides under the schema owner name of EDWMGR. The EDW also uses the EDWSTG schema as a repository for staging tables used to process extracts. The ODS is contained within the ODSMGR schema.

The ODS is a database of denormalized tables called composite tables. These composite tables store data contents from the administrative systems and are constructed specifically for reporting. Denormalizing combines data from many smaller tables into fewer, larger tables. This enhances data extraction and query access by eliminating the need to perform intensive performance table joins.

Data is retrieved from the source system(s) using composite views. These views use the existing business logic on the source system, and provide the extraction logic for the composite tables that reside on the reporting server. An ODS typically resides on a separate server in order to take advantage of the performance benefits associated with a query-only system. Business logic is not resident on the reporting server, ensuring that the ODS model can support all products. Because the ODS is a query-only system, the data in the ODS flows only one way — from the source administrative system to the ODS, never from the ODS to the administrative system.

The ODS standard composite tables were created with your industry-wide business needs in mind. This enables you to create your own reporting views and reports based on the delivered tables.

The ODS also includes Reporting (presentation) views. Reporting views are the final views you use to create reports.

Your ODS is installed, set up and producing reports. You have just installed your new EDW system. Now what? Below are the tasks you'll need to perform to properly set up the EDW. Refer to the section, "Setting Up and Maintaining the Enterprise Data Warehouse," in the *Information Access Administrative User Interface* chapter of this guide for detailed information on each of the following tasks.

Task 1 - EDW Extract Parameters

Before you load data into the EDW, it is important that you review the internal parameters used by the EDW during processing. These parameters are defined within the MTVPARM table with an MTVPARM_INTERNAL_CODE_GROUP of 'EDW EXTRACT PARAMETERS':

- HR_APPL_STAT
- EARNINGS
- Student Groups—STUDENT_LEVEL_GROUP, TEST, STUDENT_LEVEL_GROUP_TESTS

Task 2 - Cleansing

The cleansing process is applied to information loaded from the ODS into the EDW. This process translates some ODS code values and maintains ODS code descriptions before loading them into the EDW. This allows you to standardize descriptions and define data ranges that will be used as dimensional attributes.

Warning: You *must* set up all cleansing information before you run any EDW load jobs. This is extremely important.

Task 3- Security

Secured access to data is controlled by Oracle policies, in conjunction with the Security Rules set up using the Administrative UI. A policy is an Oracle construct that applies a WHERE clause condition to any queries made against a table. A Security Rule is simply data in the security tables that determine what that WHERE condition will look like for a given user.

By default, the ODS and EDW are delivered with no policies on any tables - that is, with no security restrictions on any tables. Therefore, you are free to set up the Security Rules for given users without affecting any user's ability to access the data. However, once the policies are defined for the tables, users can only access data to which they have been granted access.

Task 4 - Cubes

Cognos PowerPlay

Analytic tools within Cognos 8 enable you to view your institution's information using a variety of methods.

Analysis Studio allows you to use drag-and-drop techniques to manipulate dimensions and measures within a cube to view data from different perspectives. Refer to the Cognos 8 manuals for detailed instructions on how to use this application.

Your System Reporting Tools

Various other reporting tools may be used to connect to the EDW stars themselves to create reports and cubes.

Information Access Solutions Naming Conventions

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

ODS Standards (ODSMGR Schema)

Front-End Views: Presentation (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.

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

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

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

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

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

1st Character	M- Mart	System Descriptor
2nd Character	G- General Purpose	Product Identifier
3rd Character	S- Sequence	Object Identifier
4th-7th 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.

EDW Standards (EDWMGR/EDWSTG Schemas)

Warehouse Tables

Star Schema Tables (EDWMGR Schema)

Object name:

Maximum length is 30 characters. See the table below.

1st Character	W- Warehouse	System Descriptor
2nd Character	D- Dimension F- Fact	Star Schema Table Type
3rd Character	T- Table	Object Identifier
4th Character	_ (underscore)	
5-5th-30th Characters	Unique Descriptor	

Examples:

WDT_TIME, WFT_EMPLOYEE_DETAIL

Additional Detail:

Script names are the same as the object name.

Staging Tables (EDWSTG Schema)

Object name:

Maximum length is 30 characters. See the table below.

1st Character	W- Warehouse	System Descriptor
2nd Character	T- Temporary	Warehouse Table Type
3rd Character	T- Table	Object Identifier
4th Character	_ (underscore)	

5th-30th Characters	Unique Descriptor, ending in any:
	<ul style="list-style-type: none"> _INPUT _CLEAN _ERROR _WKEYS

Examples:

WTT_DEGREE_DETAIL_INPUT, WTT_ENROLLMENT_WKEYS

Additional Detail:

Script names are the same as the object name.

Sequences

Object name:

Maximum length is 30 characters. See the table below.

1st Character	W- Warehouse	System Descriptor
2nd Character	D- Dimension	Product Identifier
3rd Character	S- Sequence	Object Identifier
4th Character	_ (underscore)	
5th-30th Characters	Unique Descriptor, ending with _SEQ	

Examples:

WDS_GIFT_SEQ, WDS_JOB_SEQ

Additional Detail:

Sequences are created within the scripts that create the dimension tables.

Indexes and Constraints

Primary Key Indexes and Constraints

Object name:

Maximum length is 30 characters. See the table below.

1st - 3rd Character	PK_ (underscore)	Primary Key Prefix
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4th -30th Characters	Table Name or Abbreviation (includes the first 4 characters, e.g., WFT_)
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Examples:

PK_WFT_EMPLOYEE, PK_WFT_OPERATING_LEDGER

Foreign Key Constraints

Object name:

Maximum length is 30 characters. See the table below.

1st - 2nd Character	FK	Foreign Key Prefix
3rd Character	n	Where n is a one up number
4th Character	_ (underscore)	
5th-30th Characters		Child Table Name (omits the first 4 characters, e.g., WFT_)

Examples:

FK1_ENROLLMENT, FK2_ENROLLMENT

Chapter 2 Banner to the ODS

The Banner to the ODS chapter includes information that should be completed for Banner-specific 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 Banner-specific source systems.

Partition Exchange Option

Some load processes can take a significant amount of time to extract data into the 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 the 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 ODS installation or upgrade.

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 ODS Mappings, there are five Transaction History Loads and Load Payroll History process . 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. Therefore, an additional parameter has been included to automatically rebuild existing indexes. It is recommended that you 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.

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:

Navigation

1. Select Information Access Options from the Information Access Administrative UI menu.
2. Select Schedule a Process. The Select a Process page opens.

Tasks

1. Select Schedule ODS or EDW Mappings. The Select a Subprocess page opens.
2. Select the Payroll or Transaction History process you want to run. The Schedule a Process page opens.
3. Enter the required Scheduling Parameters information.
 - (a) Enter a **Run Date** (format dd-mon-yyyy) and **Runtime** (format hh24:mi:ss).
 - (b) 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*.

4. 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 the Banner General and Finance products before the ODS tables are loaded initially. No prerequisites are required for the remaining Banner products.

Task 1 - Define General Preferences Address Type

The MST_ADDRESS composite table stores a person's preferred address information from the Banner SPRADDR table. Since this information is rule based, the Address Type value needs to be defined in the Banner GTVSDAX form so that the 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.

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

Example:

<i>External Code</i>	<i>Internal Code</i>	<i>Internal Code Sequence Number</i>	<i>Internal Code Group</i>
PR	PREFADDR	1	ADDRESS

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

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

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

The MFT_TRANSACTION_HISTORY composite table in the ODS stores detailed history information from the 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. (MTVPARAM)

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 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

Task 3 - Load Finance into the ODS

Note: This does not apply to Partition Exchange.

Loading the ODS Composite table, MFT_TRANS_HISTORY, is broken into five separate Load mappings. (See the “Banner to 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 the 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 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 the ODS.

Validation Table Data and Incremental Refresh

The Operational Data Store (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 the 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 the 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 the 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 the 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 the 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 the 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 the 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 ODS tables need to be reloaded if you change a description in any of the Banner validation tables:

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
AABMSHP	LOAD_MAT_MEMBERSHIP	AA_MEMBERSHIP
AFBCAMP	LOAD_MAT_SOLICITOR	AA_SOLICITOR
ASBSORG	LOAD_MAT_SOLICITOR	AA_SOLICITOR
ATVAMCT	LOAD_MAT_MEMBERSHIP	AA_MEMBERSHIP
ATVAMGP	LOAD_MAT_MEMBERSHIP_INTEREST	AA_MEMBERSHIP_INTEREST
ATVAMIN	LOAD_MAT_MEMBERSHIP_INTEREST	AA_MEMBERSHIP_INTEREST
ATVAMPM	LOAD_MAT_MEMBERSHIP_DUES	AA_MEMBERSHIP_DUES
ATVAMST	LOAD_MAT_MEMBERSHIP	AA_MEMBERSHIP
ATVAMTP	LOAD_MAT_MEMBERSHIP	AA_MEMBERSHIP
ATVASSC	LOAD_MAT_GIFT_ASSOC_ENTITY	AA_GIFT_ASSOCIATED_ENTITY
ATVCFAE	LOAD_MAT_DESG_GIVING	AA_DESIGNATION_GIVING_HISTORY
ATVCFAE	LOAD_MAT_GIFT	AA_GIFT
ATVCFAE	LOAD_MAT_GIFT_MATCHING	AA_GIFT_MATCHING
ATVCFAE	LOAD_MAT_GIFT_MEMO	AA_GIFT_MEMO
ATVCFAE	LOAD_MAT_GIFT_MULTIPLE	AA_GIFT_MULTIPLE
ATVCFAE	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVCMTP	LOAD_MAT_CAMP_GIVING	AA_CAMPAIGN_GIVING_HISTORY
ATVCMTP	LOAD_MAT_GIFT	AA_GIFT
ATVCMTP	LOAD_MAT_GIFT_MATCHING	AA_GIFT_MATCHING
ATVCMTP	LOAD_MAT_GIFT_MEMO	AA_GIFT_MEMO
ATVCMTP	LOAD_MAT_GIFT_MULTIPLE	AA_GIFT_MULTIPLE
ATVCMTP	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVDCAM	LOAD_MAT_GIFT_SOCIETY	AA_GIFT_SOCIETY
ATVDCAM	LOAD_MAT_MEMBERSHIP	AA_MEMBERSHIP
ATVDCNP	LOAD_MAT_CONSTITUENT_ENTITY	AA_CONSTITUENT
ATVDCNP	LOAD_MAT_CONSTITUENT_ENTITY	AA_ORGANIZATIONAL_CONSTITUENT
ATVDCPR	LOAD_MAT_GIFT_AUXILIARY	AA_GIFT_AUXILIARY
ATVDCST	LOAD_MAT_CONSTITUENT_ENTITY	AA_CONSTITUENT

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
ATVDCST	LOAD_MAT_CONSTITUENT_ENTITY	AA_ORGANIZATIONAL_CONSTITUENT
ATVDCYR	LOAD_MAT_GIFT_SOCIETY	AA_GIFT_SOCIETY
ATVDGRP	LOAD_MAT_GIFT	AA_GIFT
ATVDGRP	LOAD_MAT_GIFT_MATCHING	AA_GIFT_MATCHING
ATVDGRP	LOAD_MAT_PLEDGE	AA_PLEDGE
ATVDONR	LOAD_MAT_GIFT_AUXILIARY	AA_GIFT_AUXILIARY
ATVDOTT	LOAD_MAT_CONSTITUENT_ENTITY	AA_CONSTITUENT
ATVDSTA	LOAD_MAT_GIFT	AA_GIFT
ATVDSTA	LOAD_MAT_GIFT_MATCHING	AA_GIFT_MATCHING
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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
FRVINDD	LOAD_MFT_GRANT_FUND	AF_GRANT_FUND
FRVINDR	LOAD_MFT_GRANT	AF_GRANT
FRVINDR	LOAD_MFT_GRANT_FUND	AF_GRANT_FUND

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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
FTVORGN	LOAD_MTT_LEDGER_ACCOUNTING	AT_LEDGER_ACCOUNTING
FTVPROG	LOAD_MAT_GIFT	AA_GIFT
FTVPROG	LOAD_MAT_PLEDGE	AA_PLEDGE
FTVPROG	LOAD_MFT_ACCOUNT_INDEX	AF_ACCOUNT_INDEX
FTVPROG	LOAD_MFT_BUDG_AVAIL_LEDG	AF_BUDGET_AVAILABILITY_LEDGER
FTVPROG	LOAD_MFT_BUDG_DETAIL	AF_BUDGET_DETAIL
FTVPROG	LOAD_MFT_ENCUMBRANCE_ACCOUNT	AF_ENCUMBRANCE_ACCOUNTING
FTVPROG	LOAD_MFT_ENDOWMENT	AF_ENDOWMENT
FTVPROG	LOAD_MFT_ENDOWMENT_UNITS	AF_ENDOWMENT_UNITS
FTVPROG	LOAD_MFT_FA_DEPRECIATED_ITEM	AF_FIXED_ASSET_DEPRECIATION
FTVPROG	LOAD_MFT_FA_FUNDING_SOURCE	AF_FIXED_ASSET_FUNDING_SOURCE
FTVPROG	LOAD_MFT_GRANT_BILL_DETAIL	AF_GRANT_BILLING_DETAIL
FTVPROG	LOAD_MFT_GRANT_LEDGER	AF_GRANT_LEDGER
FTVPROG	LOAD_MFT_INV_ACCOUNTING	AF_INVOICE_ACCOUNTING
FTVPROG	LOAD_MFT_OPERATING_LEDGER	AF_OPERATING_LEDGER
FTVPROG	LOAD_MFT_PO_ACCOUNTING	AF_PURCHASE_ORDER_ACCOUNTING
FTVPROG	LOAD_MTT_LEDGER_ACCOUNTING	AT_LEDGER_ACCOUNTING
FTVPROJ	LOAD_MPT_PAYROLL_DIST	AN_PAYROLL_DISTRIBUTION
FTVRUCL	LOAD_MAT_GIFT	AA_GIFT
FTVRUCL	LOAD_MPT_PAYROLL_DIST	AN_PAYROLL_DISTRIBUTION
FTVRUCL	LOAD_MTT_LEDGER_ACCOUNTING	AT_LEDGER_ACCOUNTING
FTVRUCL	LOAD_MTT_MISC_TRANSACTION	AT_MISCELLANEOUS_TRANSACTION
GTVCURR	LOAD_MTT_MISC_TRANSACTION	AT_MISCELLANEOUS_TRANSACTION
GTVDICD	LOAD_MGT_EVENT	AG_EVENT
GTVDICD	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE
GTVEMAL	LOAD_MST_ORGANIZATION_ENTITY	AS_ORGANIZATION_ENTITY
GTVEMPH	LOAD_MGT_EVENT	AG_EVENT

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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	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
GTVSYSI	LOAD_MGT_COMMUNICATION	AG_COMMUNICATION
GURIDEN	LOAD_MAT_ADVANCEMENT_RATING	AA_ADVANCEMENT_RATING
GURIDEN	LOAD_MAT_CONSTIT_STAFF_ASSIGN	AA_CONSTITUENT_STAFF_ASSIGN
GURIDEN	LOAD_MAT_CONSTITUENT_CONTACT	AA_CONSTITUENT_CONTACT
GURIDEN	LOAD_MAT_CONSTITUENT_PLAN	AA_CONSTITUENT_PLAN
GURIDEN	LOAD_MAT_PROSPECT_INFO	AA_PROSPECT_INFO
GURIDEN	LOAD_MAT_PROSPECT_PROPOSAL	AA_PROSPECT_PROPOSAL
GXVDIRD	LOAD_MPT_PAYROLL_DOC	AP_PAYROLL_DOCUMENT
NBBPOSN	LOAD_MPT_HR_APPL_STAT	AP_HR_APPLICATION_STATUS
NBBPOSN	LOAD_MPT_HR_APPLICATION	AP_HR_APPLICATION
NBBPOSN	LOAD_MPT_INTERVIEW	AP_INTERVIEW
NTRPCLS	LOAD_MPT_HR_APPL_STAT	AP_HR_APPLICATION_STATUS
NTRPCLS	LOAD_MPT_HR_APPLICATION	AP_HR_APPLICATION
NTRPCLS	LOAD_MPT_INTERVIEW	AP_INTERVIEW
NTRPCLS	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
NTRSGRP	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
NTRSGRP	LOAD_MPT_SALARY_RATE	AN_SALARY_RATE
NTVDOTT	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
NTVJOBP	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
NTVPFOC	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
NTVWKSH	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
PTRAPPS	LOAD_MPT_HR_APPL_STAT	AP_HR_APPLICATION_STATUS
PTRBCAT	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE
PTRBDCA	LOAD_MPT_BENEFICIARY	AP_BENEFICIARY_DEPENDENT
PTRBDCA	LOAD_MPT_MONTHLY_DEDUCT	AP_MONTHLY_DEDUCTION
PTRBDCA	LOAD_MPT_TAX	AP_TAX
PTRBDCA	LOAD_MPT_YEARLY_DEDUCT	AP_YEARLY_DEDUCTION
PTRBREL	LOAD_MPT_BENEFICIARY	AP_BENEFICIARY_DEPENDENT
PTRBURE	LOAD_MPT_BARG_UNIT	AP_BARGAINING_UNIT
PTRCERT	LOAD_MPT_CERTIFICATION	AP_CERTIFICATION
PTRDFPR	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
PTREARN	LOAD_MPT_EMPL_EARN_CY	AP_EMPLOYEE_EARNING_CY
PTREARN	LOAD_MPT_PAYROLL_EARNING	AP_PAYROLL_EARNING
PTRECLS	LOAD_MPT_HR_APPLICATION	AP_HR_APPLICATION
PTRECLS	LOAD_MPT_PAYROLL_DIST	AN_PAYROLL_DISTRIBUTION
PTRECLS	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
PTREMPR	LOAD_MPT_EMPL_EARN_CY	AP_EMPLOYEE_EARNING_CY
PTREMPR	LOAD_MPT_EMPL_EARN_FY	AP_EMPLOYEE_EARNING_FY
PTREMPR	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
PTREMPR	LOAD_MPT_PAYROLL_DEDN	AP_PAYROLL_DEDUCTION
PTREMPR	LOAD_MPT_PAYROLL_EMPL_POSN	AP_PAYROLL_EMPLOYEE_POSITION
PTREMTY	LOAD_MPT_PAST_EMPLOYMENT	AP_PAST_EMPLOYMENT
PTRFTYP	LOAD_MPT_FACULTY_APPT_HIST	AP_FACULTY_APPOINTMENT_HISTORY
PTRFTYP	LOAD_MPT_FACULTY_RANK_HIST	AP_FACULTY_RANK_HISTORY
PTRFTYP	LOAD_MPT_FACULTY_SABB_HIST	AP_FACULTY_SABBATICAL_HISTORY
PTRJBLN	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
PTRJBLN	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
PTRJCRE	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
PTRLEAV	LOAD_MPT_LEAVE_ACCRUAL	AP_LEAVE_ACCRUAL
PTRLEAV	LOAD_MPT_LEAVE_BALANCE	AP_LEAVE_BALANCE
PTRLREA	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE
PTRLREA	LOAD_MPT_FACULTY_SABB_HIST	AP_FACULTY_SABBATICAL_HISTORY
PTRPGRP	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
PTRPICT	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
PTRPICT	LOAD_MPT_LEAVE_ACCRUAL	AP_LEAVE_ACCRUAL
PTRPICT	LOAD_MPT_PAYROLL_DEDN	AP_PAYROLL_DEDUCTION
PTRPICT	LOAD_MPT_PAYROLL_DIST	AN_PAYROLL_DISTRIBUTION
PTRPICT	LOAD_MPT_PAYROLL_DOC	AP_PAYROLL_DOCUMENT
PTRPICT	LOAD_MPT_PAYROLL_EARNING	AP_PAYROLL_EARNING
PTRPICT	LOAD_MPT_PAYROLL_EMPL_POSN	AP_PAYROLL_EMPLOYEE_POSITION
PTRRANK	LOAD_MPT_FACULTY_RANK_HIST	AP_FACULTY_RANK_HISTORY
PTRSKIL	LOAD_MPT_SKILL	AP_SKILL
PTRSKLV	LOAD_MPT_SKILL	AP_SKILL
PTRTENR	LOAD_MPT_FACULTY_APPT_HIST	AP_FACULTY_APPOINTMENT_HISTORY
PTRTENR	LOAD_MST_FACULTY	AS_FACULTY
PTRTREA	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE
PTVASRC	LOAD_MPT_HR_APPLICATION	AP_HR_APPLICATION
PTVASSN	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
PTVASSN	LOAD_MPT_PAYROLL_EMPL_POSN	AP_PAYROLL_EMPLOYEE_POSITION
PTVBARG	LOAD_MPT_BARG_UNIT	AP_BARGAINING_UNIT
PTVBARG	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
PTVBDTY	LOAD_MPT_BENEFIT_DEDUCT	AP_BENEFIT_DEDUCTION
PTVDISP	LOAD_MPT_FACULTY_APPT_HIST	AP_FACULTY_APPOINTMENT_HISTORY
PTVDISP	LOAD_MPT_FACULTY_RANK_HIST	AP_FACULTY_RANK_HISTORY
PTVDISP	LOAD_MPT_FACULTY_SABB_HIST	AP_FACULTY_SABBATICAL_HISTORY
PTVEEOG	LOAD_MPT_HR_APPLICATION	AP_HR_APPLICATION
PTVEFUN	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
PTVEGRP	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
PTVEGRP	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
PTVESKL	LOAD_MPT_HR_APPLICATION	AP_HR_APPLICATION
PTVESKL	LOAD_MPT_POSITION_DEF	AN_POSITION_DEFINITION
PTVLCAT	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
PTVLCAT	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE
PTVLCAT	LOAD_MPT_PAYROLL_EMPL_POSN	AP_PAYROLL_EMPLOYEE_POSITION
PTVLGCD	LOAD_MPT_PAYROLL_EMPL_POSN	AP_PAYROLL_EMPLOYEE_POSITION
PTVORGN	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
PTVORGN	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE
PTVORGN	LOAD_MPT_FACULTY_APPT_HIST	AP_FACULTY_APPOINTMENT_HISTORY
PTVORGN	LOAD_MPT_FACULTY_RANK_HIST	AP_FACULTY_RANK_HISTORY
PTVORGN	LOAD_MPT_FACULTY_SABB_HIST	AP_FACULTY_SABBATICAL_HISTORY
PTVORGN	LOAD_MPT_PAYROLL_EARNING	AP_PAYROLL_EARNING
PTVORGN	LOAD_MPT_PAYROLL_EMPL_POSN	AP_PAYROLL_EMPLOYEE_POSITION
PTVPCAT	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
PTVPCAT	LOAD_MPT_PAYROLL_EMPL_POSN	AP_PAYROLL_EMPLOYEE_POSITION
PTVREVT	LOAD_MPT_FACULTY_APPT_HIST	AP_FACULTY_APPOINTMENT_HISTORY
PTVREVT	LOAD_MPT_REVIEW	AP_REVIEW
PTVSBTY	LOAD_MPT_FACULTY_SABB_HIST	AP_FACULTY_SABBATICAL_HISTORY
PTVSHCD	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
PTVSHCD	LOAD_MPT_PAYROLL_EARNING	AP_PAYROLL_EARNING
PTVSHCD	LOAD_MPT_PAYROLL_EMPL_POSN	AP_PAYROLL_EMPLOYEE_POSITION
PTVSTGR	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE
PTVWKCP	LOAD_MPT_EMPL_POSITION	AN_EMPLOYEE_POSITION
RFRBASE	LOAD_MRT_AWARD_BY_FUND	AR_AWARD_BY_FUND
RFRBASE	LOAD_MRT_AWARD_BY_PERSON	AR_AWARD_BY_PERSON
RFRBASE	LOAD_MRT_AWARD_DISBURSEMENT	AR_AWARD_DISBURSEMENT
RFRBASE	LOAD_MRT_LOAN_APPLICATION	AR_LOAN_APPLICATION
RFRBASE	LOAD_MRT_TRACKING_REQUIREMENT	AR_FINAID_TRACKING_REQUIREMENT
ROBINST	LOAD_MGT_COMMUNICATION	AG_COMMUNICATION

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
ROBINST	LOAD_MRT_APPLICANT_NEED	AR_APPLICANT_NEED
ROBINST	LOAD_MRT_AWARD_BY_FUND	AR_AWARD_BY_FUND
ROBINST	LOAD_MRT_AWARD_BY_PERSON	AR_AWARD_BY_PERSON
ROBINST	LOAD_MRT_AWARD_DISBURSEMENT	AR_AWARD_DISBURSEMENT
ROBINST	LOAD_MRT_FINAID_APPL_STATUS	AR_FINAID_APPLICANT_STATUS
ROBINST	LOAD_MRT_FINAID_BUDGET_COMP	AR_FINAID_BUDGET_COMPONENT
ROBINST	LOAD_MRT_FINAID_ENROLLMENT	AR_FINAID_ENROLLMENT
ROBINST	LOAD_MRT_FINAID_FUND	AR_FINAID_FUND
ROBINST	LOAD_MRT_LOAN_APPLICATION	AR_LOAN_APPLICATION
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_CURRICULUM_BATCH	AS_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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
SMRPRLE	LOAD_MST_CURRICULUM_BATCH	AS_CURRICULUM_FOS
SMRPRLE	LOAD_MST_CURRICULUM_BATCH	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_CURRICULUM_BATCH	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
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_LEARNER_CURRICULUM_FOS
STVACYR	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION

*Validation
Table*

Mapping

Composite View

STVACYR	LOAD_MST_CURRICULUM_BATCH	AS_YEAR_TYPE_DEFINITION
STVACYR	LOAD_MST_DISABILITY_INFO	AS_DISABILITY_INFORMATION
STVACYR	LOAD_MST_ENROLLMENT	AS_ENROLLMENT
STVACYR	LOAD_MST_ENROLLMENT	AS_ENROLLMENT_HISTORY
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_ATTRIBUTE	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
STVACYR	LOAD_MTT_CONTRACT	AT_CONTRACT
STVACYR	LOAD_MTT_EXEMPTION	AT_EXEMPTION
STVACYR	LOAD_MTT_INSTALLMENT_PLAN	AT_INSTALLMENT_PLAN

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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_LEARNER_CURRICULUM_FOS
STVADMT	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVADVVR	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_ATTRIBUTE	AS_RECRUITMENT_ATTRIBUTE
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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
STVATYP	LOAD_MFT_VENDOR	AF_VENDOR
STVATYP	LOAD_MGT_EVENT	AG_EVENT
STVBCHR	LOAD_MST_INST_CHARACTERISTIC	AS_INSTITUTION_CHARACTERISTIC
STVBLCK	LOAD_MST_CURRICULUM_BATCH	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_CURRICULUM_BATCH	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_CURRICULUM_BATCH	AS_LEARNER_CURRICULUM_FOS

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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
STVCOLL	LOAD_MAT_PLEDGE	AA_PLEDGE
STVCOLL	LOAD_MGT_EVENT	AG_EVENT
STVCOLL	LOAD_MPT_EMPLOYEE	AP_EMPLOYEE
STVCOLL	LOAD_MRT_NEED_ANALYSIS	AR_NEED_ANALYSIS
STVCOLL	LOAD_MST_COURSE_CATALOG	AS_COURSE_CATALOG
STVCOLL	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVCOLL	LOAD_MST_CURRICULUM_BATCH	AS_GENERAL_STUDENT
STVCOLL	LOAD_MST_FACULTY_DEPART_COLL	AS_FACULTY_DEPARTMENT_COLLEGE
STVCOLL	LOAD_MST_NONINSTRUCT_ASSIGN	AS_NONINSTRUCTIONAL_ASSIGNMENT
STVCOLL	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS
STVCOLL	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVCOLL	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUDENT_COURSE_TRANSFER
STVCOMT	LOAD_MST_MEETING_TIME	AS_MEETING_TIME
STVCOPC	LOAD_MST_STUDENT_WORK_EXP	AS_STUDENT_WORK_EXPERIENCE
STVCPLN	LOAD_MGT_COMMUNICATION	AG_COMMUNICATION
STVCREA	LOAD_MST_STUDENT_COHORT	AS_STUDENT_COHORT

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
STVCSTA	LOAD_MST_COURSE_CATALOG	AS_COURSE_CATALOG
STVCTYP	LOAD_MST_CONTACT	AS_CONTACT
STVCTYP	LOAD_MST_PRE_STUDENT	AS_PRE_STUDENT
STVDEGC	LOAD_MAT_DEGREE	AA_DEGREE
STVDEGC	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVDEGC	LOAD_MST_CURRICULUM_BATCH	AS_GENERAL_STUDENT
STVDEGC	LOAD_MST_OUTCOME_HONOR	AS_OUTCOME_HONOR_DEPT
STVDEGC	LOAD_MST_OUTCOME_HONOR	AS_OUTCOME_HONOR_INST
STVDEGC	LOAD_MST_PREVIOUS_EDUCATION	AS_PREVIOUS_EDUCATION_PCOL
STVDEGS	LOAD_MST_CURRICULUM_BATCH	AS_ACADEMIC_OUTCOME
STVDEPT	LOAD_MAT_DEGREE	AA_DEGREE
STVDEPT	LOAD_MAT_GIFT	AA_GIFT
STVDEPT	LOAD_MAT_GIFT_MATCHING	AA_GIFT_MATCHING
STVDEPT	LOAD_MAT_PLEDGE	AA_PLEDGE
STVDEPT	LOAD_MGT_EVENT	AG_EVENT
STVDEPT	LOAD_MST_COURSE_CATALOG	AS_COURSE_CATALOG
STVDEPT	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVDEPT	LOAD_MST_CURRICULUM_BATCH	AS_CURRICULUM_FOS
STVDEPT	LOAD_MST_CURRICULUM_BATCH	AS_GENERAL_STUDENT
STVDEPT	LOAD_MST_CURRICULUM_BATCH	AS_LEARNER_CURRICULUM_FOS
STVDEPT	LOAD_MST_FACULTY_DEPART_COLL	AS_FACULTY_DEPARTMENT_COLLEGE
STVDEPT	LOAD_MST_FIELD_OF_STUDY	AS_FIELD_OF_STUDY
STVDEPT	LOAD_MST_NONINSTRUCT_ASSIGN	AS_NONINSTRUCTIONAL_ASSIGNMENT
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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_CURRICULUM_BATCH	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_GENERAL_STUDENT
STVEGOL	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
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

*Validation
Table*

Mapping

Composite View

STVGCHG	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVGCHG	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUDENT_COURSE_TRANSFER
STVGCMT	LOAD_MST_STDNT_CRSE_GRD_CHG	AS_STUDENT_COURSE_GRADE_CHG
STVGCMT	LOAD_MST_STDNT_CRSE_REG_AUD	AS_STUDENT_COURSE_REG_AUDIT
STVGEOD	LOAD_MGT_GEOGRAPHIC_REG_INST	AG_GEOGRAPHIC_REGION_INST
STVGEOR	LOAD_MGT_GEOGRAPHIC_REG_INST	AG_GEOGRAPHIC_REGION_INST
STVGMOD	LOAD_MST_COURSE_OFFERING	AS_COURSE_OFFERING
STVGMOD	LOAD_MST_OFFERING_GRADE_MODE	AS_OFFERING_GRADE_MODE
STVGMOD	LOAD_MST_STDNT_CRSE_GRD_CHG	AS_STUDENT_COURSE_GRADE_CHG
STVGMOD	LOAD_MST_STDNT_CRSE_REG_AUD	AS_STUDENT_COURSE_REG_AUDIT
STVGMOD	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS
STVGMOD	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVGMOD	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUDENT_COURSE_TRANSFER
STVGRST	LOAD_MST_CURRICULUM_BATCH	AS_ACADEMIC_OUTCOME
STVHAPS	LOAD_MST_MEAL_ASSIGNMENT	AS_MEAL_ASSIGNMENT
STVHAPS	LOAD_MST_PHONE_ASSIGNMENT	AS_PHONE_ASSIGNMENT
STVHAPS	LOAD_MST_ROOM_ASSIGNMENT	AS_ROOM_ASSIGNMENT
STVHOND	LOAD_MAT_DEGREE	AA_DEGREE
STVHOND	LOAD_MST_OUTCOME_HONOR	AS_OUTCOME_HONOR_DEPT
STVHONR	LOAD_MAT_DEGREE	AA_DEGREE
STVHONR	LOAD_MST_OUTCOME_HONOR	AS_OUTCOME_HONOR_INST
STVHONR	LOAD_MST_PREVIOUS_EDUCATION	AS_PREVIOUS_EDUCATION_PCOL
STVINTS	LOAD_MST_INTEREST	AS_INTEREST
STVINTV	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVLEAD	LOAD_MAT_SPECIAL_ACTIVITY	AA_SPECIAL_ACTIVITY
STVLEAD	LOAD_MST_STUDENT_ACTIVITY	AS_STUDENT_ACTIVITY
STVLEAV	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVLEAV	LOAD_MST_CURRICULUM_BATCH	AS_LEARNER_CURRICULUM_FOS
STVLEND	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVLEVL	LOAD_MST_COURSE_LEVEL	AS_COURSE_LEVEL

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
STVLEVL	LOAD_MST_COURSE_PREREQ	AS_COURSE_PREREQ
STVLEVL	LOAD_MST_CURRICULUM_BATCH	AS_GENERAL_STUDENT
STVLEVL	LOAD_MST_GPA	AS_GPA_LEVEL
STVLEVL	LOAD_MST_GPA	AS_GPA_TERM
STVLEVL	LOAD_MST_OFFERING_PREREQ	AS_OFFERING_PREREQ
STVLEVL	LOAD_MST_STUDENT_COURSE_STEP_1	AS_STUDENT_COURSE_IN_PROGRESS
STVLEVL	LOAD_MST_STUDENT_COURSE_STEP_2	AS_STUDENT_COURSE_HISTORY
STVLEVL	LOAD_MST_STUDENT_COURSE_STEP_3	AS_STUDENT_COURSE_TRANSFER
STVLEVL	LOAD_MST_STUDENT_WORK_EXP	AS_STUDENT_WORK_EXPERIENCE
STVMAJR	LOAD_MAT_DEGREE	AA_DEGREE
STVMAJR	LOAD_MRT_LOAN_APPLICATION	AR_LOAN_APPLICATION
STVMAJR	LOAD_MST_CURRICULUM_BATCH	AS_CURRICULUM_FOS
STVMAJR	LOAD_MST_CURRICULUM_BATCH	AS_GENERAL_STUDENT
STVMAJR	LOAD_MST_CURRICULUM_BATCH	AS_LEARNER_CURRICULUM_FOS
STVMAJR	LOAD_MST_FIELD_OF_STUDY	AS_FIELD_OF_STUDY
STVMAJR	LOAD_MST_PREVIOUS_EDUCATION	AS_PREVIOUS_EDUCATION_PCOL
STVMATL	LOAD_MGT_COMMUNICATION	AG_COMMUNICATION
STVMDEQ	LOAD_MST_MEDICAL_INFORMATION	AS_MEDICAL_INFORMATION
STVMEDI	LOAD_MST_DISABILITY_INFO	AS_DISABILITY_INFORMATION
STVMEDI	LOAD_MST_MEDICAL_INFORMATION	AS_MEDICAL_INFORMATION
STVMRCD	LOAD_MST_MEAL_ASSIGNMENT	AS_MEAL_ASSIGNMENT
STVMRTL	LOAD_MAT_RELATION	AA_RELATIONSHIP
STVMSCD	LOAD_MST_MEAL_ASSIGNMENT	AS_MEAL_ASSIGNMENT
STVNATN	LOAD_MAT_CONSTITUENT_ENTITY	AA_CONSTITUENT
STVNATN	LOAD_MAT_ORGANIZATION_CONTACT	AA_ORGANIZATION_CONTACT
STVNATN	LOAD_MFT_INVOICE	AF_INVOICE
STVNATN	LOAD_MPT_PAST_EMPLOYMENT	AP_PAST_EMPLOYMENT
STVNATN	LOAD_MRT_LOAN_APPLICATION	AR_LOAN_APPLICATION
STVNATN	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVNATN	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
STVNATN	LOAD_MST_CURRICULUM_BATCH	AS_LEARNER_CURRICULUM_FOS
STVNATN	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVOCCS	LOAD_MST_COURSE_SUPPLEMENTAL	AS_COURSE_SUPPLEMENTAL
STVORSN	LOAD_MST_CURRICULUM_BATCH	AS_GENERAL_STUDENT
STVPRCD	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_CURRICULUM_BATCH	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
STVRATE	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVRATE	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVRATE	LOAD_MST_CURRICULUM_BATCH	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_GENERAL_STUDENT

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
STVRES	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
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
STVSESS	LOAD_MST_CURRICULUM_BATCH	AS_GENERAL_STUDENT

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
STVSESS	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVSITE	LOAD_MGT_EVENT	AG_EVENT
STVSITE	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVSITE	LOAD_MST_CURRICULUM_BATCH	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_CURRICULUM_BATCH	AS_LEARNER_CURRICULUM_FOS
STVSTST	LOAD_MST_CURRICULUM_BATCH	AS_GENERAL_STUDENT
STVSTYP	LOAD_MST_CURRICULUM	AS_CURRICULUM
STVSTYP	LOAD_MST_CURRICULUM_BATCH	AS_ADMISSIONS_APPLICATION
STVSTYP	LOAD_MST_CURRICULUM_BATCH	AS_LEARNER_CURRICULUM_FOS
STVSTYP	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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_GENERAL_STUDENT
STVTERM	LOAD_MST_CURRICULUM_BATCH	AS_LEARNER_CURRICULUM_FOS
STVTERM	LOAD_MST_CURRICULUM_BATCH	AS_RECRUITMENT_INFORMATION
STVTERM	LOAD_MST_CURRICULUM_BATCH	AS_YEAR_TYPE_DEFINITION
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
STVTERM	LOAD_MST_FIELD_OF_STUDY	AS_FIELD_OF_STUDY
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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
STVTEC	LOAD_MST_COURSE_PREREQ	AS_COURSE_PREREQ
STVTEC	LOAD_MST_OFFERING_PREREQ	AS_OFFERING_PREREQ
STVTEC	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_CURRICULUM_BATCH	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
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

<i>Validation Table</i>	<i>Mapping</i>	<i>Composite View</i>
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. In order 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 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
- 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_DELIQUENCY
- 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 derive what ledger amount field was updated.

<i>Ledger_Ind</i>	<i>Ledger</i>	<i>Field_Code</i>	<i>Amount Field Updated</i>	<i>Description</i>
G	General	01	Sum_Periodic_Debits	Debits
		02	Sum_Periodic_Credits	Credits
O	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
		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 an academic period is created for a student in Banner it generates one record per student per academic period.

When the same academic period record is moved into the ODS, it generates multiple MST_GENERAL_STUDENT records for each academic period of the student's effective academic period range. Generating multiple records may require increased tablespace areas for tables and indexes when the LOAD_MST_CURRICULUM_BATCH mapping is executed. This mapping loads the following:

- MST_ACADEMIC_OUTCOME
- MST_GENERAL_STUDENT
- MST_ADMISSIONS_APPLICATION
- MST_RECRUITMENT_INFO

While this generation process creates multiple records for a student, each of these records is valid based on the criteria set up in Banner for Academic Period ranges on the SGBSTDN record.

If you want to limit the number of MST_GENERAL_STUDENT records created for a student, follow one of the options below. Combining both of these options provides the least amount of General Student records, however their creation should not be viewed negatively because they provide a unique way of identifying students who, are active for a particular academic period and/or level without having to invoke complex queries against an academic period range.

Option 1 - Entries in STVTERM

The first option uses the entries in the Banner validation table, STVTERM. While the ODS process builds General Student records for the range of entries based on the SGBSTDN_TERM_CODE_EFF column, those entries do not exceed the values specified in the STVTERM table (excluding '000000' and '999999'). Therefore, if you have values in STVTERM only through the next 2 academic years, then General Student records are only created for the next 2 academic years. As you add new entries to the STVTERM table, the ODS incremental refresh process generates new General Student records for all students based on their effective academic period and the new STVTERM entries.

Option 2 - Inactivate Students

The second option is to create a process that is run each academic period that would change the status of students who have not enrolled for a specified number of academic periods to *inactive*. Once a student's **PERMIT_REGISTRATION** flag is set to *N*, then no additional General Student records can be created. This process (either performed manually or through a programmed process) creates a new SGBSTDN record with the designated status. You could also run this process for all old, converted SGBSTDN records for student's who have not been enrolled for several years. If you keep the **PERMIT_REGISTRATION** status as *Y*, then all academic_periods from the original effective term will create General Student records.

Additional 'Zero' Record in 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 the 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 the ODS.

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

<i>Composite Views</i>		<i>Composite Tables</i>		<i>Reporting View</i>	<i>End Reporting View</i>
AS_CURRICULUM_FOS	=>	MST_CURRICULUM_FOS		Split into	
		MST_CURR_ACADEMIC_OUTCOME			
AS_ACADEMIC_OUTCOME	+ =>	MST_CURR_ACADEMIC_OUTCOME MST_ACADEMIC_OUTCOME		=>	ACADEMIC_OUTCOME
AS_CURRICULUM_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_CURRICULUM_FOS	=>	MST_CURR_STUDENT	Curric		
AS_STUDENT_CLASSIFICATION	=>	MST_STUDENT_CLASSIFICATION			
AS_GENERAL_STUDENT	=>	MST_GENERAL_STUDENT_STAGE			
AS_YEAR_TYPE_DEFINITION	+ =>	MST_GENERAL_STUDENT_STAGE MST_STUDENT_TERM_STAGE	Non- curric Non- curric		
		MST_STUDENT_TERM_STAGE			
	+ =>	MST_CURR_STUDENT MST_GENERAL_STUDENT			
		MST_GENERAL_STUDENT			
	+ + + =>	MST_ENROLLMENT MST_STUDENT_CLASSIFICATION MST_ACADEMIC_STANDING		=>	ACADEMIC_STUDY
AS_CURRICULUM_FOS	=>	MST_CURRICULUM_FOS		Split into	
		MST_CURR_ADMISSIONS_APPL			
AS_ADMISSIONS_APPLICATION	+ =>	MST_CURR_ADMISSIONS_APPL MST_ADMISSIONS_APPLICATION		=>	ADMISSIONS_APPLICATION
AS_CURRICULUM_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_HS CH	+ =>	MST_PREVIOUS_EDUCATION			
AS_PREVIOUS_EDUCATION_PC OL	+ =>	MST_PREVIOUS_EDUCATION		=>	COMBINED_ACADEMIC_OUT COME

<i>Composite Views</i>		<i>Composite Tables</i>		<i>Reporting View</i>		<i>End Reporting View</i>
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				
AS_YEAR_TYPE_DEFINITION	+	MST_GENERAL_STUDENT_STAGE	Non-curric			
	=>	MST_STUDENT_TERM_STAGE	Non-curric			
		MST_STUDENT_TERM_STAGE				
	+	MST_CURR_STUDENT				
	=>	MST_GENERAL_STUDENT				
		MST_GENERAL_STUDENT				
	+	MST_ENROLLMENT				
	+	MST_STUDENT_CLASSIFICATION				
	+	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_CURRICLUM_FOS	=>	MST_CURR_STUDENT	Curric			
AS_GENERAL_STUDENT	=>	MST_GENERAL_STUDENT_STAGE				
AS_YEAR_TYPE_DEFINITION	+	MST_GENERAL_STUDENT_STAGE	Non-curric			
	=>	MST_STUDENT_TERM_STAGE	Non-curric			
		MST_STUDENT_TERM_STAGE				
	+	MST_CURR_STUDENT				
	=>	MST_GENERAL_STUDENT				
	+					
AS_CURRICLUM_FOS	=>	MST_CURRICULUM_FOS	Split into			
		MST_CURR_ADMISSIONS_APPL				
AS_ADMISSIONS_APPLICATION	+	MST_CURR_ADMISSIONS_APPL				
	=>	MST_ADMISSIONS_APPLICATION	=>	ADMISSIONS_APPLICATION	=>	GOVERNMENT_ADMISSIONS_APPLICATION
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			
AS_GENERAL_STUDENT	=>	MST_GENERAL_STUDENT_STAGE				

<i>Composite Views</i>	<i>Composite Tables</i>	<i>Reporting View</i>	<i>End Reporting View</i>
AS_YEAR_TYPE_DEFINITION	+ MST_GENERAL_STUDENT_STAGE => MST_STUDENT_TERM_STAGE MST_STUDENT_TERM_STAGE + MST_CURR_STUDENT => MST_GENERAL_STUDENT MST_GENERAL_STUDENT + MST_ENROLLMENT + MST_STUDENT_CLASSIFICATION + MST_ACADEMIC_STANDING	Non- curric Non- curric => STUDENT, ACADEMIC _STUDY	=> GOVERNMENT_FINANCIAL_A ID
AS_CURRICLUM_FOS	=> MST_CURRICULUM_FOS MST_CURR_RECRUITMENT_INFO	Split into	
AS_RECRUITMENT_INFORMATION	+ MST_CURR_RECRUITMENT_INFO => MST_RECRUITMENT_INFORMATION	=>	RECRUITMENT_INFORMATION
AS_ACADEMIC_STANDING	=> MST_ACADEMIC_STANDING		
AS_ENROLLMENT	=> MST_ENROLLMENT		
AS_ENROLLMENT_HISTORY	=> MST_ENROLLMENT		
AS_STUDENT_CLASSIFICATION	=> MST_STUDENT_CLASSIFICATION		
AS_LEARNER_CURRICLUM_FOS	=> MST_CURR_STUDENT	Curric	
AS_GENERAL_STUDENT	=> MST_GENERAL_STUDENT_STAGE		
AS_YEAR_TYPE_DEFINITION	+ MST_GENERAL_STUDENT_STAGE => MST_STUDENT_TERM_STAGE MST_STUDENT_TERM_STAGE + MST_CURR_STUDENT => MST_GENERAL_STUDENT MST_GENERAL_STUDENT + MST_ENROLLMENT + MST_STUDENT_CLASSIFICATION + MST_ACADEMIC_STANDING	Non- curric Non- curric =>	STUDENT

Composite Views

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

Note: Any institution change to a composite view impacts the ODS maintenance processes.

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 Information Access Meta Data from the Information Access Administrative menu.
2. Select Operational Data Store. The Operational Data Store Reporting View Meta Data Reports page opens.
3. Select the 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:

Fields	Descriptions / Buttons
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

Fields	Descriptions / Buttons
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.

Chapter 3 Information Access Administrative User Interface (ODS and EDW)

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

Preferences and Security

Institutional Preferences
Set Up Users & PIN
Set Up Data Display Rules
Set Up ODS Security Rules
Set Up EDW Security Rules

Information Access Meta Data

Operational Data Store
Enterprise Data Warehouse
Maintain ODS Meta Data
Maintain EDW Meta Data

Information Access Options

Set Up Parameters
Schedule a Process
View Control Reports
View and/or Remove Scheduled Processes
Freeze Data Maintenance
Maintain Descriptions for Code Values
Translate Code Values from Source Data
List Events for an EDW Star

New WebTailor Administration

Customize a Web Menu or Procedure
Customize a Graphic Element
Customize a Set of Information Text
Customize a Set of Menu Items
Update User Roles
Customize a Web Module
Customize Web Rules
Customize WebTailor Parameters
Customize a Login Return Location
Customize WebTailor Overrides
Customize Global User Interface Settings
Customize Web for Alumni Rules

There are a number of tasks involved in setting up and maintaining the ODS and EDW for use by your end reporting users. Some tasks you perform one time when you initially install and implement the ODS and EDW. Other tasks you perform 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 Information Access parameters
- Populating and synchronizing data in the ODS
- Scheduling a process
- Freezing ODS data
- Reviewing Information Access meta data

You can also use WebTailor to perform some security functions and set some security-related preferences. In addition, WebTailor gives you some options for customizing the appearance and behavior of Information Access. For more information on using WebTailor, see the “WebTailor User Guide.”

Caution: Because the ODS and EDW contain 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 Information Access URL, can gain access to the system.

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

Set up Users and PINS (ODS and EDW)

Any person using a reporting tool to access the ODS or EDW must be defined as an Oracle User. Use your normal Oracle procedures to create user accounts.

After a user account is created, that user can report against the ODS or EDW. Each user is listed in the Administrative UI on the View Business Profile and User Associations page. From that page, you can assign security rules for each user using a Business Profile. See “Set up Security” for more information.

You should set up user accounts for ODS and EDW users at your institution based on how each user needs to use the ODS or EDW. The ODS and EDW include two types of users:

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

Some users may be both Administrative and Oracle users, in which case they need a user account in both systems. In these cases, you can use the same user ID in both systems (Information Access and Oracle), however, you must always maintain a separate user account in each system.

PINs will be disabled if the number of login attempts is exceeded (set on WebTailor “Customize Web Rules” screen). They can be easily reenabled on the Update an Existing User Account screen using this checkbox.

Create Users and PINS

Administrative UI users set up and maintain the ODS and EDW 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.

To set up a new user, follow the steps below:

Navigation

1. Select Preferences & Security from the Information Access Administrative menu.
2. Select Set Up Users & PIN. The Set Up a User and PIN page opens.

Tasks

1. Select Create from the Set Up a User and PIN page. The Create a New User Account page opens.
2. 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.)

3. Enter First, Middle, and Last Names (only Last Name is required.)
4. Enter a PIN (It must be exactly six numbers; it cannot contain letters or special characters.)
5. Indicate whether the PIN is enabled or disabled.
6. Select 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 WebTailor, Customize Web Rules page), their PIN is disabled. Use this page to enable their PIN.

Navigation

1. Select Preferences & Security from the Information Access Administrative menu.
2. Select Set Up Users & PIN. The Set Up a User and PIN page opens.

Tasks

1. Select Update from the Set Up a User and PIN page. The Select an Existing User Account page opens.
2. Select a Name to update or delete. The Update an Existing User Account page opens.
3. Change the fields. Only the **Last Name** field is required.

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

4. Select Update to save. Or, select Delete to remove the User Account.

Update User Roles

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

Navigation

1. Select New WebTailor Administration from the Information Access Administrative menu.
2. Select Update User Roles. The Select a User to Update page opens.

Tasks

1. Enter the User ID, or select it from the drop-down list from the Select a User to Update page.
2. Select Submit to save.
3. Check or uncheck the boxes next to **Information Access Meta Data**, **Information Access Options**, **Information Access Security** and **WebTailor Administrator** to assign the desired access privileges.
4. Select Submit Changes.

Data Display Rules (ODS)

Display rules enable you to control and customize how data stored in your 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 an ODS composite table or displayed in an ODS Reporting view. All display rules are stored in the ODS database table - MGRSDAX.

Example - Positional Display Rules (for Slotted views):

The TEST view in the ODS displays all valid test score values loaded from your source system to the 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 the ODS is first installed, MGRSDAX (the 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 Information Access defined values). After the 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 “Set up Security Rules” for information on setting up business profiles.)

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.

Caution: 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.

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

<i>Profile Code</i>	<i>Internal Code</i>	<i>Internal Code</i>	
		<i>Sequence</i>	<i>External Code</i>
INSTITUTION	ALUMMAIL	1	BUS
INSTITUTION	ALUMMAIL	2	ART
INSTITUTION	ALUMMAIL	3	RES
INSTITUTION	ALUMMAIL	4	CPS
INSTITUTION	RECRLETR	1	ACCEPT
INSTITUTION	RECRLETR	2	CHKL
INSTITUTION	RECRLETR	3	COLLEGE NIGHT

Profile Code	Internal Code	Internal Code	
		Sequence	External Code
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.

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 "Schedule a Single ETL Slot Process."

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 the ODS MGRSDAX database table, the 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 XXXXXXXX_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 the 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.

The Display Rule Cross Reference Chart is available in two locations: in the business definitions and slotted views in the meta data, and by selecting 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 the ODS.
INTERNAL_GROUP	Value the 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 the 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 the Banner GTVSDAX rules for institutions that use the O:A views.
EXTERNAL_CODE	X identifies valid institutions values must be provided.
REPORTING_DATE	X indicates that the Reporting Date is used for sequence of display values.
TABLES	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.

Column	Description
COMPARISON COLUMN	<p>Column within the ODS composite table that is used to retrieve data based on the value in the either MGRSDAX_EXTERNAL_CODE or MGRSDAX_REPORTING_DATE.</p> <p><i>Example:</i> 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.</p>
REPORTING	<p>Package View Name of the package or view in which MGRSDAX is referenced.</p> <p>Procedure/Function Name of the process or function being used by MGRSDAX.</p>

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*.

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.

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. Select 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, select the BU link under the **External Code** column. The Update an Existing Display Rule page opens. You can change the external code from this page. Select 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.

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:

Navigation

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

Note: If a *PROFILE_CODE* is to be used in the display rule, it must be set up first. See “Set up Security Rules” for information on setting up business profiles.

Tasks

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

Column	Description
Business Profile Code	<p>Business Profile for which you want to set up display rules.</p> <p>You can create additional Business Profiles from the Create a New Business Profile web page. <i>INSTITUTION</i> is the default code for users for whom no other business profile is defined.</p>
Internal Group	<p>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. (Select the appropriate value from the Internal Group list.)</p>
Internal Code 1	<p>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.</p> <p>You can add new internal codes to be used for business purposes, and then select the appropriate code when writing a report. (Select the appropriate value from the Internal Code list.)</p>
Internal Code Sequence Number	<p>Internal sequence number that provides either a hierarchy or positional identifier:</p> <p><i>Hierarchy identifier</i></p> <p>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).</p> <p><i>Positional identifier</i></p> <p>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).</p>

Column	Description
External Code	<p>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.</p> <p>Note: Change this value so that the external codes match your institution’s code value for each display rule value.</p>

3. Select Save. The Update an Existing Display Rule page opens.

Note: 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 ETL Slot Process.”

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.

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.

Navigation

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

Tasks

1. Select 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 choose to show all groups and codes.
2. Select Search. The Select an Existing Display Rule page opens.

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.

3. 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.
4. Select an External Code link from the **External Code** column to edit a record. The Update an Existing Display Rule page opens.
5. Make your change, then select Save to save the display rule. Select Delete to remove the display rule.

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 ETL Slot Process.”

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.

Navigation

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

Tasks

1. Select 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.
2. Select Search. The Select an Existing Display Rule page opens.
3. Select an external code link from the **External Code** column. The Update an Existing Display Rule page opens.
4. Enter the External Code information or select it from the drop-down list.
5. Select the Duplicate button. The Create a New Display Rule page opens.
6. Replace the information for the existing display rule with the information for the new display rule.

7. Select Save to save your settings.

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 ETL Slot Process.”

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.

Navigation

1. Select Information Access Options from the Information Access Administrative UI menu.
2. Select Schedule a Process. The Select a Process page opens.
3. Select Schedule ODS or EDW Mappings. The Select a Subprocess page opens.

Tasks

1. Select Run A Single ETL Slot Package from the Select a Subprocess page. The Schedule a Process page opens.
2. Choose the table from the **Slotted Table to Reload** drop-down list.
3. Enter the required Scheduling Parameters information.
 - (a) Enter a Run Date (format dd-mon-yyyy) and Runtime (format hh24:mi:ss).
 - (b) 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*.

4. 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.

Set up Security (ODS and EDW)

Information Access includes two types of users, (1) Oracle users who require an Oracle user account in your source system so they can access the ODS and EDW to build reports, and (2) Administrative users who require a user account in the Administrative UI so they can use the UI to maintain the ODS and EDW. The security discussed in this section explains how security applies to the Oracle users when they access the ODS or EDW for reporting.

Information Access uses 'fine-grained access' security, which lets you selectively restrict an Oracle user's access to rows of ODS or EDW 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 your Oracle users, the rules are applied when the user searches for information within the ODS or EDW.

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 Information Access 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 the ODS or EDW security tables that determine what that WHERE predicate should look like for a given user.

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

Once a policy is set up on an ODS or EDW 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 that have access set to "all" (either All ODS Data, All EDW Data, All Data for that Area, or All Data for all columns and rules in the table), MGKSECR does not generate a predicate at all, thereby allowing those users full access to that data. For rules that list access to particular values, say campus codes of "A," "B," or "C," MGKSECR generates a corresponding WHERE clause code with the appropriate level of restriction.

Note: Security rules are cumulative – that is, they are joined with an "AND" clause. Users must be granted explicit access rights for each rule in a table in order to gain access. So, 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.

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.

Set up Business Profiles

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.

Follow the steps below to create a new Business Profile.

Navigation

1. Select Preferences and Security.
2. Select Set up ODS or EDW Security Rules.
3. Select Set Up Business Profiles. The Set Up a Business Profile page opens.

Tasks

1. Select Create from the Set Up a Business Profile page. The Create a New ODS or EDW Business Profile page opens.
2. Enter a new profile code and description. Select Save. The Update an Existing ODS or EDW Business Profile page opens. See the “View, Update or Delete Business Profiles” section for steps on updating and viewing Business Profiles.

Associate Business Profiles with a User

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

Navigation

1. Select Preferences and Security.
2. Select Set up ODS or EDW Security Rules.
3. Select Associate Users and Business Profiles. The View Business Profile and User Associations page opens.

Tasks

1. From the user drop-down list on the View Business Profiles and User Associations page, select the user to which you want to associate (or view existing) Business Profiles.
2. Select Refresh Profile List to display 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.

3. Check or uncheck the corresponding check boxes to associate or disassociate Business Profiles with the user.
4. To set up security rules for a user, select the Assign Security Rules link. This links to the Set Up Security Rules web page.

See the “Set up Security” section for additional information.

5. Select 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 Security Rules page to set up security rule assignments for that profile or user.

Navigation

1. Select Preferences and Security.
2. Select Set up ODS or EDW Security Rules.
3. Select Associate Users and Business Profiles. The View Business Profile and User Associations page opens.

Tasks

1. On the View Business Profile and User Associations page, select the Business Profile to which you want to associate (or view existing) users from the **Business Profile** column.

Note: Selecting the **Business Profile** column or **Oracle User Name** column causes the table to toggle between associating a Business Profile with a user and associating a user with a Business Profile.

2. Check the corresponding check boxes to associate or disassociate users with a Business Profile.
3. Select Save to submit your changes.

4. To set up security rules for a Business Profile, select the Assign Security Rules link.

See the “Set up Security” for instructions on assigning security rules.

View, Update or Delete Business Profiles

Use this option to change or delete a Business Profile.

Navigation

1. Select Preferences and Security.
2. Select Set up ODS or EDW Security Rules.
3. Select Set Up Business Profiles. The Set Up a Business Profile page opens.

Tasks

1. Select Update from the Set Up a Business Profile page. The Select an Existing ODS or EDW Business Profile page opens.
2. Select the Description of the Business Profile that you want to change. The Update an Existing ODS or EDW Business Profile page opens.

From this page you can change the descriptions or delete the Business Profile.

3. Make your changes to the description. Select Save to submit your changes.

OR

Select Delete to remove the displayed profile. The Business Profile is removed and you return to the Select an Existing ODS or EDW Business Profile page.

Set up and Maintain Security Rules

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

<i>Table</i>	<i>Functional Name</i>	<i>Security Rules Stored</i>
MGBFGAA	Fine Grained Access User Areas	Indicates whether the user has access to all of the elements and values within an area code
MGBFGAE	Fine Grained Access User Elements	Indicates whether the user has access to all of the values within an element code

<i>Table</i>	<i>Functional Name</i>	<i>Security Rules Stored</i>
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.	Contains various user security related data.
MGBFGAR	Fine Grained Access Element Rule Table	Contains the security rules that consist of the Information Access Solution tables and columns that have security applied to them.
MTVFGAA	Fine Grained Access Area Validation Table	Contains the security rules that consist of the Information Access Solution 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

Determine Data Security Requirements

Determine whether it's necessary to restrict some users' access to some of the data within the ODS and EDW. Determine the specific security restrictions that apply to each user.

Caution: When deciding whether to apply fine-grained access, keep in mind that its use limits the accuracy and usefulness of data presented in Information Access. 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, for example, if a user does a query 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 at your institution, you have the following options for the level of access you can give an individual Oracle user who accesses the ODS:

- Full access to all data in the ODS.
- Full access to all data at the level of the Organizational Dimension, e.g., Academic, Course and Academic, Financial, or Workforce.

- Full access to all data at an element level, e.g., 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, e.g., 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 (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 may be applied to a given user account, and to assign particular values for a given rule to a given user account. The Administrative UI uses the MGKFGAC package to apply the security rules you define.

Use the Set Up ODS Security Rules and Set Up EDW Security Rules pages 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 also, but in addition, any values related to a rule that are deleted are cascaded through the other FGA* tables.

Use the following steps for each Security Rule you want to create.

Navigation

1. Determine an ODS or EDW table and column value on which you want to secure information.
2. Select Preferences & Security from the Information Access Administrative menu.
3. Select Set Up ODS or EDW Security Rules.
4. Select Set Up and Maintain EDW Security Rules. The Set Up an ODS or EDW Security Rule page opens.

Tasks

1. Select Create from the Set up an ODS or EDW Security page. The Create a New Security Rule page opens.
2. 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 may grant access to entire sets of columns/tables at this level via a single check-box. Rules are delivered with four groupings, but you may add more groupings in the MTVFGAA validation table, and use them for new or existing rules.
Table	The ODS or EDW table on which you want to secure data, for example, the MST_TEST table, the MPT_EMPL_EARN_FY table, etc.
Rule Type	<p>The type of Security Rule. There are two possibilities:</p> <p><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].</p> <p><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.</p>
Column 1	The ODS or EDW table to which the rule pertains.
Query for Column 1	<p>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. Select Generate to automatically create the PL/SQL statement.</p> <p>The base rules are delivered with simple SELECT DISTINCT queries for each of the columns on the various ODS or EDW tables. However, if you find that 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.</p>
Column 2	An optional second column on the ODS or EDW table to which the rule pertains. This column can be used to join AND values together from two columns. (Use of this second column is described in more detail later.)

Field	Description
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. Select Generate to automatically create the PL/SQL statement.

3. Select Save.

Update 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.

Navigation

1. Select Preferences & Security from the Information Access Administrative menu.
2. Select Set Up ODS or EDW Security Rules.
3. Select Set Up and Maintain EDW Security Rules. The Set Up an ODS or EDW Security Rule page opens.

Tasks

1. From the drop-down list on the Set Up and ODS or EDW Security Rule page, choose the organizational area, table, and/or column for the rule you want to edit.

Select Search. The list of related Security Rules displays.

2. Select the link in the **Column 1** column for the rule you want to edit. The Update an Existing Rule page opens.
3. Edit the **Query for Column** fields. Select Save.

Assign Security Rules

After you create security rules, you must determine what level of security each user requires. Next, set up the security rules for users. You can use the Administrative UI to maintain the list of rules in the MGBFGAR table.

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 dimension
- 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.

Navigation

1. Select Preferences & Security from the Information Access Administrative menu.
2. Select Set Up ODS or EDW Security Rules.
3. Select Assign EDW Security Rules. The Secure ODS or EDW Access by User Name page opens listing all users and their current access level.

Tasks

1. Check the **Access to all ODS, or EDW, Data** check box for each user in which you want to assign access to all data from the Secure ODS or EDW Access by User Name page.

Each column is described below.

Select an individual user's name to restrict access to specific areas for that user. The link opens the Secure by Organizational Dimension page. See "Secure Access by Organizational Dimension" for steps on restricting a user's access by Organizational Dimension.

Field	Description						
Oracle User Name	<p>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.</p> <p>To restrict access for a specific user, select that user's user name. Organizational Dimension restrictions are made on the Secure ODS or EDW Access by Organizational Dimension page.</p> <p>See "Secure ODS Access by Organizational Dimension" to restrict a user's access.</p>						
Profiles	<p>Set up an existing business profiles on the Create a Business Profile page.</p> <p>Select the Assign Profiles link to open the View Business Profiles and User Association page.</p>						
Access Level	<p>The current level of access the user has to areas of information. To grant full access, check the checkbox in the Access to all ODS or EDW Data column.</p> <p>Possible values:</p> <table border="0"> <tr> <td><i>All</i></td> <td>Green. Full access.</td> </tr> <tr> <td><i>Partial</i></td> <td>Yellow. Access to specified areas only.</td> </tr> <tr> <td><i>None</i></td> <td>Red. No access.</td> </tr> </table>	<i>All</i>	Green. Full access.	<i>Partial</i>	Yellow. Access to specified areas only.	<i>None</i>	Red. No access.
<i>All</i>	Green. Full access.						
<i>Partial</i>	Yellow. Access to specified areas only.						
<i>None</i>	Red. No access.						
Access to all ODS or EDW Data	<p>Check the checkbox to give the user unrestricted access to all areas and information.</p> <p>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.</p>						

2. Select Save to update the Administrative UI.

Secure Access by Organizational Dimension

Use the following steps to assign security to a user by an Organizational Dimension.

Navigation

1. Select Preferences & Security from the Information Access Administrative menu.
2. Select Set Up ODS or EDW Security Rules.
3. Select Assign ODS or EDW Security Rules. The Secure ODS or EDW Access by User Name page opens listing all users and their current access level to information.

Tasks

1. Select the user name to which you want to assign access from the Secure ODS or EDW Access User Name page. The Secure ODS or EDW Access by Organizational Dimension page opens.

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

Each column is described below:

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. Select the Select Another User link to open the Secure Access by User Name page.
Profiles	Existing Business Profiles set up on the Create a Business Profile page. Select the Assign Profiles link to open the View Business Profiles and User Association page.
Access to All ODS or EDW Data	Check the checkbox to give the user unrestricted access to all areas and information. Select the Duplicate User link to open the Duplicate User Security Rules window.

Field	Description
Organizational Area	Area within the institution set up within the IA_ADMIN.MTVFGAA table.
Access All Data in this Area	<p>Select the checkbox to grant the user security access to information within the corresponding organizational area.</p> <p>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 Y for a given table you are accessing, no predicate is returned from MGKSECR and you have full access.</p>
Table	<p>The ODS or EDsW table on which you want to secure data, for example, the MST_TEST table, the MPT_EMPL_EARN_FY table, etc.</p> <p>Select the link to enable or disable the security policies for that organizational area.</p>

Field	Description
Element	<p>Select an element to open the Secure Access by Element page.</p> <p>Elements can be set up as double or single column rule elements on the Create Security Rules page.</p> <p><i>Double Column Rules</i></p> <p>If a single rule was created that applies to two element columns, then both of the column names will appear together in the Element column on the Secure Access by Organizational Dimension page, and will be 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.</p> <p><i>Single Column Rules</i></p> <p>A single column rule is when an element column was set up with a single column and a single rule.</p>
Rule Type	<p>The type of Security Rule. There are two possibilities:</p> <p><i>Range:</i></p> <p>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]</p> <p><i>List:</i></p> <p>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.</p>

Field	Description
Data Access	The level of security access assigned to the user.
<i>All</i>	Green. Full access.
<i>Partial</i>	Yellow. Access to specified areas only.
<i>None</i>	Red. No access.

- Assign security for this user, or you select another user or Business Profile in which to assign security.

To copy security access settings from one user or Business Profile to another, select the Duplicate User link. The Duplicate User Security Rules window opens.

- Select the user(s) and Business Profiles(s) whose setting you want to merge, or duplicate. To select more than one user or profile, hold down the Ctrl key while you continue to select users or profiles.
- Use the radio buttons to indicate whether to merge current settings together, or replace one set of settings with another.
- Select Duplicate to save your settings, or Cancel to close the page.

- Select 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.

Navigation

- Select Preferences & Security from the Information Access Administrative menu.
- Select Set Up ODS or EDW Security Rules.
- Select Assign Security Rules. The Secure ODS or EDW Access by User Name page opens listing all users and their current access level.

Tasks

- Select the Secure by Profile link from the Secure ODS or EDW Access by User Name page. The Secure ODS or EDW Access by Profile page opens.

A description of each field on the page appears below:

Field	Description
Business Profile	Existing Business Profiles set up on the Create a Business Profile page. Select the Business Profiles link to open the Secure Access by Organizational Dimension page.
Access Level	The level of security access assigned to the user. <i>All</i> Green. Full access. <i>Partial</i> Yellow. Access to specified areas only. <i>None</i> Red. No access.
Access to All ODS or EDW Data	Check the checkbox to give the user unrestricted access to all information. Select the Duplicate User link to open the User Security Rules window.

2. Check the **Access to All ODS or EDW Data** checkbox to grant the user unrestricted access to all information.
3. Select 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.

Navigation

1. Select Preferences & Security from the Information Access Administrative menu.
2. Select Set Up ODS or EDW Security Rules.
3. Select Assign Security Rules. The Secure ODS or EDW Access by User Name page opens listing all users and their accessibility to information.

Tasks

1. From the Secure ODS or EDW Access by User Name page, select the user name to which you want to assign access. The Secure ODS or EDW Access by Organizational Dimension page opens.

This page displays the security rules defined on the Set Up Security Rules page. The rules are grouped alphabetically by Organizational Dimension. Each field is described below:

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.
Profiles	Existing Business Profiles set up on the Create a Business Profile page.
Access to All ODS or EDW Data	Check the checkbox to give the user unrestricted access to all information. Select the Duplicate User link to open the Duplicate User Security Rules window.
Organizational Area	Area within the institution set up within the IA_ADMIN.MTVFGAA table.
Access to 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. Again, if the indicator is Y for a given table the user is accessing, no predicate is returned from MGKSECR and you have full access.
Table	The ODS or EDW table on which you want to secure data, for example, the MST_TEST table, the MPT_EMPL_EARN_FY table, etc. Select the link to enable or disable the security policies for that organizational area.

Field	Description						
Element	<p>Elements can be set up as double or single column rule elements on the Create Security Rules page.</p> <p><i>Double Column Rules</i></p> <p>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.</p> <p><i>Single Column Rules</i></p> <p>A single column rule is when an element column is set up with a single column and a single rule.</p>						
Rule Type	<p>The type of Security Rule. There are two possibilities:</p> <p><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]</p> <p><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.</p>						
Access Level	<p>The level of security access assigned to the user.</p> <table style="width: 100%; border: none;"> <tr> <td style="padding-left: 20px;"><i>All</i></td> <td>Green. Full access.</td> </tr> <tr> <td style="padding-left: 20px;"><i>Partial</i></td> <td>Yellow. Access to specified areas only.</td> </tr> <tr> <td style="padding-left: 20px;"><i>None</i></td> <td>Red. No access.</td> </tr> </table>	<i>All</i>	Green. Full access.	<i>Partial</i>	Yellow. Access to specified areas only.	<i>None</i>	Red. No access.
<i>All</i>	Green. Full access.						
<i>Partial</i>	Yellow. Access to specified areas only.						
<i>None</i>	Red. No access.						

2. Select the element to which you want to assign security for the user. The Secure ODS or EDW Access by Element page opens.

From this page you can:

- select another user
- assign profiles to the user
- enable the user to access all data
- copy user access to another user

- enable/disable policies
- assign security by element

A description of each field appears below:

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.
Organizational Area	Area within the institution set up within the IA_ADMIN.MTVFGAA table.
Table	The ODS or EDW table on which you want to secure data, for example, the MST_TEST table, the MPT_EMPL_EARN_FY table, etc. Select the link to enable or disable the security policies for that organizational area.
Element	Elements can be set up as double or single column rule elements on the Create Security Rules page. <i>Double Column Rules</i> 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. <i>Single Column Rules</i> A single column rule is when an element column is set up with a single column and a single rule.

Field	Description
Rule Type	<p>The type of Security Rule. There are two possibilities:</p> <p><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]</p> <p><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.</p>
Allow this user Access to	<p>Select the appropriate button:</p> <p><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 Y. If new values are add, they will be considered accessible after the next refresh.</p> <p><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.</p> <p>You can select All Values, which is then stored in the MGBFGAE_ALL_IND column as a Y, then the user is granted access to all values for this element.</p> <p>If you can choose Only the values specified below, then you can select the specific values to which the user will have access (a la carte style). Those selected values are then stored in the MGBFGAV table.</p>

3. Indicate whether you want to allow the user access to all values, or only the values that appear in the Values table below the **Allow this user Access to** radio group.
 - (a) If you selected a single column rule element, then refer to the sample screen for a single 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
Organizational Area: Academic Organization
Table: MST_ACADEMIC_OUTCOME
Element: CAMPUS [Select Another Element](#) [Duplicate Values](#)
Rule Type: LIST
Allow this user access to All values
 Only the values specified below

[Select All](#) | [Deselect All](#)

Values	Access
001	<input type="checkbox"/>
1	<input type="checkbox"/>
B	<input type="checkbox"/>
H	<input type="checkbox"/>
M	<input type="checkbox"/>
U	<input type="checkbox"/>
NULL *	<input type="checkbox"/>
Cypress College Campus	<input checked="" type="checkbox"/>

A description of each single column rule element 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	Check the checkbox of the values to which you want to assign security for the selected user.

- (b) 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
Organizational Area: Academic Organization
Table: MFT_GENERAL_LEDGER
Element: CHART_OF_ACCOUNTS [Select Another Element](#) [Duplicate Values](#)
Rule Type: LIST
Allow this user access to All values
 Only the values specified below

Values	Access to Values of FUND
B	3/53
I	0/37

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.

- Select Save to keep your settings.

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.

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
```

Note: These scripts are delivered in the `dbscripts/utility_scripts` directory.

To remove all the policies from the ODS or EDW tables, run:

```
sqlplus IA_ADMIN/<password> @drop_all_fga_policies
```

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 ODS or EDW 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

The 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 Secure Access by Organizational Dimension page of the Administrative UI. In the **Table** column is a link that is either set to **Policy Enabled**, or **Policy NOT Enabled**. Select the link to toggle between enabling or disabling the policy for a single table.

Example:

1. Create a new user to access the 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 ('Test1','Type A');  
INSERT INTO ODSMGR.MST_TEST (TEST,TEST_TYPE) VALUES ('Test2','Type A');  
INSERT INTO ODSMGR.MST_TEST (TEST,TEST_TYPE) VALUES ('Test2','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');  
INSERT INTO ODSMGR.MST_TEST (TEST) VALUES ('Test3');  
COMMIT;
```

Note: The last two rows have a NULL value for TEST_TYPE.

The 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 next to the user's name.

Oracle User Name	Access to All Data
ANONYMOUS	<input type="checkbox"/>
BRUCE	<input checked="" type="checkbox"/>
CTXSYS	<input type="checkbox"/>

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

```
COUNT(*)  
-----  
9
```

6. Clear the **All Values** radio button.
7. Select the Save button at the bottom of the page.
8. Select on the BRUCE account.

You can duplicate these results by enabling/disabling the **All Data in This Dimension** checkbox for the Academic Organization. To continue to test this, select a combination of values for the two columns in the MST_TEST table, namely:

MST_STUDENT_COURSE	COURSE_LEVEL	RULE	NOTE
MST_TEST	TEST	LIST	None
MST_TEST	TEST_TYPE	LIST	None
MST_COURSE_CATALOG	COURSE	LIST	None

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

Oracle User Name: BRUCE
Organizational Dimension: Academic Organization
Table: MST_TEST
Element: TEST [Select Another Element](#)
Rule Type: LIST
Allow this user access to All values
 Only the values specified below

[Select All](#) | [Deselect All](#)

Values	Access
Test1	<input checked="" type="checkbox"/>
Test2	<input checked="" type="checkbox"/>
Test3	<input type="checkbox"/>

[Select All](#) | [Deselect All](#)

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
Organizational Dimension:	Academic Organization
Table:	MST_TEST
Element:	TEST_TYPE Select Another Element
Rule Type:	LIST
Allow this user access to	<input type="radio"/> All values <input checked="" type="radio"/> Only the values specified below
Select All Deselect All	
Values	Access
Type A	<input checked="" type="checkbox"/>
NULL *	<input type="checkbox"/>
(* - refers to actual database NULL value)	
Select All Deselect All	
<input type="button" value="Save"/>	<input type="button" value="Reset All Fields"/>

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.

Security Predicates

If you encounter issues using the Security system, you can 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 possible way to retrieve the data.

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 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 (ODS)

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

The ODS includes two main categories of mappings:

- **LOAD** mappings—load data from the administrative system into the ODS. These mapping names include a “LOAD_” prefix.
- **REFRESH** mappings—update the 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.

The ODS is delivered with hundreds of mappings already defined. LOAD and REFRESH mappings exist for each composite table in the 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.

The 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 the ODS. Even with daily synchronization, you can expect minor differences between the two systems. Three main reasons that differences exist are:

- Data currency in the ODS is dependent on the timing of a query against the ODS, and when the 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 the ODS is refreshed again.
- Display rules may differ between the two systems. In the ODS, display rules defined on the MGRSDAX table drive the 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 the 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 the ODS.

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

Set up and Synchronize Data (EDW)

The EDW stores data that is fed to it from the ODS. Use the Information Access Administrative UI to schedule jobs, which run OWB mappings that take information from the ODS and load it into the EDW.

Once cleansing and MTVPARM records have been finalized, the EDW can now be populated (also known as the EDW Load Process). To populate the EDW, jobs are run from the Administrative UI. Each job requires certain runtime parameters to be selected. Once the job is submitted, Oracle Warehouse Builder (OWB) mappings take information from the ODS to the EDW. First, the mappings extract the appropriate ODS data based on the Event, Replace Event Indicator and other parameters selected. During processing, the data runs through cleansing setting the

EDW codes and short and long descriptions. Next, the dimension and fact tables are loaded.

You can monitor the progress of the jobs from the View Control Reports page under the Information Access Options menu in the Administrative UI. If there are cleansing errors, the codes which could not be translated will be listed in the control report. Modify the cleansing code translation and description records to accommodate for those new values and then either re-run the job, replacing the event or run the Fix process for that star.

Information Access requires a number of pieces of information to perform internal functions. These information pieces are called parameters and are stored in the Parameter Table (MTVPARM) in the EDW. If the EDW requires one of these pieces of information while running a process or displaying an administrative web page, it goes to MTVPARM and gets the needed information.

Before you populate the EDW, you need to review and edit the parameters related to these tasks.

Follow the steps below to populate the EDW:

Navigation

1. Select Information Access Options from the Information Access Administrative UI menu.
2. Select Schedule a Process. The Select a Process page opens.

Tasks

1. Select Schedule EDW Mappings from the Select a Process page. The Select a Subprocess page opens.
2. Select the mappings group that corresponds to the star you want to load. The Schedule a Process page opens.
3. If you selected Run a Single ODS or EDW Mapping on the previous page, choose the mapping from the Mapping to Run drop-down list.
4. Enter values for other Process Parameters, if any exist, for the selected process.

For instructions on how to set up process parameters, refer to the “Schedule a Process Parameter” section.

EDW EXTRACT PARAMETERS Parameter

This parameter is used to populate the EDW. It helps to control how certain EDW extracts operate when moving information from the ODS to the EDW.

Note: The EDW EXTRACT Parameters must be set up for your institution before you can populate the EDW.

Earnings

The EDW EXTRACT PARAMETERS parameter includes values for Earnings that let you group your institution's earning codes into one of three categories: regular, overtime and other. The Earnings parameter values are used by the Load EDW Employee and Load EDW Employee Position jobs to group earning information before loading it into the EDW.

HR Application Status

The EDW EXTRACT PARAMETERS parameter includes values for HR Application Status (HR_APPL_STAT.) The HR_APPL_STAT parameter values define HR application statuses relative to employment offered, employment accepted, interview offered, and interview completed. These values are used by the Load EDW Employment Application job for loading data into the EDW.

Student Groups

There are three EDW EXTRACT PARAMETERS student parameter groups that need to be defined for the Load EDW Recruiting and Administration job. They are Student Level Group, Student Level Group Tests and Test

Student Level Group: Use these parameters to define how your institution would prefer to group together student levels for extract into the EDW. For each Student Level Group your institution defines, link ODS student levels to that level group. There may be one or more ODS student levels linked to each extract level group. For example, the Under Graduate Student Level Group could be created to extract recruiting and admissions records for students with a level code of undergraduate or undeclared. You may define as many Student Level Group extracts as you wish.

Student Level Group Tests: Use these parameters to determine for each Student Level Group which test information your institution prefers to extract with that Student Level Group. Assign each Student Level Group one Group Tests code. For example, the Under Graduate Student Level Group may be linked to the UGTEST Student Level Group Tests parameter.

Test: Use this group of parameters to specify for each Student Level Group Test up to seven different ODS test types your institution wishes to extract with that Group Test. For example, a Student Level Group Test of UGTEST may extract SAT, ACT and TOEFL test scores.

Example:

The ODS student levels of Undeclared (00) and Under Graduate (UG) might both belong to the extract group of UNDERGRADUATE. Then that extract group of UNDERGRADUATE is associated with the test group of UGTEST. Then, the test group of UGTEST is linked to the test codes of SAT Math(S02), SAT Verbal (S01), etc. So, when the undergraduate group is selected for

extraction, students with the level codes of UG and OO are selected, as well as their test scores for tests SAT Math and SAT Verbal.

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: EDW EXTRACT PARAMETERS

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
A short description of the extract parameter group.	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 administrative page.
EARNINGS	OTHER		ADJ	Adjunct Pay By Course
HR APPLICATION STATUS	EMPLOYMENT_ ACCEPTED		OA	Offer Accepted
STUDENT LEVEL GROUP	CONTINUING_ EDUCATION		CE	Continuing Education
STUDENT LEVEL GROUP TESTS	GRADUATE		GRTEST	WRIT, MATH, T02
TEST	GRTEST	1	WRIT	Writing Entry Level

Set up Parameters (ODS and EDW)

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 the ODS, EDW, 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 “Set up Customized Scheduled Processes” for additional information.)

Note: These parameters are different from the actual runtime parameters that you supply when you schedule a process (run the mappings). (See the “Schedule a Process Parameters (ODS and EDW)” section.) The parameters discussed in this section are internal parameters that Information Access uses in internal processing.

A parameter can include multiple values. The values for a single parameter all use the same Internal Code. You use the Internal Code to select 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.

Navigation

1. Select Information Access Options from the Information Access Administrative UI menu. The Information Access Options menu opens.
2. Select Set Up Parameters. The Set Up a Parameter page opens.

Tasks

1. Select Create from the Set Up a Parameter page, or select Duplicate from the Update an Existing Parameter page. The Create a New Parameter page opens.
2. 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 the 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.

3. Select Save to create the new parameter.

Update or Delete a Parameter

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

Navigation

1. Select Information Access Options from the Information Access Administrative UI menu. The Information Access Options menu opens.
2. Select Set Up Parameters. The Set Up a Parameter page opens.

Tasks

1. From the Show All Internal Groups drop-down list on the Set Up a Parameter page, select 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.

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

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

Tip:

If you know the first letter of the Internal Group or Code you want to select, 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.

Note: Only External Codes less than 80 characters in length display in the drop-down 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.

5. Select 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 “Schedule a Process” section.

Note: The parameters listed below are delivered with the ODS, followed by an additional list of parameters that are also delivered with the EDW. For a list of parameters used only to schedule a process, see the “Schedule a Process Parameters (ODS and EDW)” section.

Parameters (ODS and EDW)

<i>This Parameter . . .</i>	<i>Used for this Task and Solution . . .</i>	<i>Does This . . .</i>
ADMIN_PREFERENCES	Administrative UI for the ODS and EDW	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.
CLEANSING PREFIX		
ETL CONTROL GROUP	Schedule a Process for the ODS and EDW	Groups together ETL MAP PACKAGE and/or ETL SLOT PACKAGE jobs as one job.
ETL MAP PACKAGE	Schedule a Process for the ODS and EDW	Groups related jobs (OWB mappings) as one job.
ETL MAP PACKAGE LOAD PURGE	Schedule a Process for the ODS	Identifies the required crosswalk DELETE mappings for the Load Purge Process.

<i>This Parameter . . .</i>	<i>Used for this Task and Solution . . .</i>	<i>Does This . . .</i>
ETL MAP PACKAGE LOGIC	Schedule a Process for the ODS	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 EDW jobs as they have dependencies from one step (or mapping) to another, while ODS mappings are independent of each other.
ETL MAP PACKAGE RECONCILE LOGIC	Reconcile ODS Tables	Provides a list of mappings that are exceptions in the reconcile 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 ODS table. This list also includes mappings that require either multiple source composite views or mappings in order to reconcile an ODS table.
ETL SLOT PACKAGE	Schedule a Process for the ODS	Groups together related slot jobs (SQL packages) as one job.
EVENT	Freeze data for the ODS	Defines EVENT codes used for Freezing data.
INSTALLED PROCESS	Schedule a Process for ODS and EDW	Populates a list of processes displayed on the Select a Process page.
JOB	Schedule a Process for ODS and EDW	Defines the actual name of the job (program) to run when you schedule a process.
JOB INTERVAL	Schedule a Process for ODS and EDW	Defines the list of sample Job Interval settings displayed in the Select an Interval window on the Schedule a Process page.

<i>This Parameter . . .</i>	<i>Used for this Task and Solution . . .</i>	<i>Does This . . .</i>
JOB_KILLER	Kill a Running Job/ Process	Defines which administrative accounts have the ability to stop a process that is running.
JOB_NOTIFICATION	Set up email notification	Defines a list of process parameters you need to set up email notification.
METADATA	Meta Data publishing for the ODS and EDW	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	Run a Process for the ODS and EDW	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	Schedule a Process for the ODS and EDW	Defines a list of a job’s input parameters you need to supply when you schedule a process.
PUBL_CATE_CODE	Schedule a Process for the ODS and EDW	Used during meta data publishing to differentiate the source from the target types.
SSR CONFIGURATION (optional)	Self-Service Reporting	Defines the location of the SSR help files and the ODS metadata used by SSR, if SSR is installed.
RANGE		
SUBPROCESS	Schedule a Process for the ODS and EDW	Populates a list of processes displayed on the Select a Subprocess page.

Parameters (EDW)

<i>This Parameter . . .</i>	<i>Used for this Task and Solution . . .</i>	<i>Does This . . .</i>
CLEANSING DATA ELEMENT	Cleansing for the EDW	The list of data elements used in Cleansing. The elements listed here are what show up in the drop-down lists for cleansing description and code value screens.
CLEANSING DEFAULT LINK	Cleansing Load for the EDW	For those cleansing data elements that get their initial values from an ODS validation table, this parameter defines which sub-code in the ODS validation to look for.
CLEANSING DEFAULT VALUES	Cleansing for the EDW	Define the value, and long and short descriptions, used in the EDW for NULL and BAD (i.e. value not found in cleansing values list) cleansing values.
CLEANSING EFF_ DATE ELEMENTS	Cleansing for the EDW	Define which Cleansing data elements use effective dating
CLEANSING PREFIX ELEMENTS	Cleansing for the EDW	Define which Cleansing data elements use prefixes.
CLEANSING RANGE ELEMENTS	Cleansing for the EDW	Define which Cleansing data elements use a date range.
CLEANSING SOURCES	Cleansing for the ODS and EDW	Defines the sources used for cleansing (EDW) and for Freezing data (ODS).
EDW DIMENSIONS	Meta Data publishing for the EDW	An internal listing of which dimension tables are used in which EDW Stars (used for generating the EDW Meta Data report pages).
EDW_EVENT_LISTING	List events for an EDW star	Determines which columns to exclude from the List Events for an EDW Star page.
EDW EXTRACT PARAMETERS	Populating the EDW	Controls how certain EDW extracts operate when moving information from the ODS to the EDW.
ETL SCRIPT	Run a Process for the ODS	Defines external operating system script commands that can be run as part of a process.

Schedule a Process (ODS and EDW)

Jobs can be scheduled to run at specific times. To run 'load' and 'refresh' (update) jobs, use the Schedule a Process option on the Information Access Options menu of the Administrative UI. This section describes how to schedule a process. Below are the processes that can be loaded or ran.

ODS Processes

Schedule ODS Mappings

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

- Load All ODS Products
- Refresh All 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 ODS Slotted Tables
- Run A Single ODS Mapping
- Run A Single ETL Slot Package
- Refresh Date Hierarchy Table
- Load Finance Transaction History

ODS Utilities

Select this option to report source change table counts, reconcile tables and run checks and balances.

- Report ODS Source Change Table Counts
- Reconcile a Single ODS Table
- Reconcile Multiple ODS Tables
- ODS Checks and Balances

Miscellaneous

Select this option to freeze tables/views and publish meta data.

- Freeze Multiple ODS Tables/Views
- Freeze a Single ODS Table/View
- Publish Info Access Meta Data

EDW Processes

Schedule EDW Mappings

Select this option to run all mappings that load the corresponding star. Use the Fix options to run all mappings that load the corresponding star, but use the cleansing error table as input.

- Load EDW Academic Program Course
- Load EDW Advancement Giving
- Load EDW Course Registration
- Load EDW Employee
- Load EDW Employee Degree
- Load EDW Employee Position
- Load EDW Employment Application
- Load EDW Enrollment
- Load EDW Financial Aid Pre Student
- Load EDW Financial Aid Student
- Load EDW General Ledger
- Load EDW Graduation Completion
- Load EDW Grant and Project
- Load EDW Operating Ledger
- Load EDW Receivable Customer
- Load EDW Receivable Revenue
- Load EDW Recruiting and Admissions
- Fix EDW Advancement Giving
- Fix EDW Course Registration
- Fix EDW Employee
- Fix EDW Employee Degree
- Fix EDW Employee Position
- Fix EDW Employment Application
- Fix EDW Enrollment
- Fix EDW Financial Aid Pre Student
- Fix EDW Financial Aid Student
- Fix EDW General Ledger
- Fix EDW Graduation Completion
- Fix EDW Grant and Project
- Fix EDW Operating Ledger
- Fix EDW Receivable Customer
- Fix EDW Receivable Revenue
- Fix EDW Recruiting and Admissions

Caution: Before you schedule any jobs to run, you *must* review and set up parameters associated with scheduling a process. See “Set up Parameters” for more details.

EDW Utilities

Select this option to report source change table counts, reconcile tables and run checks and balances.

- EDW Checks and Balances
- Load EDW Data Default Cleansing Values

Schedule a Single Process

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

Navigation

1. Select Information Access Options from the Information Access Administrative UI menu.
2. Select Schedule a Process. The Select a Process page opens.

Tasks

1. Select the type of process you want to schedule to run from the Select a Process page.

If you select Schedule ODS or EDW Mappings or Freeze Multiple 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.

2. Select the subprocess you want to run. The Schedule a Process page opens.
3. If you selected the subprocess Run a Single ODS or EDW Mapping, choose the mapping from the **Mapping to Run** drop-down list.
4. Enter values for other Process Parameters for the selected process, if any exist.
5. Enter the required Scheduling Parameters information.
 - (a) Enter a Run Date (format dd-mon-yyyy) and Runtime (format hh24:mi:ss).
 - (b) 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.

Schedule Multiple Processes

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

Navigation

1. From the Information Access Administrative UI menu, select Information Access Options.
2. Select Schedule a Process. The Select a Process page opens.

Tasks

1. From the Select a Process page, select the type of process you want to schedule.

If you chose Schedule ODS Mappings or Freeze Multiple 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 4.

2. Select a subprocess. The Schedule a Process page opens.
3. If you selected the subprocess Run a Single ODS or EDW Mapping, choose the mapping from the **Mapping to Run** drop-down list.
4. To open the .csv file, select the Export button.

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.

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.

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

A1	A	B	C	D	E	F	G	H	I
1	JOBDEF	DATE	TIME	PROCESS	SUBPROCESS	Source Institution:	Event:	Academic Period:	Replace Event (Check for 'Yes')
2	JOB	'JAN-30-2007'	'23:00:00'	'MAPGROUP-EDW'	'LOAD_EDW_ENROLLMENT'	'SGHE'	'REG021'	'200910'	'Y'
3	JOB	'FEB-28-2007'	'23:00:00'	'MAPGROUP-EDW'	'LOAD_EDW_ENROLLMENT'	'SGHE'	'REG020'	'200830'	'Y'
4	JOB	'MAR-29-2007'	'23:00:00'	'MAPGROUP-EDW'	'LOAD_EDW_ENROLLMENT'	'SGHE'	'REG019'	'200820'	'Y'
5	JOB	'APR-31-2007'	'23:00:00'	'MAPGROUP-EDW'	'LOAD_EDW_ENROLLMENT'	'SGHE'	'REG018'	'200811'	'Y'
6	JOB	'MAY-30-2007'	'23:00:00'	'MAPGROUP-EDW'	'LOAD_EDW_ENROLLMENT'	'SGHE'	'REG017'	'200810'	'Y'
7	JOB	'JUN-30-2007'	'23:00:00'	'MAPGROUP-EDW'	'LOAD_EDW_ENROLLMENT'	'SGHE'	'REG016'	'200809'	'Y'
8	JOB	'JUL-30-2007'	'23:00:00'	'MAPGROUP-EDW'	'LOAD_EDW_ENROLLMENT'	'SGHE'	'REG015'	'200740'	'Y'
9	JOB	'AUG-30-2007'	'23:00:00'	'MAPGROUP-EDW'	'LOAD_EDW_ENROLLMENT'	'SGHE'	'REG014'	'200730'	'Y'
10	JOB	'SEP-31-2007'	'23:00:00'	'MAPGROUP-EDW'	'LOAD_EDW_ENROLLMENT'	'SGHE'	'REG013'	'200720'	'Y'
11	JOB	'OCT-30-2007'	'23:00:00'	'MAPGROUP-EDW'	'LOAD_EDW_ENROLLMENT'	'SGHE'	'REG012'	'200710'	'Y'

9. Select the Import button on the Schedule a Process page to re-import the .csv file into the Administrative UI.
10. Enter the name of the exported job into the subwindow, or search for it using the Browse button.
11. Select 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.

Navigation

1. Select Information Access Options from the Information Access Administrative menu.
2. Select View and/or Remove Scheduled Processes. The Select and View Scheduled Processes page opens.

Tasks

1. Select the date from which you would like to view scheduled processes from the Select and View Scheduled Processes page.

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

2. Select Display Jobs. The processes scheduled for the selected date display.

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

To Edit

- (a) Select the Edit link next to the job number. The Schedule a Process page opens.
- (b) Make your changes.

- (c) 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.

- (d) Select Submit.

To Delete

- (a) To delete processes, check the checkbox in the **Delete** column for the process you want to delete.
- (b) Select Delete Jobs.

Kill a Running Job/Process

This feature gives you the ability to stop a process while it is running.

Prerequisite:

Only administrative accounts that have been set up with the Internal Group Code parameter of JOB KILLER, the Internal Code 1 of ACCOUNT NAME, and the External Code of the administrative user (IA_ADMIN username) have the ability to use this feature.

Follow the steps below to stop a running process using the Process Termination Wizard:

Navigation

1. Select Information Access Options from the Information Access Administrative menu.
2. Select View Control Reports. The Select a Control Report page opens.

Tasks

1. Select the link for the process you want to kill. The Display a Control Report opens.
2. Select the **Kill Job** link in the **Status** column.

Note: This link only appears for jobs that are currently running.

3. The Process Termination Wizard window opens and displays the process attributes.
4. Select to either kill the process directly (at the operating system level) or to have the wizard display a list of Oracle commands needed to kill the process manually.

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

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

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, if you want to bring additional data into the ODS or EDW, 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.

EDW processes are set up like ODS processes, in that they use the same ETL MAP PACKAGE, JOB, and SUBPROCESS parameter entries. EDW processes also use the ETL MAP PACKAGE LOGIC parameter to indicate a termination point for the process. By default, all mappings within a process execute regardless of whether they error. Setting up an ETL MAP PACKAGE LOGIC allows a job to terminate if a mapping errors, and if the delivered processes to load the cubes use these parameters.

If you wanted to add new star or cube, you can duplicate one of the existing processes (complete with PROCESS, SUBPROCESS, ETL MAP PACKAGE entries).

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 - EDW) to appear on the Select a Subprocess web page, and on the Schedule 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 the ODS and EDW which item in the Schedule ODS or EDW Mappings list (MAPGROUP - EDW) to run.

Follow the steps below. Examples appear after the steps.

Navigation

1. Select Set Up Parameters from the Information Access Options menu. The Set Up a Parameter page opens.

Tasks

1. Select 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.
2. Select Save.

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.

3. To run the newly created process, select Schedule a Process from the Information Access Options menu. The Select a Process page opens.
4. Select Schedule ODS or EDW Mappings. The Select a Subprocess page opens.
5. Select your new process.

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. Select Set Up Parameters from the Information Access 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.

<i>In This Field ...</i>	<i>Enter This ...</i>	<i>Here's Why ...</i>
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.

<i>In This Field ...</i>	<i>Enter This ...</i>	<i>Here's Why ...</i>
Internal Code 2	TEST_LOAD_STUDENT_COURSE_1	Mapping name in OWB and the package name in the 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.
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.

4. Select Save.

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

1. Select the Create a New Parameter link at the bottom of the page. The fields on the page reset.
2. Enter the following information.

<i>In This Field ...</i>	<i>Enter This ...</i>	<i>Here's Why ...</i>
Internal Group	SUBPROCESS	<i>Must</i> be SUBPROCESS. This tells the ODS to display this group on the Select a Subprocess menu.

<i>In This Field ...</i>	<i>Enter This ...</i>	<i>Here's Why ...</i>
Internal Code 1	MAPGROUP	<i>Must</i> be MAPGROUP in order to display this group on the Schedule 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.
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 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.

3. Select Save.

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

1. Select the Create a New Parameter link at the bottom of the page. The fields on the page reset.
2. Enter the following information.

<i>In This Field ...</i>	<i>Enter This ...</i>	<i>Here's Why ...</i>
Internal Group	JOB	JOB <i>must</i> be entered.

<i>In This Field ...</i>	<i>Enter This ...</i>	<i>Here's Why ...</i>
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 is.
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.

3. Select Save.

EDW Example:

The example below walks you through how to create a scheduled process called TEST_LOAD_EDW_EMPLOYEE. This group will have one mapping called TEST_LOAD_EDW_EMPLOYEE_1

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

1. Open the Create a New Parameter page.
2. Enter the information below into the fields.

<i>In This Field . . .</i>	<i>Enter This . . .</i>	<i>Here's Why . . .</i>
Internal Group	ETL MAP PACKAGE	<i>Must</i> be ETL MAP PACKAGE.
Internal Code 1	TEST_LOAD_EDW_EMPLOYEE	Mapping group name. Create your own name, or specify an existing group if you want to add this mapping to an existing group.

<i>In This Field . . .</i>	<i>Enter This . . .</i>	<i>Here's Why . . .</i>
Internal Code 2	TEST_LOAD_EDW_EMPLOYEE_1	Mapping name in OWB and the package name in the EDW.
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.
External Code	EDW_GENERATE_LEDGER OR STAGE_GENERAL_LEDGER	Location/project in the OWB repository. These locations pertain to the schema containing the target table(s).
Description	TEST_LOAD_EDW_EMPLOYEE_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.

3. Select Save.

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

1. Select the Create a New Parameter link at the bottom of the page. The fields on the page reset.
2. Enter the following information.

<i>In This Field . . .</i>	<i>Enter This . . .</i>	<i>Here's Why . . .</i>
Internal Group	SUBPROCESS	<i>Must</i> be SUBPROCESS. This tells the EDW to display this group on the Select a Subprocess menu.

<i>In This Field . . .</i>	<i>Enter This . . .</i>	<i>Here's Why . . .</i>
Internal Code 1	MAPGROUP - EDW	<i>Must</i> be MAPGROUP in order to display this group on the Schedule EDW 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.
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_EDW_EMPLOYEE	Group name. <i>Must</i> 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 EDW Employee	Actual text you want to display on the Schedule EDW 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.

3. Select Save.

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

1. Select the Create a New Parameter link at the bottom of the page. The fields on the page reset.
2. Enter the following information.

<i>In This Field . . .</i>	<i>Enter This . . .</i>	<i>Here's Why . . .</i>
Internal Group	JOB	JOB <i>must</i> be entered.

<i>In This Field . . .</i>	<i>Enter This . . .</i>	<i>Here's Why . . .</i>
Internal Code 1	MAPGROUP - EDW	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 is.
External Code	0	Leave as 0.
Description	mgkmap_P_RunETLMaps	Name of the PL/SQL procedure executed by the process. For mapping scheduled processes, use the standard procedure mgkmap_P_RunETLMaps.
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.

3. Select Save.

Schedule a Process Parameters (ODS and EDW)

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

Parameters are maintained on the Set Up a Parameter page of the Administrative UI. See “Update or Delete Parameters” for additional information on updating parameters. Each parameter and its purpose appear below:

<i>This Parameter . . .</i>	<i>Does This . . .</i>
INSTALLED PROCESS	Populates a list of processes displayed on the Select a Process page.
SUBPROCESS	Populates a list of processes displayed on the Select a Subprocess page.

<i>This Parameter . . .</i>	<i>Does This . . .</i>
JOB	Defines the actual name of job (program) to run when you schedule a process.
ETL MAP PACKAGE	Groups related jobs (OWB mappings) as one job.
ETL MAP PACKAGE LOAD PURGE	Identifies DELETE mappings for the Load Purge Process.
ETL MAP PACKAGE LOGIC	<p>The ETL Map Package logic parameter 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.</p> <p>This parameter is used primarily with EDW jobs as they have dependencies from one step (or mapping) to another, while ODS mappings are independent of each other.</p>
ETL MAP PACKAGE RECONCILE LOGIC	Provides a list of mappings that are exceptions in the reconcile 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 ODS table. This list also includes mappings that require either multiple source composite views or mappings in order to reconcile an ODS table.
ETL SCRIPT	Defines external operating system script commands that can be run as part of a process.
ETL SLOT PACKAGE	Groups together related slot jobs (SQL packages) as one job.
ETL CONTROL GROUP	Groups together ETL MAP PACKAGE and/or ETL SLOT PACKAGE jobs as one job.
EDW EXTRACT	Controls how certain EDW extracts operate when moving information from the ODS to the EDW.
PARAMETER	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 Group: INSTALLED PROCESS

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
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 ODS Table/View
FREEZE_TABLE	N/A	5	FREEZE_TABLE	Freeze Multiple ODS Tables/Views
MAPGROUP	N/A	1	MAPGROUP	Schedule ODS Mappings
MAPGROUP - EDW		2	MAPGROUP - EDW	Schedule EDW Mappings

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.

Adding 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 ODS or EDW Mappings, Freeze Multiple ODS Tables/Views, or Freeze A Single 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 Group: SUBPROCESS

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
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 ODS products
MAPGROUP	N/A	2	LOAD_ALL_SLOTS	Load all ODS slotted tables
MAPGROUP	N/A	3	LOAD_FINANCE	Load finance
MAPGROUP	N/A	8	REFRESH_ALL	Refresh all ODS products
MAPGROUP	N/A	9	REFRESH_FINANCE	Refresh finance
MAPGROUP	N/A	14	RUN_SINGLE_MAP	Run a single mapping

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:
 - (a) **Internal Group:** Subprocess
 - (b) **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 ODS Tables process.
 - ADHOC_FREEZE to list under the Freeze A Single ODS Table process.
 - (c) **Internal Code 2:** blank
 - (d) **Internal Code Sequence Number:** Number indicating the order in which to run this subprocess.
 - (e) **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.
 - (f) **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 Information Access 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

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
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 the ODS or EDW 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 the process/subprocess pair but there are individual mapping records associated with the pair, 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

the ODS when you submit the Load All ODS Products and Refresh All ODS Products processes. If you want to load only Student and Finance data into the 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 ODS Products and Refresh All 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

Information Access uses hundreds of OWB mappings to load and refresh ODS and EDW data, and to cleanse EDW 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

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
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_DETAIL	2	ODS_TARGET_AR	LOAD_MTT_ACCOUNT_DETAIL
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_ACCOUNTING	8	ODS_TARGET_AR	LOAD_MTT_LEDGER_ACCOUNTING

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:

- (a) Internal Group: Subprocess
- (b) Internal Code 1: MAPGROUP
- (c) Internal Code 2: blank
- (d) Internal Code Sequence Number: Number indicating the order in which to run this subprocess.
- (e) 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.
- (f) 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 the 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

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
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_ORGANIZATION_CONTACT		1	DELETE_MAT_ORGANIZATION_CONTACT	Load Purge Record
LOAD_MGT_VALIDATION_GENERAL		1	NA	Load Purge Record
LOAD_MFT_TRANS_HISTORY_1		1	DELETE_MFT_TRANS_HISTORY	Load Purge Record
LOAD_MFT_TRANS_HISTORY_2		1	NA	Load Purge Record
LOAD_MFT_TRANS_HISTORY_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. However, within the

EDW, there are such dependencies (such as when the Time Key does not process correctly).

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 ODS Composite table). Those exceptions are notes by the External Code, being either:

- **IGNORE:** used to identify mappings *not* to try to reconcile
- **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 Group: ETL MAP PACKAGE RECONCILE LOGIC

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
Name of LOAD mapping	Ignored	1	Action to take	Either simple description or name of related LOAD mappings
LOAD_MAT_CONS TIT_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

ETL SCRIPT Parameter

The ETL SCRIPT parameter enables users to define external scripts, commands, etc that can be run as a process. (ex: operating system commands, sqlloader, ftp, etc).

The following table shows the entries for an ETL SCRIPT example that will execute an operating system command. The entry has an Internal Code 1 value of OSJOB1, which is user defined.

Note: While the example shown is UNIX specific, the capability to use ETL SCRIPT parameter entries is available for scripts, packages, operating system commands, etc.

Internal Group: ETL SCRIPT

Use the associated parameter entries below to add this job to the ODS Utilities menu:

<i>Parameter type</i>	<i>The ETL group to which the script is assigned</i>	<i>Mapping name, job name, etc</i>	<i>Order to run the script within the group</i>	<i>Parameter list to use with script</i>	<i>Script name. or command</i>
ETL SCRIPT	UTILGROUP	OSJOB1	1	Parameter list if required	df -k
SUBPROCESS	UTILGROUP	<Null>	1	OSJOB1	Example of operating system command as a job
JOB	UTILGROUP	OSJOB1	1	0	mgkmap.P_RunETLScripts

Below is the samplecontrol report for the OSJOB1 job in the above example:

<i>Procedure</i>	<i>Message</i>
	Start of Process at 06-MAR-2007 11:42:18
	Running ETL Script
	Script: df -k
ETL Script	Filesystem kbytes used avail capacity Mounted on
ETL Script	/dev/dsk/c1t0d0s0 11094316 4840291 6143082 45% /
ETL Script	/devices 0 0 0 0% /devices

<i>Procedure</i>	<i>Message</i>
ETL Script	ctfs 0 0 0 0% /system/contract
ETL Script	proc 0 0 0 0% /proc
ETL Script	mnttab 0 0 0 0% /etc/mnttab
ETL Script	swap 5034016 1024 5032992 1% /etc/svc/volatile
ETL Script	objfs 0 0 0 0% /system/object
ETL Script	fd 0 0 0 0% /dev/fd
ETL Script	/dev/dsk/c1t0d0s5 6053358 1268656 4724169 22% /var
ETL Script	swap 5033024 32 5032992 1% /tmp
ETL Script	/dev/dsk/c1t2d0s0 22720296 18376817 4116277 82% /u02
ETL Script	/dev/dsk/c1t2d0s1 22720296 18491584 4001510 83% /u03
ETL Script	/dev/dsk/c1t2d0s3 25151112 23289977 1609624 94% /u04
ETL Script	Script Completed at: 06-MAR-2007 11:42:18
	Process completed successfully at 06-MAR-2007 11:42:18
	End of Report

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 the 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 the 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 Group: ETL SLOT PACKAGE

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
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_FINANCIAL_AID		1	MRKBCOMP.P_POPULATE('L')	MRT_FINAID_BUDGET_COMP_SLOT
LOAD_FINANCIAL_AID		2	MRKTREQ.P_POPULATE('L')	MRT_TRACKING_REQUIREMENT_SLOT

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 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 Group: ETL CONTROL GROUP

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
Control Group to which the ETL group is assigned.	ETL Group Name Map to Internal Code 1 of the ETL MAP PACKAGE related to this ETL group.	Order to run the ETL group within the control group.	Controls whether to run the group. Y= run ETL group N=do not run ETL group	A description of the record. This values is not used in processing.
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_RESOURCES	6	Y	HR Load ETL Control Record
LOAD_ALL	LOAD_STUDENT	7	Y	Student Load ETL Control Record

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 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:
 - (a) Internal Group: Subprocess
 - (b) Internal Code 1: MAPGROUP
 - (c) Internal Code 2: blank
 - (d) Internal Code Sequence Number: Number indicating the order in which to run this subprocess.
 - (e) 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.
 - (f) 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 an 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. When you run any of the EDW load jobs, you must supply runtime parameters. Which parameters you need to supply are defined here.

Example.

The Load EDW Employee job uses five runtime parameters—Source Institution, Event, Calendar Year, Calendar MONTH and Replace Event. The last four rows in the

table below define some of these parameters. The **Description** field supplies the actual prompt that appears for the parameter on the Schedule a Process page. The **Internal Code 2** defines the job with which the parameter is associated, in this case the LOAD_EDW_EMPLOYEE job. The **Internal Code 1** defines the parent menu option (on the Select A Process menu) from which you select the Load EDW Employee job.

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

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
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
MAPGROUP - EDW	LOAD_EDW_EMPLOYEE	1	EVENT_IN	Event:
MAPGROUP - EDW	LOAD_EDW_EMPLOYEE	2	CALENDAR_YEAR_IN	Select the calendar year
MAPGROUP - EDW	LOAD_EDW_EMPLOYEE	3	CALENDAR_MONTH_IN	Select the calendar month
MAPGROUP - EDW	LOAD_EDW_EMPLOYEE	4	REPLACE_IND_IN	Replace Event (Check for 'Yes'):

Note: 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 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.

Cleansing (EDW)

Data cleansing is the process of verifying ODS code values and possibly translating them to standardized code values in the EDW. The ETL mappings initially load code values and descriptions from the ODS into the EDW cleansing tables. Using the Administrative UI, the EDW administrator can set up cleansing rules specific for the institution.

Some of the cleansing that can take place includes:

- Creating new EDW values based on ODS values
- Changing an ODS description value to a new value in the EDW
- Removing duplicate code values
- Creating ranges of ODS codes that become one code in the EDW
- Translating multiple ODS values into one EDW value and description
- Customizing the descriptions used in the EDW

Example

You might group student levels CE and PR for Continuing Education and Professional into one code called PR - Professional. Similarly, you could combine GR and LW for Graduate and Law into one GR - Graduate code.

The EDW Data Cleansing Values table (MGRCVAL) stores code values from the ODS with the code values they translate to in the EDW. The EDW Data Cleansing Descriptions table (MGRCDDES) stores the descriptions for every EDW code value defined in the MGRCVAL table. Values for these tables are loaded from the ODS during the Cleansing Load process, which is usually run during EDW installation. This process is run like all other processes (via the Administrative UI), and can be rerun whenever values in the source system are updated. Running the Cleansing Load process will generate a Control Report that lists the number of cleansing values brought over into the EDW, as well as checking for any duplicate values/descriptions for any of the defined Data Elements.

You may need to manually add some code value translations. In addition, you may want to add or edit descriptions for some of the code values set up during the installation process. You can use the Administrative UI to add and edit records in the MGRCVAL and MGRCDDES tables. Note that records loaded via the Cleansing Load process are flagged with a “System Maintained” indicator in order to differentiate them from changes you might make, so that your changes are retained when the Cleansing Load process is rerun. Follow the steps below to set up and maintain cleansing processes at your institution.

Note: To optimize the use of the Academic Period Type cube dimension attribute, you should define a User Short Description for all like academic periods (Fall, Spring, Summer or Semester 1, Semester 2) as appropriate for your institution.

Warning: You must set up all cleansing information before you run any jobs to load data into the EDW.

This is crucial to ensure that accurate, consistent information is loaded into the EDW. It is especially important to verify that the various Event codes and descriptions meet your institution’s needs.

An Event is a logical point in time when you extract information from the ODS and load it into the EDW, essentially freezing the data and giving you a snapshot of the data at that point in time. A logical point in time refers to a conceptual time, not an actual calendar date. For example, a logical time to extract financial information may be at the end of the first week of each quarter.

Before you run the processes that load data into the EDW, you need to define events that are relevant for your institution’s business needs.

Several event data elements have been delivered with the EDW. Events defined within the Administrative UI appear as data elements starting with the word ‘EVENT’ when validating codes and descriptions (such as “EVENT_STUDENT”, “EVENT_HR”, etc.).

Verify MGRCVAL and MGRCDDES Load

When the EDW is installed, the Load EDW Data Cleansing Values process is run. During that process, values are loaded into the MGRCVAL and MGRCDDES tables with information from the ODS tables. Some additional code descriptions are defined using translation, range, and effective date logic in the Load process.

Verify that the Load EDW Data Cleansing Values process successfully loaded data into the MGRCVAL and MGRCDDES tables using the Administrative UI. To verify the information, see “Edit an Existing Code Value Descriptions” and “Create a New Code Value Translation from Source Data.”

Set up Descriptions for Code Values

Maintaining code descriptions leaves the code value unchanged, but alters its short and long descriptions in the EDW.

Navigation

1. Select Maintain Descriptions for Code Values from the Information Access Options menu. The Set Up Descriptions for Code Values page opens.

Tasks

1. Select a data element from the drop-down list next to the Create button.
2. Select Create. The Create a New Description for Code Values page opens.
3. Fill in the required information.
4. Select Save.

Edit an Existing Code Value Description

You might want to edit code value descriptions to:

- Change or simplify some of the descriptions to make them more meaningful to the users who create reports against the EDW.
- Clean up short descriptions. Short descriptions are recommended to make the best use of the limited space on graphs and reports. Review short descriptions to make sure they are both concise and meaningful.
- Search the data elements to verify that MGRCDDES was populated, and to make institution-specific changes as necessary.

Follow the steps below to edit a code value description:

Navigation

1. Select Maintain Descriptions for Code Values from the Information Access Options menu, The Set Up Descriptions for Code Values page opens.

Tasks

1. Select your search criteria from the **Data Element** drop-down list, and also narrow down your search by entering information into the **EDW Prefix** and **EDW Values** fields .
2. Select Search. The Select an Existing Descriptions for Code Values page opens.

3. Select the **Long Description** link for the code value description you want to edit. The Update an Existing Description for Code Values page opens.
4. Enter the new description into the **User Short Description** or **User Long Description** fields.

To enter a code value translation, select the Set Up Values link. The Select an Existing Code Value Translation page opens.

5. Select Save.

A description of each field appears below:

Field	Description
Data Element	Name of the field where this data is stored in the EDW.
Source	Originating source of data for the EDW.
EDW Value	Code that identifies this data element in the EDW.
Short Description	Short description for this data in the EDW. This is the short description brought over from the ODS or supplied by the institution if the translation is newly created in the EDW. If the translation is system maintained, you cannot edit this field.
User Short Description	If the translation is system maintained, the institution can supply a short description to be used instead of the system description. The institution's short description is stored in this field and will be used instead of the system description when cleansing values.
Long Description	The long description for this data in the EDW. The long description is either brought over from the ODS or you supply it if you create the translation in the EDW. If the translation is system maintained, you cannot edit this field; it is updated when you run the job.
User Long Description	If the translation is system maintained, the institution can supply a long description to be used instead of the system description. The institution's long description is stored in this field and will be used instead of the system description when cleansing values.
System Maintained?	If <i>Yes</i> , this description was created by the Cleansing Load process based on value in the ODS. The code's Short and Long Descriptions reflect the descriptions in the ODS.

Create a New Code Value Translation from Source Data

A code value translation takes a code value in the ODS source data and converts it into a different value that is used in the EDW. You might want to create a translation to:

- Import related data from two systems that use different sets of codes. You can translate the codes from both systems so that they match one set of codes.
- Combine several codes to simplify data in the EDW. For example, your enterprise may use several different codes to indicate off-campus housing status. If you want to combine them all for EDW reporting, you can translate all of them to a single new code.
- Take a quantifiable data element and convert it to a series of categories that can be used to group data. For example, if you take age data and create a series of age ranges, such as 0-17, 18-19, 20-21, and so on.
- Search data elements to verify that MGRCVAL was populated, and to make Institution-specific changes as necessary.

Note: When you create a new code value translation, you *must* create the descriptions first then associate them with the new code value translation when you add it. Be sure you have created all related code descriptions (in the previous step) before you attempt to create a new code value translation.

Navigation

1. From the Information Access Options menu, select Translate Code Values from Source Data. The Set Up Code Values from Source Data page opens.

Tasks

1. Select the relevant data element from the drop-down list next to the Create button on the Set Up Code Values from Source Data page.
2. Select Create. The Create a Code Value Translation page opens.

To enter a code value description, select the Set Up Descriptions link. The Select an Existing Description for Code Values page opens.

3. Fill in the required information.

You can type a single ODS source code value in the **Source From Value** field, or you can also fill in the **Source To Value** field to delineate a “from...to” range of values.

4. Select Save.

Edit Code Value Translation from Source Data

Navigation

1. From the Information Access Options menu, select Translate Code Values from Source Data. The Set Up Code Values from Source Data page opens.

Tasks

1. Select a data element from the drop-down list on the Set Up Code Values from Source Data page.
2. Select Search. The Select an Existing Code Value Translation page opens.
3. In the list of code value translations, under the **EDW Long Description** column, select the link to the existing code value translation you want to edit.
4. Change the information as needed. A description of each field appears below:

Field	Column
Data Element	The name of the field where this data is stored in the EDW.
Source	The source of the data (your default institution or appropriate MIF value)
Source Value	The code value in the source ODS data.
EDW Value	The code that identifies this data element in the EDW.
System Required?	If <i>Yes</i> , this translation record is maintained via the Cleansing Load process; you cannot delete it.

5. Select Save.

Cleansing Parameters

To set up cleansing rules, use the options Maintain Descriptions for Code Values and Translate Code Values From Source Data on the Information Access Options menu in the Administrative UI. These two options use the parameters in this section. You may need to add or change parameter values before you can successfully run one of the processes.

A parameter can include multiple values. The values for a single parameter all use the same **Internal Code**. Use the **Internal Code** to select a parameter for editing on

the Set Up a Parameter page. The parameters used for cleansing purposes and defined in this section include:

<i>Parameter Name</i>	<i>Internal Group</i>
Cleansing Data Elements	CLEANSING DATA ELEMENTS
Cleansing Default Link	CLEANSING DEFAULT LINK
Cleansing Default Values	CLEANSING DEFAULT VALUES
Cleansing Eff Date Elements	CLEANSING EFF_DATE ELEMENTS
Cleansing Prefix Elements	CLEANSING PREFIX ELEMENTS
Cleansing Range Elements	RANGES
Cleansing Sources	CLEANSING SOURCES

CLEANSING DATA ELEMENTS Parameter

Information Access uses this parameter during the cleansing process when building the dimension tables for the EDW star schemas. This parameter defines the Data Elements that exist within each dimension. A Data Element is a piece of information that needs to be cleansed, for example, some data elements in the Finance area include Account, Fiscal Year, Fund, and Grant.

This parameter is delivered with one entry for every Data Element within a dimension table. 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: CLEANSING DATA ELEMENTS

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
Data warehouse dimension table.	Dimension table name in the star schema where this Data Element is stored.	N/A	Column name in the star schema dimension table where this Data Element is stored.	Data Element being defined.
GENERAL_LEDGER	WDT_ACCOUNT	1	ACCOUNT	ACCOUNT
GENERAL_LEDGER	WDT_ACCOUNT		ACCOUNT_TYPE	ACCOUNT_TYPE
GENERAL_LEDGER	WDT_FUND	1	FUND	FUND
GENERAL_LEDGER	WDT_FUND	1	FUND_TYPE	FUND_TYPE
GENERAL_LEDGER	WDT_TIME	1	FISCAL_YEAR	CALENDAR_YEAR

Set up the Parameter

This parameter is delivered with all of the values you need. You should not change any of the existing entries for this parameter.

If you add a new dimension table or add information to an existing dimension table in the EDW, then you need to add a value to this parameter defining the new data elements for that dimension.

CLEANSING DEFAULT LINK Parameter

The Information Access uses this parameter to set up links between Data Elements and ODS values which are used to load default cleansing translations and descriptions. If a Data Element has a concept in an ODS table or view from which its default values and descriptions can be loaded, the specifics of that association or link will be entered here.

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: CLEANSING DEFAULT LINK

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
	N/A	N/A		Default value to be entered into related field.
ACADEMIC_PERIOD	MGT_VALIDATION	1	STVTERM	Cleansing link for ACADEMIC_PERIOD
ACADEMIC_PROGRAM	MGT_VALIDATION	1	SMRPRLE	Cleansing link for ACADEMIC_PROGRAM
ACADEMIC_YEAR	MGT_VALIDATION	1	STVACYR	Cleansing link for ACADEMIC_YEAR

CLEANSING DEFAULT VALUES Parameter

During the cleansing process, some values may not cleanse properly or may contain “null” values. This parameter defines the default values to put in the Long Description, Short Description, and Value fields in the EDW for any “bad” or “null” data.

This parameter is delivered with one entry for every field that gets populated with default data when there is a problem during cleansing. The second row gives a definition of each field.

Internal Group: CLEANSING DEFAULT VALUES

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
	N/A	N/A		Default value to be entered into related field.
BAD_CLEANSE_LONG		1	BAD_CLEANSE_LONG	***Warehouse Description Undefined***
BAD_CLEANSE_SHORT		1	BAD_CLEANSE_SHORT	Desc Undefined
BAD_CLEANSE_VALUE		1	BAD_CLEANSE_VALUE	#####
MULTI_SOURCE_CLEANS_LONG	N/A	1	MULTI_SOURCE_CLEANS_LONG	Insert a default long description for your institution.
MULTI_SOURCE_CLEANS_SHORT	N/A	1	MULTI_SOURCE_CLEANS_SHORT	Insert a default short description for your institution.
MULTI_SOURCE_CLEANS_VALUE	N/A	1	MULTI_SOURCE_INST	Multi-Source institution
NULL_CLEANSE_LONG		1	NULL_CLEANSE_LONG	***Data Not Available***
NULL_CLEANSE_SHORT		1	NULL_CLEANSE_SHORT	Data Not Avail
NULL_CLEANSE_VALUE		1	NULL_CLEANSE_VALUE	????????????????????

Set Up the Parameter

This parameter is delivered with one value for each field that gets loaded with a default message when the data is bad or “null.” If you would like to customize the default value that is entered in a “null” of bad data field, change the description for that field. However, be sure your custom value or descriptions are not "null".

CLEANSING EFFECTIVE DATE ELEMENTS Parameter

Code descriptions can vary over time. For example, in Finance information, the description for an account code can change from month to month. This means you need to associate an effective date with the account to properly cleanse it and get the correct description.

Information Access uses this parameter to determine whether the data being cleansed requires an effective date. This parameter defines which data elements within the system require an effective date.

This parameter is delivered with one entry for every data element within a system that requires an effective date as illustrated by the following table. The able

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

Internal Group: CLEANSING EFF_DATE ELEMENTS

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
Source system of the Data Element.	N/A	N/A	Data Element that requires an Effective Date.	Can be used to describe the specific parameter. Not used in processing but is required.
SOURCE	N/A	N/A	COLUMN_NAME	Effective date cleansing element example: COLUMN_NAME Requires Effective Dates

Set Up the Parameter

This parameter is delivered with all of the values you need. You should *not* change any of the existing entries for this parameter.

CLEANSING PREFIX ELEMENTS Parameter

Information Access uses this parameter during the cleansing process to determine when to combine the values of one data element with the values of another data element as a prefix.

Defining a data element as a prefix data element sets up a relationship between two data elements that gives you all combinations of both elements' values as new values. This concept is most used in the area of finances where you want to look at all values of some data elements (fund, account, organization) across all values of your charts of accounts. Lets look at an example.

Example

In accounting business practices, you typically structure your funds and charts of accounts so that the same funds occur within every chart of accounts. In essence, you associate every chart of accounts value with every fund value to create a combination of values. Suppose you have the following chart of account and fund values:

<i>Chart of Accounts Values</i>	<i>Fund Values</i>
A	1000
B	2000
	3000

Ultimately, you want to be able to report on all combinations of chart of accounts values with fund values. The combined values would look like this:

*Combined Chart of
 Accounts + Funds Values*

- A1000
- A2000
- A3000
- B1000
- B2000
- B3000

The CLEANSING PREFIX ELEMENTS parameter is delivered with one entry for every data element that requires a prefix. 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: CLEANSING PREFIX ELEMENTS

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
Source system of the Data Element.	Data Element whose values will become the prefix for values of data element specified in the External Code .	N/A	Data Element whose values will combine with the values of prefix data element specified in the Internal Code 2 .	Can be used to describe the specific parameter. Not used in processing but is required.
O	CHART_OF_ACCOUNTS	1	ACCOUNT	ACCOUNT Requires Prefixes
O	CHART_OF_ACCOUNTS	1	ACCOUNT_TYPE	ACCOUNT TYPE Requires Prefixes
O	CHART_OF_ACCOUNTS	1	FUND	FUND Requires Prefixes
O	CHART_OF_ACCOUNTS	1	FUND_TYPE	FUND TYPE Requires Prefixes
O	CHART_OF_ACCOUNTS	1	LOCATION	LOCATION Requires Prefixes
O	CHART_OF_ACCOUNTS	1	ORGANIZATION_CODE	ORGANIZATION_CODE Requires Prefixes
O	CHART_OF_ACCOUNTS	1	PROGRAM	PROGRAM Requires Prefixes

Set Up the Parameter

This parameter is delivered with all of the values used by Information Access during cleansing. You should not change any of the existing entries for this parameter.

You can add new values for this parameter if there are other data elements that you want to define with a prefix.

CLEANSING RANGE ELEMENTS Parameter

Sometimes distinct values from the source system get combined into a range of values in the EDW. For example, student ages are stored in a range of values so that you can group students by different age categories. If a student's age is 16, it gets cleansed and stored in the age range value 0-18.

Information Access uses this parameter to determine whether the information being cleansed belongs to one of the Data Elements that uses a range of values.

This parameter is delivered with one entry for every Data Element that uses a range of values as illustrated by the following table. 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 Group: CLEANSING RANGE ELEMENTS

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
Source system of the Data Element.	N/A	N/A	Data Element that requires Range Values.	Can be used to describe the specific parameter. Not used in processing but is required.
O		1	ACADEMIC_PERCENTILE_RANGE	ACADEMIC_PERCENTILE_RANGE Requires Range Values
O		1	AGE_RANGE	AGE_RANGE Requires Range Values
O		1	ANNUAL_SALARY_RANGE	ANNUAL_SALARY_RANGE Requires Range Values
O		1	BILL_DATE_AGING	BILL_DATE_AGING Requires Range Values
O		1	EFFECTIVE_DATE_AGING	EFFECTIVE_DATE_AGING Requires Range Values
O		N/A	FAMILY_INCOME_RANGE	FAMILY_INCOME_RANGE Requires Range Values

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
			PLEDGE_RANGE	PLEDGE_RANGE Requires Range Values
			TEST_SCORE_RANGE	TEST_SCORE_RANGE Requires Range Values
			YEARS_OF_SERVICE_RANGE	YEARS_OF_SERVICE_RANGE Requires Range Values

Set Up the Parameter

This parameter is delivered with all of the values you need. You should not change any of the existing entries for this parameter.

If you add information that is cleansed by a range to an existing dimension table in the EDW, then you need to add a value to this parameter defining the new Data Element for that dimension.

CLEANSING SOURCES Parameter

Use this parameter to find the cleansing rules for a specific source system. It defines the data sources to the EDW. Use the External Code values of this parameter in the **Source** field when you are setting up code value translations and descriptions.

This parameter is delivered with one default entry. The table below illustrates a sample of the values as delivered. The second row gives a definition of each field.

Internal Group: CLEANSING SOURCES

<i>Internal Code 1</i>	<i>Internal Code 2</i>	<i>Internal Code Seq.</i>	<i>External Code</i>	<i>Description</i>
The source code actually used in extract and cleansing jobs.	N/A	N/A	The data source.	
MULTI_SOURCE_INST	N/A	1	Multi-Source Institution Description	ODS Default Source

Set Up the Parameter

Note: The value for INTERNAL_CODE_1 must match the MULTI_SOURCE values loaded from the ODS. Therefore, the INTERNAL_CODE_1 for the delivered CLEANSING SOURCE should match the EXTERNAL_CODE for the CLEANSING_DEFAULT_VALUES that

should have an INTERNAL_CODE_1 of
MULTI_SOURCE_CLEANSE_VALUE.

List Events for an EDW Star (EDW)

Use this option to view a list of events that were loaded for each EDW Star. All the time dimension information displays for job events which have been run.

The EDW_EVENT_LISTING parameter determines which columns you want to display on the List Events for an EDW Star page.

Navigation

1. Select Information Access Options from the Information Access Administrative UI menu. The Information Access Options menu opens.
2. Select List Events for an EDW Star. The List Events for an EDW Star page opens.

Tasks

1. Select the star you want to review from the **EDW Star** drop-down list on the List Events for an EDW Star page.
2. Select List Events.

Utilities (ODS and EDW)

The Utilities process contains utility jobs that perform various administrative tasks, and provide on-going maintenance of the ODS and EDW. 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 the 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 out of synchronization.

Navigation

Follow the navigation steps below to access the utilities options:

1. Select Information Access Options from the Information Access Administrative UI menu.
2. Select Schedule a Process. The Select a Process menu opens.
3. Select ODS or EDW Utilities. The Select a Subprocess menu opens. Each sub-process is described in the sections below.

Report ODS Source Change Table Counts

The Report ODS Source Change Table Counts utility produces a control report that calculates how many rows are in each of the source system Change tables for each 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 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.

Navigation

Follow the navigation steps below to access the utilities options:

1. Select Information Access Options from the Information Access Administrative UI menu.
2. Select Schedule a Process. The Select a Process menu opens.
3. Select ODS or EDW Utilities. The Select a Subprocess menu opens.

Each sub-process is described in the sections below.

ODS Checks and Balances

The 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 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 ODS baseline delivered meta data records to a count of the records in the 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 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 the 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 the ODS, those table structures may become out of synch 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 resynch your freeze tables with the Reporting views.

Navigation

Follow the navigation steps below to access the utilities options:

1. Select Information Access Options from the Information Access Administrative UI menu.
2. Select Schedule a Process. The Select a Process menu opens.
3. Select ODS or EDW Utilities. The Select a Subprocess menu opens. Each subprocess is described in the sections below.

Reconcile Multiple ODS Tables

Reconcile Multiple ODS Tables compares the number of records for all ODS composite tables (by subject area) with the corresponding source composite views. 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 the synchronization between the source system and the ODS. However, it makes the most sense to run it 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 ODS objects dynamically. The process pulls SQL from the load mappings that are created and deployed from Oracle Warehouse Builder. There are a few cases where 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.

Navigation

Follow the navigation steps below to access the utilities options:

1. Select Information Access Options from the Information Access Administrative UI menu.
2. Select Schedule a Process. The Select a Process menu opens.
3. Select ODS or EDW Utilities. The Select a Subprocess menu opens. Each subprocess is described in the sections below.

Reconcile a Single ODS Table

Reconcile a Single ODS Table compares the number of records in a single 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 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 ODS objects dynamically. The process pulls SQL from the load mappings that are created and deployed from Oracle Warehouse Builder. There are a few cases where 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.

Navigation

Follow the navigation steps below to access the utilities options:

1. Select Information Access Options from the Information Access Administrative UI menu.
2. Select Schedule a Process. The Select a Process menu opens.
3. Select ODS or EDW Utilities. The Select a Subprocess menu opens. Each subprocess is described in the sections below.

EDW Checks and Balances

EDW Checks and Balances reports on the state of the EDW. This process could be run after an upgrade or intermittently if you suspect an error. Options are available to ensure the following:

- Mapping packages exist and are valid in the database
- Mapping parameters exist for each mapping package
- Delivered indexes exist on the EDW dimension and fact tables
- Meta data records have been created

Load EDW Data Default Cleansing Values

Load EDW Data Default Cleansing Values must be run before loading the stars.

.View Control Reports (ODS and EDW)

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.

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

Navigation

1. From the Information Access Administrative menu, select Information Access Options.
2. Select View Control Reports. The Select a Control Report page opens.

Tasks

1. 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.

Select the **Refresh Jobs Status Codes** button 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 select this button you not only refresh all status codes, but also ensure that any Terminated status codes display correctly.

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

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

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

Link/Button	Description
Filter Report	<p>Select the Filter Report button to view only ,selected lines of a report.</p> <p>The Select Report Filters window opens. Check the box next to the filter phrases that you want to see in the report. (The Select All and Deselect All links select or deselect all lines on the report.) Select Filter Report.</p> <p>To show all the information again, select the Show Detail button.</p> <p>To filter the report for certain leading words/ phrases, enter one or more delimiter characters and select the Scan button. (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.</p>

Link/Button	Description
CSV Summary	<p>You can select the CSV Summary button 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.</p> <p>Note: This option is primarily intended for 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.</p>
Reschedule Process	<p>If you want to reschedule a process, select the Reschedule a Process button to open the Schedule a Process page.</p>

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.

Some error messages identify data cleansing Warning messages and they show the number of rows written to the WTT_<star schema name>_ERROR table. The line under the Warning identifies the DATA_ELEMENT and data value that caused the cleansing error. Correct the cleansing error and run the FIX EDW <star name>.

Freeze Process

Process failed, no mgbfrez records for this list

The selected freeze table list does not have entries in MGBFREQ table. Select 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.

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.MTVPARAM table matching on the sequence number. Any unmatched rows in MGBPSQL are reported

Action: Sequence numbers that exist in MGBPSQL but not in MTVPARAM 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 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 ODS mappings (ETL MAP PACKAGE)

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

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

Metadata warning: WMT_<tablename> count not equal delivered count

Reason: The delivered (baseline) meta data is verified to stored record counts.
Note: There may be slight inconsistencies if local meta data changes are made, or if local reporting views are added to the meta data

Action: Check with technical staff to create missing baseline 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. Note: Client developed reporting views can be imported into the metadata using the Admin 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 in 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 Admin UI. Note: Client developed reporting views can be imported into the metadata using the Admin 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 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 the 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 Admin 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 the Banner database failed.

Action: If the database link is valid, verify that the listed view exists in the Banner database

ERROR: ADVANCEMENT dblink test failed

Reason: A query from a single Advancement view in the 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 the Banner database

ERROR: FINANCE dblink test failed

Reason: A query from a single Finance view in the 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 the Banner database.

FINANCIAL AID dblink test failed

Reason: A query from a single Financial Aid view in the 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 the Banner database.

ERROR: COMMON dblink test failed

Reason: A query from a single view in the 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 the Banner database.

ERROR: HR dblink test failed

Reason: A query from a single Human Resources view in the 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 the Banner database.

ERROR: STUDENT dblink test failed

Reason: A query from a single Student view in the 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 the Banner database. .

EDW Checks and Balances Process

Error: mapname is INVALID in the database

Recreate the mapping package in the database.

Warning: mapname parameter does not have corresponding MAPPING

If the parameter is valid, create the missing mapping package in the database. If the mapping package does not exist in the database, use the Administrative UI to remove the parameter.

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

The mapping parameters for the EDW have not been created in MTVPARM. Check with technical staff to create the missing entries.

Metadata warning: WMT_TARGET count not equal delivered count

Metadata warning: WMT_TARGET_COLUMN count not equal delivered count

Metadata warning: WMT_SOURCE count not equal delivered count

Metadata warning: WMT_SOURCE_COLUMN count not equal delivered count

Metadata warning: WMT_SOURCE_TO_TARGET_MAP count not equal delivered count

The delivered meta data is verified to stored record counts. There may be slight inconsistencies if local meta data changes are made.

View column missing in MetaData

The column name from the error message does not have meta data in the EDW. Select the menu options Information Access Meta Data and Maintain EDW Meta Data to add the missing information.

MetaData column missing in table

The table name from the error message has meta data in the EDW, but does not exist in the actual table. Verify that the table exists, and that the column is spelled accurately in the meta data. Use the Information Access Meta Data and Maintain EDW Meta Data menu options.

Publish Information Access 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. Select the menu options Information Access 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, select the menu options Information Access 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. Select the menu options Information Access 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 the 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 the ODS. (The message below provides additional details.)

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 the ODS or Banner that do not match to the other system. Use these key values to further diagnose the discrepancy.

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 the 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 the 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: <table name>

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 Information Access Administrative UI can be configured to automatically link to the RAB for mappings that have been run. All you'll need to do is select 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:

Navigation

1. Select Information Access Options from the Information Access Administrative UI menu. The Information Access Options page opens.
2. Select Set Up Parameters. The Set Up a Parameter page opens.

Tasks

1. 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 select Create to create the parameter. See "Set up Parameters" for instruction on how to create this optional parameter.)

2. Select 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.

3. 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.

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).

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. Just select the link after the OWB Audit Execution ID on the control report. The Runtime Repository page opens.

Set up Email Notification (ODS and EDW)

You can configure the Administrative UI to send an email when a job is completed. To do this, set up the following system parameters (MTVPARM records):

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.

JOB NOTIFICATION

Internal Group	Internal Code 1	Internal Code 2	Internal Code Sequence	External Code	Description
JOB NOTIFICATION	EMAIL_ADMIN_URL			ADMIN URL	http://localhost/pls/ia/twbkwbis.p_wwwlogin
JOB NOTIFICATION	EMAIL_DOMAIN			SCHOOL.EDU	Email Domain
JOB NOTIFICATION	EMAIL_FROM_ADDRESS			IA_ADMIN@SCHOOL.EDU	Email From Address
JOB NOTIFICATION	EMAIL_LIST			YOU@SCHOOL.EDU	Your Name
JOB NOTIFICATION	EMAIL_SERVER			MAILHOST.SCHOOL.EDU	Email Server

Note: These parameters are not delivered. (You must create them. See the “Set up Parameters.”) Emails are only sent if all parameters (except the Administration URL) are set up. No email notification takes place until you set these parameters. Below are the defaults:

Parameter	Description
EMAIL_ADMIN_URL:	<p>The complete URL to connect to the Administration system. If this parameter is defined, the URL is included in the email message to make it easier for the recipient to log into the Administration system. The message contents are:</p> <p>Subject: <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.)</p> <p>Message: This job has completed. Check the Info Access Administration application for more details.</p> <p>Job Name: <Job Name> Job User: <Admin Username of account that ran the job> Job Number: <job number> <For jobs that run mappings:> Job Execution Time: Start of Mapping at (start time) Process completed at (end time) <If any errors occurred during the job, they are listed next as follows:> Error Details: Error</p> <p>(If the EMAIL_ADMIN_URL is defined:) Log in to the IA/Admin utility at: <Admin URL>. Optional.</p>
EMAIL_FROM_ADDRESS	<p>Email address in the From section of the email. This is typically a server address. By default, you only receive email 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.</p>
EMAIL_LIST:	<p>Email address to receive a job notification message for all Administration jobs that complete. Create one parameter for each recipient address. Required</p>
EMAIL_SERVER	<p>The machine name of your SMTP server machine. Required</p>

Freeze Data Maintenance (ODS)

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).

The ODS is designed to freeze 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 'Freeze a Single ODS Table/View' and 'Freeze Multiple ODS Tables/Views').

Use the Freeze Data Maintenance Option to:

- Set up Freeze Data list
- Add additional tables to existing freeze lists
- Review events in existing freeze tables

Set up Freeze Data Lists

A Freeze List is what the ODS calls for one or more tables/views that have related data to be frozen at the same time. The freeze process will select data from the source table/view, create a table with the 'history' name supplied, and copy (freeze) the selected source data into the history table. By default all the columns from the source table will be copied to the freeze table. Use the 'Select Columns' link 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.

Note: It is recommended that your institution have a naming convention in place for freeze lists and freeze tables

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').

Note: Do *not* include the actual word WHERE in the condition. It is assumed.

Navigation

1. Select Information Access Options.
2. Select Freeze Data Maintenance. The Set Up Freeze Data Lists page opens.

Tasks

1. Select 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/Button	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	<p>Opens a window of existing freeze columns. Select the column(s) to freeze or not freeze, then select the corresponding arrows to move them to the appropriate box.</p> <ul style="list-style-type: none"> • Select a single arrow to move one column. • Select a multi-arrow to move all columns. • Hold down the Ctrl key while selecting to move a few columns.
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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. Select Save.

Add a Table/View to a 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.

- Select the freeze list called STUDENT_COURSE_REGDATA from the drop down list.
- Select the Add another Table link.
- Select 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..

Navigation

1. Select Information Access Options.
2. Select Freeze Data Maintenance. The Set Up Freeze Data Lists page opens.

Tasks

1. Choose the freeze list you want to modify from the drop-down list on the Set Up Freeze Data Lists page.
2. Select Search. The Select a Freeze Data Table page opens displaying the freeze tables associated with the displayed freeze list.
3. Select the link in the **Source Name** column for the tables/views you want to add. The Update an Existing Freeze Data Table page opens.
4. Select the Add Another Table link. The Create a Freeze Data Table page opens.

The links on this page are described below:

Link/Button	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	<p>Opens a window of existing freeze columns. Select the column(s) to freeze or not freeze, then select the corresponding arrows to move them to the appropriate box.</p> <ul style="list-style-type: none"> • Select a single arrow to move one column. • Select a multi-arrow to move all columns. • Hold down the Ctrl key while selecting/deselecting to move a multiple columns. <p>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.</p>

5. Enter the new list name, source name and freeze table name.
6. *(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'`.
7. Select Save.
8. Select Add Another Table to add another table to your list.

Delete, Rename or Duplicate Freeze Data

Follow the steps below to delete, rename, or duplicate freeze data list.

Navigation

1. Select Information Access Options from the Information Access Administrative menu.
2. Select Freeze Data Maintenance. The Set Up Freeze Data Lists page opens.

Tasks

1. Select the Freeze List you want to modify from the drop-down list on the Set Up Freeze Data Lists page.
2. Select 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/Button	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 select Rename. Tables of frozen data will not be renamed.
Duplicate Freeze List	Displays the Duplicate a Freeze List window. Enter the new name, then select Duplicate. None of the history tables are duplicated.

3. (optional) Check the **Show Event Names** checkbox to indicate whether to display the event within each table. An extra column of names displays.

Note: You select 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 ODS Table/View

You can freeze a single table using the Schedule a Process>Freeze a Single ODS Table option. Follow the steps below:

Navigation

1. From the Information Access Administrative menu, select Information Access Options.
2. Select Schedule a Process. The Select a Process page opens.

Tasks

1. Select Freeze A Single ODS Table/View from the Select a Process page.
2. Enter the required process parameters.
 - (a) Type the name of a table/view into the **Enter Table to Freeze** field.
 - (b) Type the new (history) table name into the **Enter Table Name to Freeze to** field. (Follow your history table naming conventions.)
3. Enter the required scheduling parameters.
 - (a) Enter a **Run Date** (format dd-mon-yyyy) and **Runtime** (format hh24:mi:ss).
 - (b) 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 “Update or Freeze Recurring ODS Data” for more details on setting the Interval.
4. Select 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 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 “Freeze Data Maintenance (ODS)” for instructions on how to define a list of freeze tables.

Follow the steps below to freeze multiple tables/views:

Navigation

1. From the Information Access Administrative menu, select the Information Access Options.
2. Select Schedule a Process. The Select a Subprocess page opens.

Tasks

1. Select Freeze Multiple ODS Tables/Views from the Select a Process page.

All freeze data lists defined within Freeze Data Maintenance display.
2. Select the freeze data list. The Schedule a Process page opens.
3. From the **Event Handling** drop-down list, select whether you want to replace, insert(add), or delete existing events from the tables in the freeze data list.

4. Choose an event to capture. The system tags the information extracted during this process with the event code you select.

Note: You have to select 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.

5. 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 “Update or Freeze Recurring ODS Data” for more details on setting the Interval.

6. Select 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 ODS Data

You'll need to refresh the data in your ODS on a regular basis to keep it synchronized with data in your administrative system. You may also want to freeze portions of 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 the ODS data.

Update the ODS Daily

It is recommended that the 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 the 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 the 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.

Note: Refer to your Oracle documentation for more information on setting job intervals.

<i>Run job</i>	<i>Interval Value</i>
Daily	<i>SYSDATE+1</i>
Hourly	<i>SYSDATE + 1/24</i>
Weekly (every 7 days)	<i>SYSDATE + 7</i>
Every day at 12:00 midnight	<i>TRUNC(SYSDATE + 1)</i>
Every day at 8:00 a.m.	<i>TRUNC(SYSDATE + 1) + 8/24</i>

<i>Run job</i>	<i>Interval Value</i>
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.	$TRUNC(ADD_MONTHS(SYSDATE + 2/24, 3), 'Q') - 1/24$
Every Monday, Wednesday, and Friday at 9:00 a.m.	$TRUNC(LEAST(NEXT_DAY(SYSDATE, MONDAY), NEXT_DAY(SYSDATE, WEDNESDAY), NEXT_DAY(SYSDATE, FRIDAY))) + 9/24$

Information Access Meta Data (ODS and EDW)

Meta data is often explained as 'data about data'. Essentially, meta data is information, or characteristics, about data entities such as a column name, description, format, length, origin and destination.

Meta data in the ODS and EDW tell what data columns are in the ODS and EDW, 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.)

Think of data as facts or instructions recorded on a storage medium for communication, retrieval, processing, or presentation. Think of information as data that human beings assimilate and evaluate to solve problems or make decisions. The example below combines data, information and meta data together to help you more fully understand meta data:

Example:

The numbers 8002237036 are data. Without putting them in context, you have no way of knowing that this is the SunGard Higher Education telephone number. If someone asked "What is SunGard Higher Education's 800 number?" and the response was 800-223-7036, then suddenly, this data would become information.

In the example above, information and characteristics about that information was put into context. This is the role that meta data plays. It combines data and information about the data to become meta data.

The ODS and EDW store information about the source and target of the data. This is meta data. The Administrative UI meta data pages also include reports that show

the relationship between the data stored in the ODS and EDW (target) and the source from which it is extracted.

Note: The meta data includes ODS reporting views and source composite views, both with the original source tables and source column names. The 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 ODS reporting should *not* use the Object:Access views.

The EDW meta data includes fact tables, dimension tables, and stars.

The following navigation links and buttons display throughout the Administrative UI meta data pages:

<i>This Link/Button ...</i>	<i>Does this ...</i>
<-	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.

<i>This Link/Button ...</i>	<i>Does this ...</i>
Select	<p><i>From the Subject Area:</i></p> <p>Opens the Select A Subject Area window.</p> <p>Select the Target or Source radio group and select Reporting View or Composite View radio group to indicate the report type with which you want to work.</p> <p>Choose the new subject area with which you want to work. The window closes automatically.</p> <p><i>From the Reporting or Composite View:</i></p> <p>Opens the Select A Target window.</p> <p>Select the reporting or composite view with which you wish to work. The window closes automatically.</p> <p><i>From the Reporting or Composite View Column:</i></p> <p>Opens the Select a Target Column or Select a Source Column window.</p> <p>To have the columns listed alphabetically, select the Sort By: Column Name radio group. To have the columns listed in column order, select the Sort By: Column Order radio group. Select the column with which you wish to work. The window closes automatically.</p>
Add Target	Adds a target view. The Target window opens.
Add Source	Adds a source view. The Source window opens.
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 ODS Reporting Views	Displays the reporting views for the selected subject area.

<i>This Link/Button ...</i>	<i>Does this ...</i>
Preview	Save, then select Preview to review your changes. Do not select this link then use the back button. Or select Preview to review the list of all reporting or composite views within a subject area or a list of all source or target columns within a view
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 select 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. Select 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.
Save Changes	Records your changes.
Select Another Maintenance Function	Returns to the Maintain ODS and EDW 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 the ODS and EDW are 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

Meta Data Publish Preferences 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.

Navigation

1. Select Preferences & Security from the Information Access Administrative menu. The Preferences & Security menu opens.
2. Select Institutional Preferences. The Set Up ODS or EDW Publishing Options menu opens.
3. Select ODS or EDW Publishing Preferences. The Set Up Meta Data Publish Preference page opens.

Tasks

1. In the ODS or EDW 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.
2. Select the color in which you want your report rows and local meta data information to appear.

Note: Colors appear institution-wide. They are not personal colors.

3. Indicate whether reports should appear in column or name order.

4. Select Save to keep your changes.

Meta Data Parameter Set up for Publishing Reports

Meta data reports list the columns used in the ODS and EDW. The meta data reports are created as static HTML pages, from the Administrative UI or from the command line. The process of creating the HTML pages is call ‘publishing’. (See “Publish Meta Data” for additional information on publishing meta data reports from the command line.) There are system parameters that must be configured when the ODS and EDW are 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.

You need to specify the initialization parameter UTL_FILE_DIR within the init.ora file for the ODS and EDW instance. This UTL_FILE_DIR parameter defines 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 the ODS and EDW 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

Navigation

1. Select Information Access Options from the Information Access Administrative UI menu. The Information Access Options menu opens.
2. Select Set Up Parameters. The Set Up a Parameter page opens.

Tasks

1. In the Show all Internal Groups drop-down list on the Set Up a Parameter page, select *METADATA*.
2. Select Search. The Select an Existing Parameter page opens.
3. Look for the PUBLISH_LOCATION, VIEW_URL, or COPY_SCRIPT parameter in the **Internal Code 2** column.
4. Select the corresponding link in the **Description** column. The Update an Existing Parameter page opens.
5. The link for the selected parameter appears in the **Description** field, as follows:

<i>For parameter ...</i>	<i>Change to this Directory or Server Location ...</i>
PUBLISH_LOCATION	UTL_FILE_DIR location
VIEW_URL	Web server location where published files are located
COPY_SCRIPT	Script used to move HTML pages from the database server to the the application Web server.

Tip:
On the Update page, you can only change the **External Code** and **Description** fields. But, if you select the **Duplicate** button 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). Select the **Back** button (twice), then select **Delete**.

Note: If the Web server is running on the ODS and EDW machine, set up the UTL_FILE_DIR location (for output of generated pages) to be the same as the the explicit path for the meta data subdirectory under the Web server document root. The PUBLISH_LOCATION would be set to the same thing. There is no change in the way the VIEW_URL parameter is set. It would be set to a relative path (the metadata subdirectory of the document root) as before. This saves copying the files each time they are published.

Edit Target Meta Data Properties

Follow the steps below to change the properties of your target meta data.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Target(s)** radio group.
3. Select 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.

4. Select the reporting or composite view whose properties you want to change. The View Target Report page opens.
5. Select the Properties link located to the right of the reporting/composite view name. The Edit Target Properties page opens.
6. Make your changes.
7. Select 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.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Target(s)** radio group.
3. Select 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.

4. Select the Add Target link. The Add Target window opens.
5. Enter the new target name.
6. Select Add Target to save the new view. The View Target Report page opens displaying the new target reporting or composite name.
7. Select the Add Target Column link to add columns to the view. The Add a New Column window opens.
8. Enter the new information, then select 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.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Target(s)** radio group.
3. Select 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.

4. Select the reporting or composite view you want to change. The View Target Report page opens.
5. Select the Target Column you want to change. The Edit Target Columns page opens.
6. Enter your changes. Select Save Changes to keep your changes.

Delete Local Target Properties

Follow the steps below to delete local target properties:

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Target(s)** radio group.
3. Select 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.

4. Select the reporting or composite view whose target properties you want to delete. The View Target Report page opens.
5. Select the Delete link. A message window appears.
6. Select 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.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Target(s)** radio group.
3. Select 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.

4. Select the reporting or composite view whose columns you want to delete. The View Target Report page opens.
5. Select the target column you want to delete. The Edit Target Column page opens.
6. Select the Delete Local link. A message window appears.
7. Select 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 Information Access Definitions page.

Edit Source Meta Data Properties

Follow the steps below to change the properties of your source meta data.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page. The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Source(s)** radio group.
3. Select the subject area you want to view. The window closes automatically.

Note: Check the **Show locally modified sources only** checkbox to display local target views only.

4. Select the Source Name whose properties you want to change. The View Source Report page opens.
5. Select the Properties link located to the right of the source name. The Edit Source Properties page opens.
6. Make your changes.
7. Select 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

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link from the View Target Report List page. The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Source(s)** radio group.
3. Select 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.

4. Select the Add Source link. The Add Source window opens.
5. Enter the new source name. Select Add Source to save the new name. The View Source Report page opens displaying the new source name.
6. Select the Add Source Column link to add columns to the source. The Add a New Column window opens.
7. Enter the new column information, then select 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.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page . The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Source(s)** radio group.
3. Select 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.

4. Select the source name you want to change. The View Source Report page opens.

5. Select the source column you want to change. The Edit Source Columns page opens.
6. Enter your changes. Select Save Changes to keep your changes.

Delete Local Source Properties

Follow the steps below to delete local source properties:

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page . The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Source(s)** radio group.
3. Select the subject area you want to view. The window closes automatically.

Note: Check the **Show locally modified sources only** checkbox to display local target views only.

4. Select the source name whose source properties you want to delete. The View Source Report page opens.
5. Select the Delete link. A message window appears.
6. Select 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.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page. The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Source(s)** radio group.
3. Select the subject area you want to view. The window closes automatically.

Note: Check the **Show locally modified sources only** checkbox to display local target views only.

4. Select the Source Name whose columns you want to delete. The View Source Report page opens.
5. Select the source column you want to delete. The Edit Source Column page opens.
6. Select the Delete Local link. A message window appears.
7. Select 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:

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page. The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Source(s)** radio group.
3. Select 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.

4. Select the reporting view to map. The View Target Report page opens.
5. Select the target column you want to map. The Edit Target Columns page opens.
6. *To Add:*
Select the Add Local Mapping link at the bottom of the web page. The Add a Source Mapping window opens. (Continue to the next step below.)
7. Enter the source subject area, table and column (required fields). Or, search for them using the corresponding links. Select the table or column from the drop-down list associated with that link.
8. Select Add Mapping to save the newly mapped meta data.

To Delete:

Select the Delete Local Mapping link at the bottom of the web page. Select OK to delete the local mapping.

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.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page. The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Target(s)** or **Source(s)** radio group.
3. Select the subject area you want to view. The window closes automatically.

Note: Check the **Show locally modified targets (or sources) only** checkbox to display local target (or source) views only.

4. Select the Import button located at the top right side of the web page. The Select a View window opens.
5. Select one or more views to import.

To select more than one view, select the first view, then hold down the Ctrl key while selecting the remaining views.

6. Select 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.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select the <- or -> link.

1. Select the Select link on the View Target Report List page. The Select A Subject Area window opens.
2. Select either the **Reporting View(s)** or **Composite View(s)** radio group. Then, select the **Target(s)** or **Source(s)** radio group.
3. Select 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.

4. To export all reporting or composite views in a subject area, select the CSV Export button located at the top right side of the View Target (or Source) Report List page.
5. 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. Select **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, as a result, a meta data report is created. This section describes the methods of publishing meta data.

You can publish meta data for some or all sources and targets. Once a meta data report is published, it can be stored on a server accessible to reporting users. This enables them to easily view the relationships between the ODS and EDW columns and their sources.

Meta data is published from the Administrative UI, or from the command line outside the Administrative UI.

Note: If the web server is not on the ODS and EDW machine, the files need to be copied to the web server after publishing.

Below are the two ways to publish meta data from the Maintain Information Access pages of the Administrative UI:

- Publish all meta data reports for one subject area of information, for example, all Student or Finance related meta data.
- Publish a meta data report for one table or view, for example, the PERSON reporting view in the ODS and EDW.

Below are two ways to publish all meta data reports for all subject areas:

- Publish all meta data reports for all subject areas of information from the Administrative UI. Use the Schedule a Process web page from the Information Access Options menu to schedule a batch process that publishes all the meta data reports.
- Publish all meta data reports from the command line outside the Administrative UI. A sample script, PUBLISH.SQL, is provided in the dbscripts/utility_scripts folder.

Publish Meta Data for an Entire Subject Area

Follow the steps below to publish meta data for an entire subject area (Student, Finance, etc.).

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select <- or ->.

Check the **Show locally modified targets only** checkbox to display local target views only.

1. Select the Select link on the View Target Report List page. The Select A Subject Area window opens.
2. Select the **Target(s)** radio group.

3. Select the subject you want to view. The window closes automatically.
4. Select the Publish button located at the top right side of the web page.
5. Select 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.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative UI menu.
2. Select Maintain ODS or EDW Meta Data. The View Target Report List page opens.

Tasks

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, select <- or ->.

Check the **Show locally modified targets only** checkbox to display local target views only.

1. Select the Select link on the View Target Report List page. The Select A Subject Area window opens.
2. Select the **Target(s)** radio group.
3. Select the subject you want to view. The window closes automatically.
4. Select the reporting view whose meta data you want to preview or publish.
5. Select 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.
6. Select the Publish button 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

Note: Baseline meta data reports are provided when your solution is installed, so 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 “Schedule a Process” section. You should select the Publish Info Access 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 the ODS or EDW 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 the ODS or EDW reporting view (or composite view).

Reporting View Meta Data

Use the following steps to view a published reporting view meta data report.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative menu.
2. Select Operational Data Store or Enterprise Data Warehouse. The Operational Data Store or Enterprise Data Warehouse Reporting View Meta Data Reports page opens.

Tasks

1. Select a subject area from the Operational Data Store or Enterprise Data Warehouse Reporting View Meta Data Reports page. The Reporting View Meta Data Reports page opens.
2. Select a reporting view. The selected report displays.

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

ODS and EDW composite view meta data is also available as published meta data. Use the following steps to view published composite view meta data reports.

Navigation

1. Select Information Access Meta Data from the Information Access Administrative menu.
2. Select Operational Data Store or Enterprise Data Warehouse. The Operational Data Store or Enterprise Data Warehouse Reporting View Meta Data Reports page opens.

Tasks

1. Select the ODS or EDW Composite View Meta Data Reports link located in the top right-hand corner of the Operational Data Store or Enterprise Data Warehouse Reporting View Meta Data Reports page. The Operational Data Store or Enterprise Data Warehouse Composite View Meta Data Reports page opens.
2. Select the subject area. The Composite View Meta Data Reports page opens listing the view name and description.
3. To view the column details associated with the selected composite view, select 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.

The Information Access, 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 an Information Access "Warehouse Meta Data Table." In addition, there is a public synonym for each table that simply removes the "WMT_" prefix.

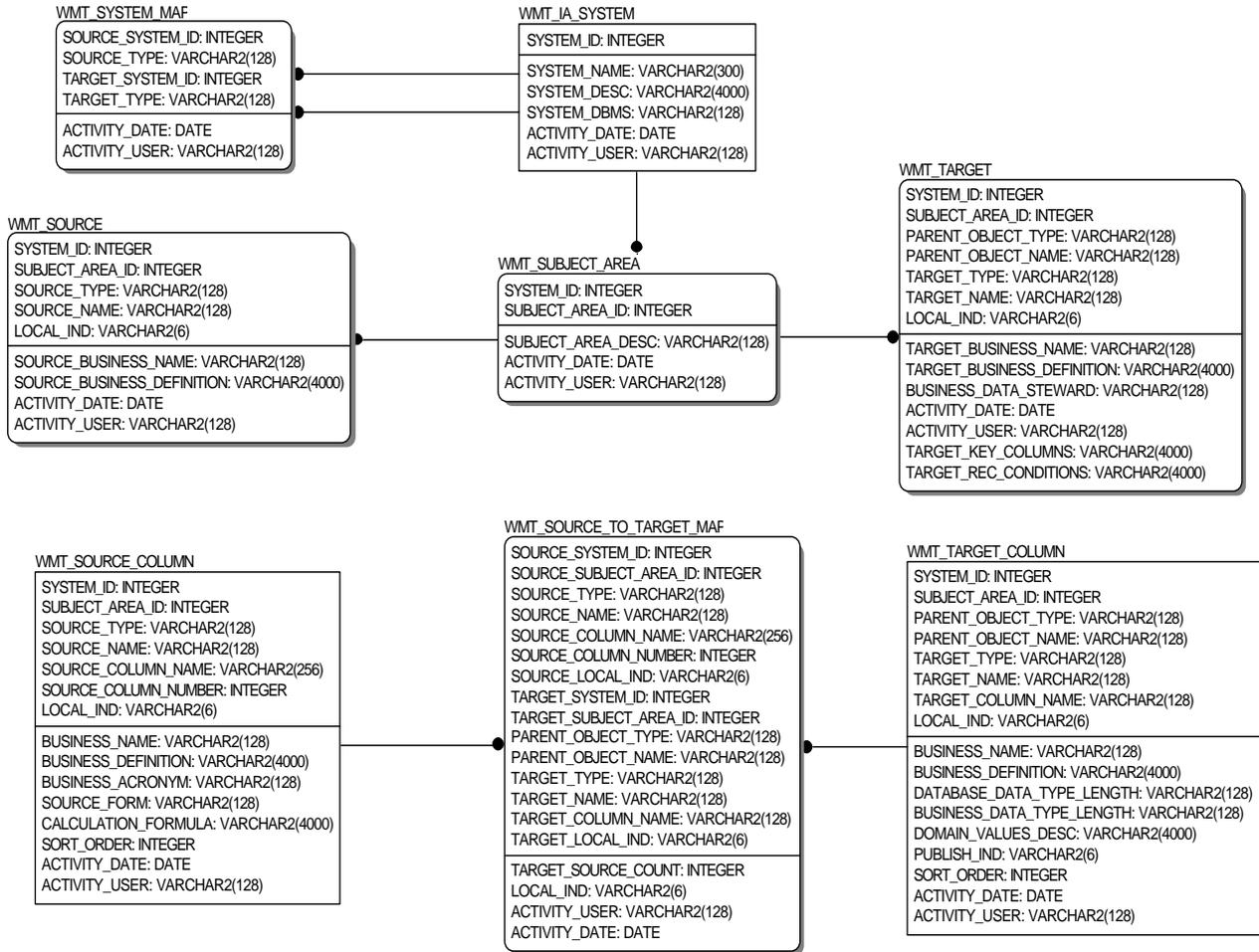
The meta data tables and views that make up the metamodel illustrate the different pieces of meta data available, and how they relate to each object type. The object types are the reporting views and the source tables.

<i>Meta Data Table Name</i>	<i>Synonym</i>
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
WMT_TARGET
WMT_TARGET_COLUMN

SYSTEM_MAP
TARGET
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.

ODS and EDW Meta Data Object Types

Information exists in the meta data layer for the following types of objects:

Field	Description
Target View	ODS or EDW reporting views that join related information from the ODS and EDW 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 the ODS and EDW. <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 the ODS and EDW.

EDW Meta Data Object Types

Meta data information exists for the following types of objects:

Field	Description
Target Table	EDW fact and dimension tables that represent the data from the ODS or EDW reformatted into star schema.
Source View	Reporting views in the ODS and EDW

Source Meta Data Tables

The following meta data tables store information about the source of the ODS and EDW data. In the ODS and EDW, this is meta data about the source systems.

Source Table (WMT_SOURCE)

Column	Description
SYSTEM_ID	Unique ID for the source system.

Column	Description
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.
LOCAL_IND	Indicates whether the row is a local or baseline version.
ACTIVITY_DATE	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_COLUMN_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.

Column	Description
SOURCE_COLUMN_NUMBER	Distinguishes between source columns that have the same names.
LOCAL_IND	Indicates whether the row is a local or baseline version.
BUSINESS_NAME	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.
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 the ODS and EDW data, the ODS and EDW reporting views or EDW stars, fact, and fact or dimension tables.

Target Table (WMT_TARGET)

Column	Description
SYSTEM_ID	Unique ID for the ODS and EDW.
SUBJECT_AREA_ID	Unique ID for the subject area.

Column	Description
PARENT_OBJECT_TYPE	This column is used in the EDW only. In the case of the EDW, the parent object type is STAR. Not used in the ODS.
PARENT_OBJECT_NAME	This column is used in the EDW only. In the EDW, this identifies the star to which the target belongs.
TARGET_TYPE	Stores whether this is an ODS and EDW table or view. Currently, reporting and composite view information is available. Sample values for the ODS and EDW 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_NAME	Target descriptive name.
TARGET_BUSINESS_DEFINITION	Target business purpose.
BUSINESS_DATA_STEWARD	Person or department responsible for the data in the target.
LOCAL_IND	Indicates whether the row is a local or baseline versions.
ACTIVITY_DATE	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_CONDITIONS	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 the ODS and EDW.
SUBJECT_AREA_ID	Unique ID for the subject area.
PARENT_OBJECT_TYPE	This column is used in the EDW only. In the EDW, the parent object type is STAR.
PARENT_OBJECT_NAME	This column is used in the EDW only. In the EDW, this identifies the star to which the target belongs.
TARGET_TYPE	Stores whether this is an ODS and EDW table or view. Currently, reporting view information is available. Sample values for the ODS and EDW 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_COLUMN_NAME	Target column name.
LOCAL_IND	Indicates whether the row is a local or baseline version.
BUSINESS_NAME	Descriptive name for the column in the target.
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_DATA_TYPE_LENGTH	Comes from the relational database data dictionary in the ODS and EDW. 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.

Column	Description
BUSINESS_DATA_TYPE_LENGTH	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. <i>Example</i> 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_VALUES_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_DATE	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 the ODS and EDW.

Information Access System Table (WMT_IA_SYSTEM)

Column	Description
SYSTEM_ID	Unique ID for a system.
SYSTEM_NAME	Administrative source or Information Access solution system name.

Column	Description
SYSTEM_DESC	Administrative source or Information Access solution system description.
SYSTEM_DBMS	Database management system software, Oracle for example, used to implement the source or target system.
ACTIVITY_DATE	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_SYSTEM_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_SYSTEM_ID	ODS and EDW unique ID.
TARGET_TYPE	Stores whether this is an ODS and EDW table or view. Currently, reporting and composite view information is available. Sample values for the ODS and EDW are REPORTING VIEW and COMPOSITE VIEW. Sample values for the EDW are DIMENSION TABLE, FACT TABLE, and STAR.

Column	Description
ACTIVITY_DATE	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_SYSTEM_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_COLUMN_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_COLUMN_NUMBER	Distinguishes between source columns that have the same names.
SOURCE_LOCAL_IND	Indicates whether the row is a local or baseline version.
TARGET_SYSTEM_ID	ODS and EDW unique ID.
TARGET_SUBJECT_AREA_ID	Subject area unique ID.
PARENT_OBJECT_TYPE	This column is used in the EDW only. In the EDW, the parent object type is STAR.

Column	Description
PARENT_OBJECT_NAME	This column is used in the EDW only. In the EDW, this identifies the star to which the target belongs.
TARGET_TYPE	Stores whether this is an ODS and EDW table or view. Currently, reporting and composite view information is available. Sample values for the ODS and EDW 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_COLUMN_NAME	Column name in the target reporting view.
TARGET_LOCAL_IND	Indicates whether the row is a local or baseline version.
TARGET_SOURCE_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_DATE	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 Name	Description
WMV_SOURCE	Lists all information associated with sources and source columns.
WMV_SOURCE_TO_TARGET_MAP	Lists all information associated with sources, targets, and source and target columns.

View Name	Description
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 the ODS and EDW reporting views provide access to the data in the ODS and EDW tables.

Source Meta Data View (WMV_SOURCE)

Column	Description
SYSTEM_NAME	Administrative source or Information Access solution system name.
SYSTEM_DESC	Administrative source or Information Access 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_COLUMN_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.

Column	Description
SORT_ORDER	Column order in the table or view. It is determined by numbering the columns in alphabetical order.
BUSINESS_NAME	Column name in the source.
BUSINESS_ACRO NYM	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)

Column	Description
TARGET_SYSTEM _NAME	Information Access Solution system name.
TARGET_SYSTEM _DESC	Information Access Solution system description.
TARGET_ SUBJECT_AREA_ DESC	Advancement, Student or Human Resources, for example.
PARENT_OBJECT _TYPE	This column is used in the EDW only. In the case of the EDW, the parent object type is STAR.
PARENT_OBJECT _NAME	This column is used in the EDW only. In the case of the EDW this identifies the star to which the target belongs.
TARGET_TYPE	Stores whether this is an ODS and EDW table or view. Currently Reporting Views information is available. A sample value for the ODS and EDW is REPORTING VIEW. Sample values for the EDW are DIMENSION TABLE, FACT TABLE and STAR.
TARGET_NAME	Table or view name.

Column	Description
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	Target column name.
TARGET_COLUMN _BUSINESS_ NAME	Target column descriptive name.
TARGET_COLUMN _BUSINESS_DEF	Target column description in business terms. This is the comment on column in the relational database data dictionary in your target system.
DATABASE_DATA _TYPE_LENGTH	Comes from the relational database data dictionary in the ODS and EDW. 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_DATA _TYPE_LENGTH	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.
<p><i>Example:</i></p> <p>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.</p>	
DOMAIN_VALUES _DESC	Description of the valid values that a column can contain. It could be a list of codes and code descriptions.

Column	Description
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_SYSTEM_NAME	Information Access Solution system name.
SOURCE_SYSTEM_DESC	Information Access 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.
SOURCE_BUSINESS_NAME	Source descriptive name.
SOURCE_BUSINESS_DEFINITION	Business purpose of the source.
SOURCE_COLUMN_NAME	Source column name from the source, if the source is a table or view. Function name if the source is a function.
SOURCE_COLUMN_BUSINESS_NAME	Column in the source descriptive name.
SOURCE_COLUMN_BUSINESS_DEF	Source column described in business terms.

Column	Description
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)

Column	Description
SYSTEM_NAME	Administrative source or Information Access solution system name.
SYSTEM_DESC	Administrative source or Information Access solution system description.
SUBJECT_AREA_DESC	Advancement, Student or Human Resources, for example.
PARENT_OBJECT_TYPE	This column is used in the EDW only. In the case of the EDW, the parent object type is STAR.
PARENT_OBJECT_NAME	This column is used in the EDW only. In the case of the EDW this identifies the star to which the target belongs.
TARGET_TYPE	Stores whether this is an ODS and EDW table or view. Currently, Reporting and Composite View information is available. Sample values for the ODS and EDW are REPORTING VIEW and COMPOSITE VIEW. Sample values for the EDW are DIMENSION TABLE, FACT TABLE, and STAR.

Column	Description
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_NAME	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_DATA_TYPE_LENGTH	Comes from the relational database data dictionary in the ODS and EDW. 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_DATA_TYPE_LENGTH	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.
	<i>Example:</i> 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_VALUES_DESC	Description of the valid values that a column can contain. It could be a list of codes and code descriptions.

Column	Description
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.

WebTailor Administration

The Enterprise Information Access Administrative application uses SunGard Higher Education's WebTailor application to build its look and feel. WebTailor delivers customizable global Web rule definitions and procedures, customizable menus, menu items, graphics and text definitions.

From the Information Access Administrative Tool, use the WebTailor Administration menu item to access the WebTailor options. The tasks under this menu item allow you to customize various aspects of the Information Access Administrative Tool. Other sections of this chapter include references to the various WebTailor options that you may want to customize. To learn more about WebTailor, refer to the "WebTailor User Guide."

Functions

WebTailor 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. WebTailor delivers customizable global web rule definitions and procedures, customizable menus, menu items, graphics and text definitions.

The WebTailor functions are available from the WebTailor 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
- WebTailor Parameters
- Graphic Elements
- Login Return Location
- WebTailor 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, WebTailor 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

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

WebTailor Parameters

This function allows you to customize parameters used in WebTailor 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.

WebTailor 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 WebTailor 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 WebTailor 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.

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Chapter 4 Data Models (ODS)

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.

The Operational Data Store (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 ODS data model, reporting views are grouped into logical “business concepts” to better illustrate the various business uses or reporting opportunities within the 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 ODS, and illustrate business concepts within and across all ODS subject areas. However, this is not an inclusive representation as additional business concepts could be conceived and supported by the 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 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

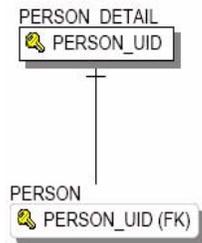
An example and description of each category is displayed below:

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.

One to Exactly One

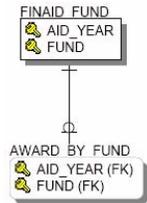
Each Person Detail has exactly one Person.



4 Data Models (ODS)
Entity Relationship Diagrams (ERD)

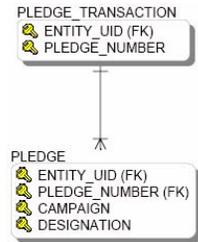
One to Zero or One

Each Finaid Fund has zero or one Award by Fund.



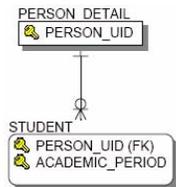
One to One or More

Each Pledge Transaction has one or more Pledges.



One to Zero, One or More

Each Person has zero, one, or more Students. This makes sense because a Student really represents a student for each academic period.



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

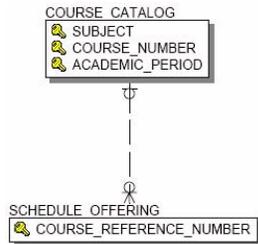
4 Data Models (ODS)

Entity Relationship Diagrams (ERD)

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.

Zero or One to Zero, One, or More

Each Course Catalog entry has zero, one or more Schedule Offerings. There may be a Schedule Offering without a Course Catalog entry.



Special Relationships

Special relationships are logical relationships that don't use foreign keys.

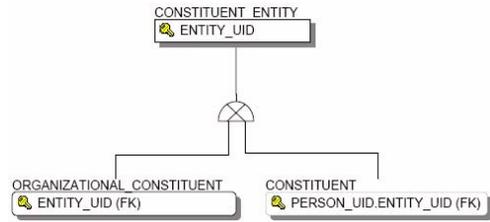
Many to Many



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.

4 Data Models (ODS)
Entity Relationship Diagrams (ERD)

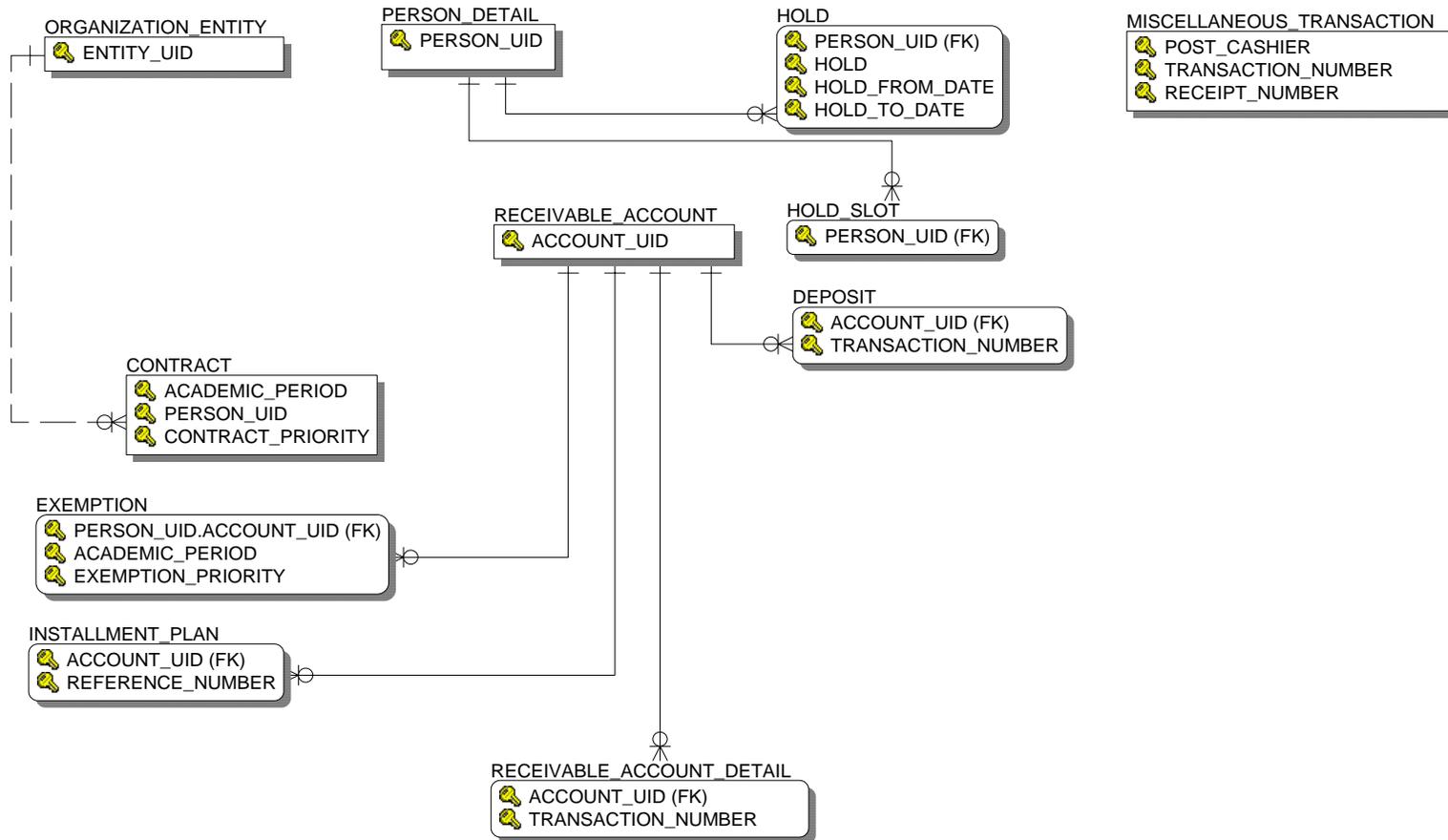
Subtype Relationships



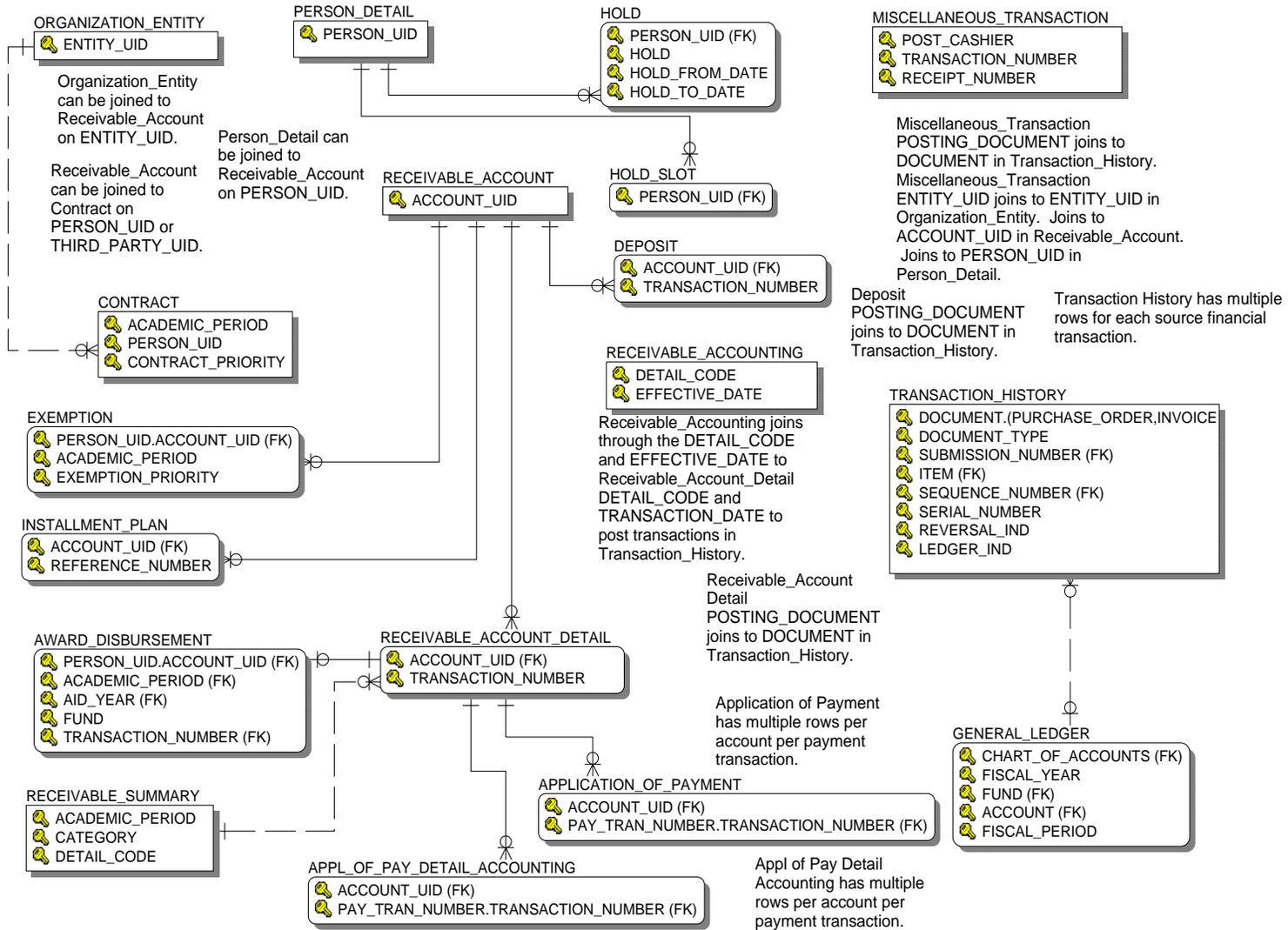
In an ERD, you can show that organizational constituents and constituents are part of a larger category, Constituent Entity, by creating a subtype relationship. A subtype relationship connects an entity that defines the category and two or more additional entities that define each of the elements of the category. The parent entity of the category is considered the supertype and each child entity is considered a subtype.

Accounts Receivable

Receivable Customer

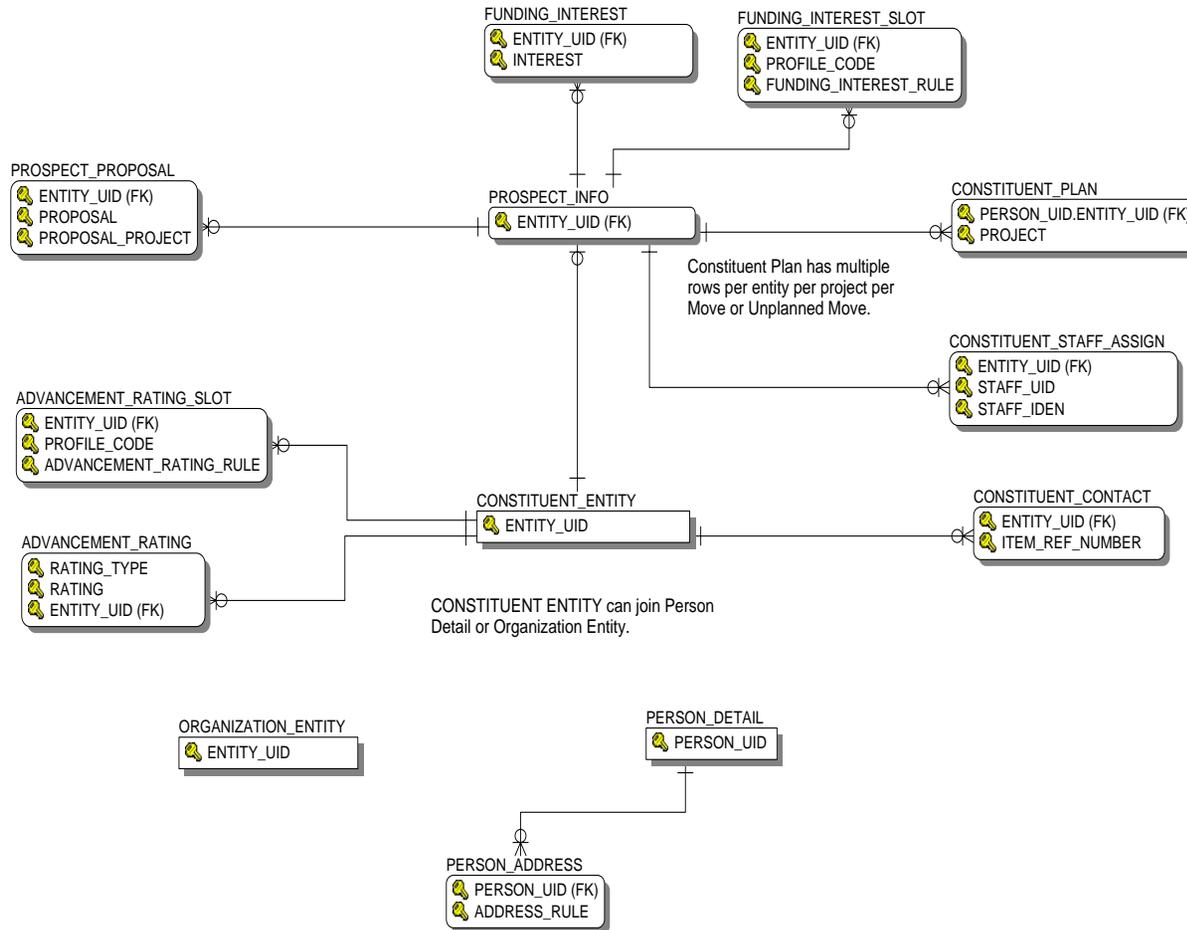


Receivable Revenue

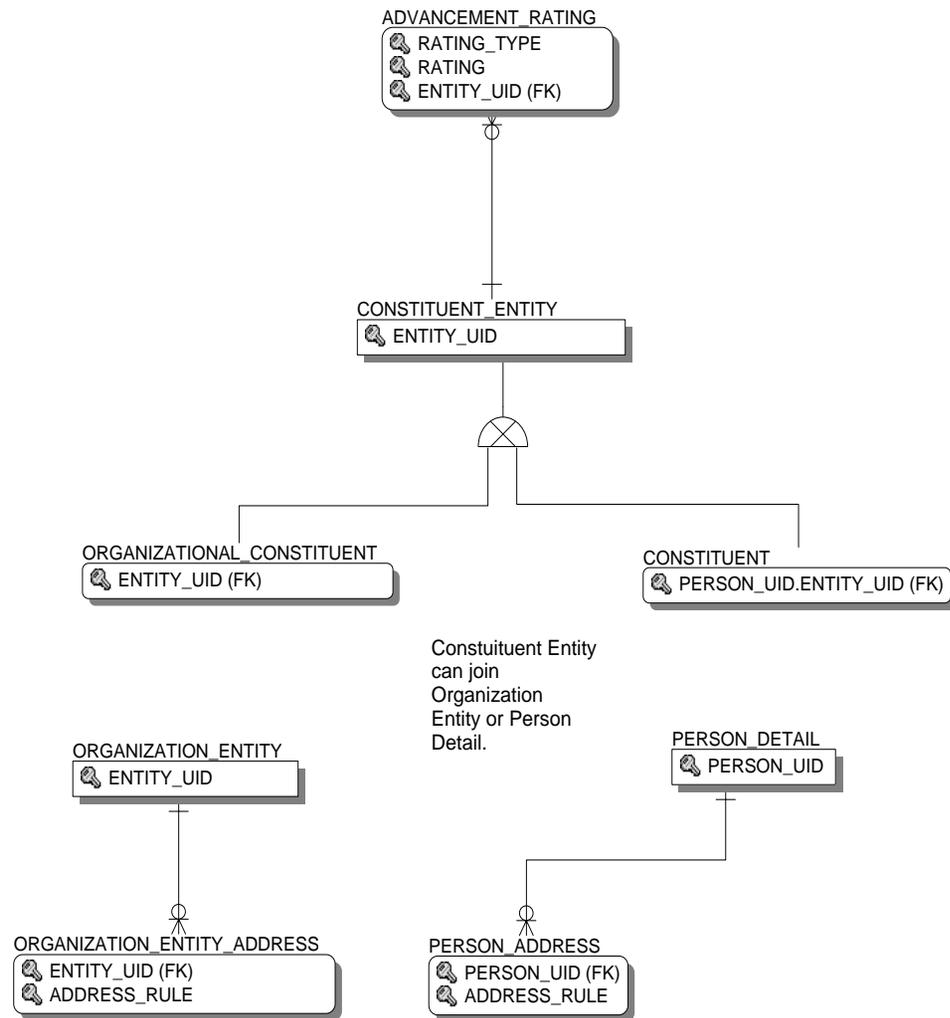


Advancement

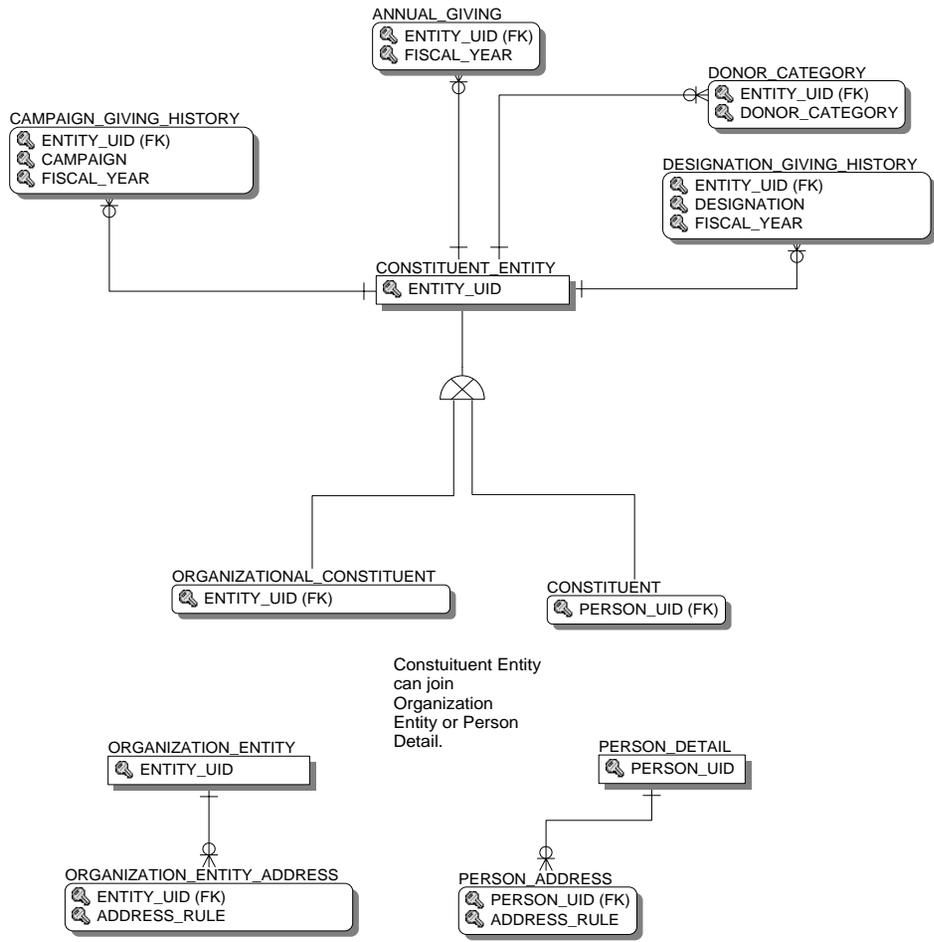
Advancement Prospect



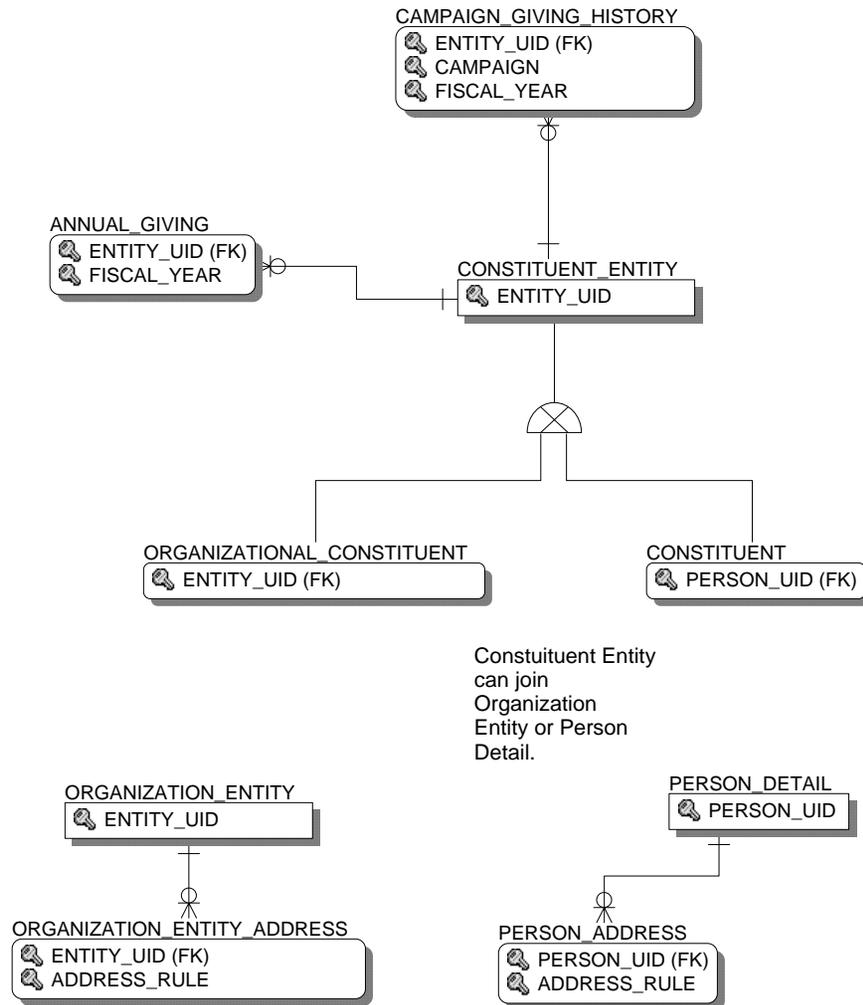
Advancement Rating



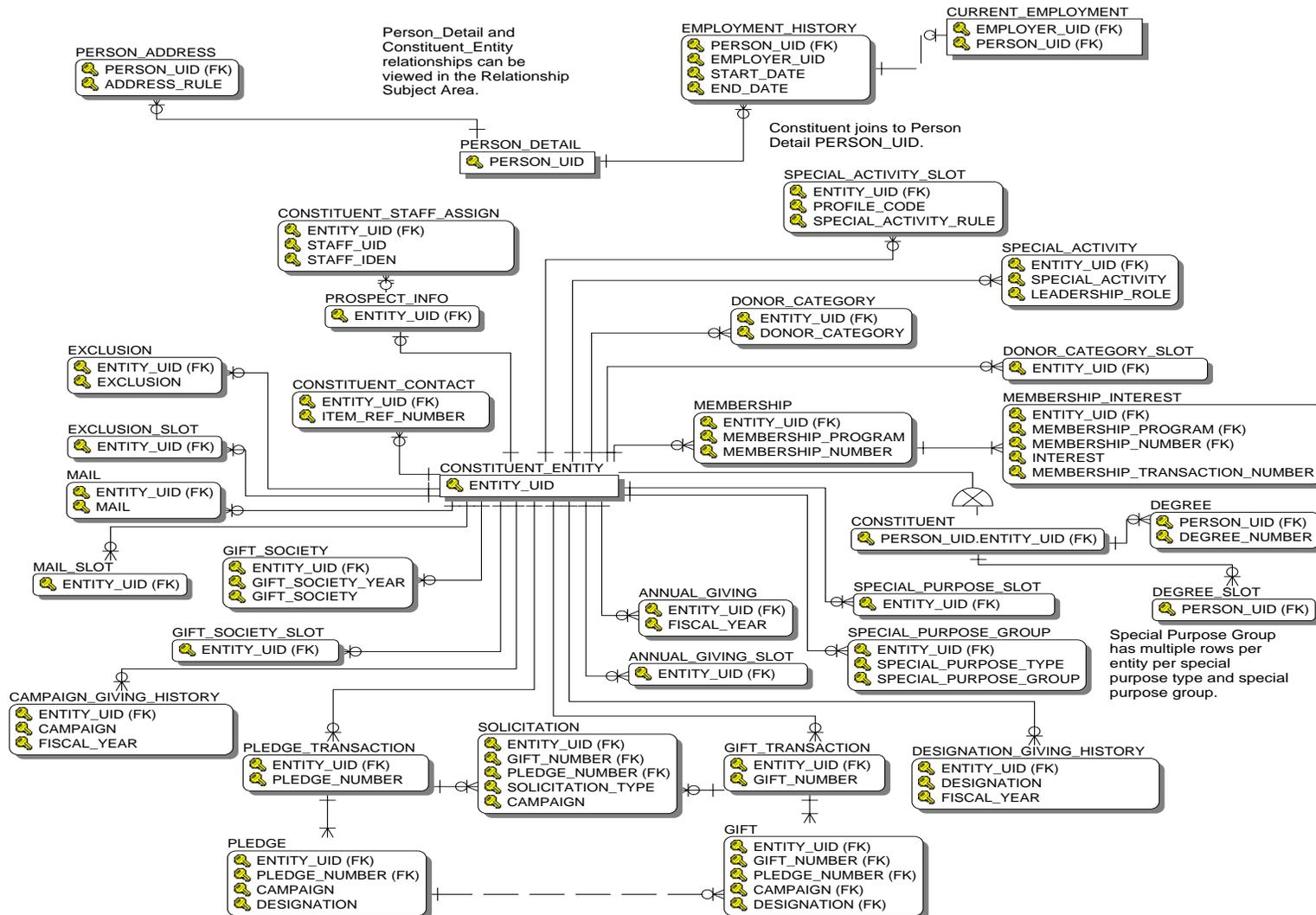
Annual Giving



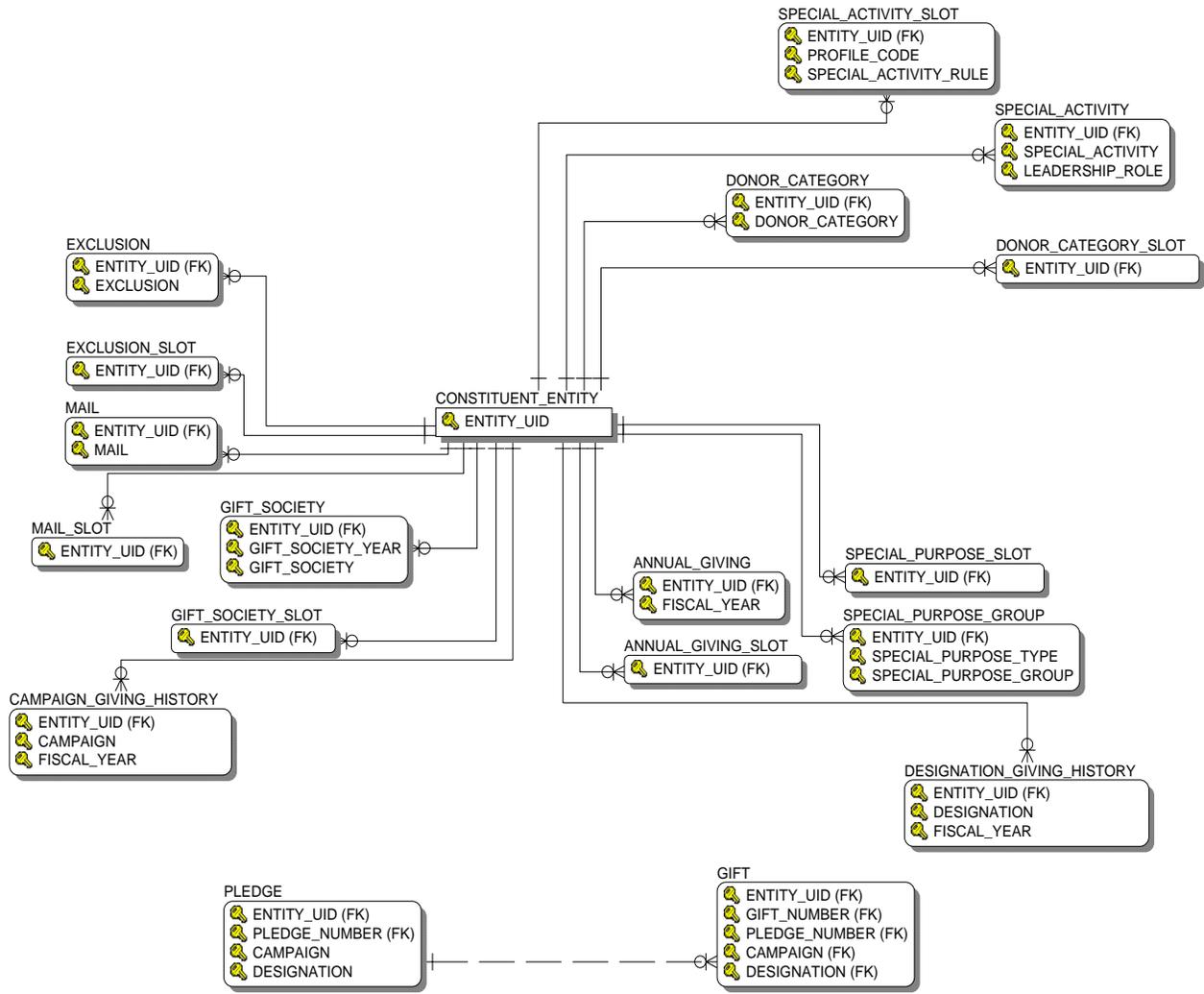
Campaign Giving History



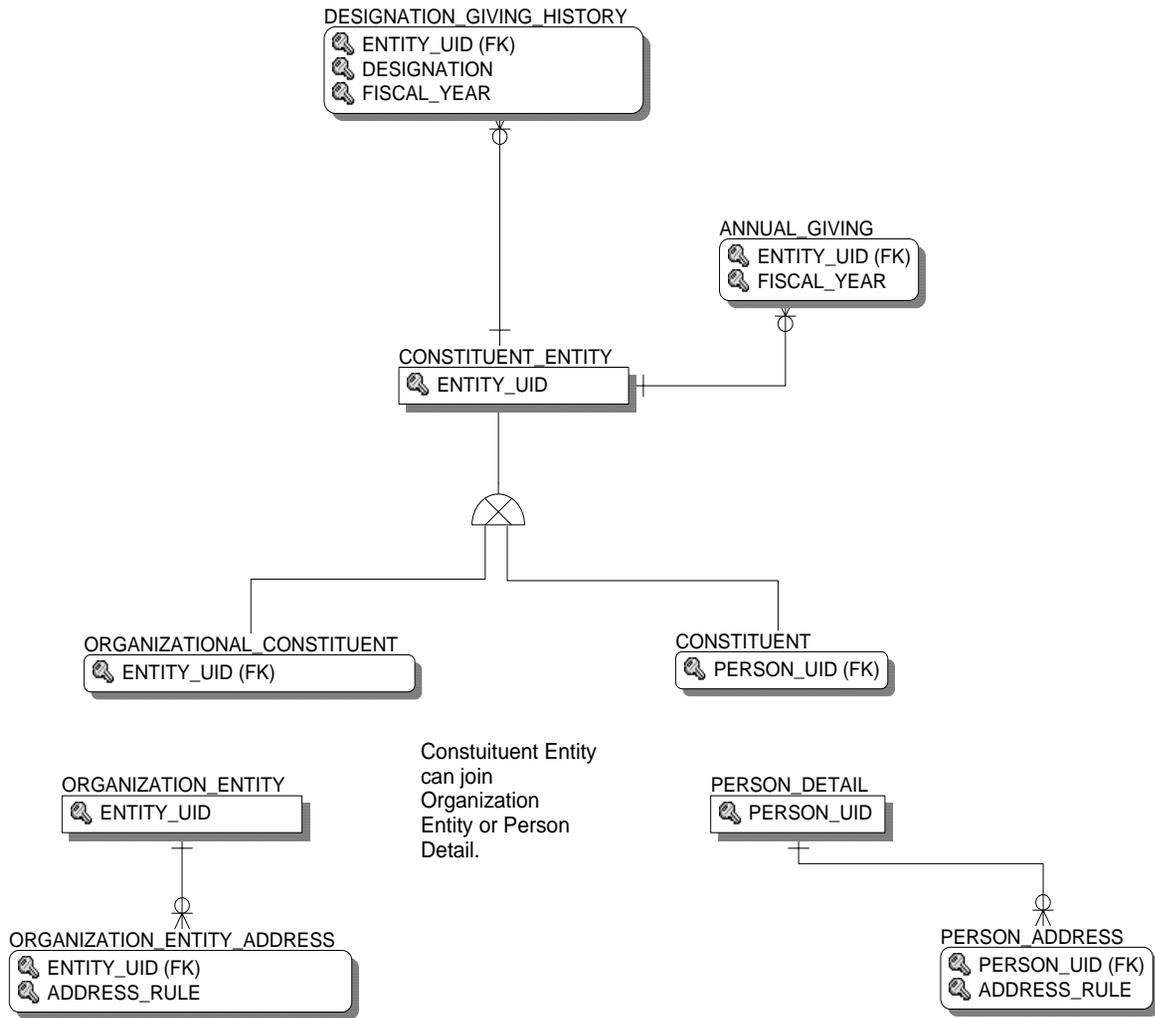
Constituent



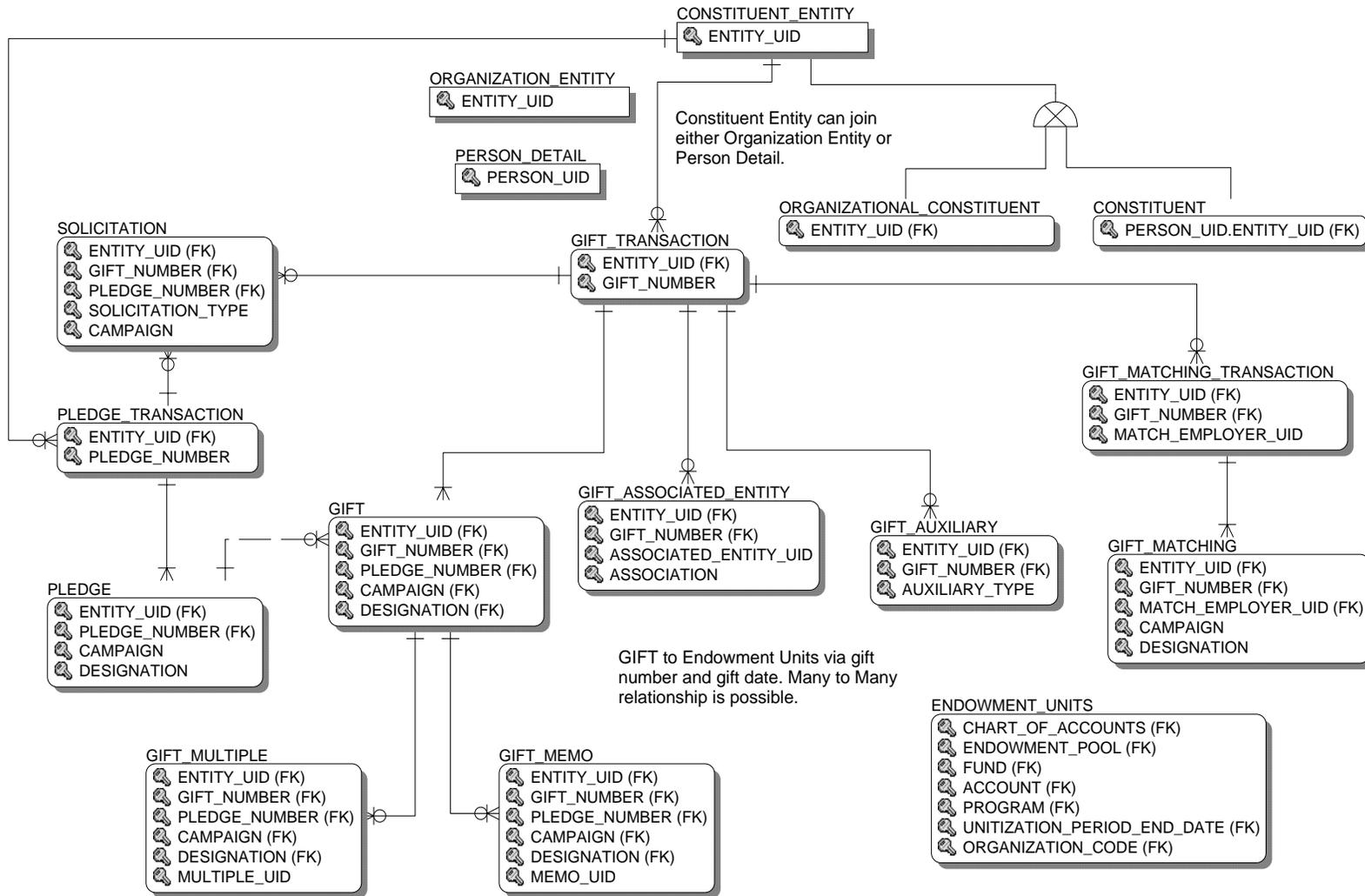
Constituent Entity



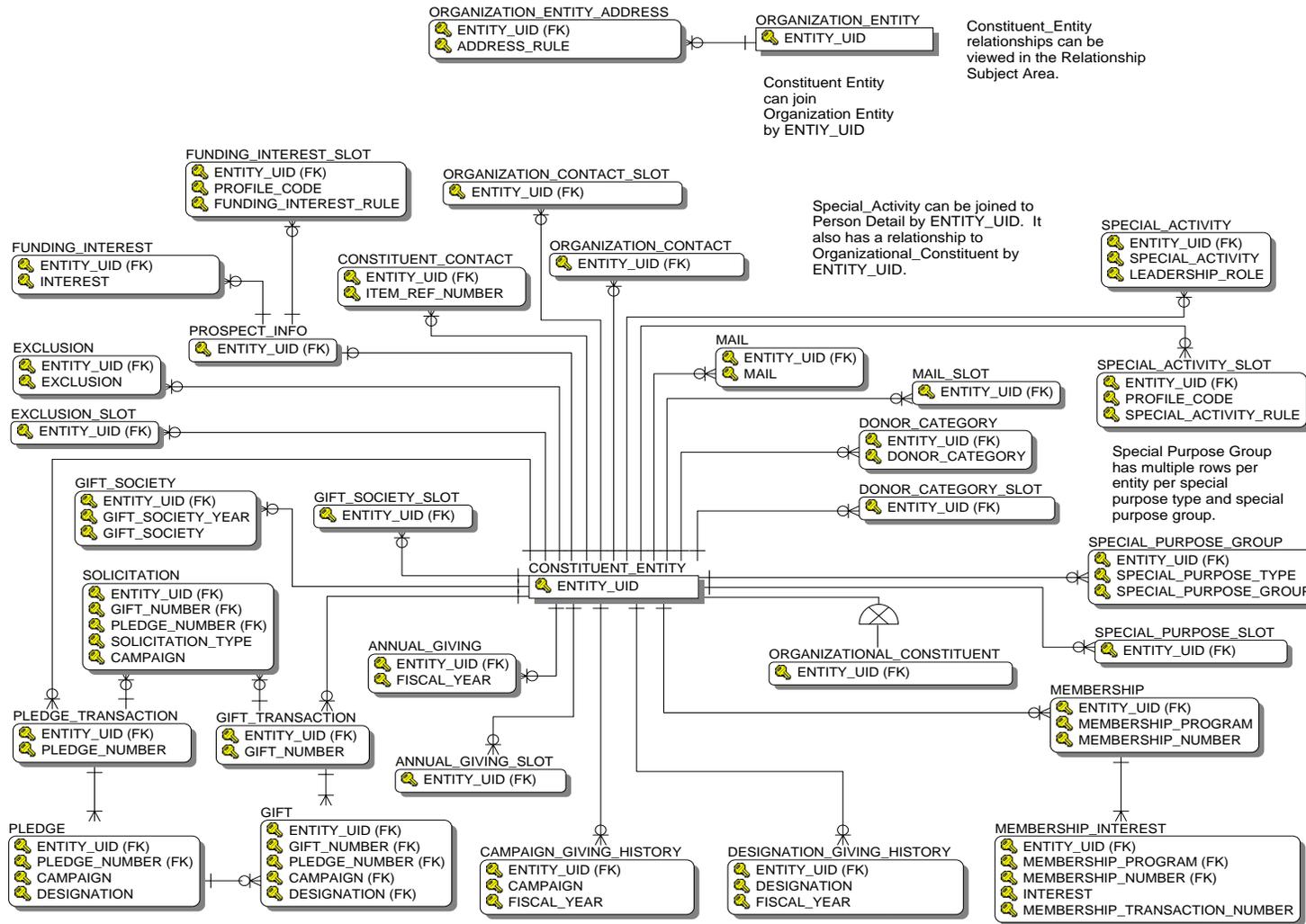
Designation Giving History



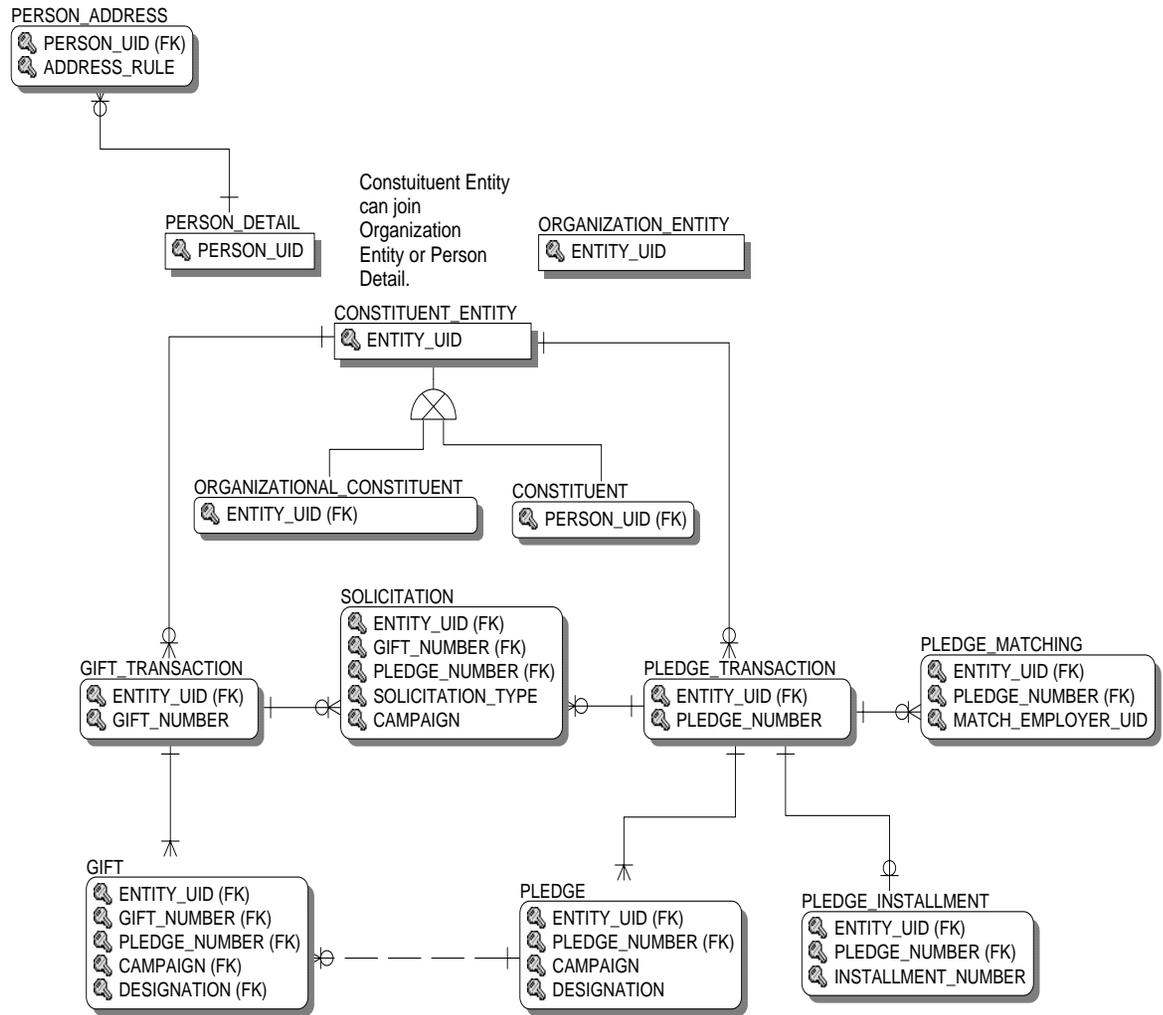
Gift



Organizational Constituent

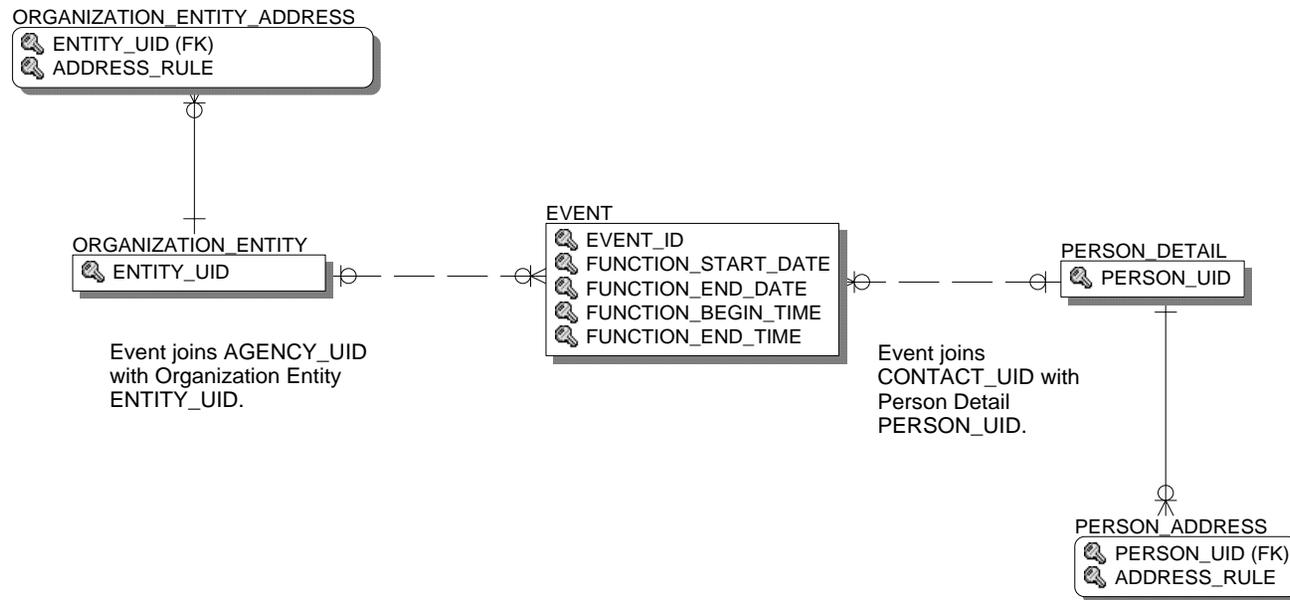


Pledge

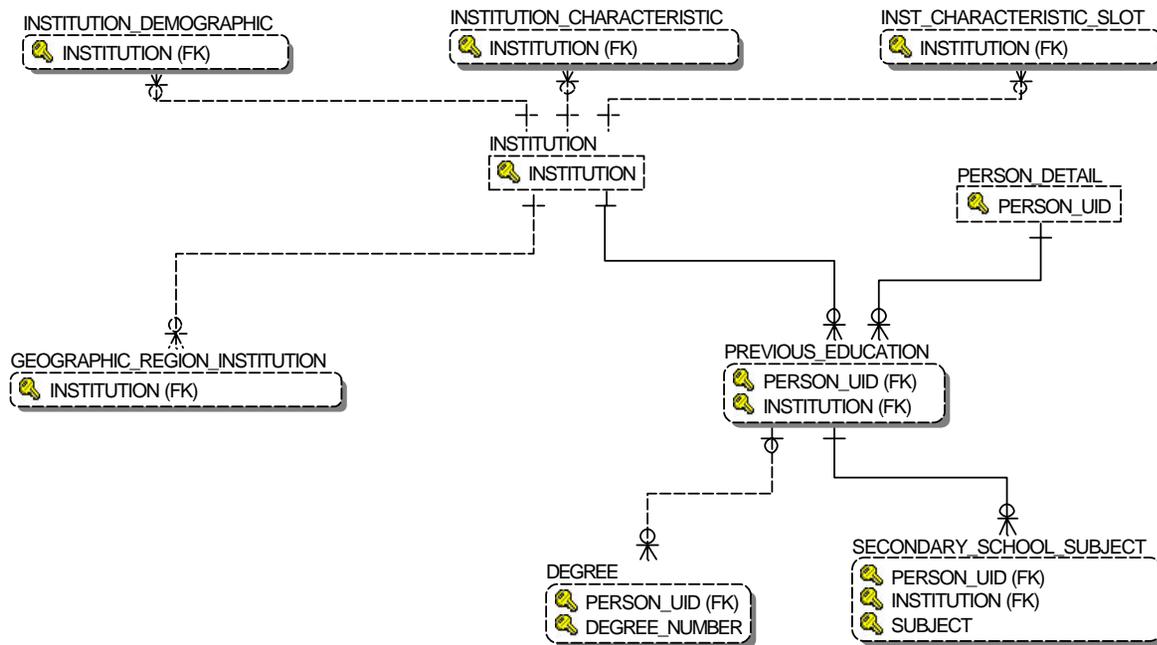


Common

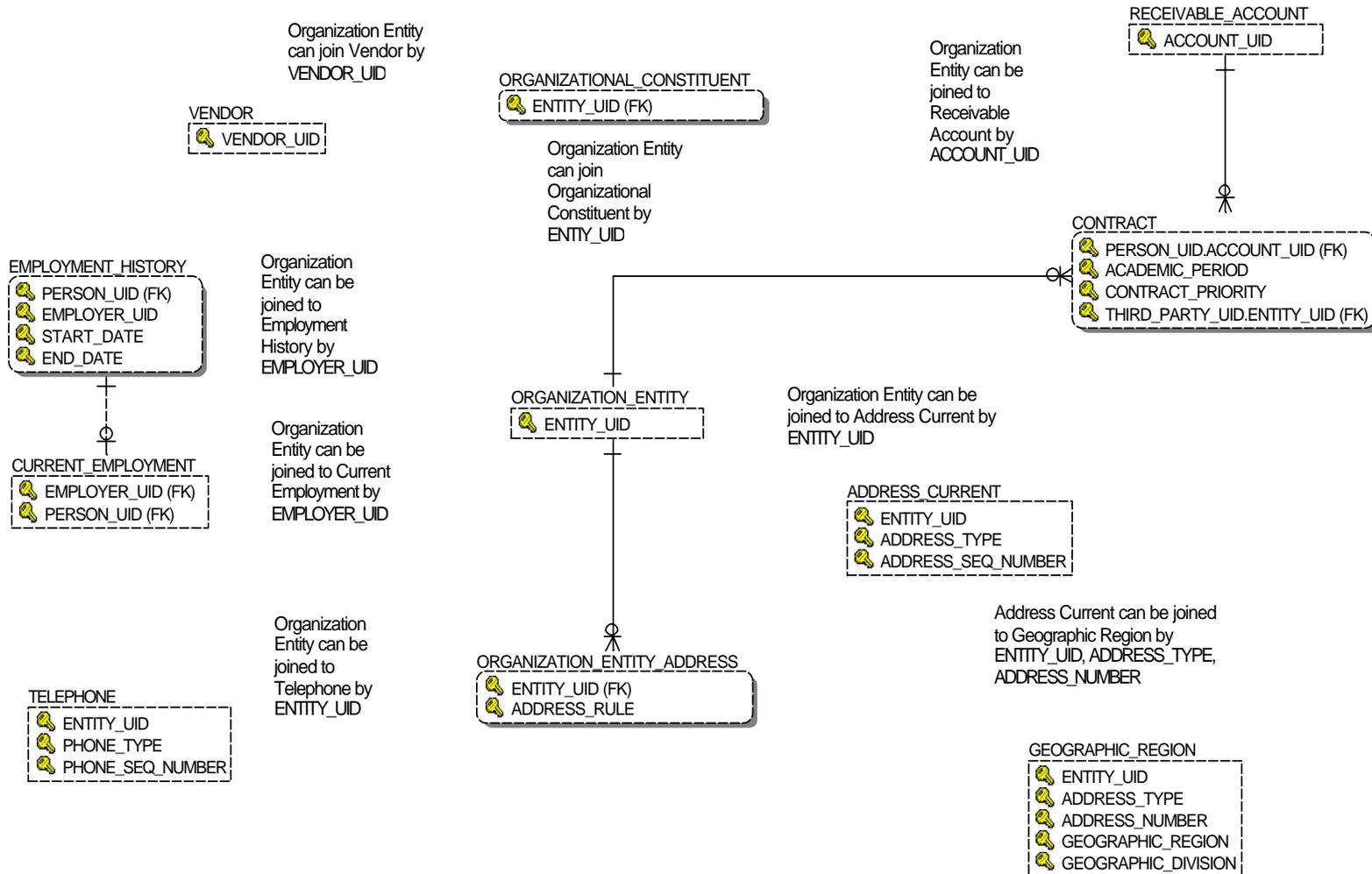
Event



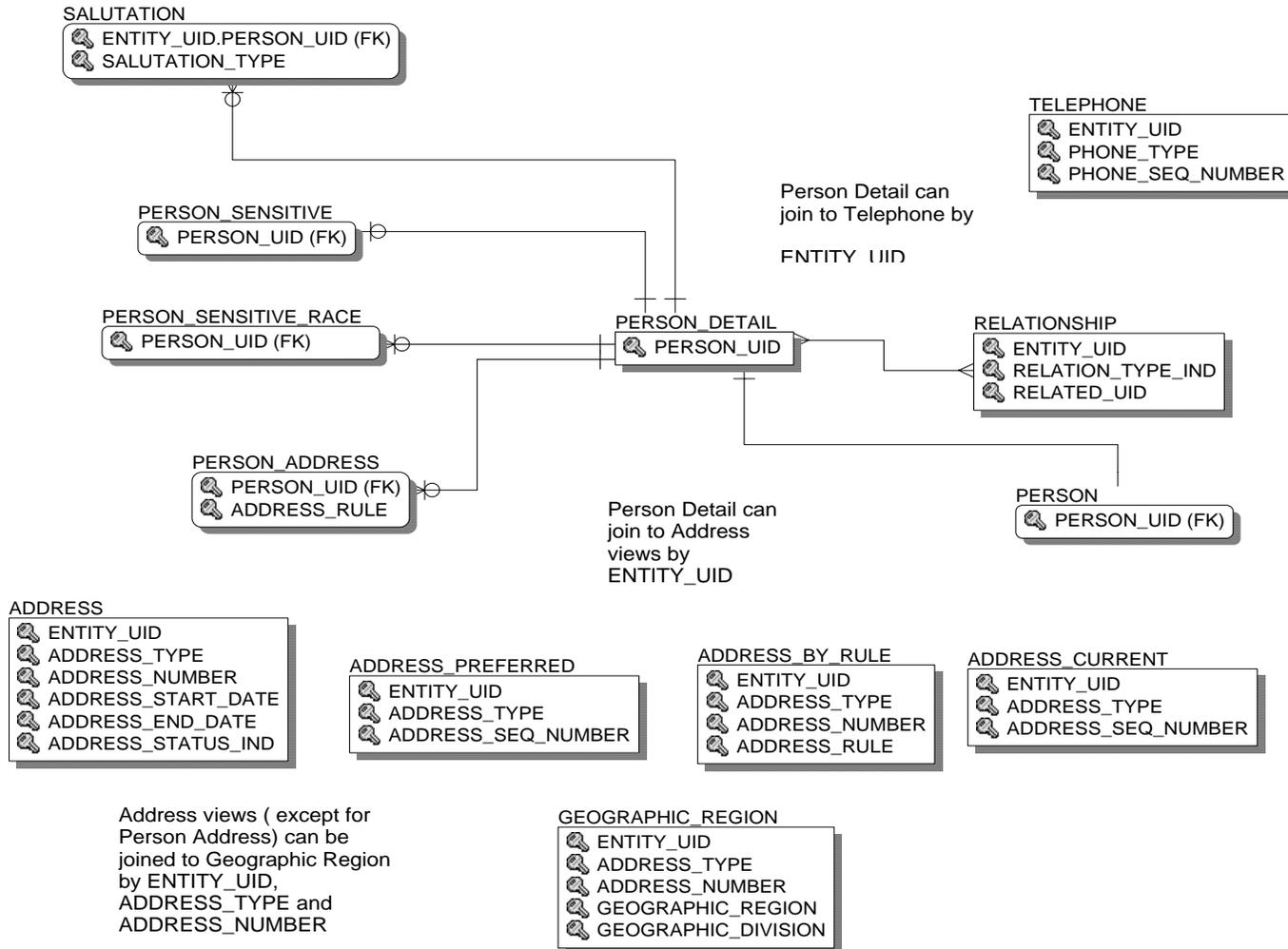
Institution



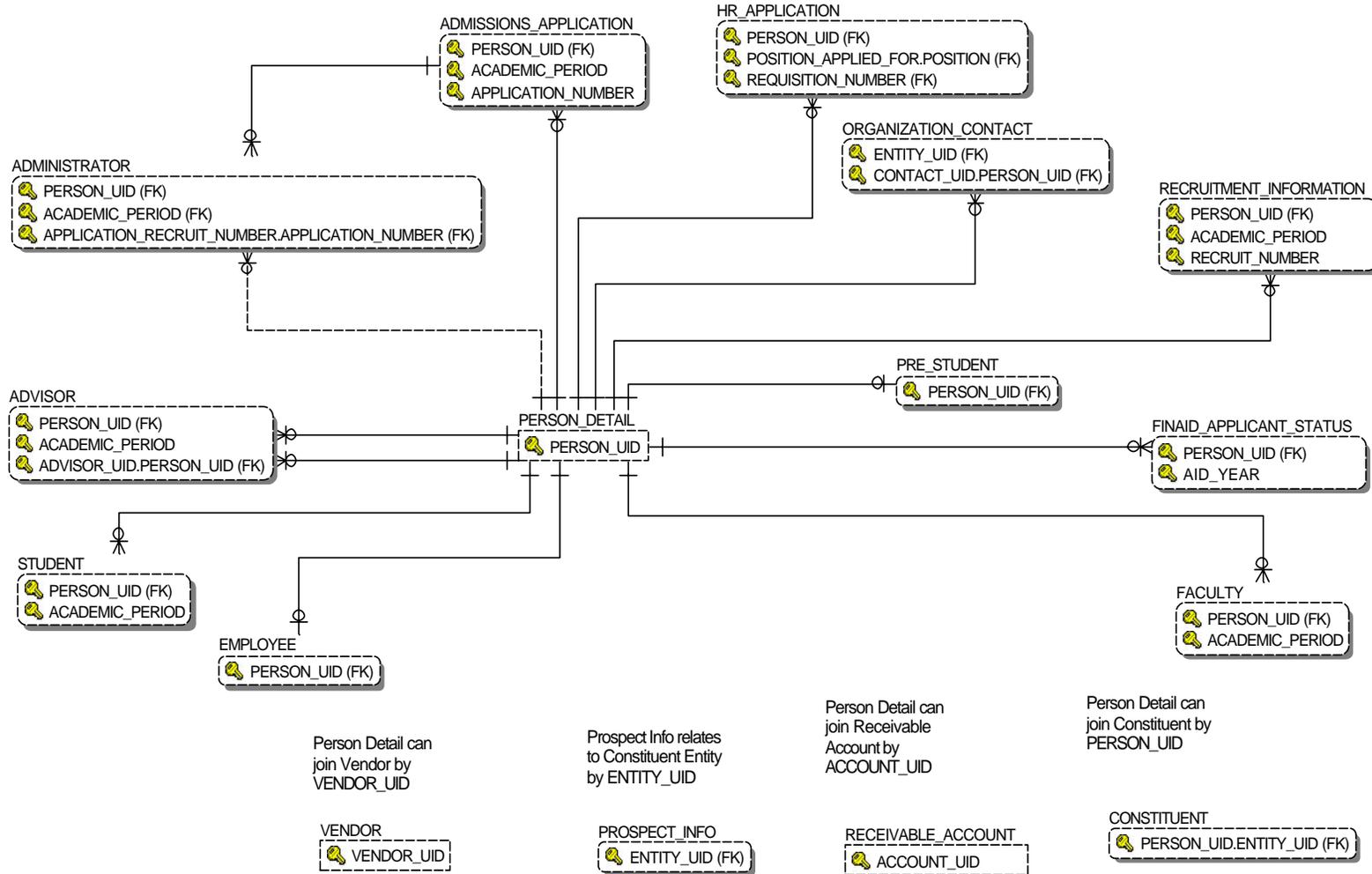
Organization Entity



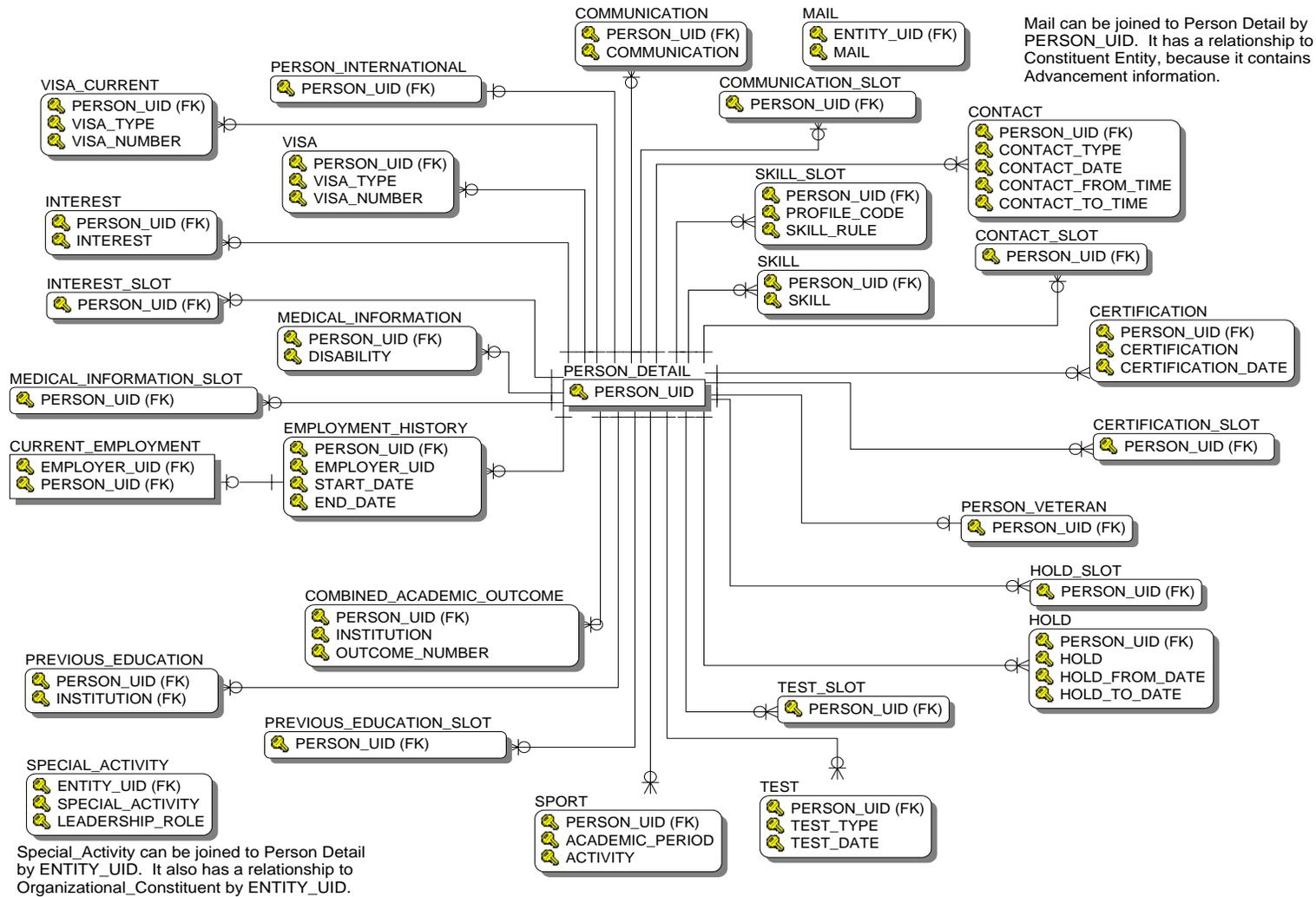
Person Demographic



Person Role

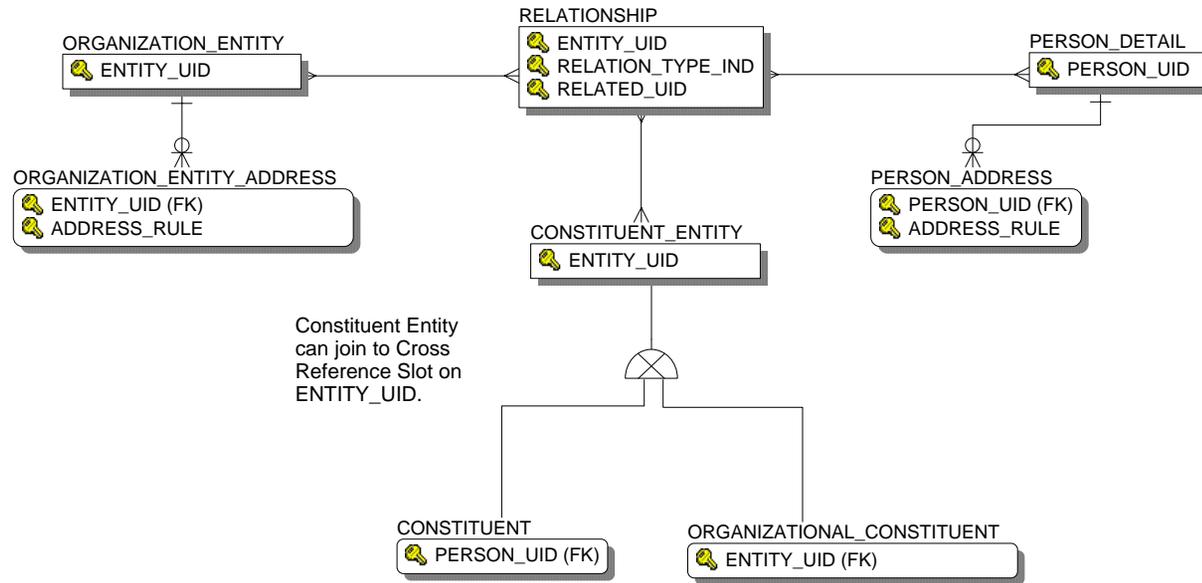


Person Supplemental



Relationship

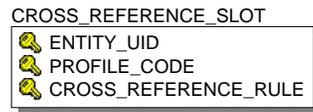
Relationships using a Relationship Type



Constituent Entity
 can join to Cross
 Reference Slot on
 ENTITY_UID.

Relationships using a Slotted View

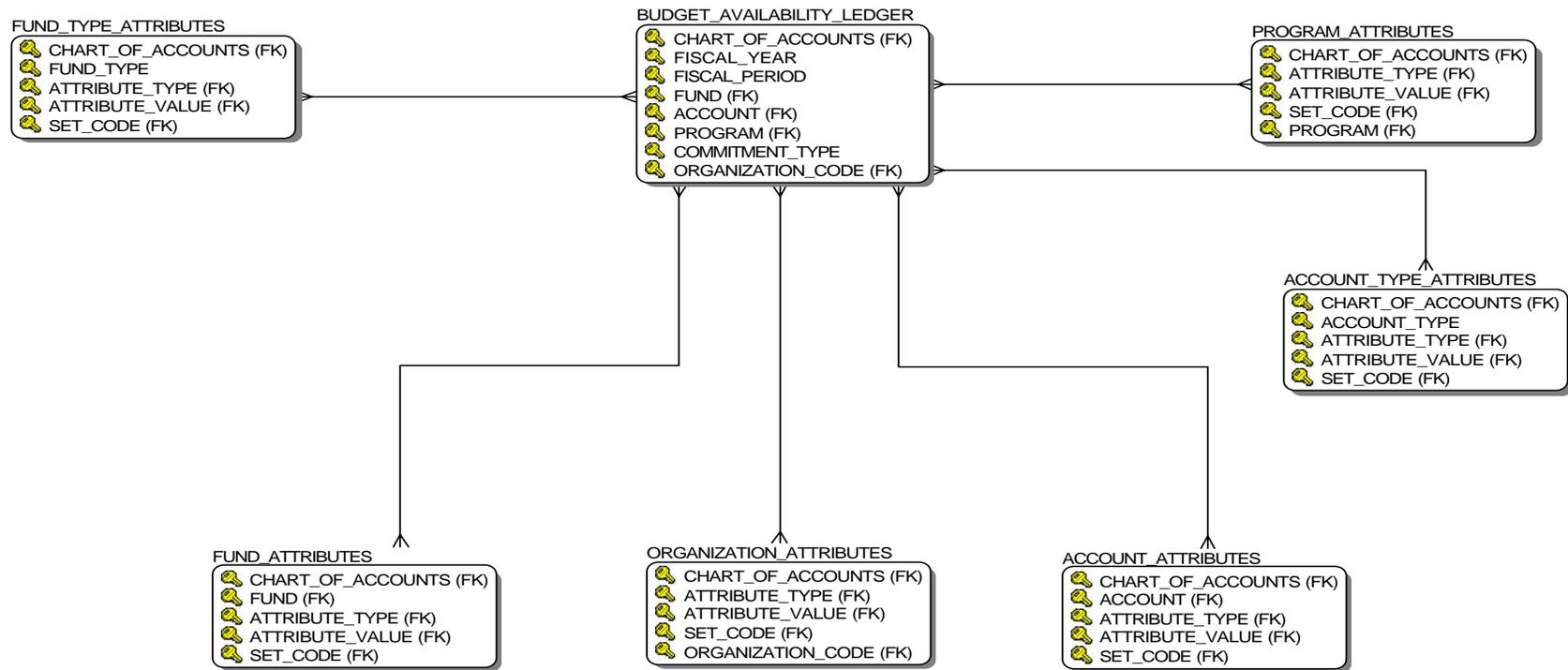
Organization
 Entity can join to
 Cross Reference
 Slot on
 ENTITY_UID.



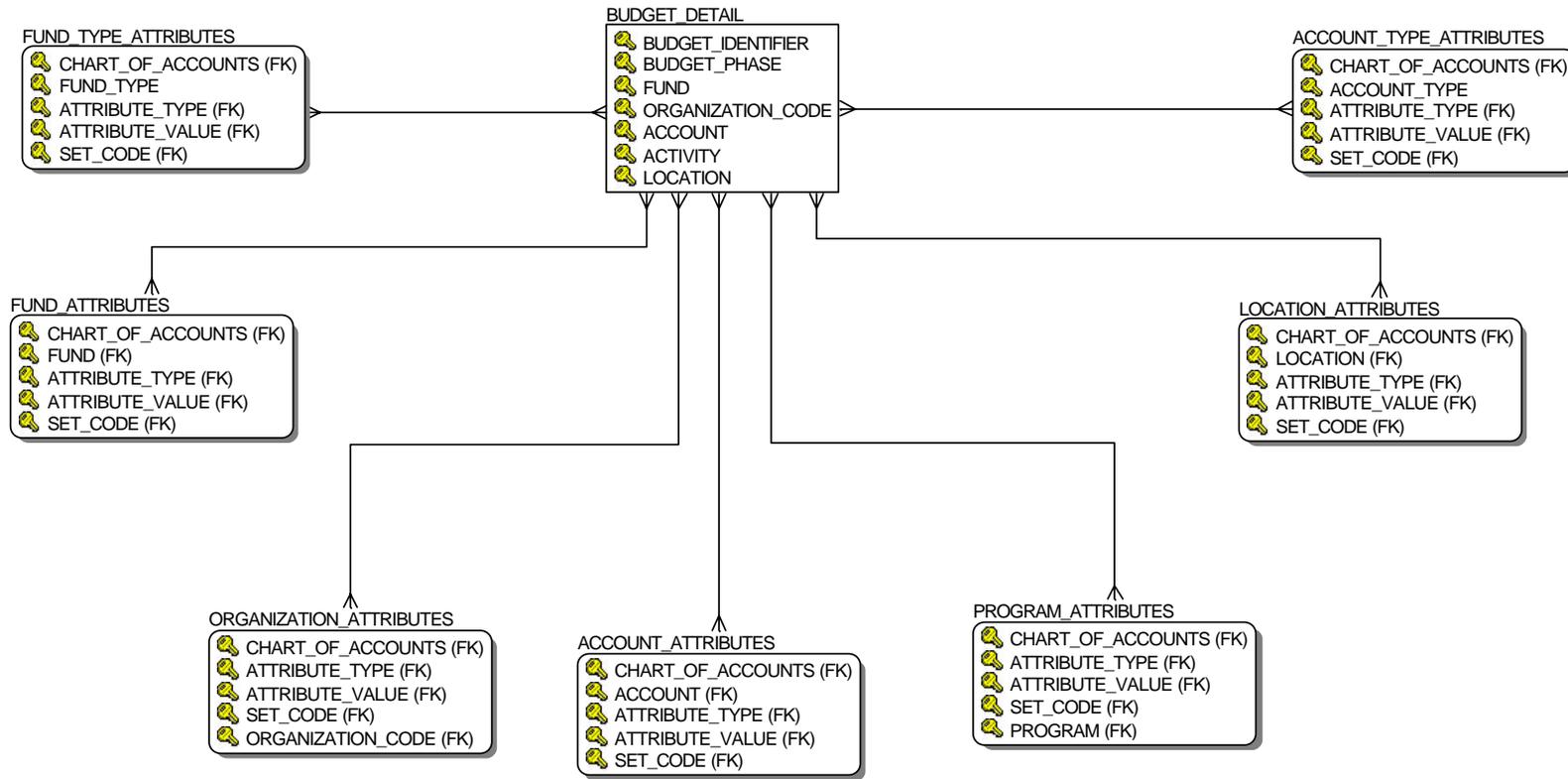
Person Detail can
 join to Cross
 Reference Slot on
 PERSON_UID.

Finance

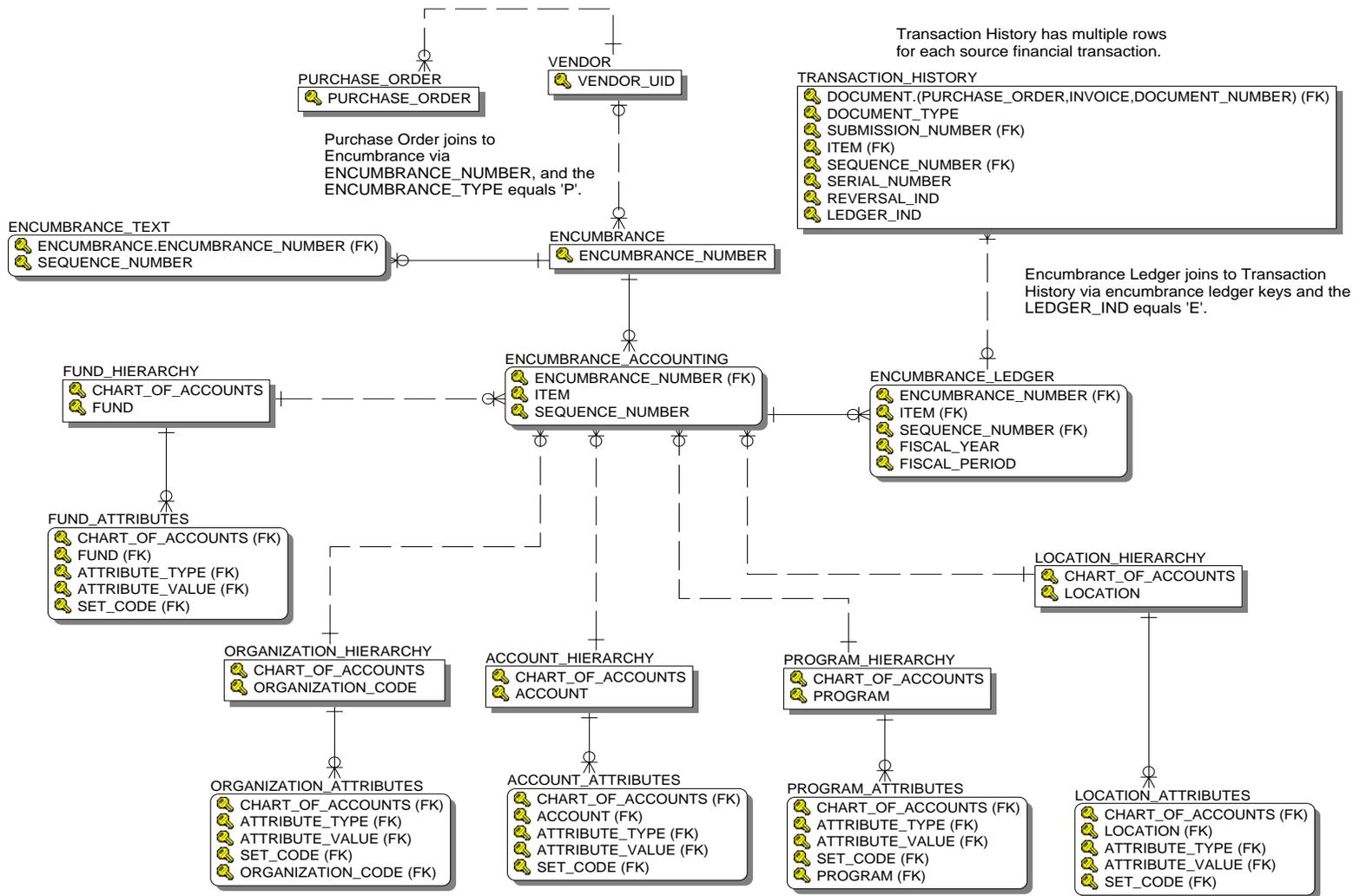
Budget Availability Ledger



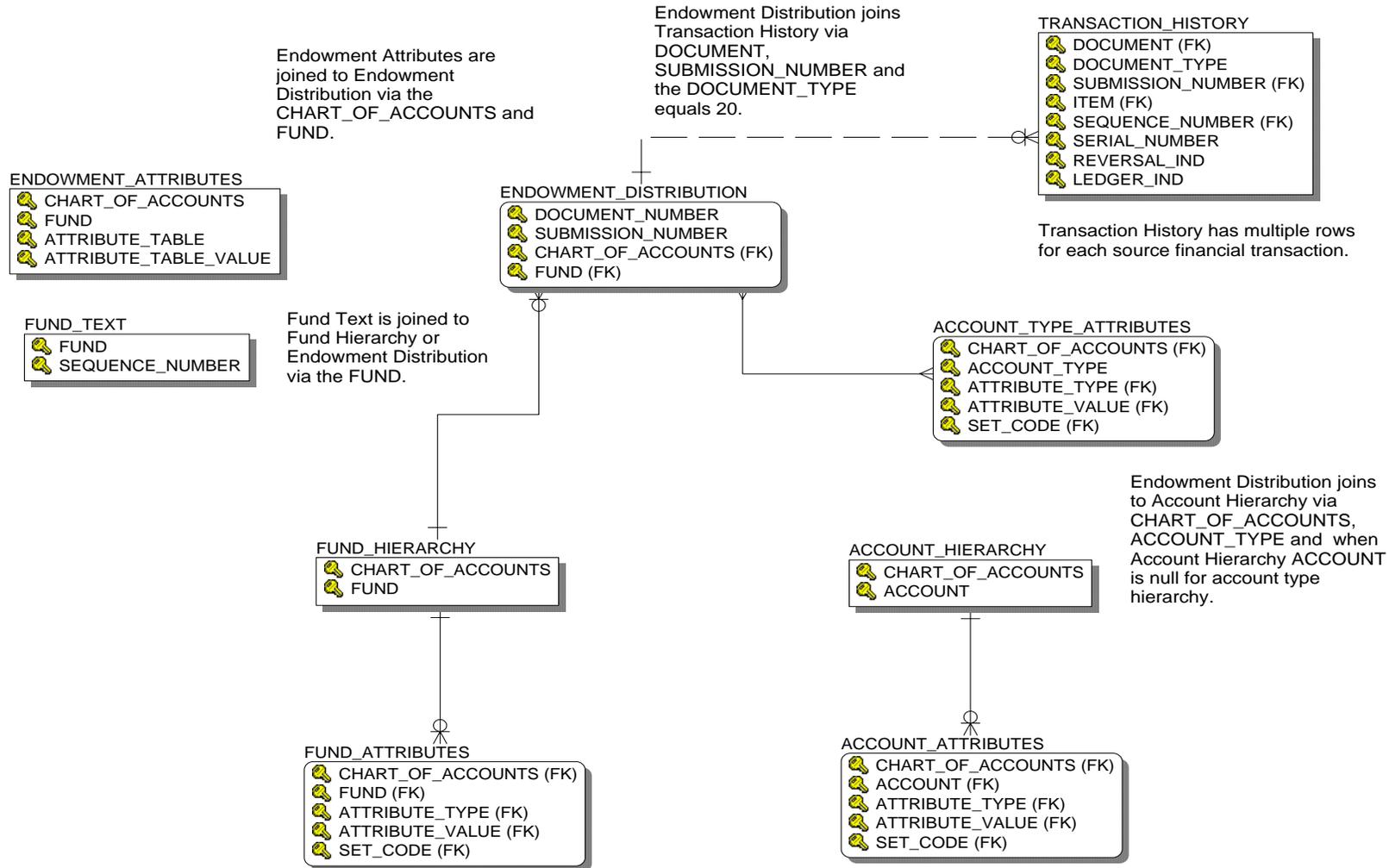
Budget Detail



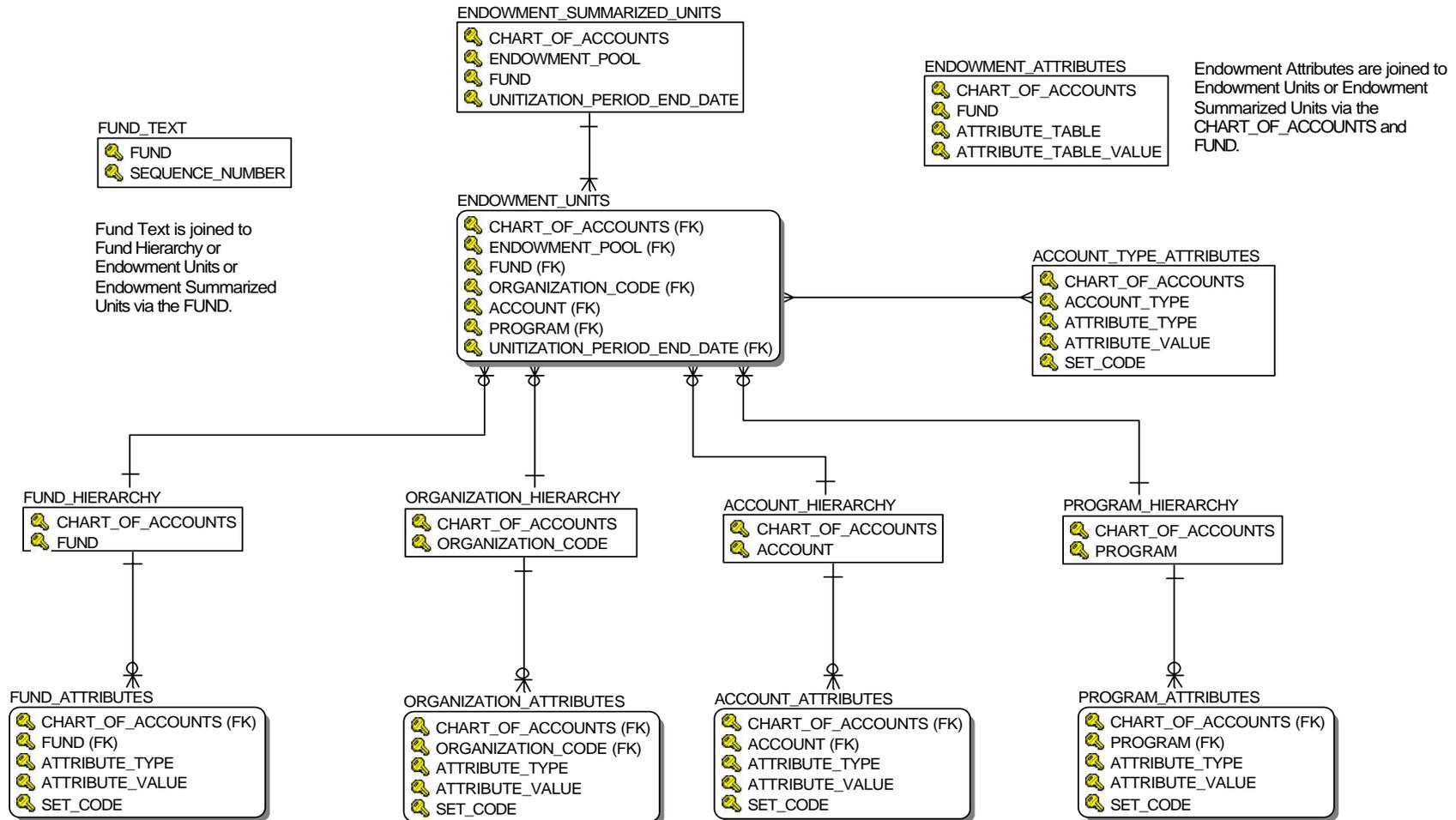
Encumbrance



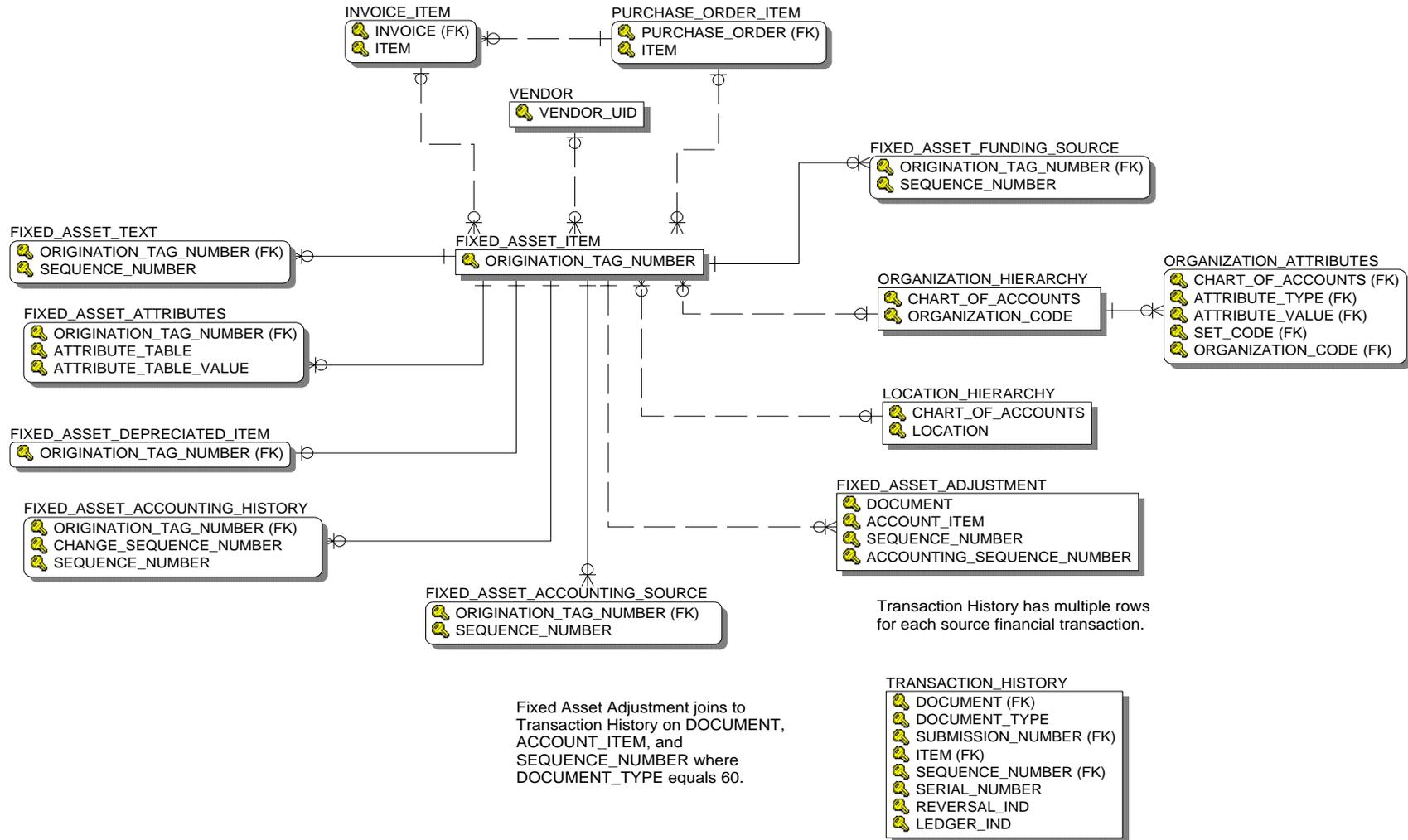
Endowment Distribution



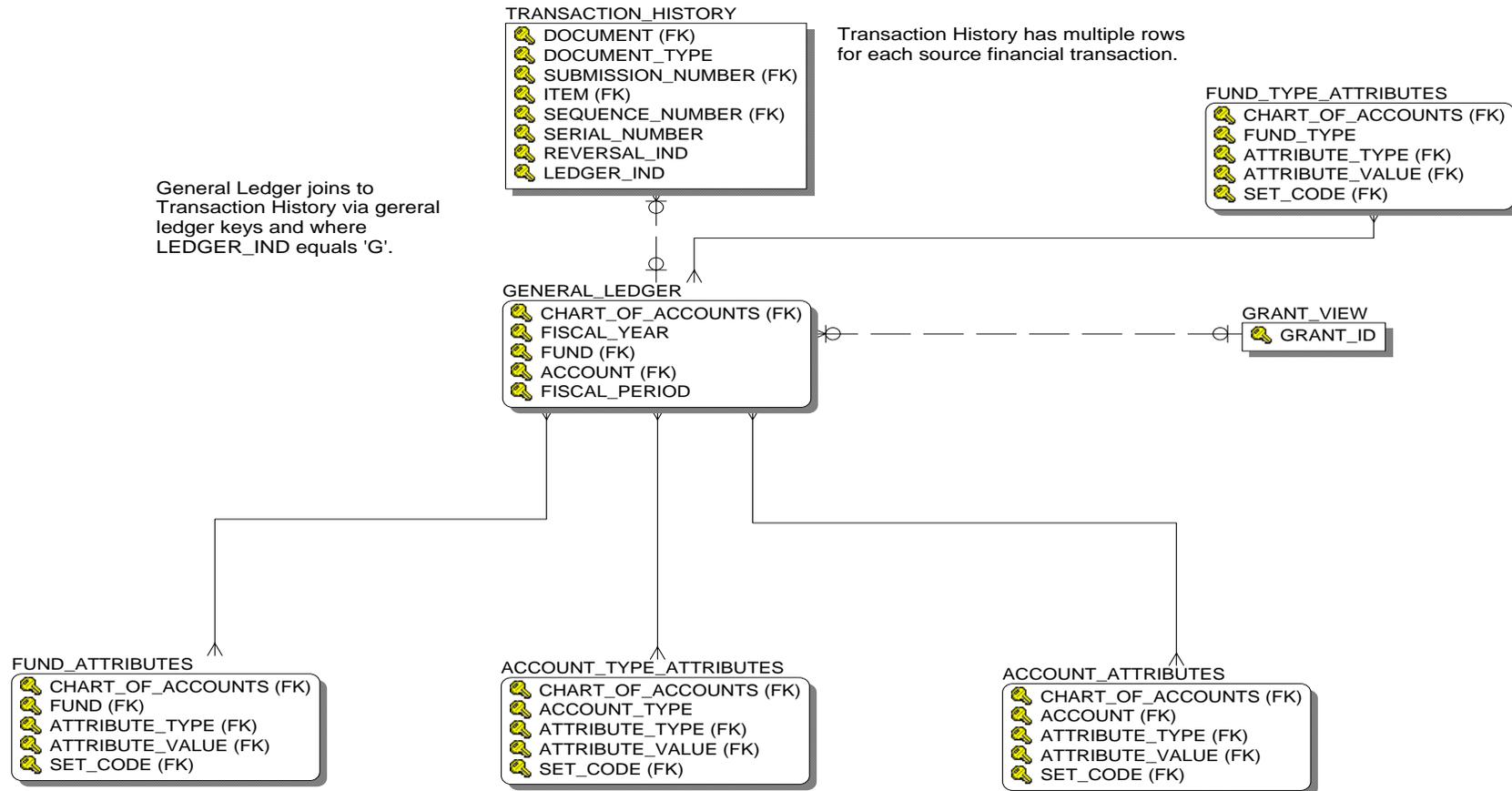
Endowment Units



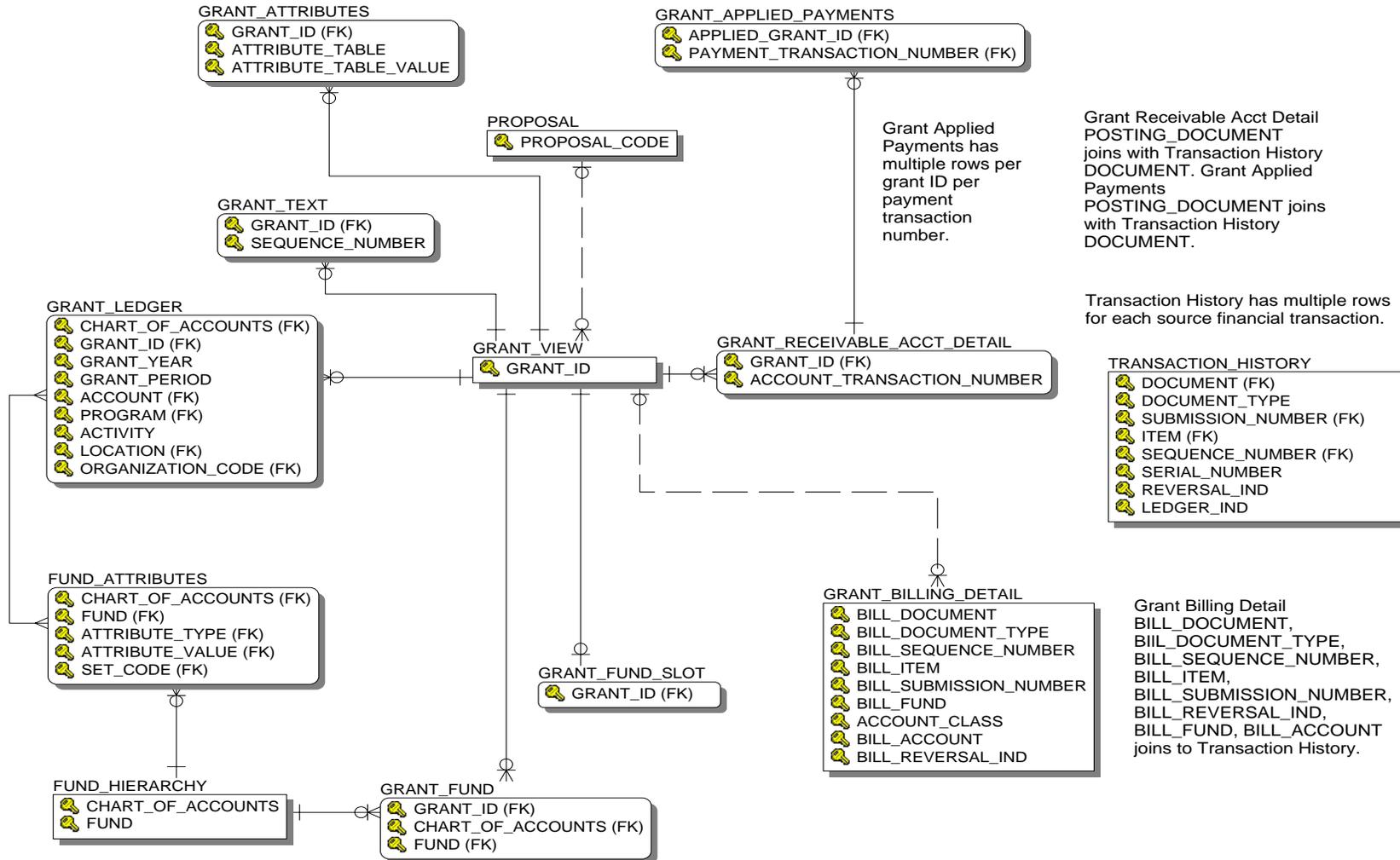
Fixed Asset



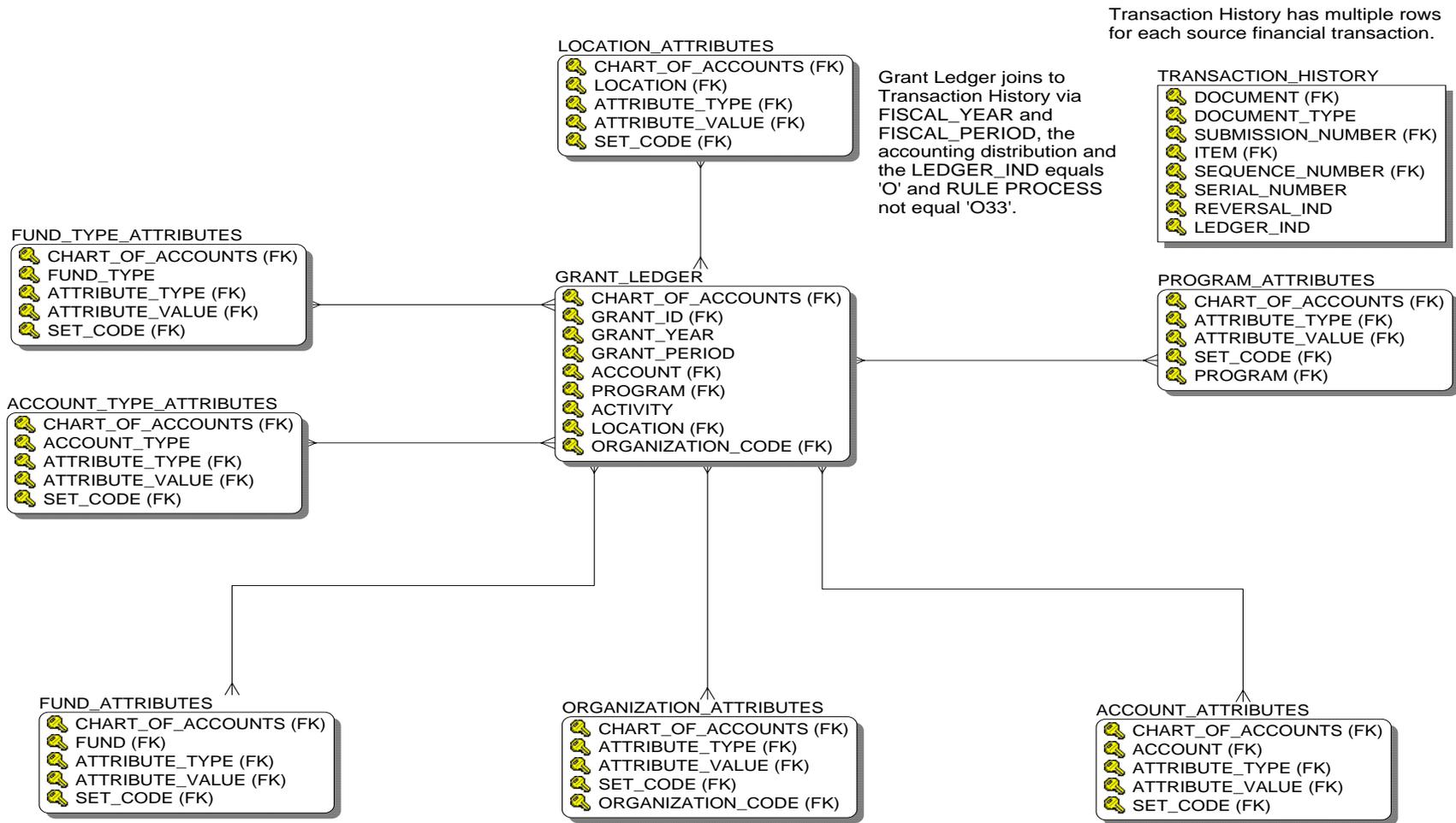
General Ledger



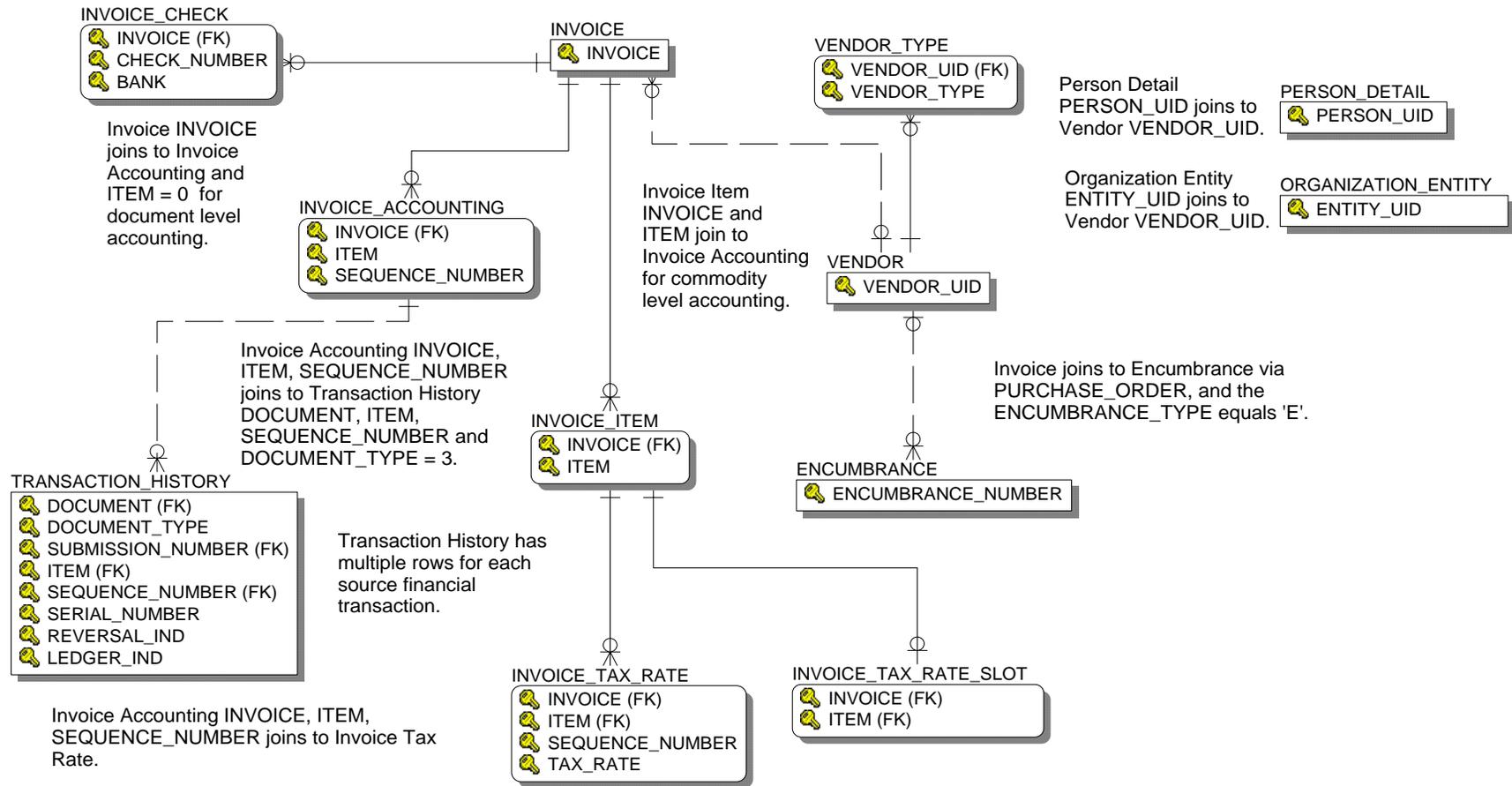
Grant and Project



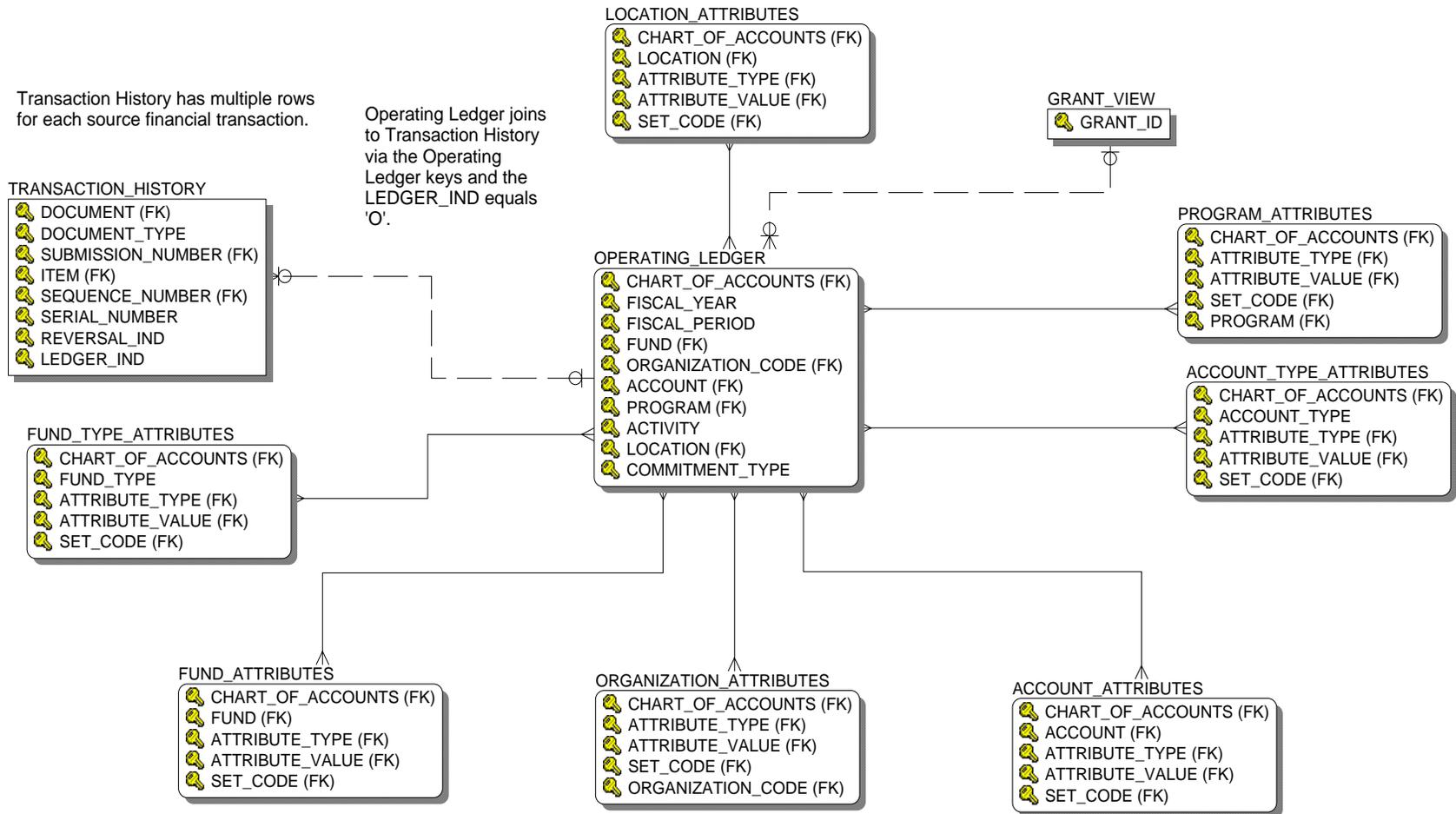
Grant Ledger



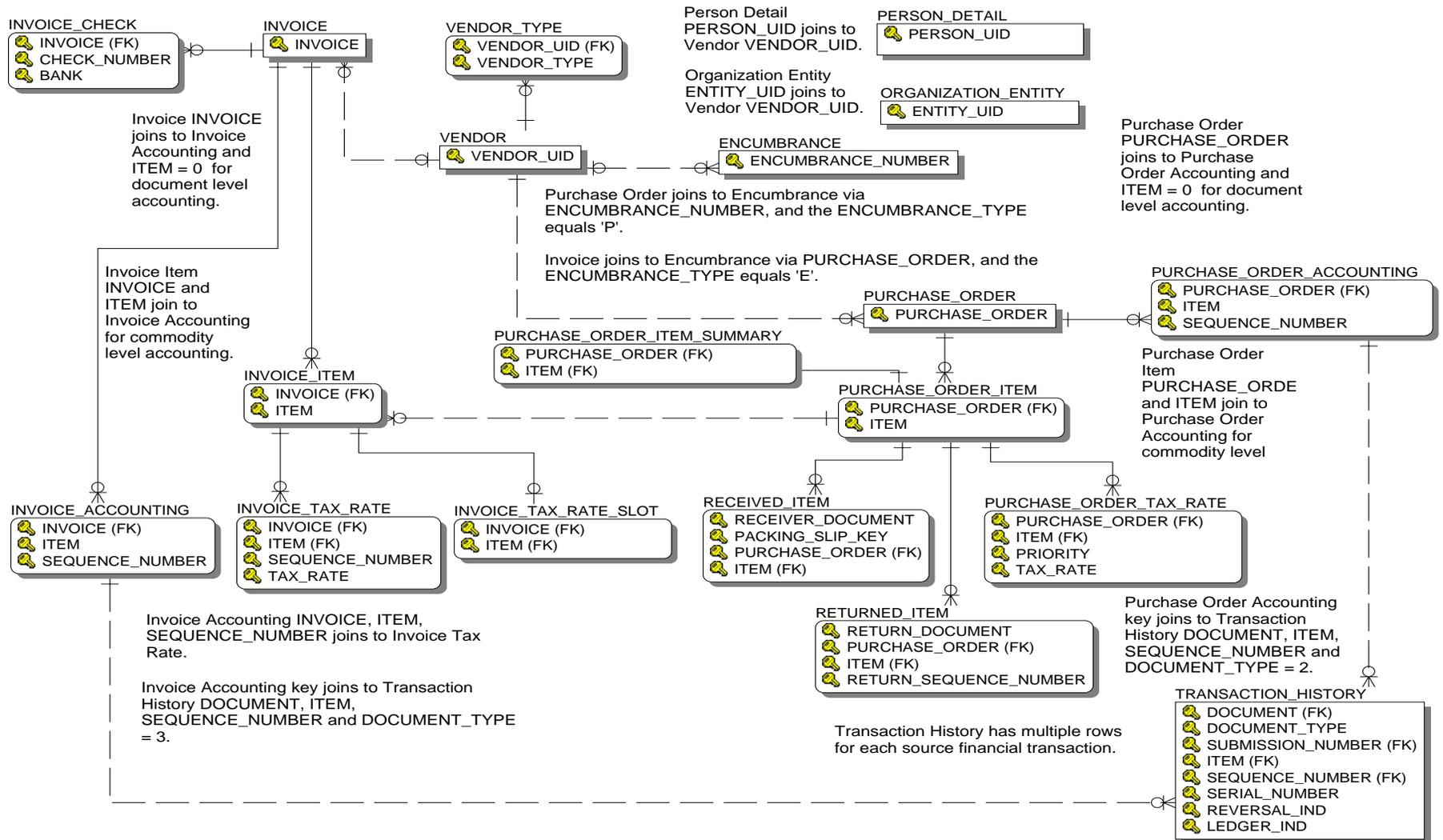
Invoice Payable



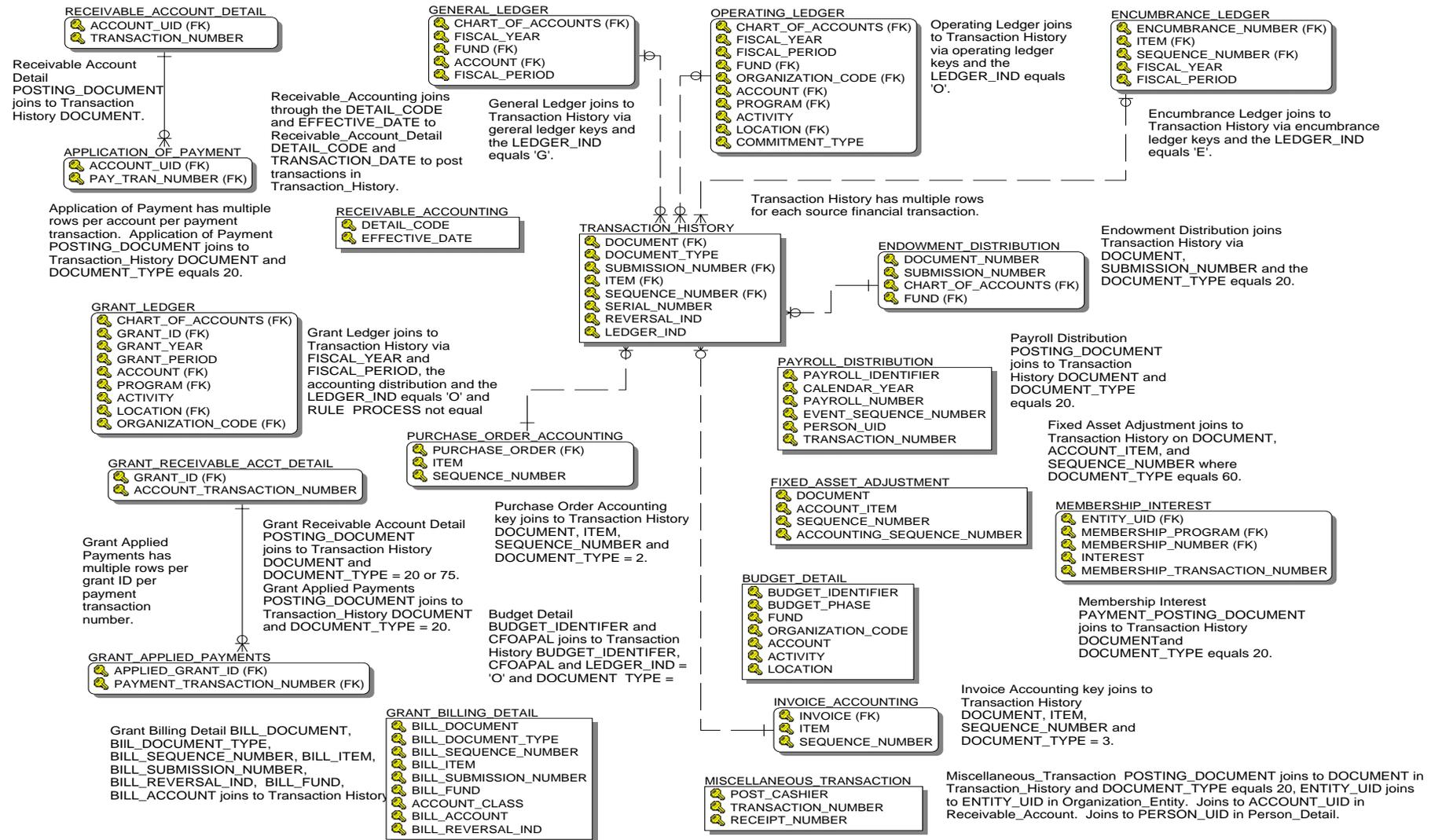
Operating Ledger



Purchasing Payable

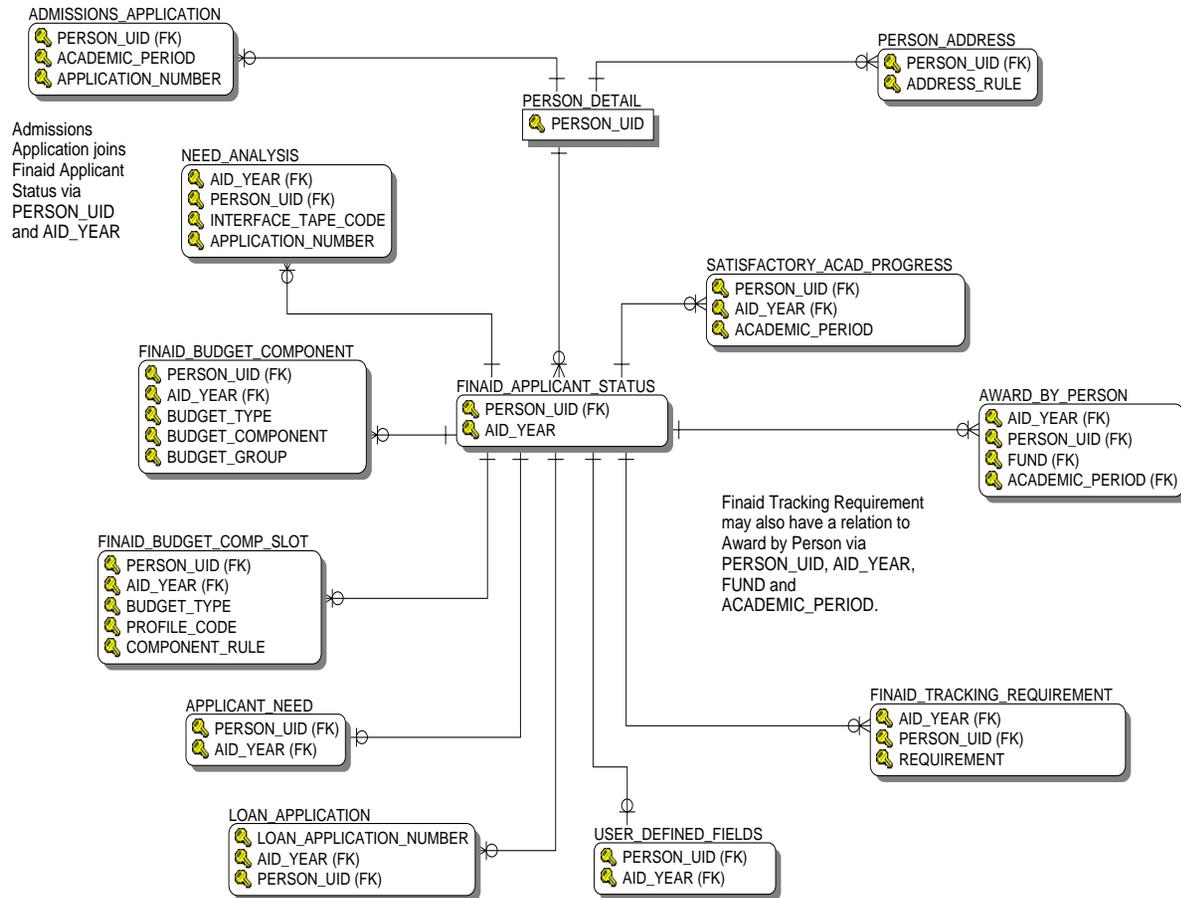


Transaction History

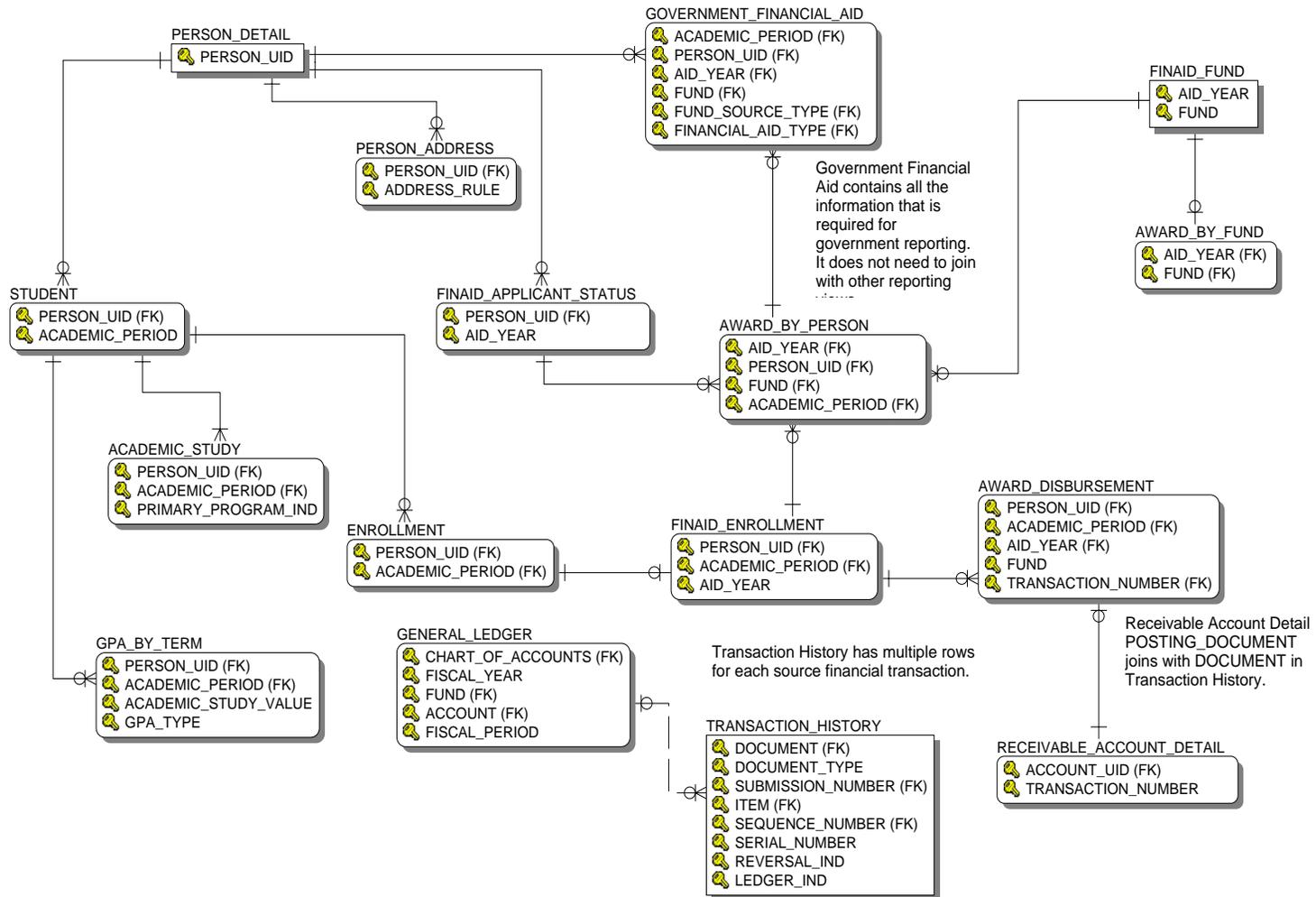


Financial Aid

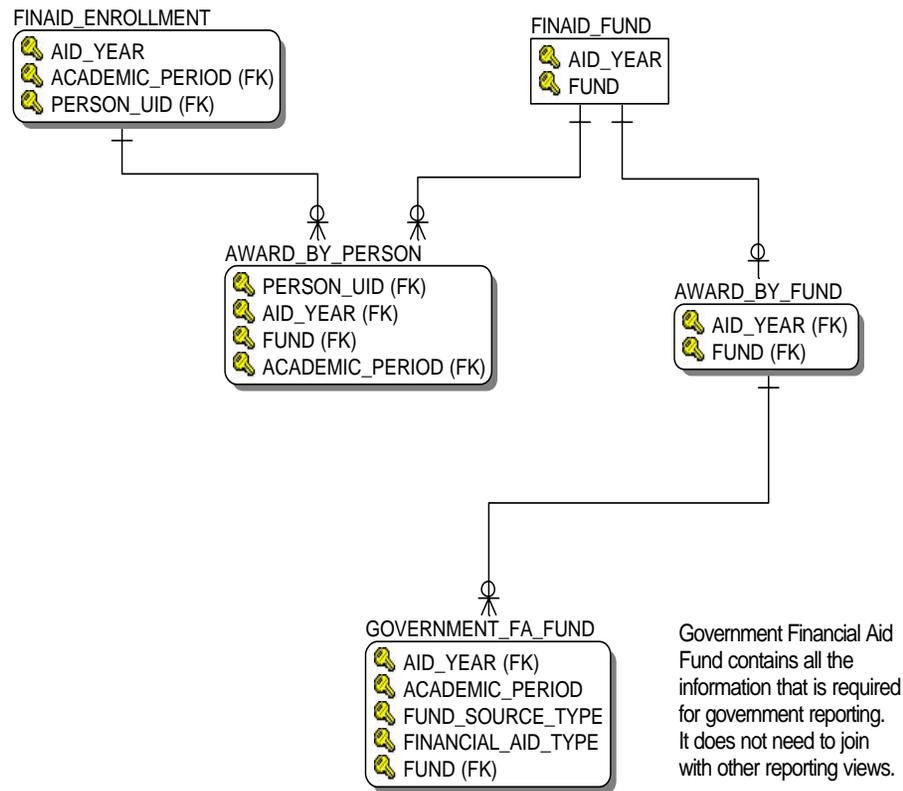
Financial Aid Application



Financial Aid Award and Disbursement

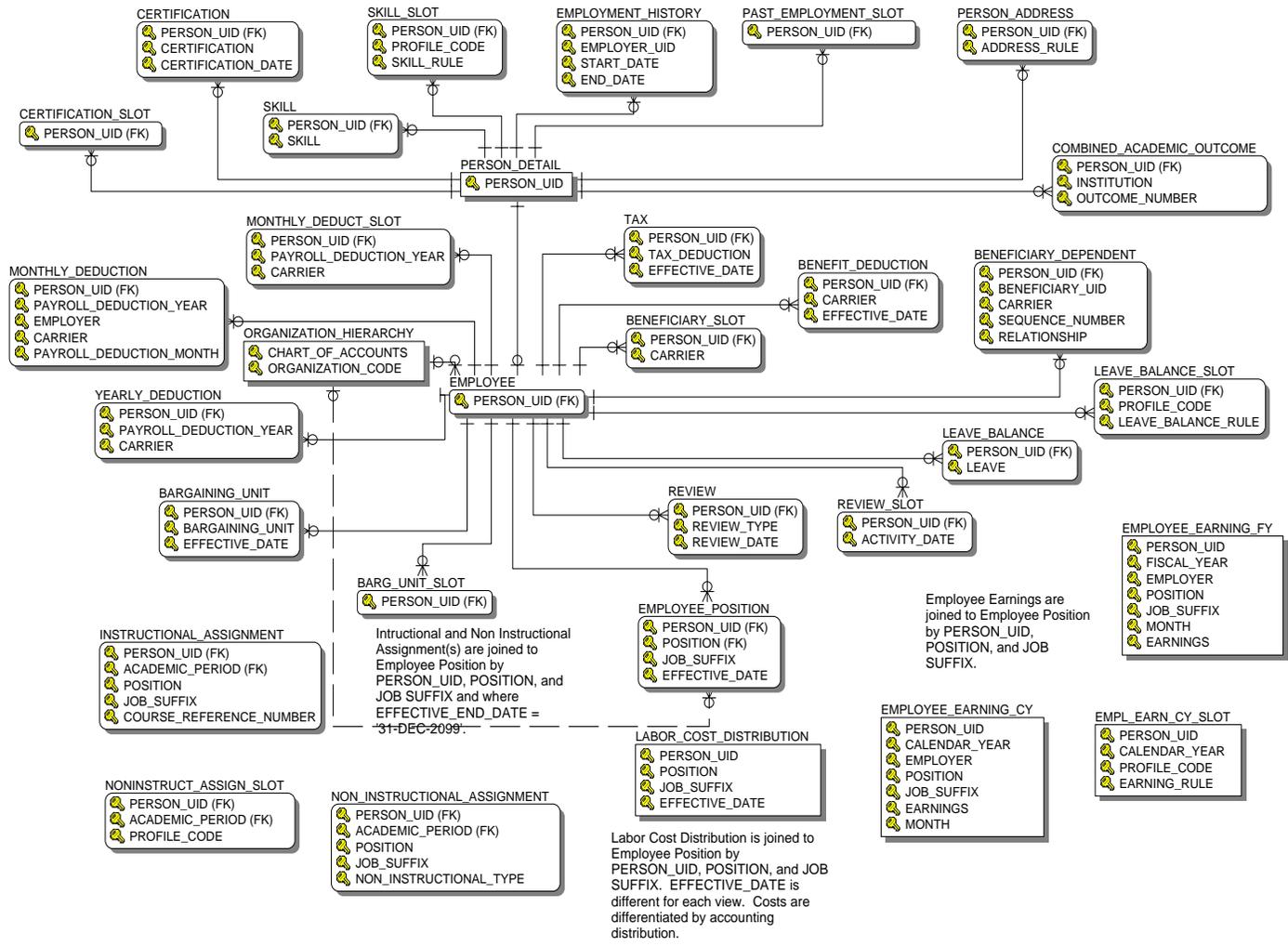


Financial Aid Fund

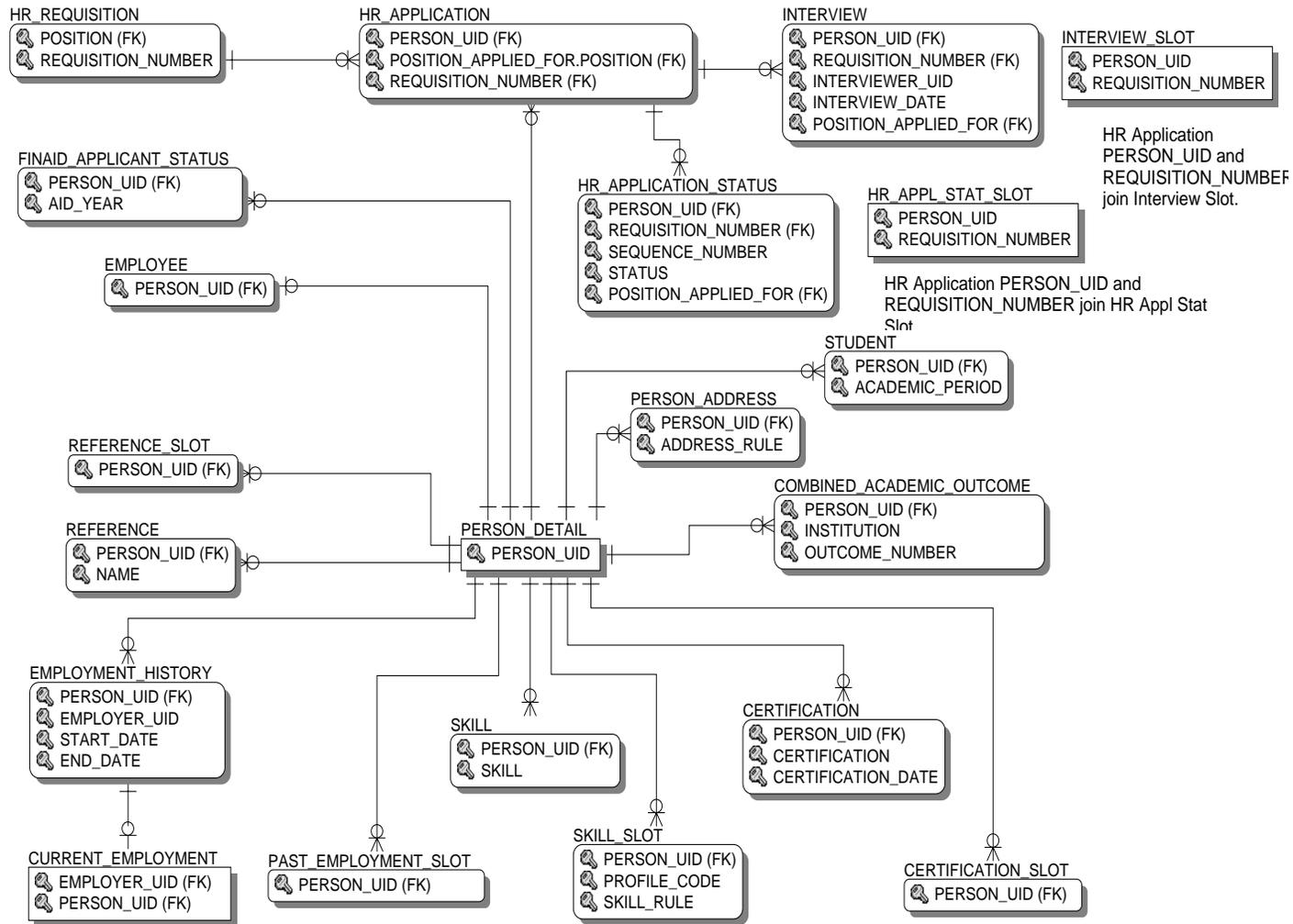


Human Resources

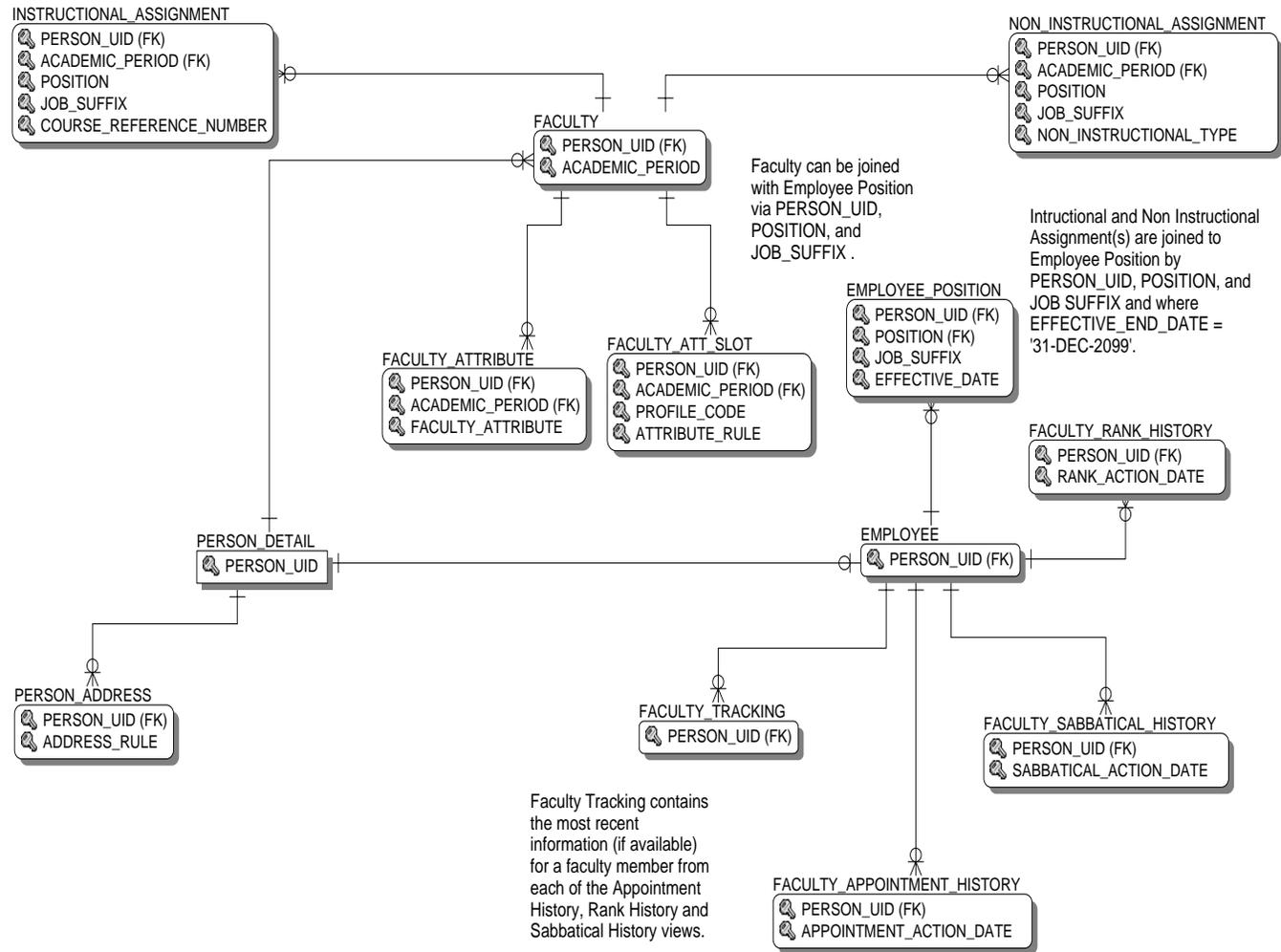
Employee



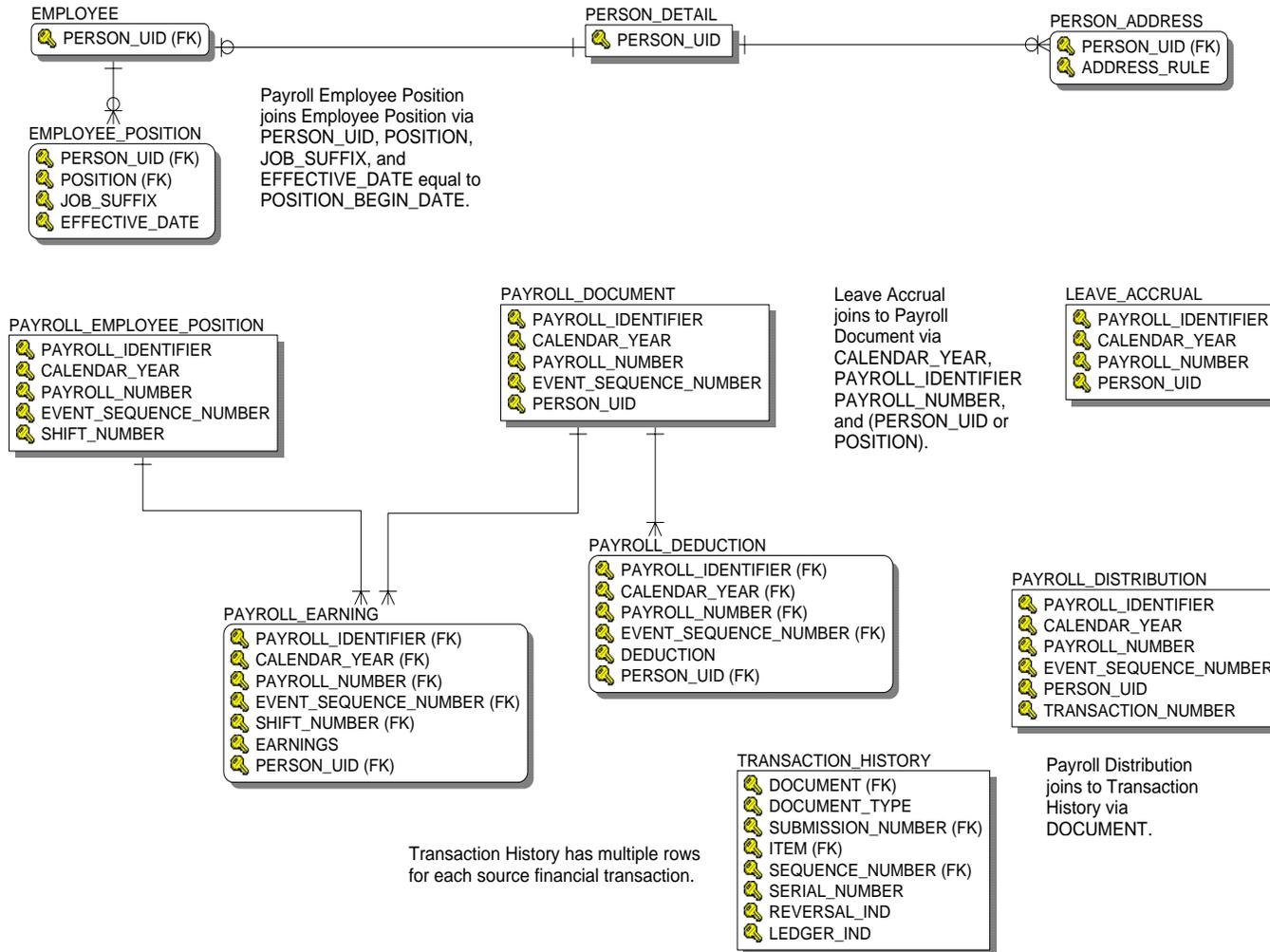
Human Resource Application



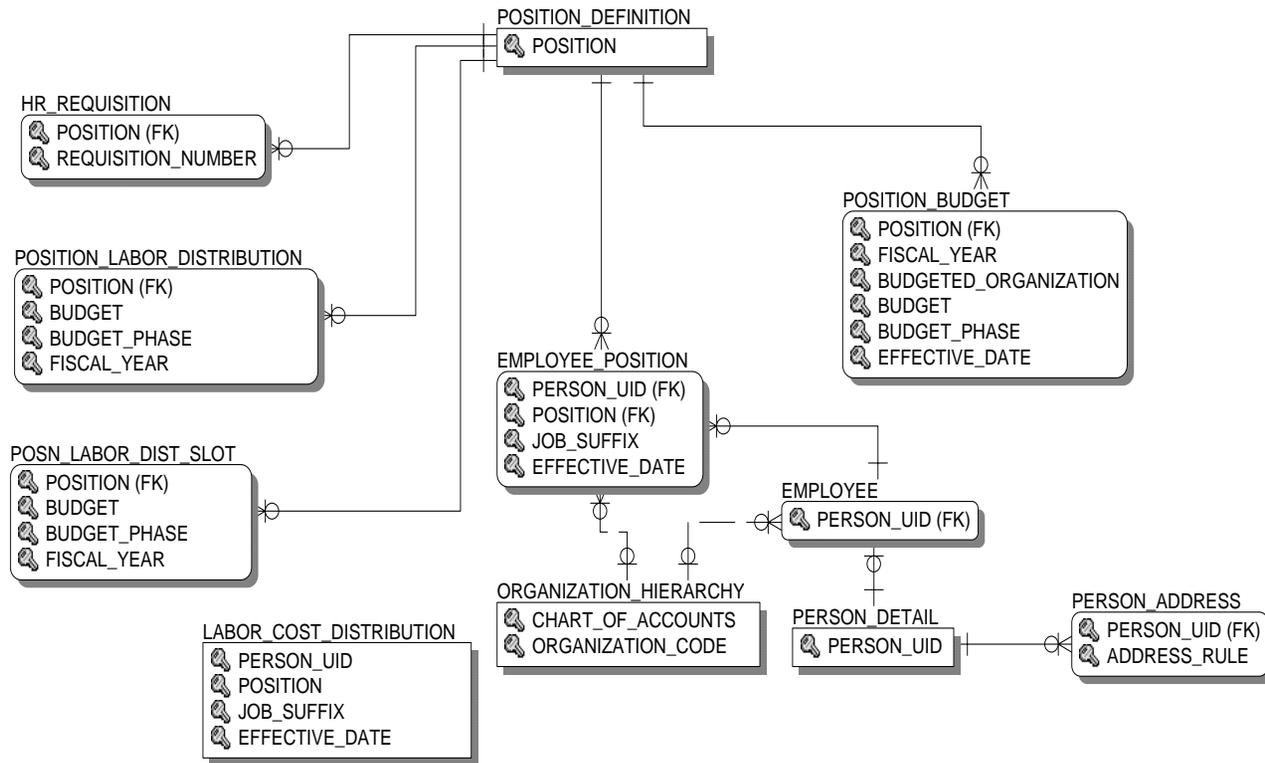
Human Resource Faculty



Payroll



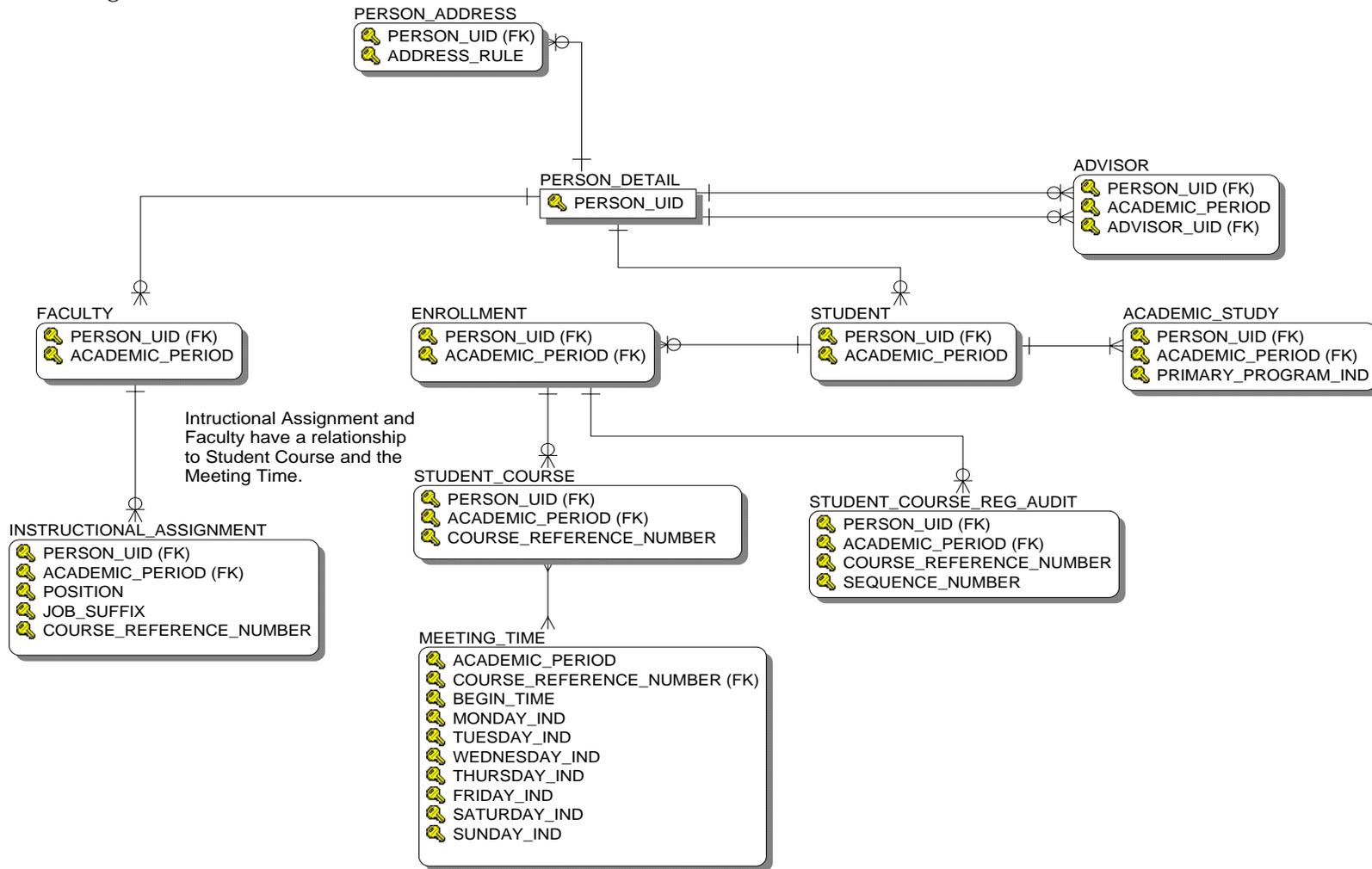
Position



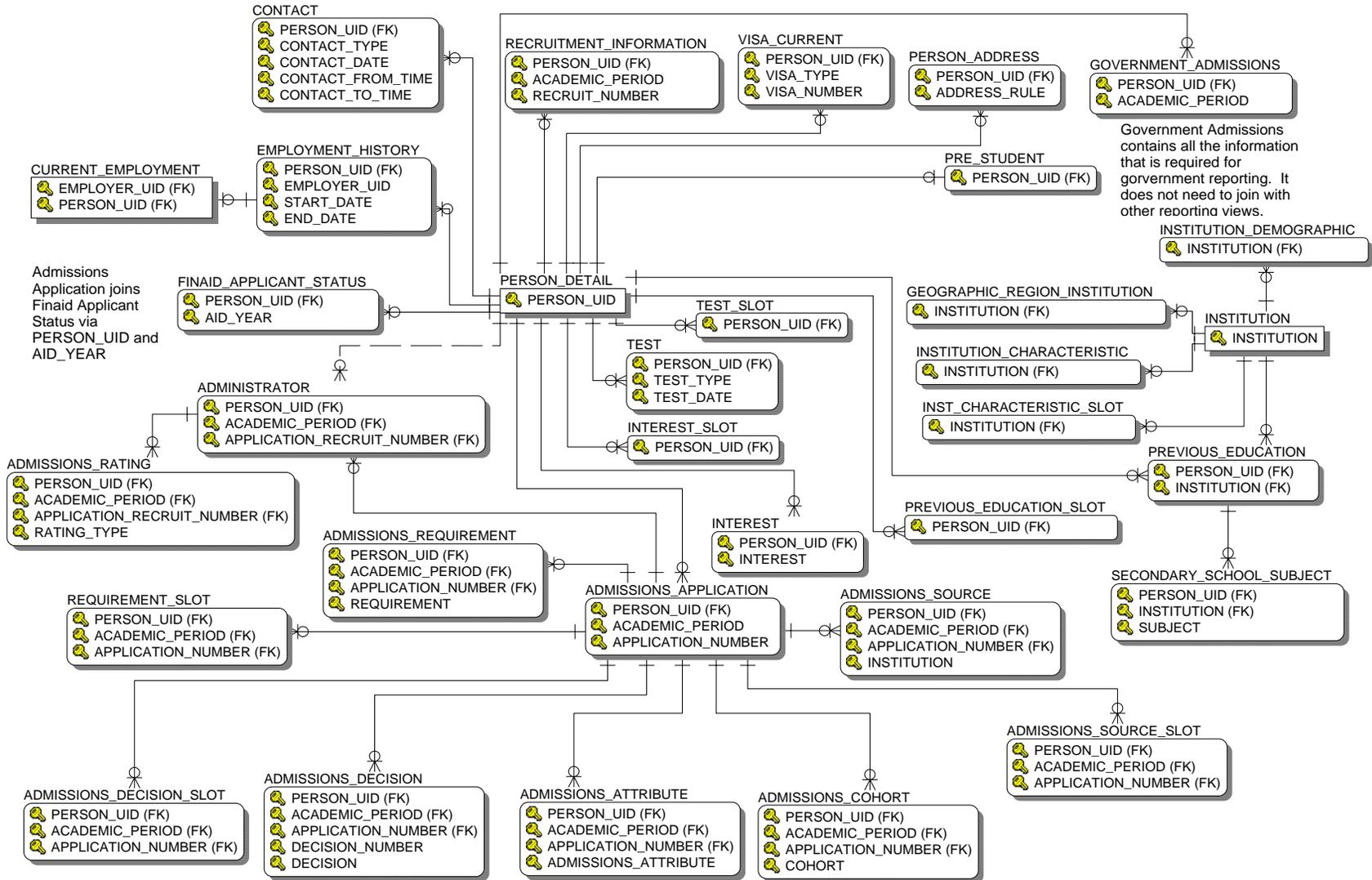
Labor Cost Distribution is joined to Employee Position by PERSON_UID, POSITION, and JOB SUFFIX. EFFECTIVE_DATE is different for each view. Costs are differentiated by accounting distribution.

Student

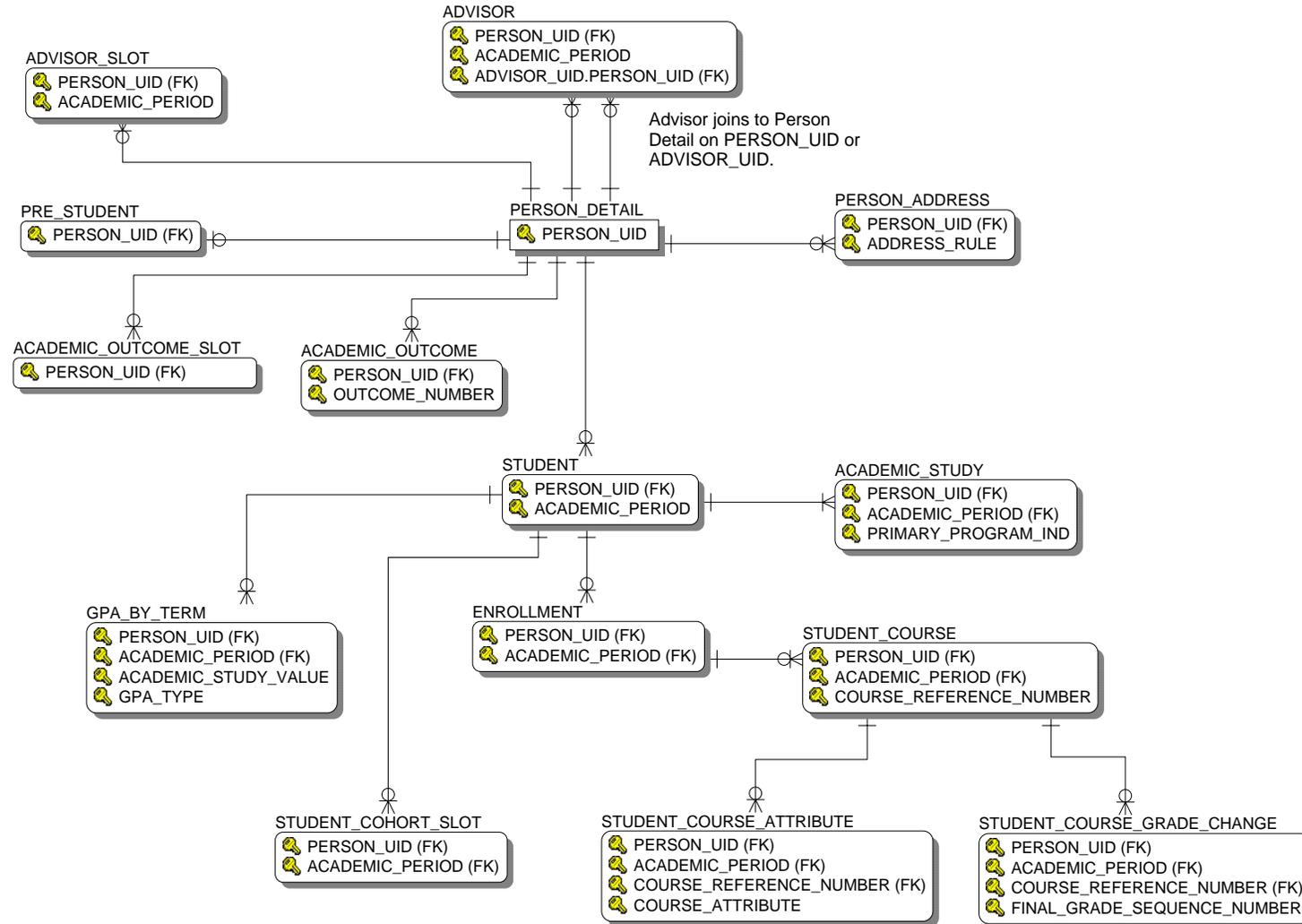
Active Registration



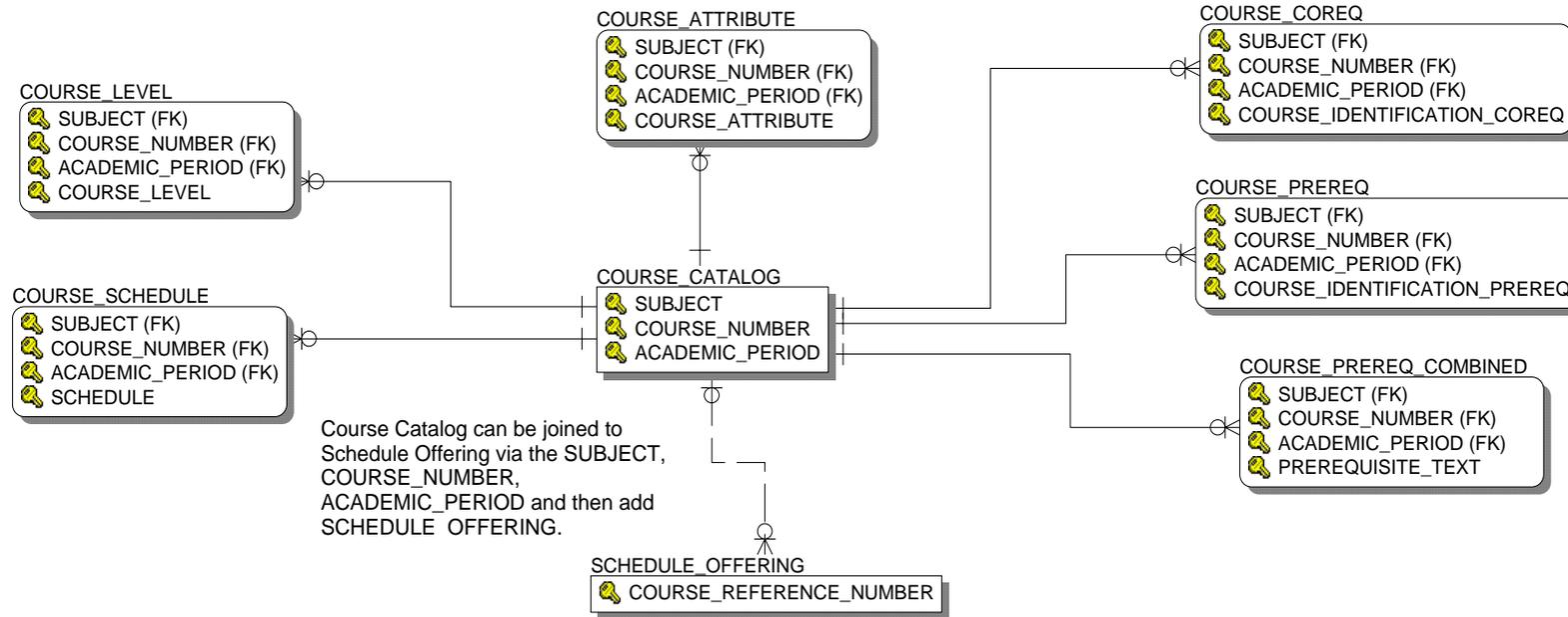
Admissions Application



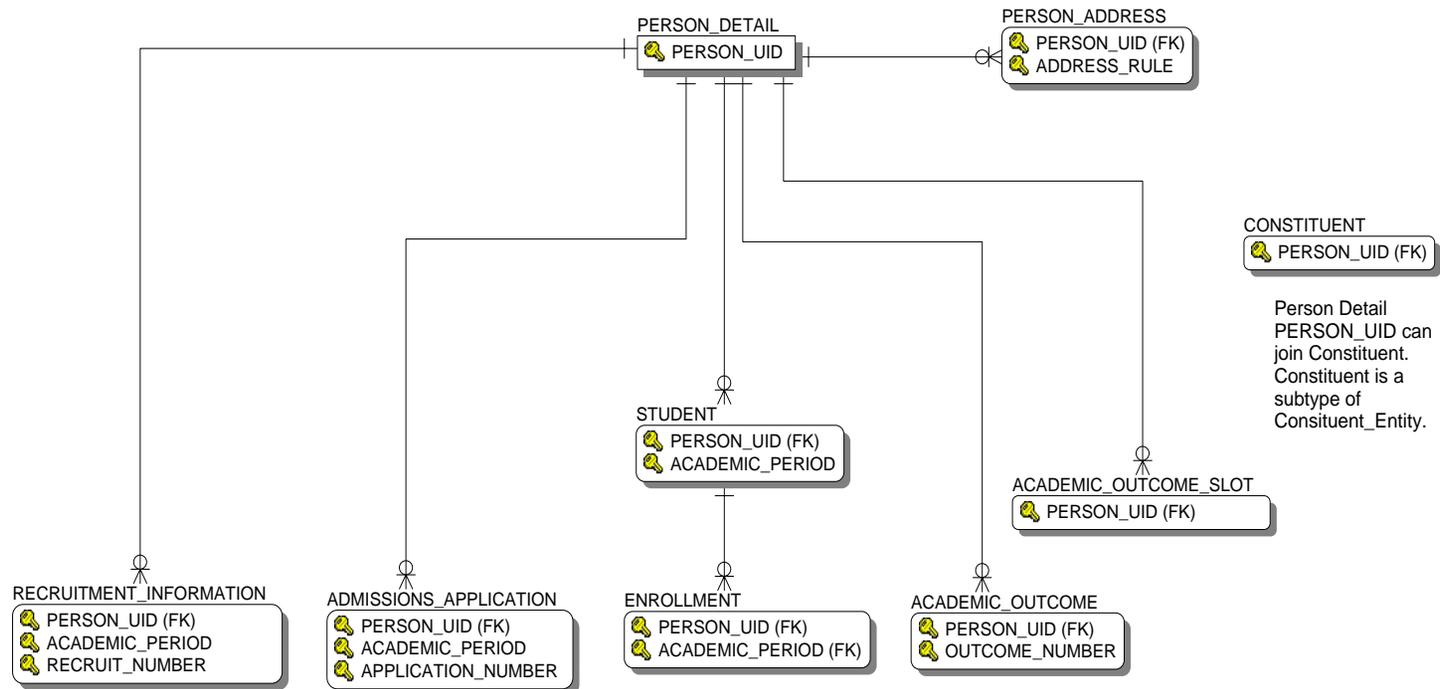
Advisor Student List



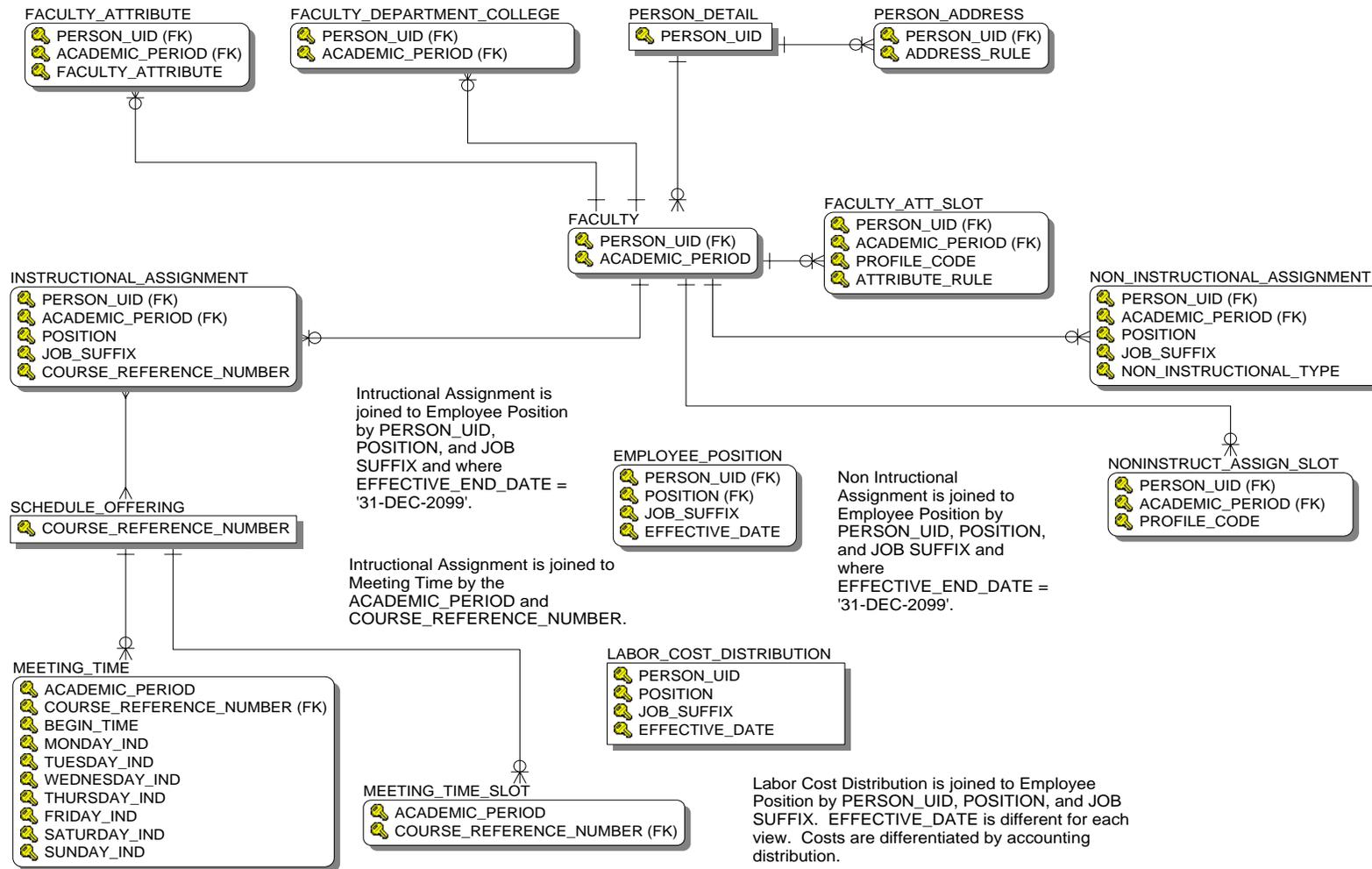
Course Catalog



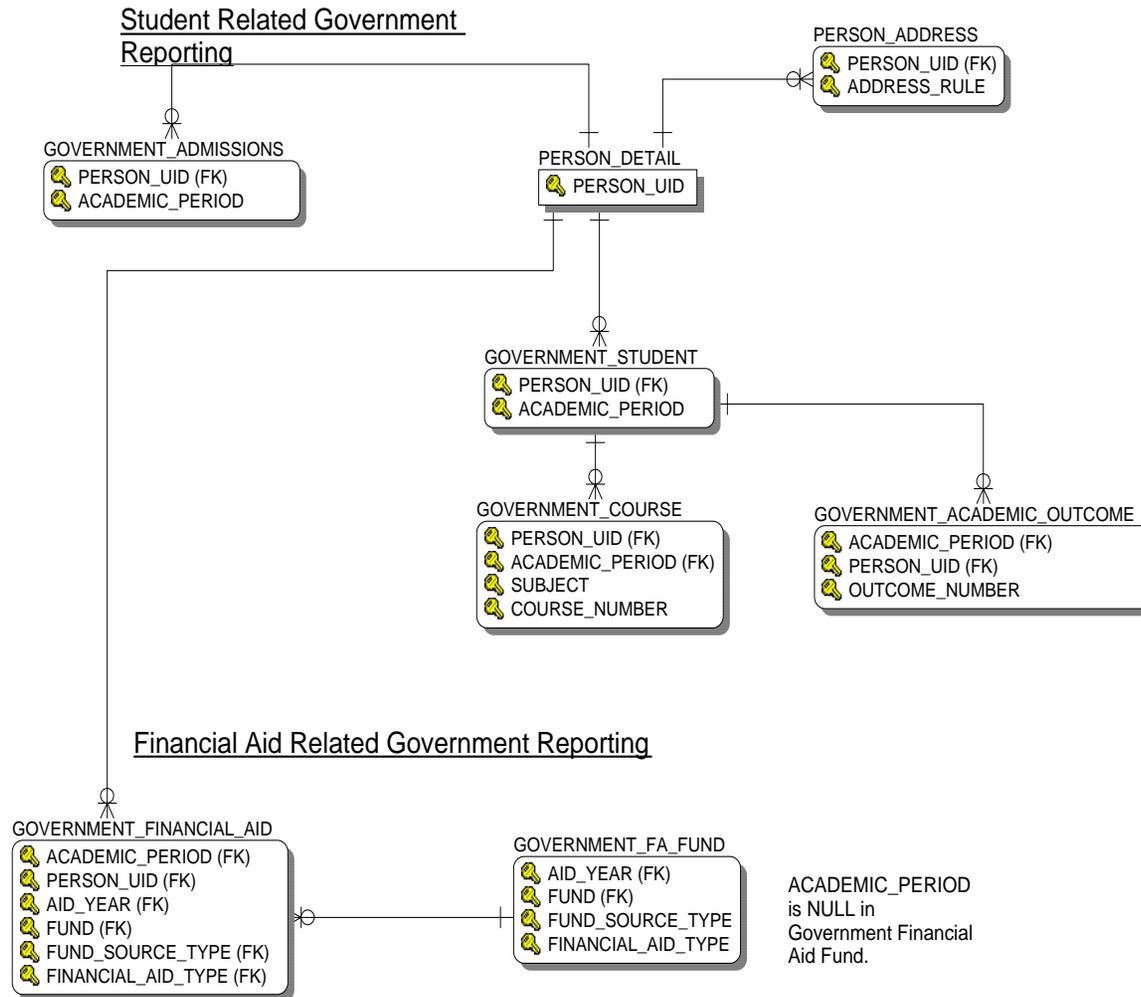
Enrollment Management



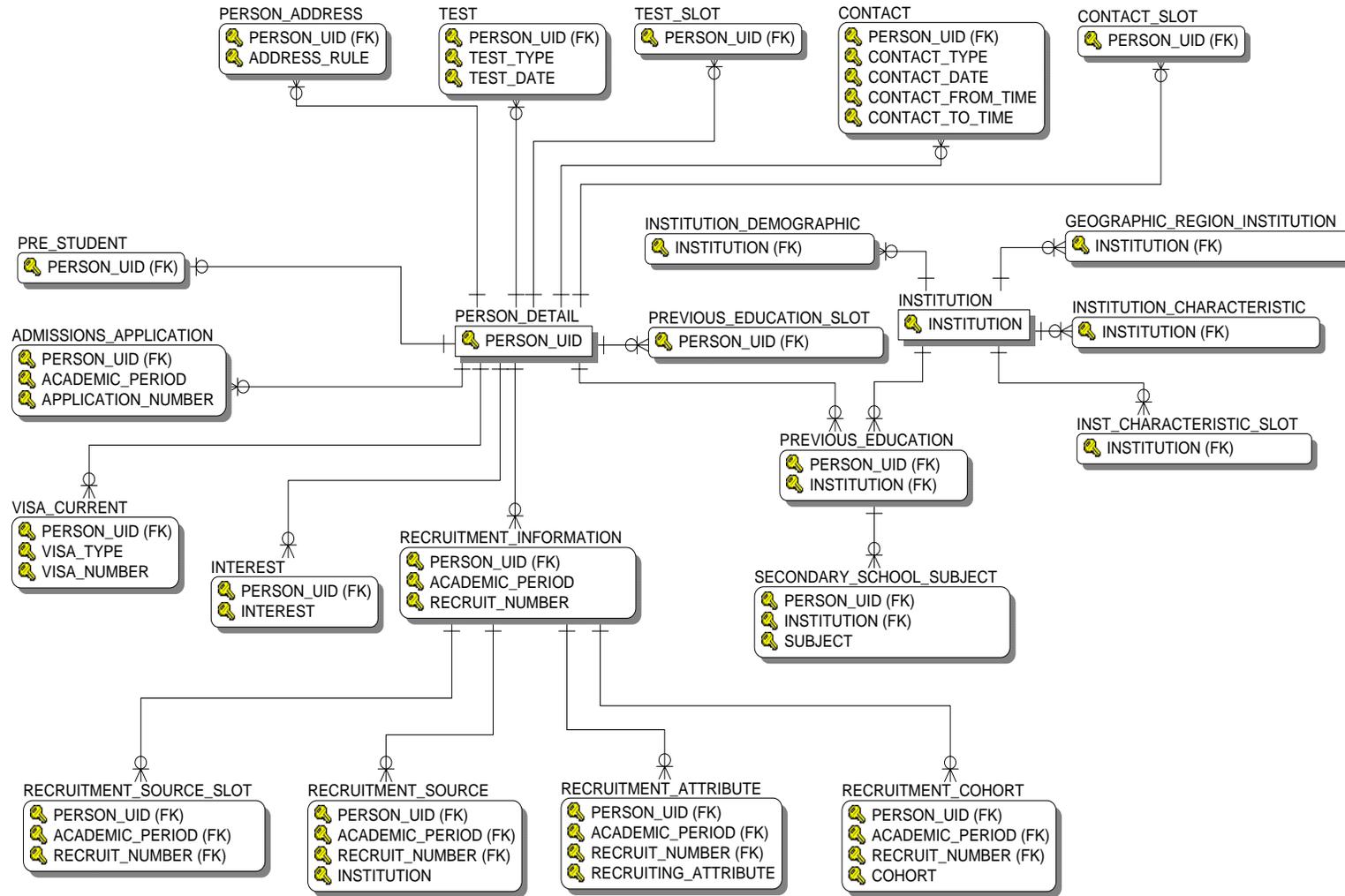
Faculty Assignment



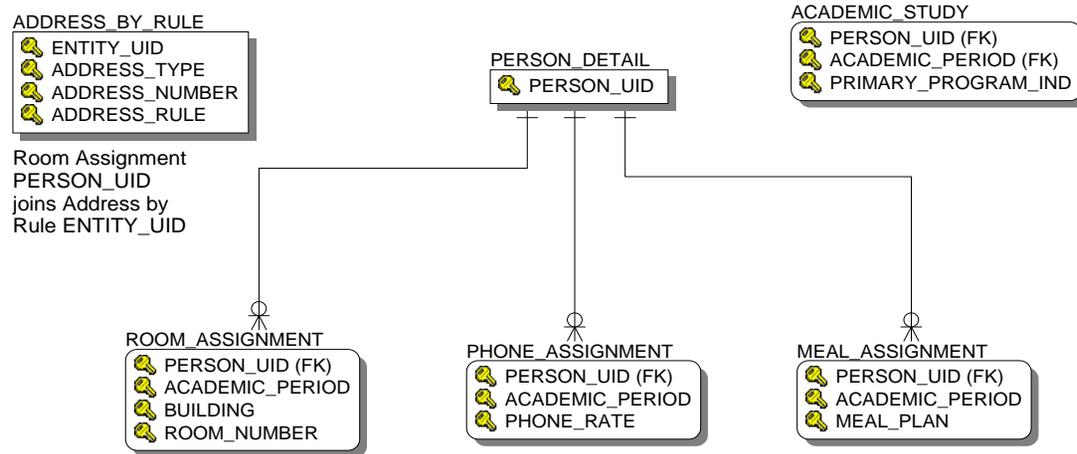
Government Reporting



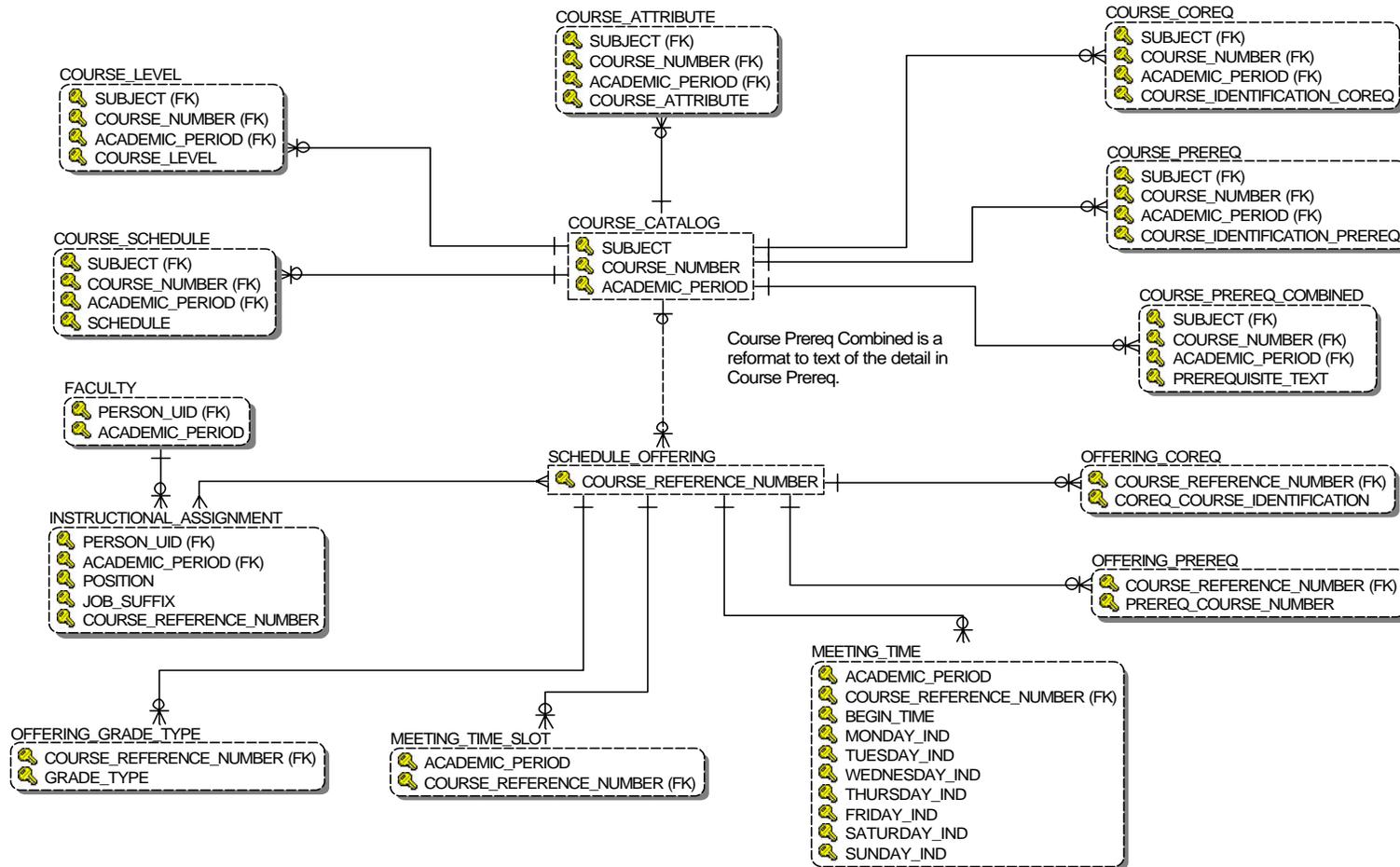
Recruitment Information



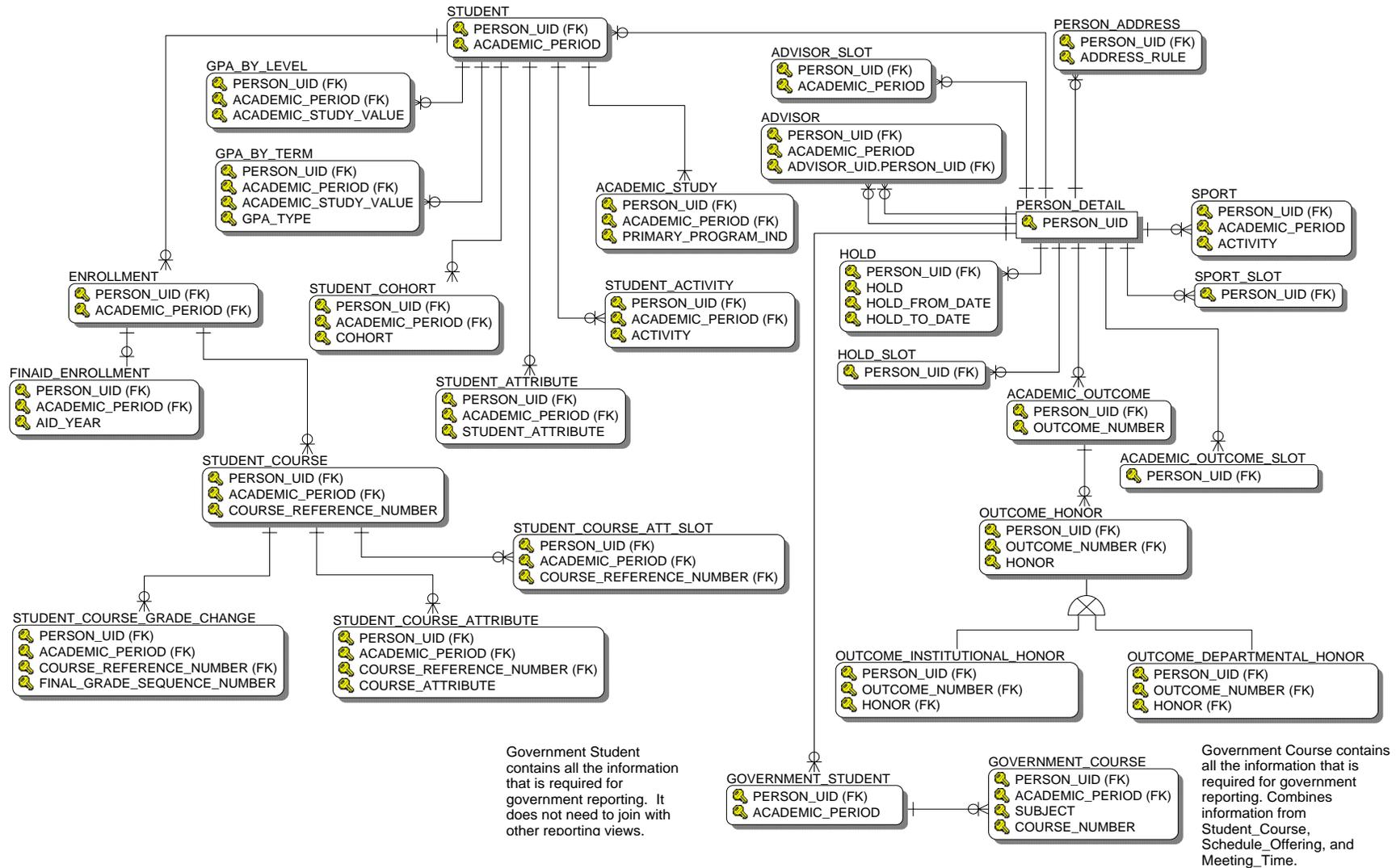
Residential Life



Schedule Offering



Student Detail



Reporting Views

Data from your source system database (for example, Student, Human Resources, Finance, etc.) is used to populate ODS composite tables, and can be retrieved in reports using the ODS reporting views. Use the Information Access 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 Information Access Administrative User Interface chapter, “Composite View Meta Data” 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 Information Access Administrative User Interface, “Information Access Meta Data (ODS and EDW)”.

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 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 the 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.

4 Data Models (ODS)
List of Value Views

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 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 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 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.

<i>List of Value View Name</i>	<i>Table Name</i>	<i>Table Name</i>	<i>Has Chart of Accounts Qualifier</i>	<i>Has PIDM Qualifier</i>	<i>Has Academic Period Qualifier</i>	<i>Uses EFFECTIVE _DATE and NEXT_ CHANGE_ DATE logic</i>	<i>Uses PIDM as Value</i>
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	x				
LOV_ACCOUNT_ATTRIBUTE_TYPE	ACCOUNT_ATTRIBUTE_TYPE	FTVATTT, FTRACTA	x				

4 Data Models (ODS)
List of Value Views

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_ DATE logic	Uses PIDM as Value
LOV_ACCOUNT_ATTRIBUTE_VALUE	ACCOUNT_ATTRIBUTE_VALUE	FTRATTV, FTRACTA	x				
LOV_ACCOUNT_CLASS	ACCOUNT_CLASS	FTVSDAT	x			x	
LOV_ACCOUNT_LEVEL_1	ACCOUNT_LEVEL_1	FTVACCT	x				
LOV_ACCOUNT_LEVEL_2	ACCOUNT_LEVEL_2	FTVACCT	x				
LOV_ACCOUNT_LEVEL_3	ACCOUNT_LEVEL_3	FTVACCT	x				
LOV_ACCOUNT_LEVEL_4	ACCOUNT_LEVEL_4	FTVACCT	x				
LOV_ACCOUNT_POOL	ACCOUNT_POOL	FTVACCT	x				
LOV_ACCOUNT_TYPE_ATTR_SET	ACCOUNT_TYPE_SET_CODE	FTRATYA, FIVATTS	x				
LOV_ACCOUNT_TYPE_ATTR_TYPE	ACCOUNT_TYPE_ATTR_TYPE	FTVATTT, FTRATYA	x				
LOV_ACCOUNT_TYPE_ATTR_VALUE	ACCOUNT_TYPE_ATTR_VALUE	FTRATTV, FTRATYA	x				
LOV_ACCOUNT_TYPE_LEVEL_1	ACCOUNT_TYPE_LEVEL_1	FIVATYP	x				
LOV_ACCOUNT_TYPE_LEVEL_2	ACCOUNT_TYPE_LEVEL_2	FIVATYP	x				
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					x
LOV_ADVISOR_TYPE	STVADVR	STVADVR					
LOV_AID_FUND	RFRBASE	RFRBASE					
LOV_AID_YEAR	ROBINST	ROBINST					
LOV_APPLICATION_DECISION	STVAPDC	STVAPDC					
LOV_APPLICATION_STATUS	STVAPST	STVAPST					
LOV_ASSIGNMENT_GRADE	ASSIGNMENT_GRADE	NBBPOSN					

4 Data Models (ODS)
List of Value Views

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_ DATE logic	Uses PIDM as Value
LOV_ASSIGNMENT_PAY_ID	PTRPICT	PTRPICT					
LOV_ASSIGNMENT_SALARY_GROUP	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	x				
LOV_BUDGET_GROUP	RTVBGRP	RTVBGRP					
LOV_BUDGET_PHASE	FTVOBPH	FTVOBPH	x				
LOV_BUILDING	STVBLDG	STVBLDG					
LOV_CALENDAR_MONTH	CALENDAR_MONTH	STATIC (01,02,03,04,05,06,07, 08,09,10,11,12))					
LOV_CAMPAIGN	AFBCAMP	AFBCAMP					
LOV_CAMPAIGN_TYPE	ATVCMTP	ATVCMTP					
LOV_CAMPUS	STVCAMP	STVCAMP					
LOV_CERTIFICATION	PTRCERT	PTRCERT					
LOV_CHART_OF_ACCOUNTS	FTVCOAS	FTVCOAS				x	
LOV_COHORT	STVCHRT	STVCHRT					
LOV_COLLECTION_AGENCY_NAME	COLLECTION_AGENCY_NAME	TBRCOLC					x
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					

4 Data Models (ODS)
List of Value Views

<i>List of Value View Name</i>	<i>Table Name</i>	<i>Table Name</i>	<i>Has Chart of Accounts Qualifier</i>	<i>Has PIDM Qualifier</i>	<i>Has Academic Period Qualifier</i>	<i>Uses EFFECTIVE _DATE and NEXT_ CHANGE_ DATE logic</i>	<i>Uses PIDM as Value</i>
LOV_COURSE_IDENTIFICATION	COURSE_IDENTIFICATION	STVTERM, SCBCRSE			x		
LOV_COURSE_REFERENCE_NUMBER	COURSE_REFERENCE_NUMBER	STVTERM, SSBSECT			x		
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					
LOV_EMPLOYEE_STATUS	EMPLOYEE_STATUS	STATIC (A,B,L,F,P,T)					
LOV_EMPLOYER	PTREMPR	PTREMPR					
LOV_EMPLOYER_CATEGORY	ATVJOB	ATVJOB					
LOV_EMPLOYER_INDUSTRIAL_TYPE	ATVSICC	ATVSICC					
LOV_EMPLOYMENT_STATUS	ATVEMPS	ATVEMPS					
LOV_ENROLLMENT_STATUS	STVESTS	STVESTS					
LOV_ETHNICITY	STVETHN	STVETHN					
LOV_FINANCE_ACCOUNT	FTVACCT	FTVACCT	x			x	
LOV_FINANCE_ACCOUNT_TYPE	FTVATYP	FTVATYP	x			x	
LOV_FINANCE_ACTIVITY	FTVACTV	FTVACTV	x			x	
LOV_FINANCE_FUND	FTVFUND	FTVFUND	x			x	
LOV_FINANCE_FUND_TYPE	FTVFTYP	FTVFTYP	x			x	
LOV_FINANCE_LOCATION	FTVLOCN	FTVLOCN	x			x	

4 Data Models (ODS)
List of Value Views

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_ DATE logic	Uses PIDM as Value
LOV_FINANCE_ORGANIZATION	FTVORGN	FTVORGN	x			x	
LOV_FINANCE_PROGRAM	FTVPROG	FTVPROG	x			x	
LOV_FINANCIAL_MANAGER	FINANCIAL_MANAGER	FTVFUND		x			
LOV_FISCAL_PERIOD	FTVFSPD	FTVFSPD	x			start date	
LOV_FISCAL_YEAR	FTVFSYR	FTVFSYR	x			start date	
LOV_FOREIGN_CURRENCY	GTVCURR	GTVCURR				x	
LOV_FUND_ATTRIBUTE_SET	FUND_SET_CODE	FTVATTS, FTRFNDA	x				
LOV_FUND_ATTRIBUTE_TYPE	FUND_ATTRIBUTE_TYPE	FTVATTT, FTRFNDA	x				
LOV_FUND_ATTRIBUTE_VALUE	FUND_ATTRIBUTE_VALUE	FTRATTV, FTRFNDA	x				
LOV_FUND_LEVEL_1	FUND_LEVEL_1	FTVFUND	x				
LOV_FUND_LEVEL_2	FUND_LEVEL_2	FTVFUND	x				
LOV_FUND_LEVEL_3	FUND_LEVEL_3	FTVFUND	x				
LOV_FUND_LEVEL_4	FUND_LEVEL_4	FTVFUND	x				
LOV_FUND_LEVEL_5	FUND_LEVEL_5	FTVFUND	x				
LOV_FUND_POOL	FUND_POOL	FTVFUND	x				
LOV_FUND_SOURCE	RTVFSRC	RTVFSRC					
LOV_FUND_TYPE	RTVFTYP	RTVFTYP					
LOV_FUND_TYPE_ATTR_SET	FUND_TYPE_SET_CODE	FTVATTS, FTRFTYA	x				
LOV_FUND_TYPE_ATTR_TYPE	FUND_TYPE_ATTR_TYPE	FTVATTT, FTRFTYA	x				
LOV_FUND_TYPE_ATTR_VALUE	FUND_TYPE_ATTR_VALUE	FTRATTV, FTRFTYA	x				
LOV_FUND_TYPE_LEVEL_1	FUND_TYPE_LEVEL_1	FTVATYP	x				
LOV_FUND_TYPE_LEVEL_2	FUND_TYPE_LEVEL_2	FTVATYP	x				
LOV_GENDER	GENDER	STATIC (M,F,N)					
LOV_GEOGRAPHIC_AREA	STVGEOR	STVGEOR					
LOV_GRADE_TYPE	STVGMOD	STVGMOD					
LOV_GRANT	FRBGRNT	FRBGRNT	x			term date	
LOV_HOLD	STVHLDD	STVHLDD					

4 Data Models (ODS)
List of Value Views

<i>List of Value View Name</i>	<i>Table Name</i>	<i>Table Name</i>	<i>Has Chart of Accounts Qualifier</i>	<i>Has PIDM Qualifier</i>	<i>Has Academic Period Qualifier</i>	<i>Uses EFFECTIVE _DATE and NEXT_ CHANGE_ DATE logic</i>	<i>Uses PIDM as Value</i>
LOV_HR_APPLICATION_STATUS	PTRAPPS	PTRAPPS					
LOV_INCOME_LEVEL	ATVINCM	ATVINCM					
LOV_INSTALLMENT_PLAN	INSTALLMENT_PLAN	TBBISTC					
LOV_INSTRUCTIONAL_METHOD	GTVINSM	GTVINSM					
LOV_INSTRUCTOR_NAME	INSTRUCTOR_NAME	STVTERM, SPRIDEN, SIRASGN		x		x	
LOV_INTERNAL_ACCOUNT_TYPE	INTERNAL_ACCOUNT_TYPE	FTVSDAT	x			x	
LOV_INTERNAL_FUND_TYPE	INTERNAL_FUND_TYPE	FTVSDAT	x			x	
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_REASON	PTRLREA	PTRLREA					
LOV_LEGACY	STVLGCY	STVLGCY					
LOV_LEVEL	STVLEVL	STVLEVL					
LOV_LOCATION_LEVEL_1	LOCATION_LEVEL_1	FTVLOCN	x				
LOV_LOCATION_LEVEL_2	LOCATION_LEVEL_2	FTVLOCN	x				
LOV_LOCATION_LEVEL_3	LOCATION_LEVEL_3	FTVLOCN	x				
LOV_LOCATION_LEVEL_4	LOCATION_LEVEL_4	FTVLOCN	x				
LOV_MAIL	GTVMAIL	GTVMAIL					
LOV_MAJOR	STVMAJR	STVMAJR					
LOV_MARITAL_STATUS	STVMRTL	STVMRTL					
LOV_MEAL_PLAN	STVMRCD	STVMRCD					
LOV_MEETING_TYPE	GTVMTYP	GTVMTYP					
LOV_NATION	STVNATN	STVNATN					
LOV_NATIVE_LANGUAGE	STVLANG	STVLANG					

4 Data Models (ODS)
List of Value Views

<i>List of Value View Name</i>	<i>Table Name</i>	<i>Table Name</i>	<i>Has Chart of Accounts Qualifier</i>	<i>Has PIDM Qualifier</i>	<i>Has Academic Period Qualifier</i>	<i>Uses EFFECTIVE_ _DATE and NEXT_ CHANGE_ DATE logic</i>	<i>Uses PIDM as Value</i>
LOV_ORGANIZATION_ATTR_SET	ORGANIZATION_SET_CODE	FTVATTS, FTRORGA	x				
LOV_ORGANIZATION_ATTR_TYPE	ORGANIZATION_ATTR_TYPE	FTVATTT, FTRORGA	x				
LOV_ORGANIZATION_ATTR_VALUE	ORGANIZATION_ATTR_VALUE	FTRATTV, FTRORGA	x				
LOV_ORGANIZATION_LEVEL_1	ORGANIZATION_LEVEL_1	FTVORGN	x				
LOV_ORGANIZATION_LEVEL_2	ORGANIZATION_LEVEL_2	FTVORGN	x				
LOV_ORGANIZATION_LEVEL_3	ORGANIZATION_LEVEL_3	FTVORGN	x				
LOV_ORGANIZATION_LEVEL_4	ORGANIZATION_LEVEL_4	FTVORGN	x				
LOV_ORGANIZATION_LEVEL_5	ORGANIZATION_LEVEL_5	FTVORGN	x				
LOV_ORGANIZATION_LEVEL_6	ORGANIZATION_LEVEL_6	FTVORGN	x				
LOV_ORGANIZATION_LEVEL_7	ORGANIZATION_LEVEL_7	FTVORGN	x				
LOV_ORGANIZATION_POOL	ORGANIZATION_POOL	FTVORGN	x				
LOV_ORG_FINANCIAL_MANAGER	ORG_FINANCIAL_MANAGER	SPRIDEN, FTVORGN		x			
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					
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		x			
LOV_PROGRAM	SMRPRLE	SMRPRLE					

4 Data Models (ODS)
List of Value Views

<i>List of Value View Name</i>	<i>Table Name</i>	<i>Table Name</i>	<i>Has Chart of Accounts Qualifier</i>	<i>Has PIDM Qualifier</i>	<i>Has Academic Period Qualifier</i>	<i>Uses EFFECTIVE_ _DATE and NEXT_ CHANGE_ DATE logic</i>	<i>Uses PIDM as Value</i>
LOV_PROGRAM_ATTR_SET	PROGRAM_SET_CODE	FTVATTS, FTRPRGA	x				
LOV_PROGRAM_ATTR_TYPE	PROGRAM_ATTR_TYPE	FTVATTR, FTRPRGA	x				
LOV_PROGRAM_ATTR_VALUE	PROGRAM_ATTR_VALUE	FTRATTV, FTRPRGA	x				
LOV_PROGRAM_CLASSIFICATION	STVCIPC	STVCIPC					
LOV_PROGRAM_LEVEL_1	PROGRAM_LEVEL_1	FTVPROG	x				
LOV_PROGRAM_LEVEL_2	PROGRAM_LEVEL_2	FTVPROG	x				
LOV_PROGRAM_LEVEL_3	PROGRAM_LEVEL_3	FTVPROG	x				
LOV_PROGRAM_LEVEL_4	PROGRAM_LEVEL_4	FTVPROG	x				
LOV_PROGRESS_EVALUATION	STVPREV	STVPREV					
LOV_PROJECT	ATVPROJ	ATVPROJ					
LOV_PROSPECT_STATUS	ATVPRST	ATVPRST					
LOV_RATING	ATVRATE	ATVRATE					
LOV_RATING_TYPE	ATVRTGT	ATVRTGT					
LOV_RECEIVABLE_CATEGORY	TTVDCAT	TTVDCAT					
LOV_RECEIVABLE_CONTRACT	RECEIVABLE_CONTRACT	STVTERM, TBBCONT			x		
LOV_RECEIVABLE_DELIQUENCY	TTVDELI	TTVDELI, TBBACCT					
LOV_RECEIVABLE_DETAIL_CODE	TBBDETC	TBBDETC					
LOV_RECEIVABLE_EXEMPTION	RECEIVABLE_EXEMPTION	STVTERM, TBBEXPT			x		
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					

4 Data Models (ODS)
List of Value Views

<i>List of Value View Name</i>	<i>Table Name</i>	<i>Table Name</i>	<i>Has Chart of Accounts Qualifier</i>	<i>Has PIDM Qualifier</i>	<i>Has Academic Period Qualifier</i>	<i>Uses EFFECTIVE _DATE and NEXT_ CHANGE_ DATE logic</i>	<i>Uses PIDM as Value</i>
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					
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	FIVVTYP	FIVVTYP				start date term date	
LOV_VETERAN_CATEGORY	STVVETC	STVVETC					
LOV_VISA	STVVVYP	STVVVYP					
LOV_WITHDRAW_REASON	STVWRSN	STVWRSN					
LOV_WORKER_COMPENSATION_ CLASS	PTVWKCP	PTVWKCP					

Chapter 5 Third Party Reporting Tools (ODS)

Various tools are available that provide the ability to retrieve, analyze and present information. However, 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 allows for the definition of relationships between objects in the database, and for any additional filtering or formatting which would be useful for the average end user.

Cognos ReportNet and Oracle Discoverer meta data layers are delivered as part of the Operational Data Store (ODS). Relationships between the reporting views in the ODS are included in these meta data layers. The meta data layer, therefore, provides the joins used by the database to connect the views and the end user does not need to define that relationship when creating queries or reports. The reporting meta data contains reporting view and column definitions within the reporting views. The meta data also defines how to manage columns that are number data type, i.e. 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.

In Cognos ReportNet, the reporting meta data is called the ReportNet model. In Oracle Discoverer, the reporting meta data is called the End User Layer (EUL).

Business Concepts

These reporting tools use business concepts to logically organize ODS information. Cognos ReportNet refers to these groups of reporting views as business views. Oracle Discoverer calls them business areas. The relationships in the business views and business areas are different from the relationships in the business concept Entity Relationship Diagrams (ERDs). The ERDs show the logical foreign key constraints between the reporting views, and the logical primary keys for the reporting views. For example, you need a row in the Person Detail view before you can have a row in the Person Address view. These keys and relationships in the ERDs are “logical” (show what types of data *could* be in the system) rather than “physical” (show what data *must* be in the system). Therefore, they are documented in the ERDs to make it easier to understand the data in the views.

The relationships in the business views and business areas define how the SQL generated by the reporting tool should connect the reporting views. These relationships provide the most efficient query possible relative to the business view/area within which the reporting views are contained. Within the reporting relationships, SunGard Higher Education defines one primary reporting view for a business view/area. A primary reporting

view is the view to which all other views in the business view or business area are joined. It contains the main facts (measures) relative to queries relevant for that business concept.

Business Views and Areas

The table below lists the business views/areas and the primary reporting view in each of the business views/areas. They are grouped by subject area. A subject area loosely corresponds to a Sungard Higher Education Banner product. It is important when creating a report in Cognos ReportNet or Oracle Discoverer to use the right business view/area. When you write a report, use filters on the primary reporting view, rather than the other reporting views whenever possible.

<i>Subject Area</i>	<i>Business View or Area</i>	<i>Primary Reporting View (Reporting views at the center of ODS Queries)</i>
Accounts Receivable	Receivable Customer	RECEIVABLE_ACCOUNT
	Receivable Revenue	RECEIVABLE_ACCOUNT_DETAIL
Advancement	Advancement Prospect	PROSPECT_INFO
	Advancement Rating	ADVANCEMENT_RATING
	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

5 *Third Party Reporting Tools (ODS)*
Business Concepts

<i>Subject Area</i>	<i>Business View or Area</i>	<i>Primary Reporting View (Reporting views at the center of ODS Queries)</i>
Financial Aid	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 Application	FINAID_APPLICANT_STATUS
	Financial Aid Award and Disbursement	AWARD_BY_PERSON
Human Resources	Financial Aid Fund	AWARD_BY_FUND
	Employee	EMPLOYEE
Student	Human Resource Application	HR_APPLICATION
	Human Resource Faculty	FACULTY
	Payroll	PAYROLL_DOCUMENT
	Position	POSITION_DEFINITION
	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, GOVERNMENT_ADMISSIONS	
Recruitment Information	RECRUITMENT_INFORMATION	

<i>Subject Area</i>	<i>Business View or Area</i>	<i>Primary Reporting View (Reporting views at the center of ODS Queries)</i>
	Residential Life	PERSON_DETAIL
	Schedule Offering	SCHEDULE_OFFERING
	Student Detail	STUDENT

Reporting Relationships

The relationships in the reporting meta data for Cognos ReportNet and Oracle Discoverer are the same. Appendix A contains diagrams that show the relationships among the various ODS reporting views.

Lists of Values

A list of values (LOV) is a set of valid values for a column in an ODS reporting view. List of value views are contained within the ODSLOV schema within the ODS. The LOV views obtain their information from the ODS composite table called MGT_VALIDATION. As stated previously, the meta data layers for both Cognos ReportNet and Oracle Discoverer 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 the “Data Models (ODS)” chapter for the complete list of ODSLOV list of value views. The values also exist in Discoverer and ReportNet with the exact same names as the LOV views but without the underscores.

There is a business view in Cognos ReportNet that contains a model query subject for each of the ODSLOV views. Similarly, in Oracle 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” in both cases.

Cognos ReportNet

Lists of Values - Prompts

Lists of values query subjects in ReportNet that can be used to create lists for prompts in the report writing component of Cognos ReportNet's Report Studio. There is an additional list of values query subject in the ReportNet 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 ODS using objects in the reporting tool meta data. In ReportNet these objects are called filters.

The tables on the following pages identify which filters are set up in the ReportNet model. There are two tables because there are two different kinds of filters used in ReportNet – 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:

<i>ReportNet Object</i>	<i>Definition</i>
Filter Name	Cognos ReportNet filter name for the filter on the reporting view.
Business View	logical grouping of ODS Reporting Views.

<i>ReportNet Object</i>	<i>Definition</i>
Filter Expression	Expression used to generate a WHERE clause when querying the reporting view.

Embedded Filters

The ReportNet model uses embedded filters when you use a filter with only one query subject. They are created in our model query subjects.

<i>Filter Name</i>	<i>Business View</i>	<i>Filter Expression</i>
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'

<i>Filter Name</i>	<i>Business View</i>	<i>Filter Expression</i>
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 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.

<i>Business View</i>	<i>Filter Name</i>	<i>Filter Expression</i>
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

<i>Business View</i>	<i>Filter Name</i>	<i>Filter Expression</i>
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'

<i>Business View</i>	<i>Filter Name</i>	<i>Filter Expression</i>
Transaction History	General Ledger Indicator	Transaction History.LEDGER_IND ='G'
Transaction History	Operating Ledger Indicator	Transaction History.LEDGER_IND ='O'

Oracle Discoverer

Lists of Values – Item Classes

List of value folders in Oracle Discoverer are used to create items classes in 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.

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.)

Discoverer end users use lists of values to display values or enter values in parameters and conditions.

A table of 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:

<i>Item Class</i>	<i>Item Class</i>	<i>Item Class</i>
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

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<i>Item Class</i>	<i>Item Class</i>	<i>Item Class</i>
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
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

<i>Item Class</i>	<i>Item Class</i>	<i>Item Class</i>
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
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

<i>Item Class</i>	<i>Item Class</i>	<i>Item Class</i>
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

<i>Item Class</i>	<i>Item Class</i>	<i>Item Class</i>
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
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

<i>Item Class</i>	<i>Item Class</i>	<i>Item Class</i>
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

<i>Item Class</i>	<i>Item Class</i>	<i>Item Class</i>
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 ODS can be filtered using objects in the reporting tool meta data layer. In Discoverer, they are called conditions.

The table at the bottom of this section identifies which conditions are set up in the Oracle Discoverer EUL.

<i>Discoverer Object</i>	<i>Definition</i>
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 Discoverer folder that represents an ODS Reporting View.
Business Area	A logical grouping of ODS Reporting Views.

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<i>Discoverer Object</i>	<i>Definition</i>			
Optional vs. Mandatory	If a condition is optional, it is visible in Discoverer Plus and can be added to a workbook. If it is mandatory, it is invisible, and always applied to a folder.			
<i>Condition Name</i>	<i>Formula</i>	<i>Folder Name</i>	<i>Business Area</i>	<i>Optional vs. Mandatory</i>
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

<i>Condition Name</i>	<i>Formula</i>	<i>Folder Name</i>	<i>Business Area</i>	<i>Optional vs. Mandatory</i>
General Ledger Indicator	Ledger Indicator = 'G'	Transaction History	General Ledger	Optional
			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

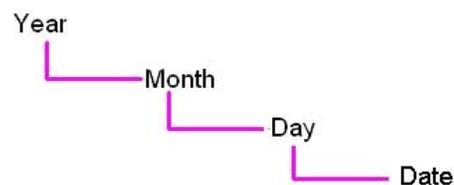
Hierarchies are logical relationships between items that enable you to drill up and down to view more or less detail. To analyze information effectively, Discoverer end users should:

- 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.

Note: Discoverer automatically creates default date hierarchies against date items when you import a reporting view into the End User Layer (EUL) using Discoverer Administrator. However, these default date hierarchies can cause

performance issues. 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 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 Discoverer EUL.

<i>Date Folder</i>	<i>Date Folder</i>
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

<i>Date Folder</i>	<i>Date Folder</i>
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 Discoverer EUL by business area:

<i>Business Area</i>	<i>Date Folder</i>
Active Registration	Current Time Status Date
	Enrollment Status Date
Admissions Application	Latest Decision Date
Advancement Prospect	Target Ask Date

<i>Business Area</i>	<i>Date Folder</i>
Advancement Rating	Rating Date
Annual Giving	Highest Gift Amount Date
Constituent	Most Recent Gift Date
	Most Recent Pledge Date
Constituent Entity	Birth Date
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

<i>Business Area</i>	<i>Date Folder</i>
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

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<i>Business Area</i>	<i>Date Folder</i>
	Pledge Date
	Posting Date
Position	Position Begin Date
Purchasing Payable	Invoice Date
	Purchase Order Date
Receivable Customer	Collection Date
Receivable Revenue	Operating Date
Recruitment Information	Date Added Date
Relationship	Related Birth Date
	Related Deceased Date
Residential Life	Birth Date
	Deceased Date
	Immigration Status Date
	Military Separation Date
	Start Date
Schedule Offering	Start Date
Transaction History	Transaction Date

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Chapter 6 Report Templates (ODS)

The ODS provides report templates written specifically against the ODS data model. These templates use the Oracle Discoverer reporting tool and use the reporting views within the ODS as their data source. This provides for consistent column names between the provided report templates and any additional reports that your institution creates on their own. Any additional reporting tool that SunGard Higher Education supports in future releases will also go directly against the reporting views. Sungard Higher Education has provided an enterprise business area called ODS – Reporting Views within the Discoverer reporting tool with join conditions established. These reports are written against the ODS – Reporting Views business area.

This chapter provides a description and parameter listing of each delivered ODS report template. The templates are listed in template number order by module. The following report template summaries are provided as a starting point for creating your customized reports.

Note: To refresh the List of Values, you must validate and refresh folders in the End User Layer of your Discoverer Administrator system. Check the box that disables the Fan-Trap option in the Discoverer Desktop, PLUS, or Viewer.

Advancement

The Advancement module contains the following standard templates.

<i>Advancement Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AA01 - Giving by Donor Category	Provides a summary of giving by donor category for the current year and the previous 3 years. Lists the total Number of Gifts, Total Giving, and Highest Gift Amount.	Donor
AA02 - Prospect Ask Amount	Provides information about the prospects, contacts, and requested gift amounts.	Entity, Prospect, Rating Type, Rating, Project
AA03 - Campaign Activity	Provides information about gift amounts, pledge amounts, and paid amounts given during a campaign or campaigns.	Campaign
AA04 - Gift Summary By Class Year	Provides information about the total and average amounts of gifts and pledges made, by class year. Lists current and two previous fiscal years.	Preferred
AA05 - Staff Contact Detail	Provides information about prospect contacts by related staff assignments.	Entity
AA06 - Constituent Detail	Provides detailed information about each constituent.	Entity, Constituent
AA07 - Constituent Category	Provides detailed information about each constituent, grouped by category, class, and college.	Class, College, Category
AA08 - Lost Constituent	Provides details about each lost constituent.	Preferred

6 Report Templates (ODS)
Advancement

<i>Advancement Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AA09 - Additional Constituent Information	Provides details about educational degrees, job, children for each constituent.	Entity, Constituent
AA11 - Organizational Funding	Provides information about organizations and their funding interests.	Fund
AA12 - Solicitor Gift and Pledge Summary	Provides information about lifetime total gift and pledge amounts by donor, grouped by Solicitor. Will not count gifts/pledges without solicitor credit.	Entity
AA13 - Lifetime Commitment Range	Provides information about nondeceased donors, and their giving and total pledges within lifetime commitment ranges.	Entity, Amount Range
AA14 - Unfulfilled Pledges	Provides information about unpaid balances of pledges.	None
AA15 - Staff Assignments	Provides information about the prospects assigned to each Development Officer.	None
AA16 - Percent of Alumni Participation	Provides the percentage of all living, non-lost alumni on record who have made a gift in the current Fiscal Year.	None
AA17 - Gift - by Gift Date	Provides details about gifts made for the period entered.	Gift Giving
AA18 - Campaign Summary	Provides information about all campaign activity during selected Fiscal Year(s).	Fiscal Year
AA19 - Multi-Year Campaign Comparison	Provides information about each year's campaign giving, pledges, and payments for a selected campaign.	Campaign

6 Report Templates (ODS)
Advancement

<i>Advancement Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AA20 - Designation Detail	Lists gift and pledge summary counts and totals for each designation within a selected campaign.	None
AA21 - Pledges by Solicitation Code	Provides a Detail or Summary report. Lists pledge activity for solicitation codes within a campaign. Will not list gifts or pledges without solicitation codes.	Solicitation Code
AA22 - Phonathon	Provides information about pledge detail (date, amount, designation, pledge class, status, amount paid to date.	Campaign, Solicitor Type, Solicitor, Pledge Date
AA23 - Regional Activity	Provides information about name, preferred address, phone. By specified geographic region.	Geographic
AA24 - Designation Summary	Provides summary information about pledge activity for each designation within a selected campaign.	None
AA25 - Phone Exception - Geographic	Provides information about name, preferred address, and last known phone number(s) for constituents who do not have a current phone number.	None
AA26 - Active Employees By Employer	Provides information about all active employees with their job information.	None

Finance

The Finance module contains the following standard templates.

<i>Finance Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AF01 - Balance Sheet	Provides a summary of the Assets and equates them to the summarized Liabilities and Fund Balance for a designated group of Funds within a Chart of Accounts. Assets and Liabilities are displayed at the highest level of account types. This report can be generated as a Consolidated Balance Sheet for all Funds within a Chart of Account.	Chart of Accounts, Fiscal Year, Fiscal Period, Level of Fund, Fund
AF10 - Expenditure-Revenue Transaction Detail	Provides detailed operating account transaction history for a budget unit.	Chart of Accounts, Fiscal Year, Transaction Date Range, Fund, Organization, Account
AF13 - Vendor Invoice Activity	Provides a Detail or Summary report about vendor purchasing activity, using vendor invoice activity as the basis. The summary report lists the dollar amount of goods or services invoiced by each of the institutions vendors. The detail report lists all activity for a specific vendor. In either Summary or Detail the report requires begin and end dates. When the Threshold parameter is populated, vendors with activity totals below the Threshold will be excluded.	Open or Paid Ind, Vendor ID, Transaction Date Range, Fiscal Year, Fiscal Period
AF14 - Vendors On-time Performance	Provides details about Vendor's on-time performance by comparing the Delivery Date on the Purchase Order to the Received Date on the receiving form. Can be run for a specific vendor, vendor type, or all vendors. It may be further refined by excluding on-time deliveries by specifying the number of delivery-to-receipt days that are considered on-time.	Purchase Order Date Range, Days Difference, Vendor Type, Vendor Name, Commodity

<i>Finance Report No. and Name (cont)</i>	<i>Description</i>	<i>Parameters</i>
AF15 - Vendors Delivery Performance	Provides a comparison of what was received to what was ordered. Can be run for a specific vendor, list of vendors, or all vendors, or specific Purchase Order, list of Purchase Orders, or all Purchase Orders.	Purchase Order Date Range, Vendor ID, Purchase Order Number
AF16 - Vendor Volume - Commodities Invoiced	Provides the ability to monitor by commodity the level of business provided to vendors that service the institution, using invoices as the basis. Can be run for commodity (specific, list, or all), vendor type (specific, list, or all), and vendor (specific, list, or all).	Fiscal Year, Commodity, Vendor Type, Vendor ID
AF17 - Checks Paid - with Invoice Detail	Provides details about the disbursement of funds to various vendors (including third party vendors) with whom the institution is contracting for the provision of goods and services.	Fiscal Year, Begin Fiscal Period, End Fiscal Period, Vendor ID
AF18 - Proposed Budget	Provides details about the budget model so that the institution can monitor the budget life cycle. It compares the proposed budget to the prior year's posted budget and the prior year's year-to-date actual activity.	Chart of Accounts, Budget, Budget Phase, Level, Fund, Organization, Account, Program
AF19 - Transaction History by Grant	Provides detailed transaction history for a single Grant Code or all grants for the date range specified by the user.	Chart of Accounts, Transaction Date Range, Grant Code
AF20 - Grant Budget Status	Provides Revenue and Expenditure Analysis using operating accounts. Based on Grants Fiscal Year and since inception.	Chart of Accounts, Agency ID, Grant Code
AF21 - Grant Cost	Provides a cost report, comparing Grant activity to General Ledger Accounts. Based on Grants Fiscal Year and since inception.	Chart of Accounts, Agency ID, Grant Code

6 Report Templates (ODS)
Finance

<i>Finance Report No. and Name (cont)</i>	<i>Description</i>	<i>Parameters</i>
AF23 -AR/GL Reconciliation	Aligns Accounts Receivable data to corresponding Accounts Receivable General Ledger accounts.	Chart of Accounts, Fiscal Year, Detail Code, Fund, Account
AF24 - Budget Availability	Provides available budget amounts at a specific time in the budget year.	Chart of Accounts, Fiscal Year, Level, Fund, Organization, Account
AF28 - Checks Paid by Vendor	Provides a list of checks and their amounts by Vendor. This report supplies the status of the check (indicates whether the check has cleared the bank or not).	Fiscal Year, Check Date Range, Entity, Reconciliation Ind, Vendor ID
AF31 - Accounts Receivable Balances By Entity	Provides a list of all entities and their account balance, current amount due, memo balance, and deposit balance.	Entity, ID
AF33 - Proposals	Provides a summary report for proposals, including proposal status. The report utilizes the institution's fiscal year and period, not the proposals.	Chart of Accounts, Fiscal Year, Organization
AF37 - Accounts Payable Detail Listing	Provides a list of invoices and amounts in support of the Accounts Payable liability account in the General Ledger.	Chart of Accounts, Fiscal Year, Fiscal Period, Fund, Fund Type
AF38 - Application of History - Payment	Provides a breakdown of how a payment was applied to outstanding charges on an account, and how various revenue accounts will be affected by the payment side of the transaction.	ID, Payment Term, Payment, Charge, Detail Category
AF39 - Application of Payment History - Charge	Provides a breakdown of how a payment was applied to outstanding charges on an account, and how various revenue accounts will be affected by the charge side of the transaction.	ID, Payment Term, Payment, Charge, Detail Category

<i>Finance Report No. and Name (cont)</i>	<i>Description</i>	<i>Parameters</i>
AF40 - Outstanding Deposits	Provides a list of entities with outstanding (unreleased) deposits.	Deposit Term, ID, Detail Code, Deposit Release Date Range, Deposit Balance
AF43 - Organization Operating Statement	Provides a list of the fiscal year, chart of accounts, fund, organization, account, and program, along with the budget amount, YTD adjusted amount, current month actual, budget commitments, remaining balance, and percent remaining for each account.	Chart of Accounts, Fiscal Year, Fiscal Period, Level, Fund, Organization
AT06 - Summary - Payment by Detail Code - Term	Provides a summary of the charges that were paid by a particular detail code for a term.	Term, Detail Code, Detail Category, Transaction Date Range
AT07 - Summary - Charge by Detail Code - Term	Provides a summary of what paid a particular detail code for a term.	Term, Detail Code, Detail Category, Transaction Date Range
AT11 - Summary of Charges by Term	Provides information about charges. Lists totals by detail codes for a term. This report can be used to capture one charge detail code or all charge detail codes for a term.	Term, Detail Code
AT12 - Summary of Payments by Term	Provides information about totals by detail codes for a term. This report can be used to capture one payment detail code or all payment detail codes for a term.	Term, Detail Code

Financial Aid

The Financial Aid module contains the following standard templates.

<i>Financial Aid Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AR01 - Aid Applicant Counts	Provides information about counts of standard groups of federal aid applicants, based upon general student records.	Aid Year, Admitted Term, Student Level, Student Status
AR03 - Packaging Process	Provides information about aid applicants ready to package.	Aid Year, Tracking Group, Budget Group, Packaging Group, User Defined
AR05 - Academic Program Changes	Provides information about students whose academic program changes during an aid year. Compares academic information from the starting term to academic information from the current term.	Aid Year, Starting Term, Current Term
AR06 - Loans - Less Than Half Time	Provides information about loan recipients whose actual enrollment is less than half time.	Aid Year, Term, Half Time Hours, Enrollment Type
AR07 - EFC Discrepancies	Provides information about students where the Pell PGI and SAR EFC are not equal.	Aid Year, Package Complete Date
AR08 - Counselor Packaging (Monthly)	Provides information about monthly counts of awards based upon user-defined field coding.	Aid Year, Month, User Defined Fields
AR09 - Financial Aid Lifecycle	Provides information about the lifecycle of a student's financial aid.	Aid Year, User Defined Fields

6 Report Templates (ODS)
Financial Aid

<i>Financial Aid Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AR11 - Non-Degree Aid Applicants	Provides information about aid applicants who are enrolled in non-degree or aid-ineligible programs.	Aid Year, TREQ Code
AR12 - State Grants Recipients Enrollment Review	Provides information about state grant recipients whose attempted hours do not equal earned hours.	Aid Year, Term, Fund
AR13 - Statement of Funds	Provides a summary report of FWS awards.	Aid Year
AR15 - Awards Completion Tracking	Provides information about time elapsed for packaging process for a student.	Aid Year
AR16 - Student Progress	Provides information about GPA and credit hours earned by each aid applicant during a term.	Aid Year, Term, College
AR18 - Title IV Recipient Loan Process	Provides information about Title IV recipients who do not have a loan application record.	Aid Year, Loan Fund
AR19 - Title IV Recipient Overaward	Provides information about Title IV recipients who have unmet needs less than 0.	Aid Year
AR20 - Title IV Recipient Budget Exception	Provides information about Title IV recipients who have budget amount equal to 0.	Aid Year
AR21 - Counselor Packaging (Daily)	Provides information about daily counts of awards based on user-defined field coding.	Aid Year, User Defined Fields, Date
AR22 - Missing Residency Data	Provides information about students with missing residency information.	Aid Year

6 Report Templates (ODS)
Financial Aid

<i>Financial Aid Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AR24 - Award Summary	Provides information about aid received by categories of students.	Aid Year, Student Level
AR26 - Verification Incomplete	Provides information about aid applicants selected for verification, with verification not complete.	Aid Year, Tracking Group
AR27 - User Defined Field	Provides information about aid applicants with coding in user defined field.	Aid Year, User Defined Fields
AR28 - Statement of Funds - FWS	Provides summary information about specified funds.	Aid Year, Fund, Fund Source, Fund Type, Federal Fund ID
AR29 - Outstanding Tracking Requirements	Provides information about federal aid applicants with outstanding tracking requirements based on general student records.	Aid Year, Tracking Group
AR30 - Pending Package	Provides information about aid applicants where package requirements complete date is populated and applicant has not been packaged.	Aid Year, Packaging Group, Package Complete Date
AR31 - Disbursement Load vs. Package Load	Provides information about aid recipients whose package load indicator does not match disbursement load indicator.	Aid Year, Term
AR32 - Pending Disbursements	Provides information about aid recipients with pending disbursements.	Aid Year, Term

Human Resources

The Human Resources module contains the following standard templates.

<i>Human Resources Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AP01 - Deductions Benefit Non-Participating Members	Provides information about all personnel who are not participating in benefits on or before the date entered. Lists name, social security number, id, empl status, ecls code, bcat code, and current hire date, adjusted service date, home organization code, home organization description, and years of service (f_calculate_age).	Hired Before Date, Benefit Deduction
AP02 - Deduction Benefit Participating Members	Provides information about all personnel who participate in benefits on or before the date entered. Lists name, social security number, id, empl status, ecls code, bcat code, benefit category description, deduction amount or, plan code, plan code description, arrears status, arrears amount, current hire date, and adjusted service date.	Hired Before Date, Benefit Deduction
AP03 - Deduction	Provides information about all employees and all their deductions for a given Fiscal Year or Fiscal Quarter. Lists deduction description, employee amount, employer amount, and applicable gross compensation.	Payroll Deduction Year, Benefit Deduction, Period
AP04 - Recruits Under Consideration	Provides information about all recruits under consideration for employment. Lists name, address, phone, application date, full or part-time position, position applied for, position status, comments, and application status date.	Application Code
AP05 - Recruit Certifications	Provides information about recruits which have certifications listed in their profile. List certification date, next certification date and expiration date, name, address, and phone.	Application Disposition, Certification

6 Report Templates (ODS)
Human Resources

<i>Human Resources Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AP06 - Recruit Exceptions	Provides information about recruits under consideration who are missing application information.	None
AP07 - Recruit Data Selection	Provides information about recruits who fall into one of the following categories: Veteran, Medical disability, and/or having a degree.	Application Disposition, Position Status
AP08 - Active Employees by Department	Provides information about employees by department and employee last name, first name. Lists name, address, phone number, and department.	Home Organization
AP09 - Employee Statistics	Provides information about by employee class, employee statistics on gender, age, marital status, or ethnicity.	None
AP10 - Contract Jobs - Employee Data	Lists employee name, id, employee class code, adjusted service date, distribution organization, time sheet organization, time sheet organization description, employee status, jobs employee class code, jobs status, hourly rate or annual salary, payid, job begin date, job end date, contract type, number of pays, and personnel date.	Employee Class, Active As Of Date
AP11 - Employee Review	Provides information about employees scheduled for review next month. Lists employees name, id, home organization code, home organization description, employee class code, employee class description, position, position title, employee work address and phone number/extension, supervisor name, review code, and review code description.	Review Date Range

<i>Human Resources Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AP12 - Termination	Provides information about all terminated employees. Lists employee name, id, employee home organization and description, termination code termination code description, term date, position, position title, employee class code, employee class code description, employees supervisor name, and home address.	Termination Date Range
AP13 - Leave of Absence	Provides information about all employees currently on leave of absence. Lists employee name, id, employee home organization and description, leave code, leave code description, start date of leave, end date of leave, employees supervisor name, and home address.	Leave As Of Date
AP14 - Employee Degree	Provides information about employees with degrees completed or in progress. Lists employee name, id, home organization and description, current job title, degree(s) awarded, degrees in progress, certifications awarded, employee work address and phone number/extension.	Hire As Of Date, Home Organization
AP15 - Employee Class	Provides information about employees in classes. Lists employee class, employee name, id, home organization, home organization title, employee position, and position title.	Employee Class
AP16 - Mailing Labels	Provides population selection labels based off address hierarchy.	Home Organization
AP17 - Employee Anniversary	Provides information about personnel by 5/10/15/20/25/30 year employment anniversary. Lists employee name, id, home organization, adjusted service date, employee class code and description, employee work address and phone number/extension.	Anniversary Date Range

<i>Human Resources Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AP18 - Supervisor	Provides information about each supervisor and the personnel assigned to the supervisor. Can select a detail report for one supervisor or a summary for all supervisors. Lists employee name, id, employee dist organization adjusted service date, employee class code and description hourly rate/annual salary, position, position title, years of service, certifications, degrees awarded, and last review date.	Supervisor Name
AP19 - Position Status	Provides information about position information by position status. Lists title, type, group code/description, empl class description, position class description, encumbrance amount, hourly rate, annual salary, salary range indicator. Report format is based on user input.	Position Status, Position Class, Employee Class
AP23 - Position Incumbent	Provides information about all positions, number, title, person filling position, if vacant list position with no employee, position budget amount, salary table, salary step, salary group, and position status.	As Of Date, Home Organization, Salary Group
AP25 - Two Year Earnings Summary	Provides information about current years' earnings compared to previous years' earnings by ecl's totals. Lists employee class code and description and year-to-date earnings. Report should include fiscal year to date earnings.	Year, Earnings
AP28 - Organization	Provides information about all employees by orgn_code_home, based on orgn_code_home. Lists employee name, id, employee class code, adjusted service date, distribution organization, employee status, years of service (f_calculate_age), jobs employee class code, jobs status hourly rate or annual salary.	As Of Date
AP29 - Department	Provides information about all Positions and Incumbents by Department, and lists salaries by ECLS.	As Of Date

6 Report Templates (ODS)
Human Resources

<i>Human Resources Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AP30 - Salary	Provides information about all Employees, their jobs, titles, and salaries.	Employee Class
AP31 - Count of Employees	Provides information about a Count of employees by Employee Class.	None

Student

The Student module contains the following standard templates.

<i>Student Report No. and Name</i>	<i>Description</i>	<i>Parameters</i>
AS02 - Honor's List	Provides information about students who have attained an honor's list within the institution. Lists GPA, term, dean's list description, level, campus and college, student name, major hours earned, hours attempted, hours passed and the GPA.	Term, Level, College, Campus
AS04 - Degree Confirmation	Provides information about students' most recent degree based on the Degree Sequence Number. Lists Graduation Term, Level, Campus, College, Degree, Major, Student Name, ID, Degree Status, Nation, City, Gender, and Ethnicity.	Term, Degree Status
AS05 - Recruits by Source	Provides information about recruits for the selected term, grouped by level, college, major and primary source. Lists the name, address, county, address type, ID and SSN, birth date, age sex and phone.	Term
AS06 - Recruits by Region	Provides a graph of recruits by region.	Term, Campus
AS07 - Applicants by Geographic Region	Provides information about applicants by geographic region, grouped by term and geographic region. Lists applicant name, ID, address and address type, level, degree, major, age, sex and phone.	Term, Level, College, Campus, Major
AS08 - Applicants by Application Decision	Provides information about applicants who have had a application decision posted to their admissions record for the selected term. Groups by term, level, campus, degree, major and application decision. Lists name, ID, decision date and status date.	Term, Decision

<i>Student Report No. and Name (cont)</i>	<i>Description</i>	<i>Parameters</i>
AS09 - Applicants by Applicant Status	Provides a summary report or detail report. Summary report counts the number of applicants for each application status for the selected term. Report sorts by term, level, campus, degree, major and application status. Detail report displays applicant name, address and address type, phone, application date and status date. It sorts by term, level, campus degree, major and application status.	Term, Campus, Application Status
AS10 - Student Exception	Provides information about missing student data for the selected term, grouped by level, college, degree and major. Lists name, ID, SSN, sec, deceased indicator, birth date, ethnicity, address type, phone number, enrolled indicator, registered indicator and graduated indicator. Missing data is designated with an 'X' in the applicable column.	Term, Level, College, Degree, Major
AS11 - Enrollment Counts	Provides information about enrollment counts for the selected term, level and campus as of the day and time the report is generated. Lists the student count by major with totals for level, campus and total.	Term, Level, Campus
AS12 - Enrolled Last Term - Not This Term	Provides information about students who have not re-enrolled for the selected term, grouped by degree for each campus and level. Lists name, ID, major description, attempted and earned hours and GPA from the enrolled term.	Campus, Current Term, Previous Term
AS13 - Enrollments by Enrollment Status	Provides information about student enrollment by enrollment status, grouped by term, level, campus, college, degree and enrollment status by the date and time the report is generated. Lists name, ID and SSN, classification, student type, registered hours and major, Totals are by status total enrollments for each status, total enrollments for each degree, total enrollments for each college, and total enrollments for each level.	Term, Campus, Level

6 Report Templates (ODS)
Student

<i>Student Report No. and Name (cont)</i>	<i>Description</i>	<i>Parameters</i>
AS14 - Advising List	Provides information about advisees grouped by advisor and advisor type. Lists term, address type, ID, advisee name, address, phone number, major, hours enrolled, academic standing, cumulative GPA, student classification and student type.	Term, Address Type
AS16 - Course Attributes by Student	Provides information about students who have course/section attributes attached to their record. Lists student name, ID, and up to five attributes.	Term, Course Attribute
AS17 - Student Meal Plans	Provides information about students who have a valid meal assignment for the selected term. Lists name, meal code and date, AR indicator (have charges been assessed), beginning and ending date of meal assignment.	Term
AS18 - Cleared To Attend	Provides information about current AR balances for the selected term, level and campus, grouped by college. Lists the student name, address, phone, prior balance, current charges and payments, authorized payments, financial aid memos and the amount owed, and totals by college.	Term, Level, Campus, College, Address Type
AS19 - Residential Life	Provides information about students who have valid room assignments for the selected term. Lists assignment code, AR indicator (have charges been assessed), beginning and ending date of assignment, building and room code, phone and total days, months or term in assignment.	Term
AS21 - Sports Participation by Term	Provides information about students' sports participation, grouped by sport's description and term. Lists ID, name, eligibility status, financial aid indicator. Also lists the same information for each student if a second sport exists.	Term, Sport Code

<i>Student Report No. and Name (cont)</i>	<i>Description</i>	<i>Parameters</i>
AS22 - Recruiting Trends	Provides information about recruiting trends for a term, grouped by College, Degree, and Major. Lists the term, area, and number of recruits for each of the terms. Can also graph the information in the report.	Term, Campus, Level
AS23 - Admission Trends	Provides information about admissions trends, grouped by College, Degree, and Major. Lists term, area, and number of admits for each of the terms.	Term, Campus, Level
AS26 - Full Time / Part Time	Provides a summary or detail report. Lists full time and part time students for the selected term. Summary report lists campus, college, major, student type, count of students, total credit and billing hours for the students counted, and the percent of the total that the report represents. Detail report lists the student name, ID, credit and billing hours by campus, college, major and student type, and percent of the total.	Term, Campus
AS27 - Census Date Detail	Provides information about students enrolled on the census date for the selected term, grouped by level, campus, college, degree and major. Lists the student name, ID and SSN, student type, end of term academic standing, classification, prior term GPA, cumulative GPA, total credit hours enrolled and total CEUs enrolled.	Term
AS30 - New Students	Provides information about students who are new to the institution for the selected term. Report is grouped by level, college, degree and major.	Term, Campus, College, Level, Degree, Major
AS31 - Course Master File	Provides information about courses offered at the institution, grouped by term, level, campus, college, department and subject. Lists the CRN, section number, course number, level, division, course effective term, course status, credit hours assigned to the section and any related course credit hour range, section status, CEU indicator, co-requisites indicator and pre-requisites indicator.	Term, Level, College, Campus

6 Report Templates (ODS)
Student

<i>Student Report No. and Name (cont)</i>	<i>Description</i>	<i>Parameters</i>
AS32 - Grade Distribution	Provides information about student final grades for each instructor, grouped by department and term. Lists the number of grades per final grade given.	Term, Department
AS35 - Credit Hour Analysis	Provides information about the total number of hours produced and earned for a term.	Term, Campus
AT02 - Non Registered with Balance	Non-Registered Students with a Balance Report	Term
AT03 - Registered with Balance	Registered Students with a Balance Report	Term
AT08 - Installment Plan	List of Students on a Particular Installment Plan Report	Term, Installment Plan
AT09 - Returned Check	List of Students with an NSF Check Report	Term
AT10 - Hold	List of Students with a Hold on Them Report	Term, Holds Code
AT13 - Registered Student Balance Less Aid	List of Registered Students and Account Balance Less Authorized Financial Aid Report	Term
AT14 - Registered Student Balance Less Financial Aid	List of Registered Students and Account Balance Less All Financial Aid Report	Term
AT16 - Account Transactions for a Document Code	Account Transactions for a Document Code Report	Feed Document Code

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Chapter 7 Data Models (EDW)

A data model is a representation of the information available in the database. It is intended to show the relationship of the data in one table to the data in another table within the EDW.

This chapter of the EDW Administration Guide shows three representations of the EDW data: a fact/dimension cross reference table, fact/dimension table definitions and the star schema business purpose.

The Fact/Dimension Cross Reference table shows how the fact and dimension tables of the EDW relate to each other. The Fact/Dimension Table Definitions give a description of each table in the data model. The Star Schemas are picture representations of dimension tables that go with each fact table. Each data representation is explained within this chapter.

Fact and Dimension Tables

The Fact and Dimension Table definitions give a description of each table in the data model. Names that begin with WDT_ are dimension table names. Names that begin with WFT_ are fact tables.

Follow the steps below to use the Administrative UI to view fact and dimension table information displayed on the Enterprise Data Warehouse Meta Data Reports.

1. Select Enterprise Data Warehouse from the Information Access Meta Data menu. The Enterprise Data Warehouse Meta Data Reports page opens.
2. Select the star you want to review. The Star Report for that star and subject area opens.
3. Select the target or source dimension or fact table you want to review. The selected report displays.

Star Schemas

Star schemas are a standard data model technique used for designing the summary tables of a data warehouse. Star schemas improve response time by requiring very few joins for queries. Measures are preaggregated and do not need to be calculated at query time.

The fact table is the primary table in the star that stores the numerical performance measurements of the business. It's where all amounts or counts are stored. For example, Total Credits is an enrollment fact that is stored in the Enrollment fact table.

Dimensions are the tables that contain descriptive attributes of business entities. In the query Total Credits by Program, Program is the dimension. Program is a dimension attribute of the Academic Study dimension table.

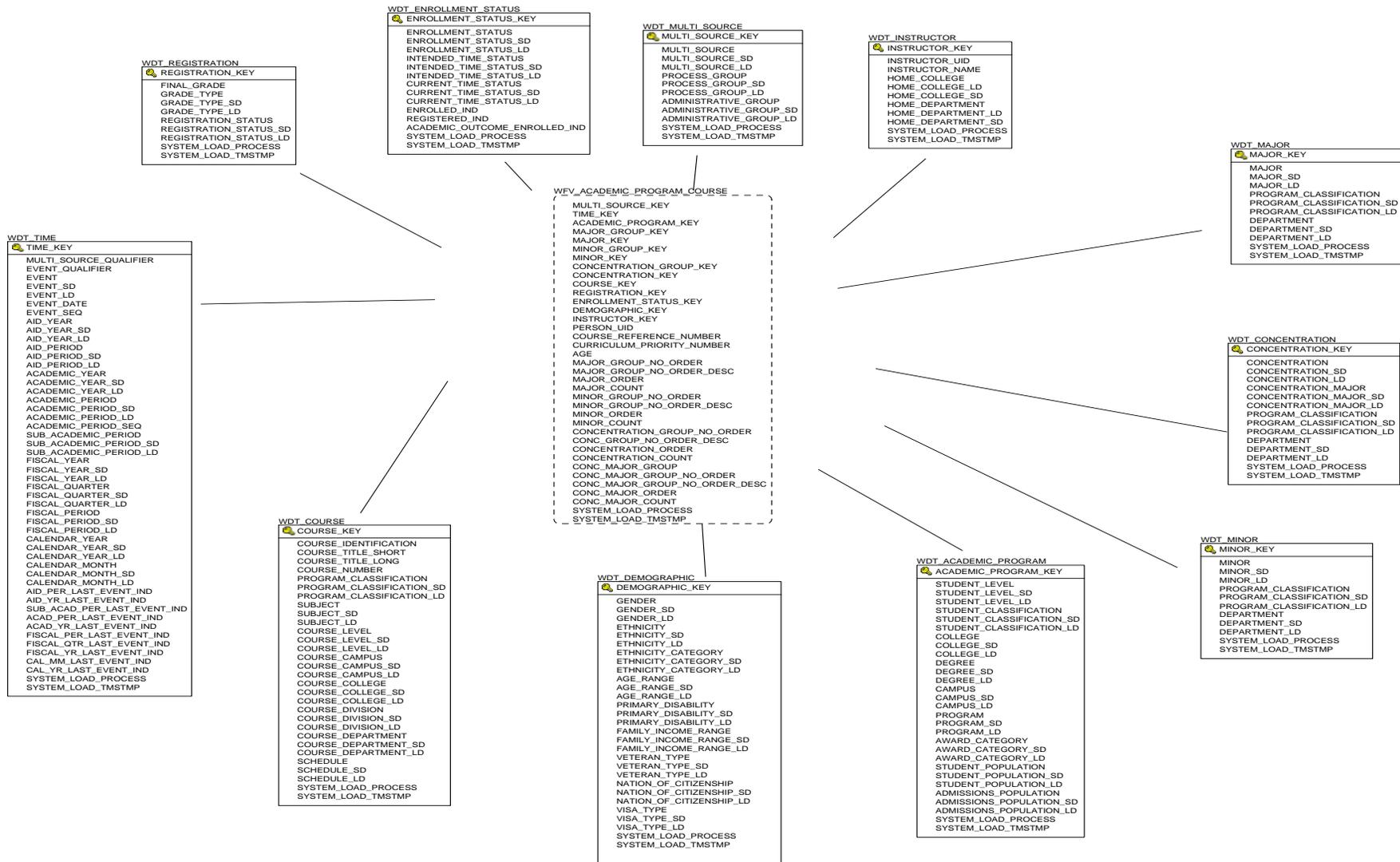
The star schemas are a picture representation of dimension tables that go with each fact table.

Academic Program Course

Use the Academic Program Course star schema to review trends in course registration and the programs, majors, etc. of the students registering for those courses. This information can be used to analyze the number of students and courses using attributes from any of the following dimensions:

- Mult-Source (if applicable)
- Instructor
- Major
- Concentration
- Minor
- Academic Program
- Demographic (ethnicity, gender)
- Course
- Time (calendar year, event)
- Registration
- Enrollment status

7 Data Models (EDW)
Star Schemas

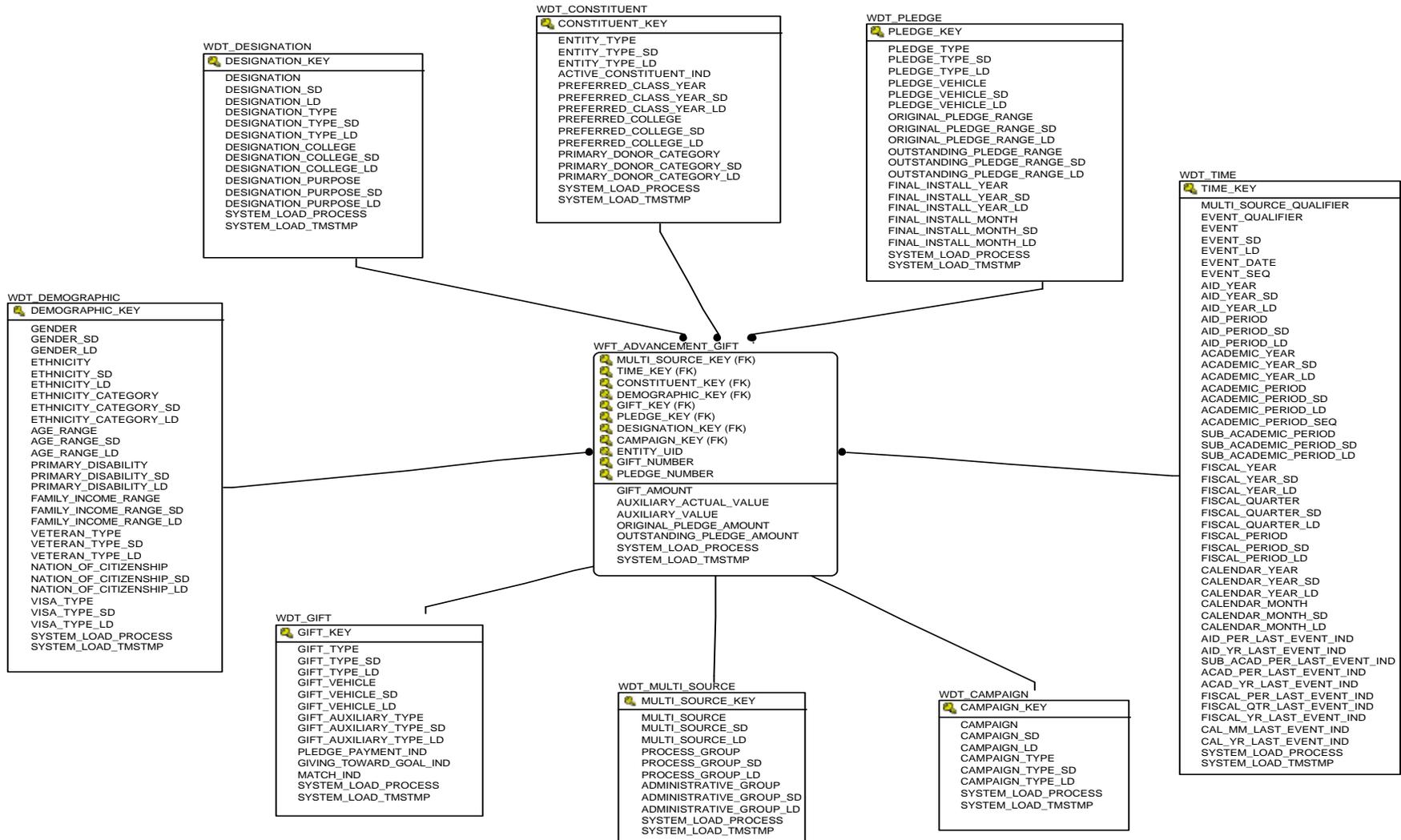


Advancement Gift

Use the Advancement Gift star schema to understand the trends in giving, and to better manage donor acquisition and retention. With this data you can analyze gifts using any of the following:

- Multi-Source (if applicable)
- Time (calendar year, event)
- Constituent Information (class year, college)
- Demographic Data (ethnicity, gender)
- Gift (type and source of gift)
- Pledge (type, vehicle and amount)
- Designation/Fund information (purpose)
- Campaign

7 Data Models (EDW)
Star Schemas



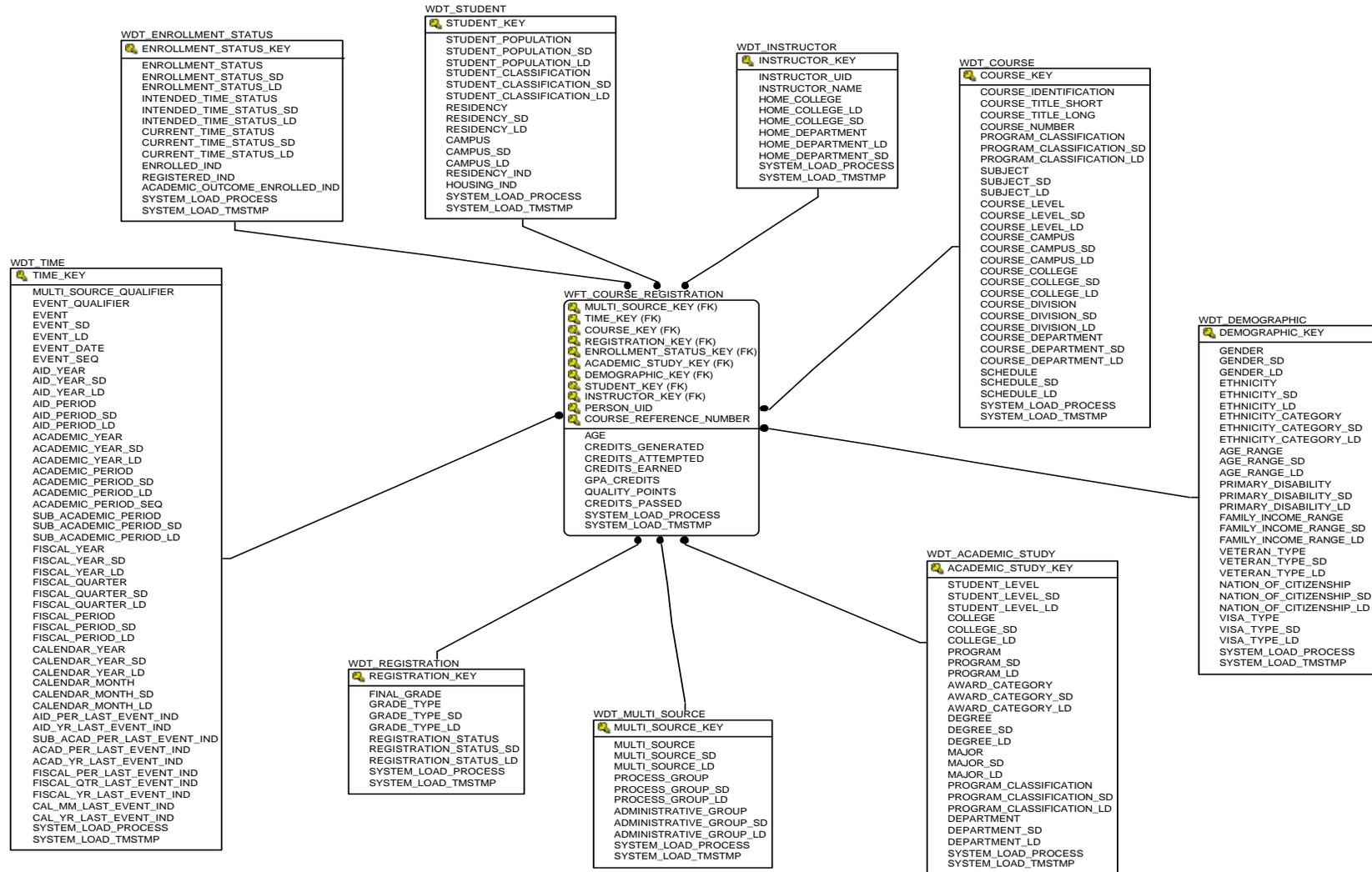
Course Registration

Use the Course Registration star schema to understand the trends in course registration, and to plan for the courses that meet your needs.

This information is used to analyze credits generated, credits attempted, credits earned, GPA credits, quality points, credits passed, and total number of students using any of the following:

- Multi-Source (if applicable)
- Time (academic year, academic period, sub-academic period)
- Course information (course level, course campus, course department)
- Registration data
- Enrollment Status
- Academic Study
- Demographic (ethnicity, gender)
- Student (residency, classification, campus)
- Instructor

7 Data Models (EDW)
Star Schemas



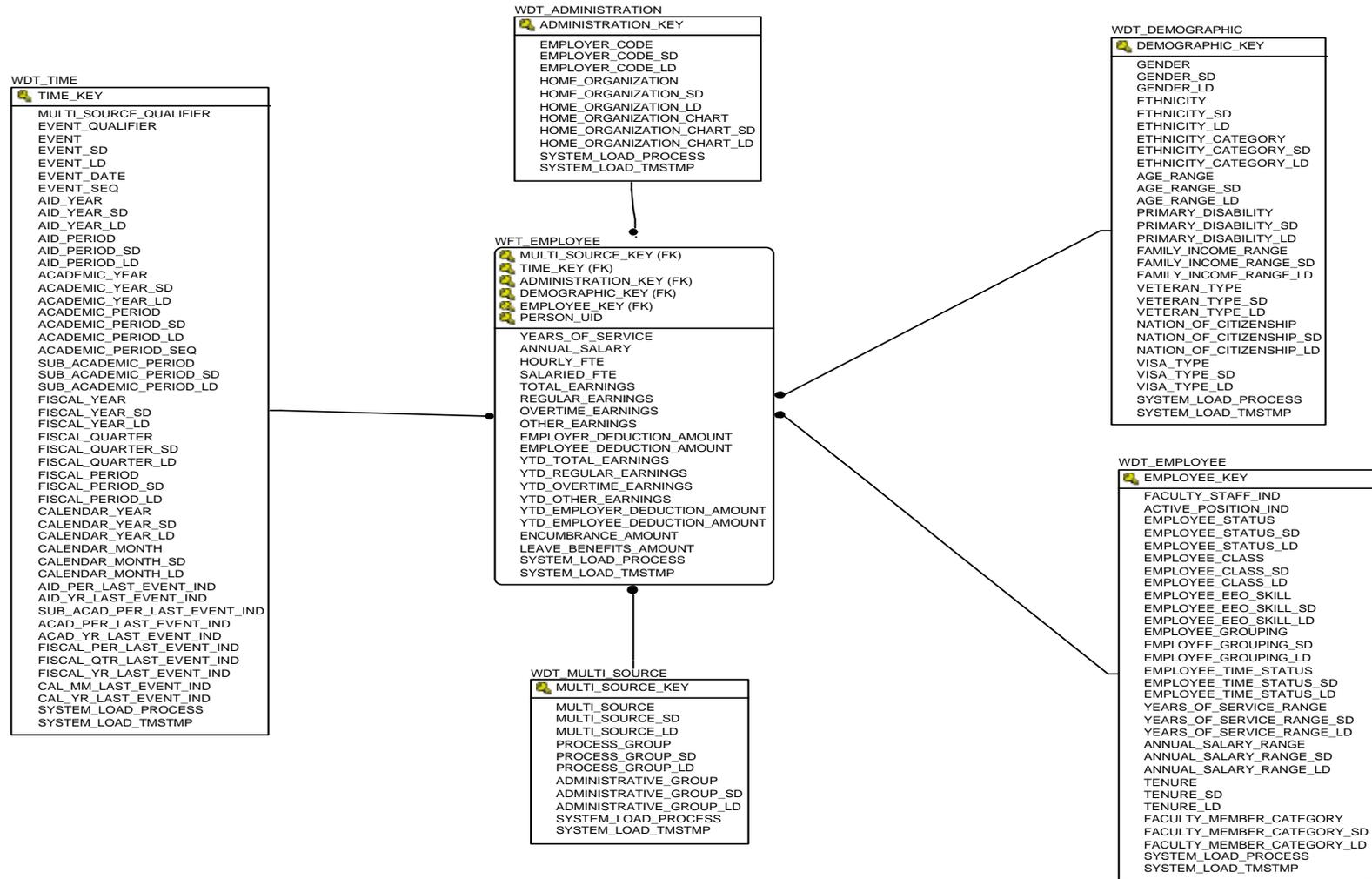
Employee

Use the Employee star schema to understand the trends in the compensation and expense structure for employees, and to better manage the cost infrastructure of the institutional staff.

With this information you can analyze the number of salaried employee and hourly employee FTE, year-to-date earnings, compensation, deductions, encumbrances, and years of service using any of the following:

- Multi-Source (if applicable)
- Time (fiscal year, calendar year, event)
- Administration (employer, division, department, chart of accounts)
- Demographic (ethnicity, gender)
- Employee (years of service, salary, type and group of employee)

7 Data Models (EDW)
Star Schemas



Employee Degree

Use the Employee Degree star schema to understand the trends in faculty degrees and majors, to better manage the educational qualifications of your faculty, and to support the institutional profile goals for faculty.

This information is used to analyze the number of degrees and majors earned using employees based on the following:

- Multi-Source (if applicable)
- Time (fiscal year, calendar year, event)
- Employee (years of service, salary, type and group of employee)
- Administration (employer, division, department, chart of accounts)
- Demographic (ethnicity, gender)
- Post Secondary School (post secondary degree and major)

7 Data Models (EDW)
Star Schemas



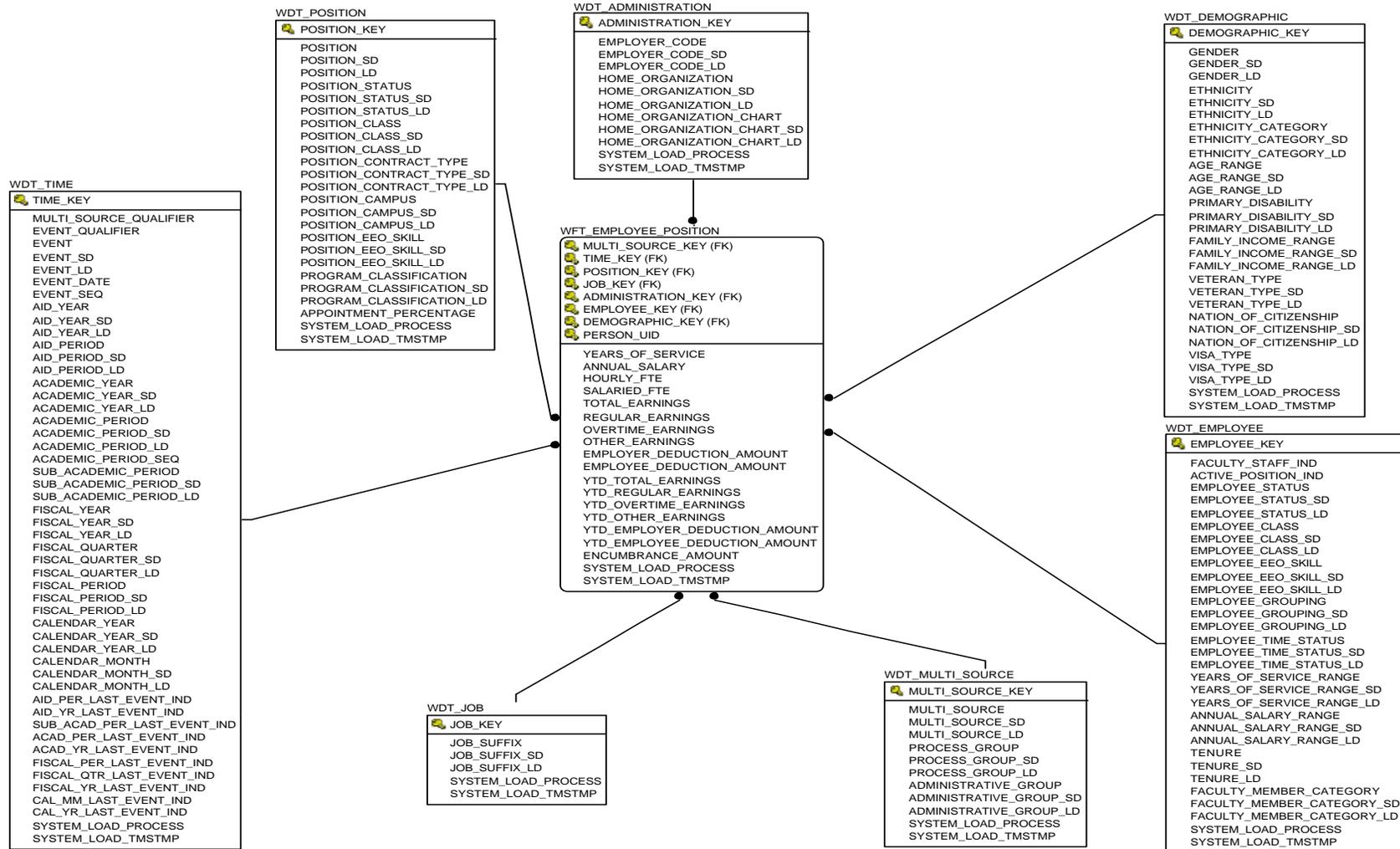
Employee Position

Use the Employee Position star schema to understand the trends in appointing employees, to better manage staff recruitment, retention and attrition, and to support a desired staff profile.

You can analyze the number of years on the job, number of hourly and salaried FTE (Full time Equivalent), year-to-date earnings, deductions, and encumbrances using any of the following:

- Multi-Source (if applicable)
- Time (fiscal year, calendar year, event)
- Position (status, contract type, position classification, EEO skill)
- Job
- Administration (employer, division, department, chart of accounts)
- Employee Data (years of service, salary, type and group of employee)
- Demographic Data (ethnicity, gender)

7 Data Models (EDW)
Star Schemas



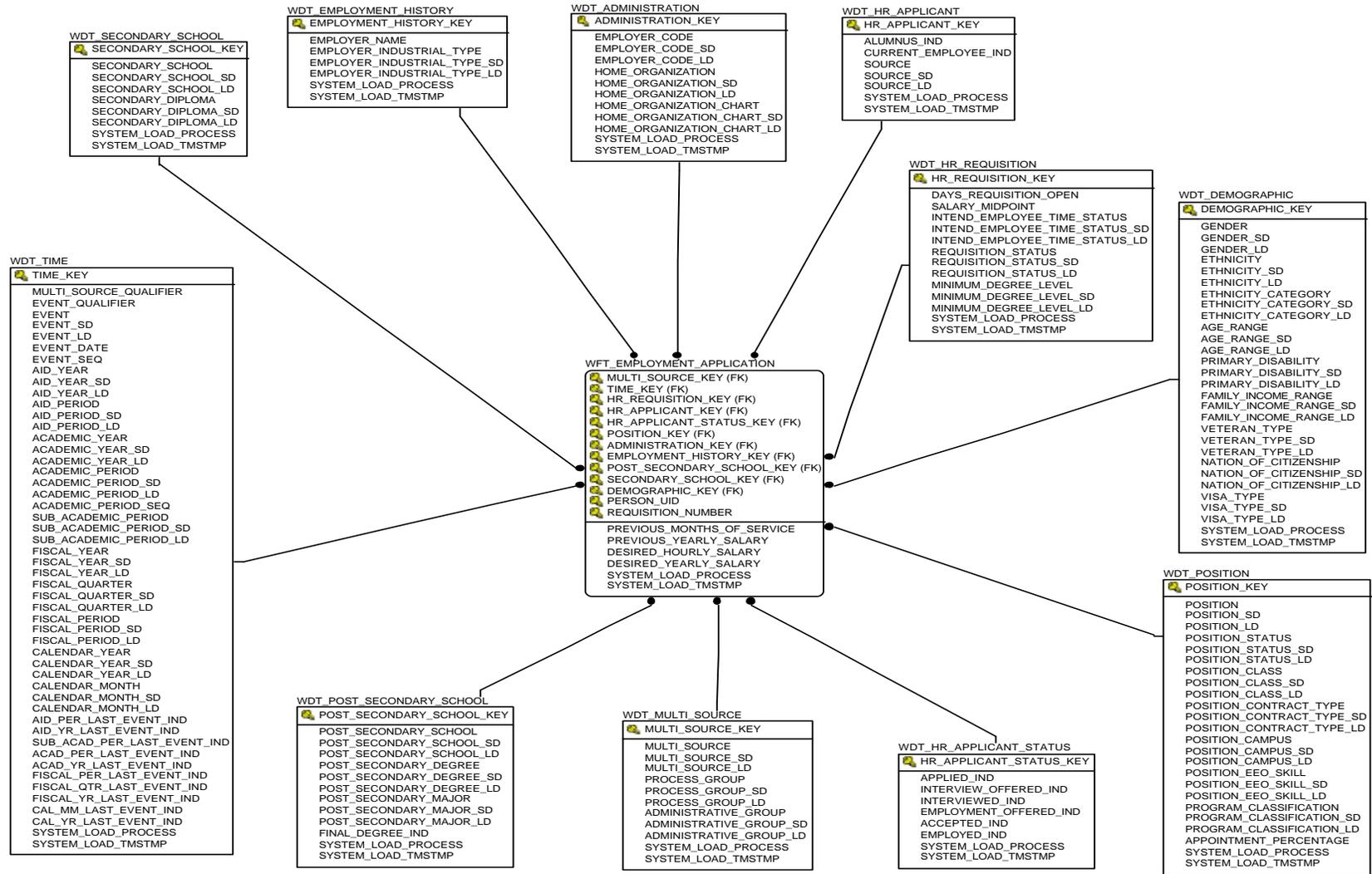
Employment Application

Use the Employment Application star schema to understand the trends in position applications, to better manage the type of effort it takes to hire a new employee, and for better analysis of the impact of turnover.

With this data you can analyze previous months of service, previous salary, & desired salary using any of the following:

- Multi-Source (if applicable)
- Time (fiscal year, calendar year, event)
- HR Requisition
- HR Applicant
- HR Applicant Status
- Position (status, contract type, position classification, EEO skill)
- Administration (employer, division, department, chart of accounts)
- Employment History
- Post-Secondary School
- Secondary School
- Demographic (ethnicity, gender)

7 Data Models (EDW)
Star Schemas



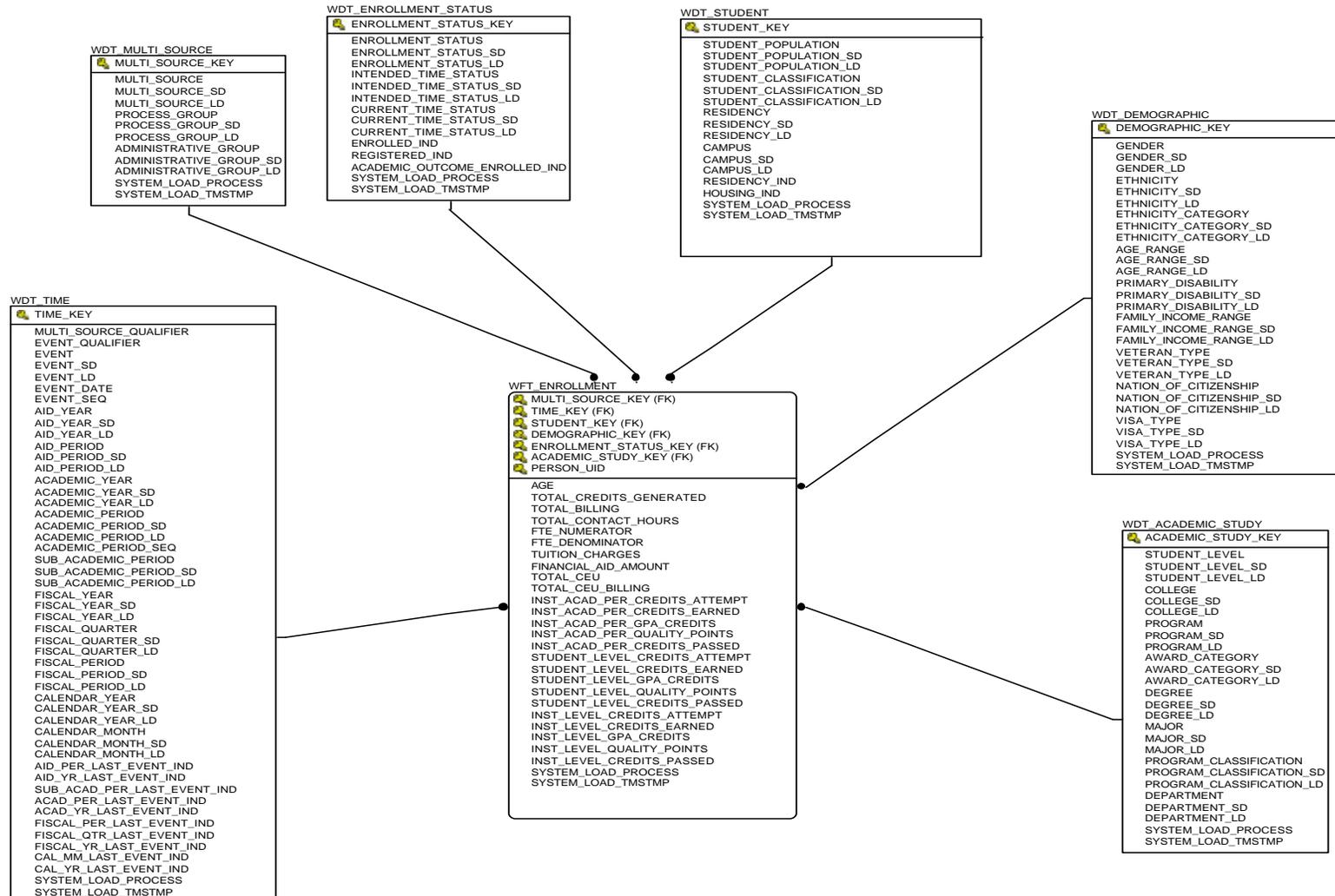
Enrollment

Use the Enrollment star schema to understand the trends in enrollment, and to support the institution's retention planning.

With this data you can analyze the generated credits, FTE (Full time Equivalent), academic period credits attempted and earned, tuition charges, financial aid amounts, enrolled counts, and registered counts using any of the following:

- Multi-Source (if applicable)
- Time (academic period, academic year)
- Student (residency, classification, campus)
- Demographic (ethnicity, gender)
- Enrollment Status
- Academic Study (program, degree, college, major, department)

7 Data Models (EDW)
Star Schemas

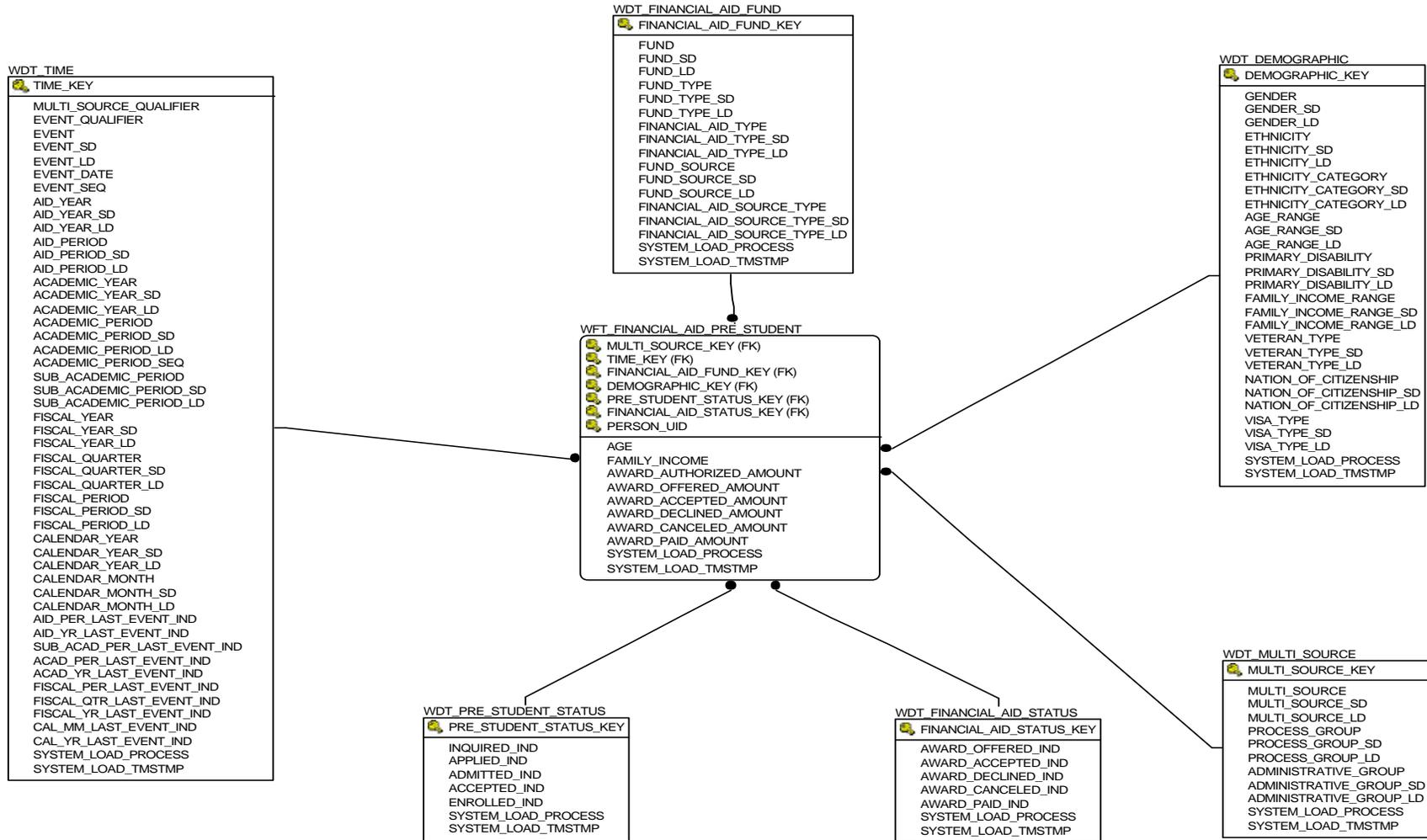


Financial Aid Pre-Student

Use the Financial Aid Pre-Student star schema to understand the trends in pre-student acceptance and enrollment based on how financial aid amounts are allocated.

With this information you can analyze the number of applicants who are aid recipients, and the award amounts offered, accepted, declined, cancelled, and paid using any of the following:

- Multi-Source (if applicable)
- Time (academic period, academic year, aid year, aid period)
- Financial Aid Fund
- Demographic Data (ethnicity, gender)
- Pre-Student Status (inquired, applied, accepted, enrolled)
- Financial Aid Status (e.g. offered, accepted, declined)



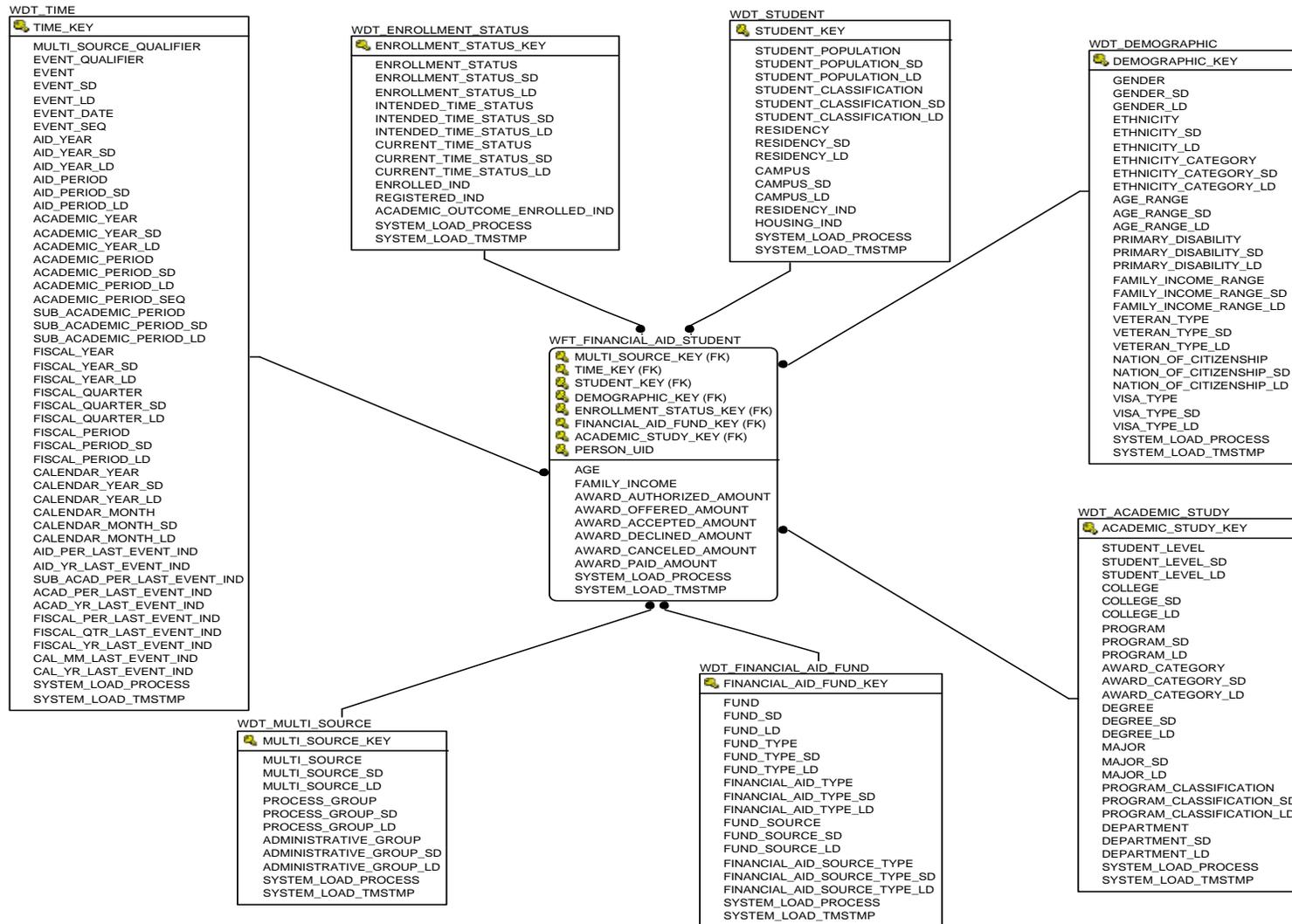
Financial Aid Student

Use the Financial Aid Student star schema to understand the trends in packaging financial aid awards, and to support improved allocation of financial aid amounts.

With this data you can analyze the family income, number of aid recipients, and the award amounts offered, accepted, declined, cancelled, and paid using any of the following:

- Multi-Source (if applicable)
- Time (academic period, academic year, aid year, aid period)
- Student
- Demographic Data (ethnicity, gender)
- Enrollment Status
- Financial Aid Fund
- Academic Study (program, degree, college, major, department)

7 Data Models (EDW)
Star Schemas



General Ledger

Use the General Ledger star schema to understand the trends in the general ledger activity, and to better manage the overall financial health of the institution.

With this data you can analyze current year, year to date, and calendar period debits & credits, and beginning & end balances using any of the following:

- Multi-Source (if applicable)
- Time (fiscal year, calendar year)
- Chart
- Fund (type, level, pool)
- Account (type, level, pool)



Graduation Completion

Use the Graduation Completion star schema to understand graduation trends, and to monitor and improve graduation rates.

With this data you can analyze, credits attempted, credits earned, credits passed, GPA credits, quality points, and number of academic periods using any of the following:

- Multi-Source (if applicable)
- Time (academic period, academic year)
- Student
- Graduation
- Demographic (ethnicity, gender)
- Academic Study (program, degree, college, major, department)

7 Data Models (EDW)
Star Schemas



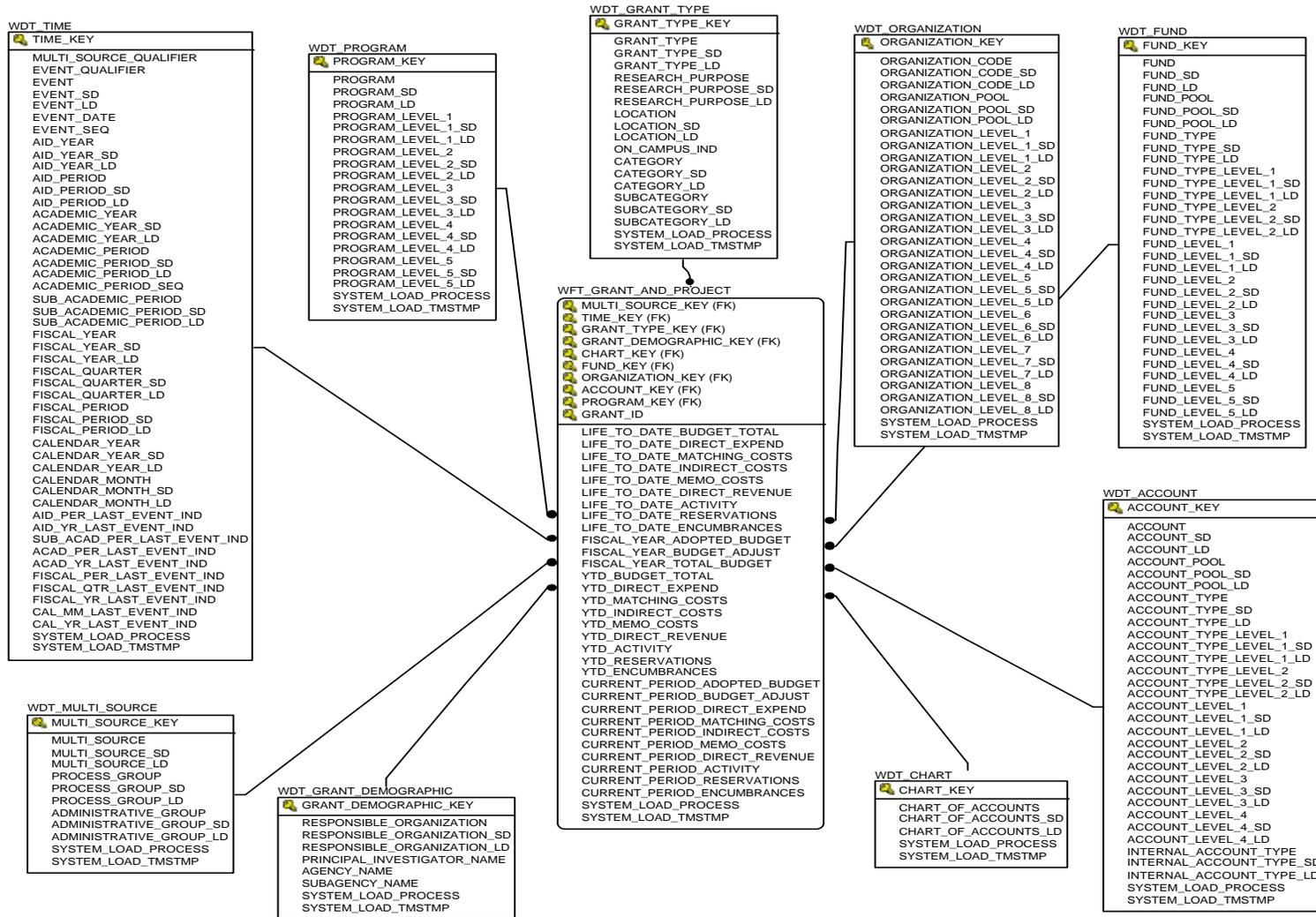
Grant and Project

Use the Grant and Project star schema to understand the trends in grants and other sponsored research projects, and to better understand and manage research funding and spending.

With this information you can analyze the budget, direct expenditures, matching costs, indirect costs, direct revenue, reservations, encumbrances, original and adjusted budgets for year-to-date, current period-to-date, and life-to-date using any of the following:

- Multi-Source (if applicable)
- Time (fiscal year, calendar year)
- Grant Type (organization, principle investigator, agency, type of grant)
- Chart
- Fund (type, level, pool)
- Organization (level, pool)
- Account (type, level, pool)
- Program (level)

7 Data Models (EDW)
Star Schemas



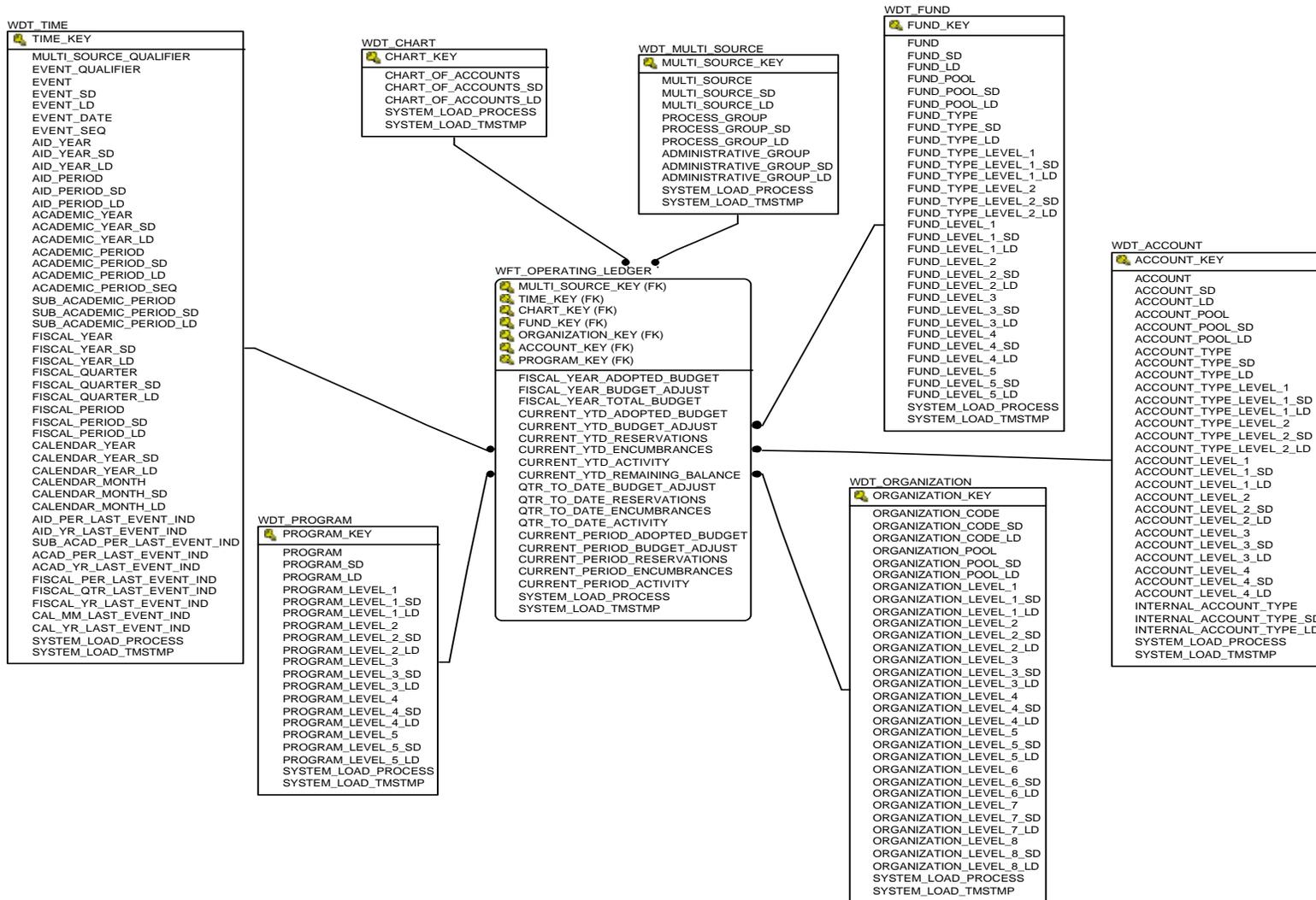
Operating Ledger

Use the Operating Ledger star schema to understand the trends in operating expenses and revenue to help you to better plan and forecast.

With this data you can analyze calendar budget information, quarterly, calendar, and current period budgeted, actuals, and reservations using any of the following:

- Multi-Source (if applicable)
- Time (fiscal year, calendar year)
- Chart
- Fund (type, level, pool)
- Organization (level, pool)
- Account (type, level, pool)
- Program (level)

7 Data Models (EDW)
Star Schemas

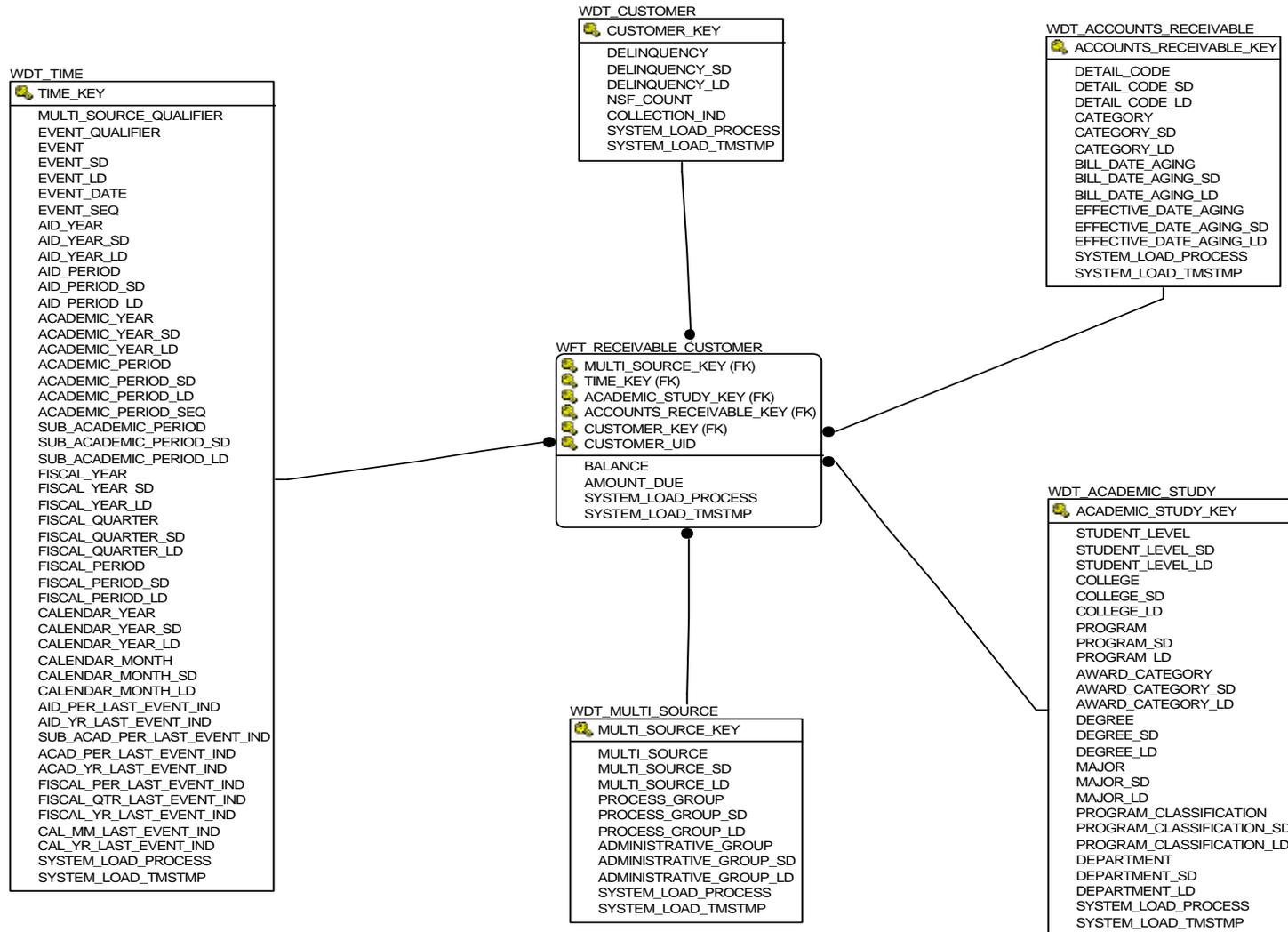


Receivable Customer

Use the Receivable Customer star schema to understand the trends in customers' accounts receivables, and to better manage the cash flow of the institution.

With this information you can analyze customers' balances and amounts due using any of the following:

- Multi-Source (if applicable)
- Time (fiscal year, calendar year)
- Academic Study (program, degree, college, major, department)
- Accounts Receivable (detail, category, bill or effective date aging)
- Customer (delinquency or collections)

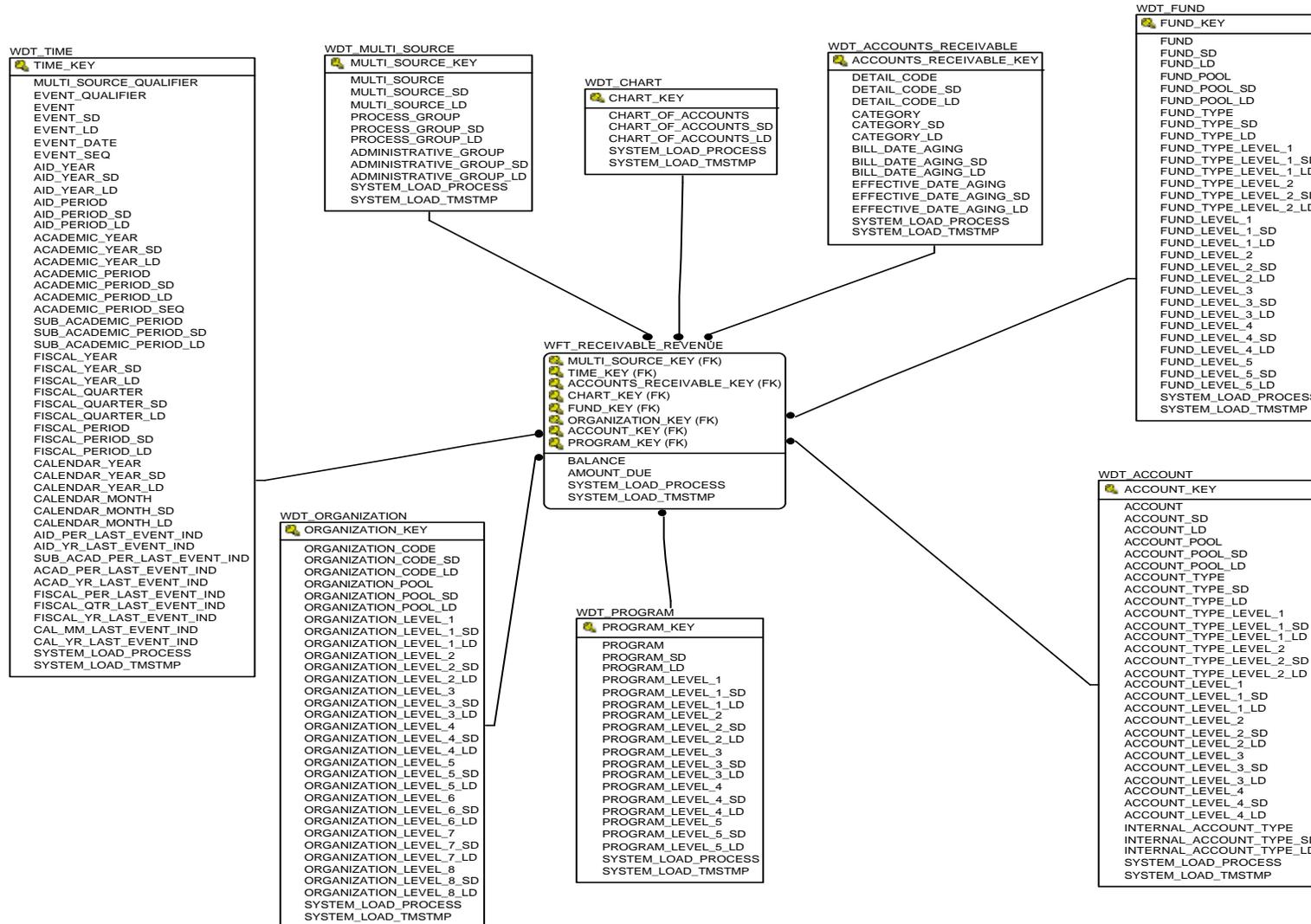


Receivable Revenue

Use the Receivable Revenue star schema to understand the trends in the receivable accounts, and to better manage the cash flow within the different ledger accounts.

With this information you can analyze receivable amounts due and balances using any of the following:

- Multi-Source (if applicable)
- Time (fiscal year, calendar year)
- Accounts Receivable (detail, category, bill or effective date aging)
- Chart
- Fund (type, level, pool)
- Organization (level, pool)
- Account (type, level, pool)
- Program (level)



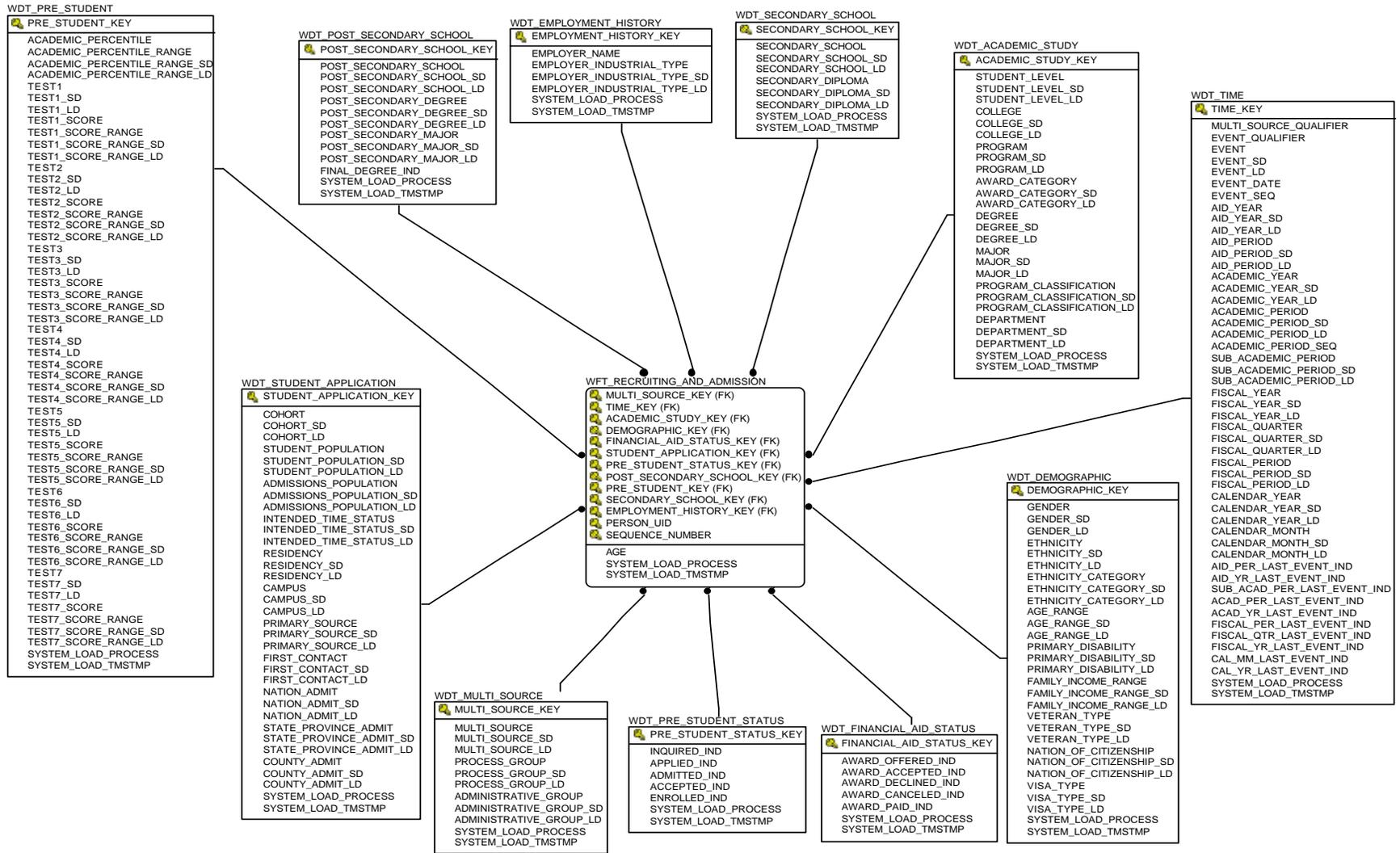
Recruiting and Admission

Use the Recruiting and Admission star schema to understand the trends in recruiting and admissions, to better manage the enrollment funnel, and to understand trends in financial aid awarding to new students to better manage financial aid funds.

With this information you can analyze the number of applications, prospects, applicants, those applying for aid, those who were admitted, and those who enrolled using any of the following:

- Multi-Source (if applicable)
- Time (academic period, academic year)
- Academic Study (program, degree, college, major, department)
- Demographic (ethnicity, gender)
- Financial Aid Status
- Student Application
- Pre-Student Status (test scores, academic percentile)
- Post Secondary School
- Pre-Student
- Secondary School
- Employment History

7 Data Models (EDW)
Star Schemas



Chapter 8 Cubes (EDW)

Cubes are basically precalculated reports with data that you can rearrange and reformat. They provide the ability to manipulate predefined facts (measures or calculated values) and dimensions (attributes or descriptions) in various formats to provide different perspectives on an institution's business. Refer to the *Data Models* chapter of your Administration Guide for detailed star schema and cube information.

Using Cognos as the user interface, you can browse data contained within each star schema in the EDW. This interface provides a predefined descriptive view of the information in the star schema that would otherwise require some understanding of a database query language to accomplish. The presorted data loaded into the cube can be retrieved quickly and can permit multiple dimensions and measures to be selected and reviewed as desired.

Cognos provides the Cognos ETL equivalent of OWB for the loading of the Cognos cubes, and provides the ability to define relationships within your data warehouse and pre-aggregate the measures presented to end users within the cubes.

Load Cubes

The load process serves two purposes. It generates the cubes, and then deploys the cubes to the Cognos BI server. You can load all the cubes, or load one cube at a time. The deploy process loads the .mdc (multidimensional cube) files to the Cognos BI Server.

Caution: Every time you update the EDW, you *must* rerun the loading process to update the cubes.

Load Process

Loading the cubes enables you to load one cube at a time. You run the first script, and it will automatically run the second script.

Load script buildEDWCube (UNIX) or buildEDWCube.bat (Windows). This script contains the cube names and descriptions, and then passes this information to the second script buildCognosCube (UNIX) or buildCognosCube.bat (Windows) script one cube at a time. This second script loads the business names for the cubes, and deploys individual cubes.

Caution: Every time you update the EDW, you must rerun the loading process to update the cubes.

Build Individual Cubes

You may want to reload individual cubes rather than all the cubes. To load individual cubes, follow the steps below:

1. Open script buildEDWCube (UNIX) or buildEDWCube.bat (Windows).
2. (UNIX) Delete the '#' (number sign) comment indicator in front of each individual cube you *want* to load.
(Windows) Delete the 'REM' comment indicator in front of each individual cube you *want* to load.
3. Rerun the script.

Modify Delivered Cubes

When the EDW cubes were designed, all available attributes and measures were included to serve the needs of the widest possible audience. There are some institutions, however, that may find these cubes to be too cluttered or overwhelming. Therefore, institutions may choose to pare down the delivered models to better suit their needs. High level instructions appear below for institutions choosing to do so:

Note: You must have a Cognos PowerPlay Transformer license.

Delete an Attribute in Cognos PowerPlay Model File

1. Open Cognos PowerPlay Transformer.
2. Open the Cognos PowerPlay Transformer model file (.mdl file) to be modified.
3. Create a backup of the delivered model file.

Example:

Save baseline as WFT_ENROLLMENT_sungardhe.mdl)

- (a) Replace delivered .mdl file with updated model file with institution-specific changes. This ensures that the automated build processes via the Administrative User Interface is not affected.
4. Select the Dimension Map window.
 - (a) Select the attribute that you would like to eliminate.
 - (b) Press the delete key.
5. Save the updated institution-specific model file.
6. Reload data into the cube as appropriate.

Add/Change a Hierarchy within Delivered Cognos PowerPlay Model File

1. Open Cognos PowerPlay Transformer.
2. Open the Cognos PowerPlay Transformer model file (.mdl file) to be modified.
3. Create a backup of the delivered model file

Example.

Save baseline as WFT_ENROLLMENT_sungardhe.mdl)

- (a) Replace the delivered .mdl file with the updated model file with institution-specific changes. This ensures that the automated build processes via the Administrative User Interface is not affected.
4. Select the Dimension Map window.
 - (a) Select the attribute that you would like to move within a hierarchy.
 - (b) Drag the selected attribute beneath its desired parent within the hierarchy.
5. Save the updated institution-specific model file.
6. Reload data into the cube as appropriate.

For more detailed information about using Cognos PowerPlay Transformer, refer to the Cognos documentation “Step-by-Step Transformer.”

Hide Dimensions in the Cubes

The PERSON_UID dimensions are used to create measures such as student or employee head count in the cubes. They are empty dimensions. Nothing appears for these dimensions if they are selected using the Cognos PowerPlay reporting tools.

To hide the PERSON_UID dimensions, create a user class view with the PERSON_UID dimension excluded for all user classes. Please refer to Cognos documentation *Step-by-Step Transformer* for instructions on how to set up user class views.

Use Reports to View Cubes

Cubes are only the holding points for your institution's information. The reports are the means by which to view the information within each cube. Use your web browser, and the URL link provided by your System Administrator, to view the reports through Cognos Upfront. Follow the steps below:

1. Open your Web browser. Log in. The News Index page opens. Select the Search tab to search, or select the Enterprise folder to display the report template names on the right pane
2. Select a business area subcategory on the right pane to open the report.
3. From the Enterprise page you have three options:
 - Select the Actions link to open the business area subcategory Actions page.
 - Select the Properties link to open the business area subcategory Properties page.
 - Select the business area that corresponds to the report you want to view.

You can save reports to the business area entry list in the right pane under a different name. You can also assign privileges to specific groups as a way to share the reports. Online help can be accessed by selecting the '?' at the bottom of your task bar.

Refer to your Cognos documentation for additional information on Cognos products.

Cube Reports

Each cube in the EDW corresponds to a star schema. The table below lists the cube name, the corresponding business/star schema name and a brief description.

<i>Cube Business Name</i>	<i>Star Schema Fact Table Name</i>	<i>Purpose/Description</i>
Academic Program Course	WFT_ACADEMIC_PROGRAM_COURSE	To review the number of students by major, major, etc sequence registered for courses.
Advancement Gift	WFT_ADVANCEMENT_GIFT	Advancement Gift Information by calendar or fiscal year to compare giver as well as gift attributes.
Course Registration	WFT_COURSE_REGISTRATION	Course Registration Information by academic year and period to compare course as well as student attributes.
Employee	WFT_EMPLOYEE	Employee Information by calendar year to count employees and employee attributes regardless of their position(s).
Employee Degree	WFT_EMPLOYEE_DEGREE	Employee Degree Information by calendar year and month to compare degree information by employee attributes.
Employee Position	WFT_EMPLOYEE_POSITION	Employee Position Information by calendar year and month to compare employee attributes by positions as appropriate.

<i>Cube Business Name</i>	<i>Star Schema Fact Table Name</i>	<i>Purpose/Description</i>
Employment Application	WFT_EMPLOYMENT_APPLICATION	Employment Application Information by calendar year to compare employment application counts by potential employee attributes.
Enrollment	WFT_ENROLLMENT	Enrollment Information by academic year and period to compare enrolled student attributes.
Financial Aid Pre-Student	WFT_FINANCIAL_PRE_STUDENT	Financial Aid Pre-Student Information by aid year to measure the impact of financial aid types and source offers and amounts on the new applicant funnel.
Financial Aid Student	WFT_FINANCIAL_AID_STUDENT	Financial Aid Information by aid year to compare the student attributes by financial aid types and source offers and amounts.
General Ledger	WFT_GENERAL_LEDGER	General Ledger Information by fiscal year, quarter and period year to date information comparing beginning and ending balances.

<i>Cube Business Name</i>	<i>Star Schema Fact Table Name</i>	<i>Purpose/Description</i>
General Ledger By Event	WFT_GENERAL_LEDGER	General Ledger By Event Information by fiscal year, quarter, period and a time slice compare the information by funds and or accounts.
Graduation Completion	WFT_GRADUATION_COMPLETION	Graduation Information or rates by academic year and academic period and graduand and academic outcome attributes.
Grant and Project	WFT_GRANT_AND_PROJECT	Grants and Projects Information by fiscal year, quarter and period to compare the usage of funding by ledger accounting and or grant program attributes.
Operating Ledger	WFT_OPERATING_LEDGER	Operating Ledger Information by fiscal year, quarter and period to compare original adopted budget and adjustments, etc by ledger accounting attributes.
Receivable Customer	WFT_RECEIVABLE_CUSTOMER	Customer Information by academic year and period to compare number of customers by accounting categories or groupings as well as student attributes.

<i>Cube Business Name</i>	<i>Star Schema Fact Table Name</i>	<i>Purpose/Description</i>
Receivable Revenue	WFT_RECEIVABLE_REVENUE	Revenue Information by academic year to compare by ledger accounting attributes.
Recruiting and Admission	WFT_RECRUITING_AND_ADMISSION	Recruiting and Admission Information by academic year and period to compare and measure applicant to student conversion rates by academic study and pre student attributes.

A sample default cube report for each business name appears below. The sample, or template, reports show the default settings that are delivered with your EDW solution. The default report format is only an example to begin exploring the data presented in a specific cube. Each institution (and or user) can tailor these reports to meet their needs to save privately or share with others. Refer to the Cognos documentation for details.

Academic Program Course

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
To review the number of students by major, major, etc sequence registered for courses.	Head Count	Major	Latest Event
	Course Count	Majors in Sequence Academic Year Academic Period Type Course College	

Insertable Objects

- EDW Academic Program Course
- cube Academic Program Course (40 of 58)
 - Multi Source
 - Academic Year
 - Academic Period Type
 - Latest Event Ind
 - Event
 - Admissions Population
 - Age Range
 - Award Category
 - Concentrations for Major
 - Concentrations in Sequence
 - Course By ID
 - Course By Subject
 - Course By Title
 - Course Campus
 - Course College
 - Course Department
 - Course Division
 - Course Level
 - Course Program Classification
 - Current Time Status
 - Degree
 - Enrollment Status
 - Ethnicity Category
 - Final Grade
 - Gender
 - Grade Type
 - Instructor

Krows: Major Majors In Seque...
Columns: Academic Year Academic Perik
Context: Yes

		2006-2007					
		Fall					
		Adult & Professional Studies		Arts & Science		Business	
		Headcount	Course Count	Headcount	Course Count	Headcount	Course Count
Accounting	First	2	4	29	42	73	
	Second	0	0	3	11	3	
	Third	0	0	0	0	9	
	Fourth	0	0	0	0	0	
	Majors In Sequence	2	4	32	51	85	
Agriculture	First	0	0	2	3	1	
	Second	0	0	0	0	0	
	Third	0	0	0	0	0	
	Fourth	0	0	0	0	0	
	Majors In Sequence	0	0	2	3	1	
Anthropology	First	1	4	18	11	13	
	Second	0	0	1	2	0	
	Third	0	0	0	0	0	
	Fourth	0	0	0	0	0	
	Majors In Sequence	1	4	19	11	13	
Art	First	0	0	2	4	0	
	Second	0	0	0	0	0	
	Third	0	0	0	0	0	

Information Academic Program Course

Advancement Gift

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Advancement Gift default report displays the number of donors and number of gifts given (and all available measures) by fiscal year filtered by latest event.	Donor Count	Calendar Year	Latest Event
	Gift Count		
	Gift Amount		
	Original Pledge Amount		
	Outstanding Pledge Amount		
	Average Gift Amount		
	Average Gift Auxiliary Amount		
	Average Original Pledge Amount		
	Average Outstanding Pledge Amount		
	Auxilliary Actual Value		
	Auxilliary Value		

Insertable Objects

- EDW Advancement Gift
 - cube Advancement Gift
 - Multi Source
 - Calendar Year
 - Calendar Month
 - Fiscal Year
 - Latest Event Ind
 - Event
 - Active Constituent Ind
 - Age Range
 - Campaign
 - Designation College
 - Designation Purpose
 - Designation Type
 - Entity Type
 - Ethnicity Category
 - Ethnicity
 - Final Install Year
 - Gender
 - Gift Auxiliary Type
 - Gift Type
 - Gift Vehicle
 - Giving Toward Goal Ind
 - Match Ind
 - Nation of Citizenship
 - Original Pledge Range
 - Outstanding Pledge Range
 - Pledge Payment Ind
 - Pledge Type
 - Pledge Vehicle

Rows: Measures (list) Columns: Calendar Year Context: Yes

Donor Count	2002	2003	2004	2005	2006	Calendar Year
Donor Count	4	36	71	56	54	183
Gift Count	11	47	484	172	122	1058
Pledge Count	29	16	116	47	33	354
Gift Amount	89,700.00	400,060.98	12,408,313.49	10,160,741.46	259,999.01	27,521,573.95
Original Pledge Amount	89,560.00	115,470.00	14,020,817.00	1,412,991.00	158,560.65	17,358,433.65
Outstanding Pledge Amount	45,210.00	58,980.00	3,352,156.98	268,081.00	140,302.15	5,139,343.22
Average Gift Amount	8,154.55	8,511.94	25,637.01	59,074.08	2,131.14	26,012.83
Average Original Pledge Amount	3,088.28	7,216.88	120,869.11	30,063.64	4,804.87	49,035.12

Information

Advancement Gift

Course Registration

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Course Registration default report displays the generated credits and number of seats (and all available measures) by academic year and academic period filtered by latest event.	Seat Count	Academic Year	Latest Event
	Credits Generated	Academic Period Type	
	GPA		
	Credits Attempted		
	Credits Earned		
	Credits Passed		
	Average Credits Generated		
	Average GPA		
	Average Credits Attempted		
	Average Credits Earned		
Average Credits Passed			

Insertable Objects

- EDW Course Registration
 - cube Course Registration (40 of 50)
 - Multi Source
 - Academic Year
 - Academic Period Type
 - Latest Event Ind
 - Event
 - Academic Outcome Enrolled Ind
 - Age Range
 - Award Category
 - Course By ID
 - Course By Subject
 - Course By Title
 - Course Campus
 - Course College
 - Course Department
 - Course Division
 - Course Level
 - Course Program Classification
 - Current Time Status
 - Degree
 - Enrolled Ind
 - Enrollment Status
 - Ethnicity Category
 - Ethnicity
 - Final Grade
 - Gender
 - Grade Type
 - Housing Ind
 - Instructor

Rows: Measures (list) Columns: Academic Year Fall Context: Yes

	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
	Fall								
Seats Count	338	311	297	219	448	771	2097	1679	
Credits Generated	1285.000	679.000	845.000	655.000	1336.000	2124.000	8952.500	5524.700	2427.
GPA	3.11258	3.22219	3.26554	3.15682	3.16303	3.06312	2.85572	2.95482	2.86
Credits Attempted	306.000	345.000	433.000	273.000	375.000	2028.000	8897.500	4674.500	162.
Credits Earned	302.000	326.000	425.000	261.000	351.000	1929.000	8510.500	4528.500	147.
Credits Passed	302.000	326.000	425.000	261.000	351.000	1929.000	8510.500	4528.500	147.
Average Credits Generated	3.802	2.183	2.845	2.991	2.982	2.755	4.269	3.290	2.
Average GPA	3.11258	3.22219	3.26554	3.15682	3.16303	3.06312	2.85572	2.95482	2.86
Average Credits Attempted	0.905	1.109	1.458	1.247	0.837	2.630	4.243	2.784	0.
Average Credits Earned	0.893	1.048	1.431	1.192	0.783	2.502	4.058	2.697	0.
Average Credits Passed	0.893	1.048	1.431	1.192	0.783	2.502	4.058	2.697	0.

Information

Course Registration

Employee

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Employee default report displays employee count (and all available measures) by calendar year filtered by latest event.	Employee Count	Calendar Year	Latest Event
	Years of Service		
	Total Earnings		
	Regular Earnings		
	Other Earnings		
	Employer Deduction Amount		
	Employee Deduction Amount		
	Encumbrance Amount		
	Leave Benefits Amount		
	Average Years of Service		
	Average Total Earnings		
	Average Regular Earnings		
	Average Other Earnings		
	Average Employer Deduction Amount		

Description

Measures

Attributes

Default Filter

Average Employee Deduction
Amount

Average Encumbrance Amount

Average Leave Benefits
Amount

Hourly FTE

Salaried FTE

Annual Salary

YTD Employer Deduction
Amount

YTD Employee Deduction
Amount

Average YTD Employer Deduc-
tion Amount

Average YTD Employee Deduc-
tion Amount

8 Cubes (EDW)
Cube Reports

Insertable Objects

- EDW Employee
- cube Employee
 - Multi Source
 - Calendar Year
 - Calendar Month
 - Latest Event Ind
 - Event
 - Age Range
 - Annual Salary Range
 - Active Position Ind
 - Employee Class
 - Employer Code
 - Employee EEO Skill
 - Employee Grouping
 - Employee Status
 - Employee Time Status
 - Ethnicity Category
 - Ethnicity
 - Faculty Member Categor
 - Faculty Staff Ind
 - Gender
 - Home Organization
 - Home Organization Chart
 - Nation Of Citizenship
 - Primary Disability
 - Tenure
 - Veteran Type
 - Visa Type
 - Not For Use

Rows: Measures (list) | Columns: Calendar Year | Context: Yes

	2001	2002	2003	2004	2005	2006
Employee Count	67	64	83	119	175	168
Years Of Service	5099	5587	6318	7149	8336	6102
Annual Salary	33,981,070.34	33,294,436.75	34,718,431.60	56,804,372.40	68,442,399.19	56,894,477.84
Total Earnings	2,783,921.61	2,762,920.47	2,875,421.67	4,731,055.65	5,714,465.69	4,739,826.65
Regular Earnings	2,556,112.92	2,591,946.66	2,672,730.90	4,448,987.50	5,365,346.84	4,540,743.13
Overtime Earnings	0.00	0.00	0.00	0.00	0.00	0.00
Other Earnings	227,808.69	170,973.81	199,721.13	266,864.15	313,184.35	198,248.39
Employer Deduction Amount	444,532.25	444,820.65	461,855.99	962,180.97	1,162,554.58	979,142.62
Employee Deduction Amount	880,670.16	834,058.85	870,418.21	1,548,413.18	1,880,070.37	1,583,814.97
YTD Employer Deduction Amount	2,792,695.37	2,844,016.14	2,914,257.07	6,172,993.64	6,910,375.47	4,383,700.66
YTD Employee Deduction Amount	5,494,061.15	5,301,365.72	5,416,667.67	9,885,439.91	11,214,573.39	7,032,405.75
Encumbrance Amount	34,494,079.79	36,326,099.13	37,096,932.75	60,386,272.65	77,061,262.61	61,952,623.18
Leave Benefits Amount	259,763.29	263,819.34	290,469.91	355,246.27	386,147.29	261,354.20
Average Years Of Service	7.07	7.84	8.51	6.07	5.77	5.01
Average Total Earnings	3,861.20	3,875.06	3,875.23	4,019.59	3,957.39	3,888.29
Average Regular Earnings	3,545.23	3,635.27	3,602.06	3,779.94	3,715.61	3,724.97
Average Overtime Earnings	0.00	0.00	0.00	0.00	0.00	0.00
Average Employer Deduction Amount	616.55	623.87	622.45	817.49	805.09	803.23
Average Employee Deduction Amount	1,221.46	1,169.79	1,173.07	1,315.56	1,301.99	1,299.27
Average YTD Employer Deduction Amount	3,873.36	3,988.80	3,927.57	5,244.68	4,785.58	3,596.14
Average YTD Employee Deduction Amount	7,620.06	7,435.30	7,300.09	8,398.84	7,766.33	5,769.00

Information

Employee

Employee Degree

Description

The Employee Degree default report displays the total employees by calendar year and post secondary degree filtered by latest event.

Measures

Employee Count

Attributes

Calendar Year

Default Filter

Latest Event

Post Secondary Degree

8 Cubes (EDW)
Cube Reports

Insertable Objects

- EDW Employee Degree
 - cube Employee Degree
 - Multi Source
 - Calendar Year
 - Calendar Month
 - Latest Event Ind
 - Event
 - Age Range
 - Annual Salary Range
 - Active Position Ind
 - Employee Class
 - Employer Code
 - Employee Grouping
 - Employee EEO Skill
 - Employee Status
 - Employee Time Status
 - Ethnicity Category
 - Ethnicity
 - Faculty Staff Ind
 - Final Degree Ind
 - Gender
 - Home Organization
 - Home Organization Chart
 - Nation Of Citizenship
 - Post Secondary Degree
 - Post Secondary Major
 - Post Secondary School
 - Primary Disability
 - Tenure
 - Veteran Type

Post Secondary ...
Calendar Year
Yes

Employee Count	2000	2001	2002	2003	2004	2005	2006	2007	Calendar Year
5 yr Bachelors and Masters	1	1	1	1	1	1	1	1	1
Associate in Applied Science	1	0	0	0	0	0	0	0	1
Associate in Arts	2	2	2	2	3	3	3	3	3
Associate in Science	1	0	0	0	1	1	1	1	2
Bachelor of Arts	5	6	6	8	10	10	10	10	11
Bachelor of Business Admin.	1	1	1	1	0	0	0	0	1
Bachelor of Commerce	0	1	1	1	1	1	1	1	1
Bachelor of Science	6	6	6	6	7	7	6	6	8
Certificate Program	1	0	0	0	0	0	0	0	1
Doctor of Medicine	1	1	1	0	0	0	0	0	1
Doctorate/PhD	1	0	0	1	0	0	0	0	2
Master of Arts	1	1	1	2	4	4	4	4	4
Master of Science	1	1	1	1	1	1	1	1	1
Ph.D.	3	3	3	3	7	8	7	7	8
Undeclared	0	0	0	0	1	1	1	1	1
Post Secondary Degree	20	18	18	21	25	26	24	24	35

Information

Employee Degree

Employee Position

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Employee Position default report displays the earnings and years of service (and all available measures) by calendar year filtered by latest event.	Employee Count, YTD Total Earnings	Calendar Year	Latest Event
	Position Count		
	Total Years of Service		
	Annual Salary		
	Hourly FTE		
	Salaried FTE		
	YTD Total Earnings		
	Encumbrance Amount		
	Average Total Years of Service		
	Average Annual Salary		
	Average YTD Total Earnings		
	Average Encumbrance Amount		
	YTD Regular Earnings		
	YTD Overtime Earnings		
	YTD Other Earnings		

YTD Employer Deduction
Amount

YTD Employee Deduction
Amount

Average YTD Regular Earnings

Average YTD Overtime Earn-
ings

Average YTD Other Earnings

Average YTD Employer Deduc-
tion Amount

Average YTD Employee Deduc-
tion Amount

Insertable Objects

- EDW Employee Position
 - cube Employee Position
 - Multi Source
 - Calendar Year
 - Calendar Month
 - Latest Event Ind
 - Event
 - Active Position Ind
 - Age Range
 - Annual Salary Range
 - Employee Class
 - Employee EEO Skill
 - Employee Grouping
 - Employee Status
 - Employee Time Status
 - Employer Code
 - Ethnicity Category
 - Ethnicity
 - Faculty Member Category
 - Gender
 - Home Organization
 - Home Organization Chart
 - Nation Of Citizenship
 - Position
 - Position Campus
 - Position Class
 - Position Contract Type
 - Position EEO Skill
 - Position Status
 - Primary Disability

Rows: Measures (list) ▼
Columns: Calendar Year ▼
Context: Yes ▼

	2006	Calendar Year
Employee Count	92	92
Position Count	42	42
Total Years Of Service	337.23	337.23
Annual Salary	4,695,319.30	4,695,319.30
Hourly FTE	1.000	1.000
Salaried FTE	92.000	92.000
YTD Total Earnings	3,476,882.73	3,476,882.73
YTD Regular Earnings	3,340,848.37	3,340,848.37
YTD Overtime Earnings	0.00	0.00
YTD Other Earnings	136,034.36	136,034.36
YTD Employer Deduction Amount	563,132.10	563,132.10
YTD Employee Deduction Amount	916,271.06	916,271.06
Encumbrance Amount	4,798,982.43	4,798,982.43
Average Total Years Of Service	3.67	3.67
Average Annual Salary	49,950.21	49,950.21
Average YTD Total Earnings	36,988.11	36,988.11
Average YTD Regular Earnings	35,540.94	35,540.94
Average YTD Overtime Earnings	0.00	0.00
Average YTD Other Earnings	1,447.17	1,447.17
Average YTD Employer Deduction Amount	5,990.77	5,990.77
Average YTD Employee Deduction Amount	9,747.56	9,747.56
Average Encumbrance Amount	51,053.00	51,053.00

Information

Employee Position

Employment Application

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Employee Position default report displays the earnings and years of service (and all available measures) by calendar year filtered by latest event.	Employee Count, YTD Total Earnings	Calendar Year	Latest Event
	Position Count		
	Total Years of Service		
	Annual Salary		
	Hourly FTE		
	Salaried FTE		
	YTD Total Earnings		
	Encumbrance Amount		
	Average Total Years of Service		
	Average Annual Salary		
	Average YTD Total Earnings		
	Average Encumbrance Amount		

Insertable Objects

- EDW Employment Application
- cube Employment Application (40 of 47)
 - Multi Source
 - Calendar Year
 - Calendar Month
 - Latest Event Ind
 - Event
 - Age Range
 - Alumnus Ind
 - Appointment Percentage
 - Current Employee Ind
 - Days Requisition Open
 - Employer Code
 - Employer Industrial Type
 - Employer Name
 - Ethnicity Category
 - Ethnicity
 - Final Degree Ind
 - Gender
 - Home Organization
 - Home Organization Chart
 - Intend Employee Time Status
 - Minimum Degree Level
 - Nation Of Citizenship
 - Position
 - Position Campus
 - Position Class
 - Position Contract Type
 - Position EEO Skill
 - Position Status

Rows: Measures (list) ▼
Columns: Calendar Year ▼
Context: Yes ▼

	2001	2002	2003	2004	2005	2006	Calendar Year
Applied Count	4	2	2	19	26	25	69
Interview Offered Count	0	1	0	1	5	7	13
Interviewed Count	0	0	1	3	5	5	15
Employment Offered Count	0	0	0	0	0	1	2
Accepted Count	0	0	1	0	2	2	5
Employed Count	0	1	0	2	1	3	7
Previous Yearly Salary							30,000.00
Previous Months Of Service							2
Desired Hourly Salary				77.40	61.10	43.25	181.75
Desired Yearly Salary	218,250.00	60,000.00	48,000.00	694,000.00	580,000.00	2,091,166.00	3,760,916.00
Average Previous Yearly Salary							30,000.00
Average Previous Months Of Service							2.00
Average Desired Hourly Salary				12.90	15.28	10.81	12.98
Average Desired Yearly Salary	54,562.50	60,000.00	48,000.00	53,384.62	64,444.44	67,456.97	61,654.36

Information

Employment Application

Enrollment

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Enrollment default report displays enrolled count (and all available measures) by academic year filtered by latest event.	Registered count	Academic Year	Latest Event
	Enrolled count		
	Total Credits Generated		
	FTE		
	Academic Period GPA		
	Academic Period Credits Attempt		
	Academic Period Credits Earned		
	Academic Period Credits Passed		
	Total Contact Hours		
	Total Billing Units		
	Tuition Charges		
	Average Tuition Charges		

8 Cubes (EDW)
Cube Reports

Description

Measures

Attributes

Default Filter

Financial Aid Amount

Average Financial Aid Amount

Total CEU

Academic Outcome Enrolled
Count

Total CEU Billing

8 Cubes (EDW)
Cube Reports

Insertable Objects

- EDW Enrollment
 - cube Enrollment
 - Multi Source
 - Academic Year
 - Academic Period Type
 - Latest Event Ind
 - Event
 - Academic Outcome Enrolled Ind
 - Age Range
 - Award Category
 - Campus
 - College
 - Current Time Status
 - Department
 - Degree
 - Enrolled Ind
 - Enrollment Status
 - Ethnicity Category
 - Ethnicity
 - Gender
 - Housing Ind
 - Intended Time Status
 - Major
 - Nation of Citizenship
 - Primary Disability
 - Program
 - Major Program Classification
 - Registered Ind
 - Residency
 - Residency Ind

Rows: Measures (list) ▼

Columns: Academic Year ▼

Context: Yes ▼

	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Registered Count	72	55	113	199	642	549	266
Enrolled Count	77	57	124	211	678	581	282
Total Credits Generated	724.000	650.000	1745.390	2858.750	11488.000	6750.600	2733.300
Student FTE							
Total Contact Hours							
GPA	3.25582	3.08112	10.76948	3.93911	10.08010	4.73922	42.55892
Credits Attempted	558.000	298.000	656.390	2561.750	10813.000	4795.500	195.000
Credits Earned	535.000	292.000	635.390	2441.750	10335.500	4631.500	186.000
Credits Passed	535.000	292.000	635.390	2441.750	10335.500	4631.500	186.000
Tuition Charges	286,000.00	328,438.00	421,679.23	552,626.44	2,251,806.23	1,283,448.41	980,900.70
Financial Aid Amount	33,104.94	48,271.97	139,501.08	107,039.68	302,717.96	237,689.28	111,616.00
Average Tuition Charges	4,028.17	6,196.94	3,373.43	3,036.41	3,842.67	2,516.57	4,283.41
Average Financial Aid Amount	2,069.06	2,298.67	3,671.08	2,326.95	2,802.94	2,242.35	2,426.43
Academic Outcome Enrolled Count	70	53	111	196	628	502	250
Total Billing Units	97.00	296.00	1013.00	112.00	85.00	1607.50	2481.50
Total CEU					26.00	70.60	15.80
Total CEU Billing Units	0.00	0.00	0.00	0.00	0.00	3.00	11.00

Information

Enrollment

Financial Aid Pre-Student

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
<p>The Financial Aid Pre-Student default report displays inquired, applied, admitted, accepted, and enrolled counts for pre-students (and all available measures) by aid year filtered by latest event.</p>	Award Authorized Amount	Aid Year	Latest Event
	Award Offered Amount		
	Award Accepted Amount		
	Award Declined Amount		
	Award Canceled Amount0		
	Award Paid Amount		
	Average Award Authorized Amount		
	Average Award Offered Amount		
	Average Award Accepted Amount		
	Average Award Declined Amount		
Average Award Canceled Amount			

8 Cubes (EDW)
Cube Reports

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
	Average Award Paid Amount		
	Inquired Count		
	Applied Count		
	Admitted Count		
	Accepted Count		
	Enrolled Count		
	Award Offered Count		
	Award Accepted Count		
	Award Declined Count		
	Award Canceled Count		
	Award Paid Count		

Insertable Objects

- EDW Financial Aid Pre-Student
 - cube Financial Aid Pre-Student
 - Multi Source
 - Aid Year
 - Academic Year
 - Academic Period Type
 - Latest Event Ind
 - Event
 - Age Range
 - Ethnicity Category
 - Ethnicity
 - Financial Aid Source Type
 - Financial Aid Type
 - Fund Source
 - Fund Type
 - Gender
 - Nation Of Citizenship
 - Primary Disability
 - Veteran Type
 - Visa Type
 - Not in use 1
 - Not in use 2
 - Not in use 3
 - Not in use 4
 - Not in use 5
 - Not in use award 1
 - Not in use award 2
 - Not in use award 3
 - Not in use award 4
 - Not in use award 5

Rows: Measures (list)
Columns: Aid Year
Context: Yes

	2003-2004 Aid Year	2004-2005 Aid Year	2005-2006 Aid Year	2006-2007 Aid Year	Aid Year
Award Authorized Amount	10,450.00	140,349.30	77,216.00	35,251.50	295,123.80
Award Offered Amount	734,499.00	2,550,728.00	1,676,181.67	1,103,869.00	7,866,639.67
Award Accepted Amount	610,743.00	2,070,631.00	1,415,862.67	901,208.00	6,509,990.67
Award Declined Amount	15,362.00	74,447.00	47,674.00	26,047.00	183,430.00
Award Canceled Amount	6,200.00	0.00	3,427.00	0.00	30,952.00
Award Paid Amount	107,039.68	312,417.66	256,538.18	133,877.00	1,073,891.59
Average Award Authorized Amount	1,306.25	1,179.41	1,016.00	903.88	1,081.04
Average Award Offered Amount	1,047.79	1,182.54	1,000.11	1,164.42	1,136.80
Average Award Accepted Amount	1,077.15	1,185.25	979.16	1,181.14	1,140.50
Average Award Declined Amount	640.08	791.99	567.55	766.09	669.45
Average Award Canceled Amount	1,033.33	0.00	155.77	0.00	499.23
Average Award Paid Amount	1,039.22	1,136.06	912.95	1,195.33	1,066.43
Inquired Count	66	24	120	68	357
Applied Count	73	178	182	80	614
Admitted Count	72	175	166	73	584
Accepted Count	72	175	155	73	573
Enrolled Count	65	166	147	67	535
Award Offered Count	19	61	43	33	186
Award Accepted Count	86	226	249	107	694
Award Declined Count	5	8	3	1	20
Award Canceled Count	1	0	0	0	6

Information

Financial Aid Pre Student

Financial Aid Student

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Financial Aid Student default report displays all available measures by aid year information filtered by latest event..	Student Count Award Authorized Amount Award Offered Amount Award Accepted Amount Award Declined Amount Award Canceled Amount Award Paid Amount Average Award Authorized Amount Average Award Offered Amount Average Award Accepted Amount Average Award Declined Amount Average Award Canceled Amount Average Award Paid Amount	Aid Year	Latest Event

Insertable Objects

- EDW Financial Aid Student
 - cube Financial Aid Student (40 of 41)
 - Multi Source
 - Aid Year
 - Academic Year
 - Academic Period Type
 - Latest Event Ind
 - Event
 - Academic Outcome Enrolled Ind
 - Age Range
 - Award Category
 - Degree
 - Campus
 - College
 - Current Time Status
 - Department
 - Enrolled Ind
 - Enrollment Status
 - Ethnicity Category
 - Ethnicity
 - Family Income Range
 - Financial Aid Source Type
 - Financial Aid Type
 - Fund Source
 - Fund Type
 - Gender
 - Housing Ind
 - Intended Time Status
 - Major
 - Nation Of Citizenship

Rows: Measures (list) ▼
Columns: Aid Year ▼
Context: Yes ▼

	2005-2006 Aid Year	2006-2007 Aid Year	Aid Year JUL 1995 - JUN 1996	Aid Year
Student Count	249	113	31	742
Award Authorized Amount	77,216.00	35,251.50	1,170.00	296,293.80
Award Offered Amount	1,676,181.67	1,103,869.00	120,183.00	7,986,822.67
Award Accepted Amount	1,415,862.67	901,208.00	82,635.00	6,592,625.67
Award Declined Amount	47,674.00	26,047.00		183,430.00
Award Canceled Amount	3,427.00	0.00	8,003.00	38,955.00
Award Paid Amount	256,538.18	133,877.00	30,305.00	1,104,196.59
Average Award Authorized Amount	1,016.00	903.88	585.00	1,077.43
Average Award Offered Amount	1,000.11	1,164.42	1,178.26	1,137.40
Average Award Accepted Amount	979.16	1,181.14	1,252.05	1,141.78
Average Award Declined Amount	567.55	766.09		669.45
Average Award Canceled Amount	155.77	0.00	1,333.83	572.87
Average Award Paid Amount	912.95	1,195.33	1,122.41	1,067.89

Information

Financial Aid Student

General Ledger

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The General Ledger default report displays the debits, credits beginning balance, activity and ending balances by fiscal year and account type level by latest event.	Debits	Fiscal Year	Latest Event is the only data available via this cube.
	Credits	Account Type Level	
	Beginning Balance		
	Activity		
	Ending Balance		

Insertable Objects

- EDW General Ledger
 - cube General Ledger
 - Multi Source
 - Fiscal Year
 - Fiscal Period
 - Account
 - Account Level
 - Account Pool
 - Account Type Level
 - Chart of Accounts
 - Fund
 - Fund Level
 - Fund Pool
 - Fund Type Level
 - Internal Account Type
 - Measures
 - Debits
 - Credits
 - Beginning Balance
 - Activity
 - Ending Balance
 - cube General Ledger by Event

Rows: Fiscal Year
Columns: Account Type Le...
Context: Measures (list)

		Debits	Credits	Beginning Balance	Activity	Ending Balance
2005	10 - Assets	17,896,420.64	17,674,474.05	61,696,847.97	221,946.59	61,918,...
	20 - Liabilities	8,100,263.78	13,006,904.02	-101,088,053.70	-4,906,640.24	-105,994,6...
	30 - Control Accounts	366,886,612.62	360,761,274.60	31,905,066.03	6,125,338.02	38,030,4...
	40 - Fund Balance	130,800.73	1,572,209.90	7,365,322.90	-1,441,409.17	5,923,9...
	50 - Revenues	0.00	0.00	112,404.00	0.00	112,4...
	60 - Labor					
	90 - Fund Additions					
	Account Type Level	393,014,097.77	393,014,862.57	-8,412.80	-764.80	-9,1...
2006	10 - Assets	59,387,459.13	42,663,624.83	243,514,409.91	16,723,834.30	260,238,2...
	20 - Liabilities	11,067,806.11	18,214,947.22	-169,647,590.63	-7,147,141.11	-176,794,7...
	30 - Control Accounts	280,532,516.67	289,974,282.18	-146,722,264.44	-9,441,765.51	-156,164,0...
	40 - Fund Balance	60,562.61	195,490.29	72,733,863.56	-134,927.68	72,598,9...
	50 - Revenues	0.00	0.00	112,404.00	0.00	112,4...
	60 - Labor					
	90 - Fund Additions					
	Account Type Level	351,048,344.52	351,048,344.52	-9,177.60	0.00	-9,1...
2007	10 - Assets	3,163,342.22	3,511,119.08	64,073,889.07	-347,776.86	63,726,...
	20 - Liabilities	1,876,844.49	2,978,159.23	-56,067,016.26	-1,101,314.74	-57,168,...
	30 - Control Accounts	86,021,370.98	84,541,685.79	2,208,619.35	1,479,685.19	3,688,...
	40 - Fund Balance	6,124.04	36,717.63	-10,245,887.56	-30,593.59	-10,276,...
	50 - Revenues	0.00	0.00	28,101.00	0.00	28,...

Information

General Ledger

General Ledger by Event

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The General Ledger default displays debits, credits, beginning balance, activity and ending balances by fiscal year and account type level. This cube might have multiple events for the same cube. The original report template is filtered by latest event.	Debit	Fiscal Year	Latest Event
	Credits	Account Type Level	
	Beginning Balance		
	Activity		
	Ending Balance		

Insertable Objects

- EDW General Ledger
 - cube General Ledger
 - cube General Ledger by Event
 - Multi Source
 - Fiscal Year
 - Fiscal Period
 - Latest Event Ind
 - Event
 - Account
 - Account Level
 - Account Pool
 - Account Type Level
 - Chart of Accounts
 - Fund
 - Fund Level
 - Fund Pool
 - Fund Type Level
 - Internal Account Type
 - Measures
 - Debits
 - Credits
 - Beginning Balance
 - Activity
 - Ending Balance

Rows: Fiscal Year
Columns: Account Type Le... Measures (list)
Context: Yes

		Debits	Credits	Beginning Balance	Activity	Ending Balance	
2005	10 - Assets	17,896,420.64	17,674,474.05	61,696,847.97	221,946.59	61,918,...	
	20 - Liabilities	8,100,263.78	13,006,904.02	-101,088,053.70	-4,906,640.24	-105,994,...	
	30 - Control Accounts	366,886,612.62	360,761,274.60	31,905,066.03	6,125,338.02	38,030,...	
	40 - Fund Balance	130,800.73	1,572,209.90	7,365,322.90	-1,441,409.17	5,923,...	
	50 - Revenues	0.00	0.00	112,404.00	0.00	112,...	
	60 - Labor						
	90 - Fund Additions						
	<i>More & hidden</i>						
	Account Type Level		393,014,097.77	393,014,862.57	-8,412.80	-764.80	-9,1...
2006	10 - Assets	59,387,459.13	42,663,624.83	243,514,409.91	16,723,834.30	260,238,...	
	20 - Liabilities	11,067,806.11	18,214,947.22	-169,647,590.63	-7,147,141.11	-176,794,...	
	30 - Control Accounts	280,532,516.67	289,974,282.18	-146,722,264.44	-9,441,765.51	-156,164,...	
	40 - Fund Balance	60,562.61	195,490.29	72,733,863.56	-134,927.68	72,598,...	
	50 - Revenues	0.00	0.00	112,404.00	0.00	112,...	
	60 - Labor						
	90 - Fund Additions						
	<i>More & hidden</i>						
	Account Type Level		351,048,344.52	351,048,344.52	-9,177.60	0.00	-9,1...
2007	10 - Assets	3,163,342.22	3,511,119.08	64,073,889.07	-347,776.86	63,726,...	
	20 - Liabilities	1,876,844.49	2,978,159.23	-56,067,016.26	-1,101,314.74	-57,168,...	
	30 - Control Accounts	86,021,370.98	84,541,685.79	2,208,619.35	1,479,685.19	3,688,...	

Information

General Ledger by Event

Graduation Completion

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Graduation Completion default report displays the number of students (and all available measures) by academic year filtered by latest event.	Student Count	Academic Year	Latest Event
	Degree Awarded Count	Award Category	
	GPA		
	Active Academic Periods		
	Credits Attempted		
	Credits Earned		
	Credits Passed		
	Average Student Age		
	Average GPA		
	Average Active Academic Periods		
	Average Credits Attempted		
	Average Credits Earned		
	Average Credits Passed		

Insertable Objects

- EDW Graduation Completion
- cube Graduation Completion
 - Multi Source
 - Academic Year
 - Academic Period Type
 - Latest Event Ind
 - Event
 - Age Range
 - Award Category**
 - Campus
 - Cohort
 - College
 - Completion Time Status
 - Degree
 - Department
 - Ethnicity Category
 - Ethnicity
 - Gender
 - Graduation Campus
 - Housing Ind
 - Intended Time Status
 - Major
 - Nation of Citizenship
 - Outcome Graduation Date
 - Primary Disability
 - Program
 - Major Program Classification
 - Residency
 - Residency Ind
 - Student Classification

Rows: Measures (list) ▼
Columns: Academic Year ▼ Award Catego ▼
Context: Yes ▼

	2004-2005		2005-2006		
	Baccalaureate Degree	Doctoral Degree	Associate Degree	Baccalaureate Degree	Doctoral Degree
Student Count	1	0	2	3	1
Degree Awarded Count	1	0	1	1	1
GPA	66.16667	/0	3.32099	3.21839	/0
Active Academic Periods	4		7	29	3
Credits Attempted	360.000		43.500	90.000	0.000
Credits Earned	360.000		40.500	83.000	0.000
Credits Passed	360.000		40.500	83.000	0.000
Average Student Age	21.00		21.00	23.00	22.00
Average GPA	66.16667	/0	3.32099	3.21839	/0
Average Active Academic Periods	4.00		3.50	9.67	3.00
Average Credits Attempted	360.000		21.750	45.000	0.000
Average Credits Earned	360.000		20.250	41.500	0.000
Average Credits Passed	360.000		20.250	41.500	0.000

Information - Award Category

Graduation Completion

Grant and Project

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Grant and Project default report displays all available measures for a grant or other project by fiscal filtered by latest event.	Budget Adjust	Fiscal Year	Latest Event
	Direct Expend		
	Matching Costs		
	Indirect Costs		
	Memo Costs		
	Direct Revenue		
	Activity		
	Reservations		
	Encumbrances		
	Average Budget Adjust		
	Average Direct Expend		
	Average Matching Costs		
	Average Indirect Costs		
	Average Memo Costs		
	Average Direct Revenue		

8 Cubes (EDW)
Cube Reports

Description

Measures

Attributes

Default Filter

Average Activity

Average Reservations

Average Encumbrances

Adopted Budget

Remaining Balance

Average Adopted Budget

Average Remaining Balance

8 Cubes (EDW)
Cube Reports

Insertable Objects

- EDW Grant and Project
- cube Grant and Project
 - Multi Source
 - Fiscal Year
 - Fiscal Period
 - Latest Event Ind
 - Event
 - Account
 - Account Level
 - Internal Account Type
 - Account Pool
 - Account Type
 - Agency
 - Category
 - Chart Of Accounts
 - Fund
 - Fund Level
 - Fund Pool
 - Fund Type
 - Grant Type
 - Location
 - On Campus Ind
 - Organization
 - Organization Level
 - Organization Pool
 - Principal Investigator Name
 - Program
 - Program Level
 - Research Purpose
 - Responsible Organization

Rows: Measures (list) ▼
Columns: Fiscal Year ▼
Context: Yes ▼

	2001	2002	2003	2004	2005	2006	2007
Adopted Budget	370,704.68	761,016.14	5,565,338.70	9,463,350.38	14,795,881.14	27,054,000.49	33,885,610.35
Budget Adjust	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Direct Expend	83,750.52	86,147.72	88,952.36	100,706.46	133,722.83	679,877.26	99,915.73
Matching Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indirect Costs	0.00	0.00	0.00	54.88	192.84	25,544.35	2,114.25
Memo Costs	0.00	0.00	0.00	0.00	45.36	11,434.49	549.20
Direct Revenue	83,750.52	86,147.72	88,952.36	96,843.91	135,691.15	703,790.31	101,669.73
Activity	167,501.04	172,295.44	177,904.72	198,472.68	270,181.34	1,413,843.22	204,059.96
Reservations	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Encumbrances	0.00	23,382.00	0.00	0.00	48,259.33	4,691.83	444,163.81
Remaining Balance	203,203.64	565,338.70	5,387,433.98	9,264,877.70	14,477,440.47	25,635,465.44	33,237,386.58
Average Adopted Budget	772.30	1,585.45	10,082.14	10,656.93	8,503.38	8,350.00	10,576.03
Average Budget Adjust	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Direct Expend	174.48	179.47	161.15	113.41	76.85	209.84	31.18
Average Matching Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Indirect Costs	0.00	0.00	0.00	0.06	0.11	7.88	0.66
Average Memo Costs	0.00	0.00	0.00	0.00	0.03	3.53	0.17
Average Direct Revenue	174.48	179.47	161.15	109.06	77.98	217.22	31.73
Average Activity	348.96	358.95	322.29	223.51	155.28	436.37	63.69
Average Reservations	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Encumbrances	0.00	48.71	0.00	0.00	27.74	1.45	138.63

Information

Grant and Project

Operating Ledger

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
<p>The Operating Ledger default report displays the fiscal year adopted budget, fiscal year budget adjustments and the fiscal Year total budget as well as the adjustments, reservations, encumbrances, activity by fiscal year and account type filtered by latest event.</p>	Fiscal Year Adopted Budget	Fiscal Year	Latest Event
	Fiscal Year Budget Adjustments	Account Type	
	Fiscal Year Total Budget		
	Adjustments		
	Reservations		
	Encumbrances		
	Activity		
	Adopted Budget		
	Remaining Balance		

Insertable Objects

- EDW Operating Ledger
 - cube Operating Ledger
 - Multi Source
 - Fiscal Year
 - Fiscal Period
 - Latest Event Ind
 - Event
 - Account
 - Account Level
 - Internal Account Type
 - Account Pool
 - Account Type
 - Chart Of Accounts
 - Fund
 - Fund Level
 - Fund Pool
 - Fund Type
 - Organization
 - Organization Level
 - Organization Pool
 - Program
 - Program Level
 - Measures
 - Fiscal Year Adopted Budget
 - Fiscal Year Budget Adjustments
 - Fiscal Year Total Budget
 - Adopted Budget
 - Adjustments
 - Reservations
 - Encumbrances

Rows: Measures (list) Columns: Fiscal Year Account Type Context: Yes

	2007				
	50 - Revenues	60 - Labor	70 - Direct Expenditures	80 - Transfers	Account Type
Fiscal Year Adopted Budget	132,480,790.56	250,808,967.48	332,282,787.00	0.00	715,572,545.04
Fiscal Year Budget Adjustments	0.00	-558,429.84	0.00	0.00	-558,429.84
Fiscal Year Total Budget	132,480,790.56	250,250,537.64	332,282,787.00	0.00	715,014,115.20
Adopted Budget	11,040,065.88	20,900,747.29	27,690,232.25	0.00	59,631,045.42
Adjustments	0.00	-46,535.82	0.00	0.00	-46,535.82
Reservations	0.00	0.00	18,111.27	0.00	18,111.27
Encumbrances	0.00	8,392,712.99	-121,201.35	0.00	8,271,511.64
Activity	124,405.35	1,526,499.22	75,388.56	-2,202.76	1,724,090.37
Remaining Balance	10,915,660.53	10,934,999.26	27,717,933.77	2,202.76	49,570,796.32

Information

Operating Ledger

Receivable Customer

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Receivable Customer default report displays the all available measures by academic year and academic period filtered by latest event.	Customer count	Academic Year	Latest Event
	Balance	Academic Period Type	
	Amount Due		
	Average Balance		
	Average Amount Due		

insertable objects

- EDW Receivable Customer
 - cube Receivable Customer
 - Multi Source
 - Academic Year
 - Academic Period Type
 - Latest Event Ind
 - Event
 - Award Category
 - Bill Date Aging
 - Category
 - Collection Ind
 - College
 - Degree
 - Delinquency
 - Department
 - Detail Code
 - Effective Date Aging
 - Major
 - NSF Count
 - Program
 - Major Program Classification
 - Student Level
 - Not for use
 - Measures
 - Customer Count
 - Balance
 - Amount Due
 - Average Balance
 - Average Amount Due

Academic Year
Fall
Measures (list)
Yes

		Customer Count	Balance	Amount Due	Average Balance	Average Amount Due
1999-2000	Fall	76	70,394.50	57,559.00	926.24	757.36
2000-2001	Fall	80	241,886.00	133,328.50	3,023.58	1,666.61
2001-2002	Fall	51	258,873.08	275,170.58	5,075.94	5,395.50
2002-2003	Fall	129	234,724.75	335,820.25	1,819.57	2,603.26
2003-2004	Fall	185	313,599.92	330,157.48	1,695.13	1,784.64
2004-2005	Fall	586	1,674,653.36	1,635,605.80	2,857.77	2,791.14
2005-2006	Fall	845	898,579.85	767,708.79	1,063.41	908.53
2006-2007	Fall	280	727,387.29	741,166.38	2,597.81	2,647.02
<i>More & hidden</i>						
Academic Year	Fall	1728	4,420,098.75	4,276,516.78	2,557.93	2,474.84

Information

Receivable Customer

Receivable Revenue

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Receivable Revenue report displays all available measures by academic year and academic period filtered by latest event.	Customer count	Academic Year	Latest Event
	Balance	Academic Period Type	
	Amount Due		
	Average Balance		
	Average Amount Due		

8 Cubes (EDW)
Cube Reports

Insertable Objects

- EDW Receivable Revenue
 - cube Receivable Revenue
 - Multi Source
 - Academic Year
 - Academic Period Type
 - Latest Event Ind
 - Event
 - Account
 - Account Level
 - Account Type
 - Bill Date Aging
 - Category
 - Chart Of Accounts
 - Detail Code
 - Effective Date Aging
 - Fund
 - Fund Level
 - Fund Type
 - Organization
 - Organization Level
 - Program
 - Program Level
 - Measures
 - Balance
 - Amount Due
 - Average Balance
 - Average Amount Due

Rows: Academic Year

Columns: Measures (list)

Context: Yes

	Balance	Amount Due	Average Balance	Average Amount Due
1998-1999	50.00	50.00	50.00	50.00
1999-2000	62,536.50	97,370.00	2,084.55	3,245.67
2000-2001	259,286.00	310,898.04	8,102.69	9,715.56
2001-2002	275,623.08	380,735.34	18,374.87	25,382.36
2002-2003	309,011.02	595,975.58	3,961.68	7,640.71
2003-2004	397,504.86	615,526.41	6,973.77	10,798.71
2004-2005	2,147,200.59	3,837,150.35	22,136.09	39,558.25
2005-2006	1,141,336.63	2,476,815.75	8,646.49	18,763.76
2006-2007	808,770.51	1,206,331.63	10,929.33	16,301.78
Academic Year	5,401,319.19	9,520,853.10	10,467.67	18,451.27

Information

Receivable Revenue

Recruiting and Admission

<i>Description</i>	<i>Measures</i>	<i>Attributes</i>	<i>Default Filter</i>
The Recruiting and Admission default report displays all available measures by academic period filtered by latest event.	Inquired Count Applied Count Admitted Count Accepted Count Enrolled Count Award Offered Count Award Accepted Count Award Declined Count Award Canceled Count Award Paid Count	Academic Period	Latest Event

8 Cubes (EDW)
Cube Reports

Insertable Objects

- EDW Recruiting and Admission
 - cube Recruiting and Admission (40 of 100)
 - Multi Source
 - Academic Year
 - Academic Period Type
 - Latest Event Ind
 - Event
 - Academic Percentile Range
 - Admissions Population
 - Age Range
 - Award Category
 - Campus
 - Cohort
 - College
 - County Admit
 - Degree
 - Department
 - Employer Industrial Type
 - Employer Name
 - Ethnicity Category
 - Ethnicity
 - Family Income Range
 - First Contact
 - Gender
 - Intended Time Status
 - Major
 - Nation Admit
 - Nation Of Citizenship
 - Post Secondary Degree

Measures (list)
Academic Year
Fall
Yes

	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	Academic Year
	Fall								
Inquired Count	67	27	173	202	251	300	235	5	1296
Applied Count	70	35	119	237	809	609	335	10	2220
Admitted Count	62	24	97	190	627	455	233	7	1720
Accepted Count	61	23	94	186	622	448	230	7	1696
Enrolled Count	44	22	72	143	483	323	183	0	1297
Award Offered Count	3	2	14	9	44	35	20	0	141
Award Accepted Count	19	20	57	71	175	186	72	0	601
Award Declined Count	0	0	3	3	6	3	1	0	16
Award Canceled Count	0	0	3	1	0	0	0	0	4
Award Paid Count	0	0	0	0	0	0	0	0	0

Information
Recruiting and Admission

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Chapter 9 Self-Service Reporting (ODS)

Self-Service Reporting (SSR) provides simple, ad hoc access to information within the 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 the 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 the 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 the 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 “Security” section at the end of this chapter for additional information.

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 ODS users. Therefore, the data results returned for any SSR report template mirror the accessible data as defined for that SSR/ODS user. If an SSR report template uses a particular 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.

<i>This navigation. . .</i>	<i>Does this . . .</i>
 Populations link (globe icon)	For ODS Population maintenance when selected from the top right corner of the home page. Opens the View Search Rules window showing all search rules with existing ODS populations, for all templates.
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.
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.
 open folder 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.
 diskette icon	Select to save a new, or resave an existing search rule. Opens the Save Search Rule window with optional save/refresh ODS population functionality.

<i>This navigation. . .</i>	<i>Does this . . .</i>
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 all detail reports on the Detail Reports page. When the page returns, the SQL is displayed below the button.
 Magnifying glass icon	Opens the Detail Reports page for the displayed list results or the Search Rule Detail window.

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 the 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 “Search Rules and ODS Populations” 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 ODS Populations for the template in context (See the “Search Rules and ODS Populations” 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.

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 “Report Templates” section for additional information.

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 an ODS reporting view. These filters are generated from a series of LOV views contained within the ODSLOV schema within the ODS. The ODSLOV views obtain their information from the 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 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 generate the List Page report. When the page returns, the SQL displays below the button.

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:

- View and sort the results
- Export the List page report as a .csv file (Microsoft Excel format, for example) or an .xml file
- Send emails
- Save, load, modify or delete search rules and optionally save, refresh or delete ODS Populations for the template in context (See the “Search Rules and ODS Populations” 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.

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 followed by 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.

Note: This display setting applies to the HTML List page only. The .csv/.xml export and 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 the magnifying glass icon in the left column for any result on the list report.

Note: For the Finance templates, in addition to the magnifying glass 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” section for information specific to each template.

Search Rules and ODS Populations

SSR allows you to save a set of defined search criteria filters for a report template as a Search Rule for future use. This makes it easy to:

- Save a new search rule (and ODS population)
- Load a saved search rule in the corresponding report template
- Update an existing search rule (or refresh an ODS population)
- View saved search rule (or ODS population) details
- Rename a search rule
- Delete a search rule (or ODS population)

Note: Search rules can be saved for each report template under a user-defined name. You can only access those search rules (and populations) saved under your user name.

For select templates, you can also optionally save the unique primary identifier(s) for your List page results to the ODS as a population for use in custom reports developed with your third party reporting tool. Supporting features makes it easy to refresh, view details, or delete ODS populations:

- Populations are associated with search rule. You can not save a population without saving the corresponding search rule.
- Populations can be used for custom reporting with other reporting tools against the ODS. Populations cannot be reused within SSR.
- The save population feature is not available for the Finance report templates.
- The save Population capability is an optional feature that may be disabled for all applicable templates if turned off at the application level for SSR.

The 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, will contain the unique identifiers for each saved population along with the distinguishing characteristics of the corresponding search rule and user.

The following search rule parameters are required to retrieve a population from the ODS_POPULATION view for reporting purposes:

- TEMPLATE_NAME
- RULE_NAME

- USER_ID

Note: A function in the ODS Population Detail window in SSR (see below) will generate the required SQL for retrieving a saved population from the ODS_POPULATION reporting view.

Save and Maintain Search Rules and ODS Populations

The following sections describe how to save, use and maintain search rules and populations in SSR.

Save Search Rule Window

Once you have selected your search criteria filters, you can save a search rule by selecting the diskette icon on the Search Criteria or List page. This opens the Save Search Rule window.

Use the following steps to save a new search rule.

1. Enter a name for the search rule into the **Search Rule** field.
2. Check the **Create/Refresh ODS Population** checkbox to save the ODS population for this search rule.
3. Select **Save**.

You may also use the Save Search Rule window (diskette icon) to perform the following:

- Manage your search rule naming conventions.
Select the View Rules [Show] link to display a list of existing search rules for the report template in context.
Select the View Rules [Hide] link to close this display.
- Update an existing search rule.
If you have changed or added any search criteria filters for an existing search rule in context and want to save those changes, select the diskette icon to open the Save Search Rule window. Select Save.

Note: If you are updating an existing search rule that has a population saved to the ODS, you *must* also check the **Create/Refresh ODS Population** checkbox to update and refresh the population. If you leave this box unchecked while updating an existing search rule, any previously saved population will be deleted.

- Create or refresh an ODS population for an existing search rule.
With an existing search rule in context, select the diskette icon to open the Save Search Rule window.

Check the Create/Refresh ODS checkbox and select Save.

- Save an existing search rule as another search rule.

With an existing search rule in context, select the diskette icon to open the Save Search Rule window.

Enter the new search rule name.

Check the **Create/Refresh ODS Population** checkbox (as applicable).

Select Save.

View Search Rules Window (Report Template Specific)

Within each individual report template you can access and maintain your saved search rules and ODS populations by selecting the open folder icon on the Search Criteria or List page. This opens the View Search Rules window. The View Search Rules window displays all search rules previously saved by the current user for the report template in context.

Use the report template View Search Rules window to review or perform the followings:

This . . .

Does This . . .

Load Search Rule

Lists the name of all search rules previously saved by this user for the report template in context.

- Select the column name to sort the search rules in ascending or descending order by search rule name.
- Select a search rule name to load the saved filters and launch the Search Criteria page for the report template in context.

Rule Details

Select the magnifying glass icon to open the Search Rule Detail window for this search rule.

<i>This . . .</i>	<i>Does This . . .</i>
Population Details	<p>This column displays a count of the unique identifier records previously saved to the ODS for this search rule population.</p> <ul style="list-style-type: none">• This column displays a 'zero' if a population was not previously saved. <p>Note: You cannot save a 'zero' population to ODS.</p> <ul style="list-style-type: none">• Select the column name to sort the search rules in ascending or descending order by population record counts.• Select the globe icon/population count link to open the ODS Population Detail window for this search rule.
Delete Rule	<p>Select the Delete link to delete this search rule.</p> <p>Note: If you delete a search rule you automatically delete any corresponding population previously saved to the ODS.</p>
Search Rule Last Activity	<p>Displays the date this search rule was last saved.</p> <p>Select the column name to sort the search rules in ascending or descending order by search rule last activity date.</p>
Population Last Activity	<p>Displays the date this population was created or last refreshed in ODS. A blank column indicates that no population exists for this search rule.</p> <p>Select the column name to sort the search rules in ascending or descending order by population last activity date.</p>

Search Rule Detail Window

From the View Search Rules window you can drill down to additional information and tasks associated with an individual search rule. Select the Rule Detail magnifying glass icon in the Rule Details column to open the Search Rule Detail window.

Use the Search Rule Detail window to review or perform the following:

<i>This . . .</i>	<i>Does this . . .</i>
Rule Name field	Displays the name of the search rule in context.
Rename button	To rename this search rule, type a new name in the Rule Name field and select Rename.
Delete button	Select Delete to delete this search rule and any corresponding population previously saved to ODS.
ODS Population Detail link	This link will only appear if a population for this search rule was previously saved to ODS. Select this link to toggle between the Search Rule Detail window and the ODS Population Detail window.
Search Criteria [Show-Hide] links	Select the [Show] link to display a list of the search criteria filters defined for this search rule. Select the [Hide] link to close this display.

ODS Population Detail Window

From the View Search Rules window, you can drill down to additional information and task associated with an ODS population previously saved for an individual search rule. Select the globe icon/population count link to open the ODS Population Detail window for a search rule.

Use the ODS Population Detail window to review or perform the following:

<i>This . . .</i>	<i>Does this . . .</i>
Refresh button	To refresh this population, select the Refresh button.
Delete button	Select Delete to delete this population in ODS. Deleting a population will not delete the search rule.
SQL button	This generates an SQL statement that may be used to retrieve this population from the ODS_POPULATION view. Select the SQL button to open the Population List SQL window. Copy/paste this SQL statement to use in a custom report in your third party reporting tool.

Example:

```
SELECT ENTITY_UID
FROM ODS_POPULATION
WHERE
RULE_NAME = 'my rule name' AND
USER_ID = 'user' AND
TEMPLATE_NAME = 'Advancement Person';
```

This . . . *Does this . . .*

If no population exists for this search rule, only one function is available:

Create button	Select the Create button to save the population to the ODS for this search rule.
---------------	--

The following additional features are also available in the ODS Population Detail window:

This . . . *Does This . . .*

Search Rule Detail link	Select this link to toggle between the ODS Population Detail window and the Search Rule Detail window.
-------------------------	--

Population Selection [Show-Hide] links	Select the [Show] link to display a list of unique identifiers saved for this population. Select the [Hide] link to close the display.
--	--

The column headers in this display table indicate the unique identifiers saved for populations created with the report template in context.

Select the Excel icon to export this population as a .csv file. The File Download window opens. Indicate whether you want to save or open the file.

View Search Rules with Populations Window (All Report Templates)

When you select the population (globe) icon from the upper right hand corner of any page in SSR, the Search Rules with ODS Populations window opens.

This window lists all search rules for all templates where a population exists, for your user ID. This feature provides quick and easy access to all search rules with populations from any where within the SSR application, allowing users to refresh search rule populations without having to navigate to an individual report template or reload and execute a particular search rule query.

Note: Only search rules with populations previously saved to the ODS display in this window.

Use the View Search Rules with Populations window to review or perform the following:

<i>This . . .</i>	<i>Does this . . .</i>
Template	<p>Lists the report template corresponding to each search rule.</p> <p>Select the column name to sort the search rules in ascending or descending order by report template name.</p>
Load Search Rule	<p>Lists the name of all search rules with ODS populations previously saved by this user for all report templates.</p> <p>Select the column name to sort the search rules in ascending or descending order by search rule name.</p> <p>Select a search rule name to load the saved filters and launch the Search Criteria page for the corresponding report template.</p>
Rule Details	<p>Select the magnifying glass icon to open the Search Rule Detail window for this search rule.</p>
Population Details	<p>This column displays a count of the unique identifier records previously saved to the ODS for this search rule population.</p> <p>Select the column name to sort the search rules in ascending or descending order by population record counts.</p> <p>Select the globe icon/population count link to open the ODS Population Detail window for this search rule.</p>
Delete Rule	<p>Select the Delete link to delete this search rule.</p> <p>Note: If you delete a search rule you automatically delete any corresponding population previously saved to ODS.</p>
Search Rule Last Activity	<p>Displays the date this search rule was last saved.</p> <p>Select the column name to sort the search rules in ascending or descending order by search rule last activity date.</p>

<i>This . . .</i>	<i>Does this . . .</i>
Population Last Activity	Displays the date this population was created or last refreshed in the ODS. Select the column name to sort the search rules in ascending or descending order by population last activity date.

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.
- 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
- 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.
- **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:

- Constituent Detail
- Current Addresses
- Other Phone Numbers
- 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

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

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.

- 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.
- **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*.

Note: The Organization Budget Status List report is dynamically built according to selected search criteria in order 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.

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' credit. 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.
- 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
- 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.
- 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
- 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.
- 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
- 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.
- **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
- 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.
- 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
- 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 include 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.

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 the 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 the ODS for a reporting tool such as 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 the 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 bookmarked or URL manipulation access to the page.

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 menu where your 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 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 the ODS for a reporting tool such as 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`
 - (a) *hostname* is the name of the system where Oracle HTTP Server is installed.
 - (b) *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.
 - (c) *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*.
 - (d) 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:
 - (a) Login to APEX as an APEX Administrator.
 - (b) Select “Manage Workspaces”.
 - (c) Select “Manage Developers and Users”.
 - (d) Select the “Create” button.
 - (e) 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:
 - (a) Login to APEX as an SSR Workspace Administrator.
 - (b) On the Home page, select the link “Manage Application Express Users” in the “Administration” box on the right side of the page.
 - (c) Select “Create End User”.
 - (d) 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”.

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.

Chapter 10 Indexes (ODS and EDW)

Indexes are added based on the reporting needs of the ODS and EDW 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.MGBINDEX 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 MGBINDEX table is also used in the 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 ODS Checks and Balances process, insert the new index information into the IA_ADMIN.MGBINDEX table using SQL (refer to the MGBINDEX_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 MGBINDEX.

The ODS meta data also uses the delivered indexes when documenting the Recommended Search Columns. The script *update_researchconds.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.

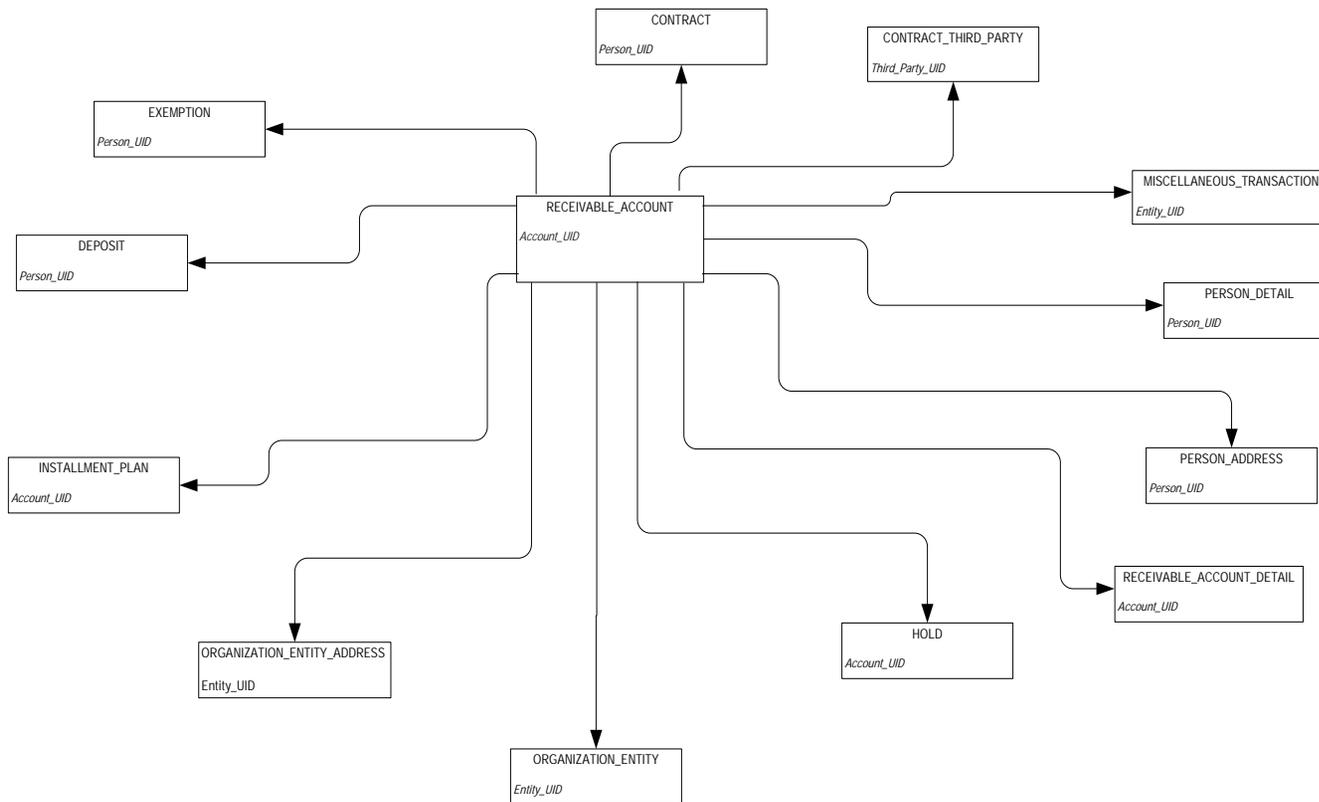
Appendix A Report Relationship Diagrams (ODS)

The Operational Data Store (ODS) is delivered with reporting meta data for Cognos ReportNet and Oracle Discoverer. In Cognos ReportNet, the reporting meta data is called the ReportNet model. In Discoverer, the reporting meta data is called the End User Layer (EUL).

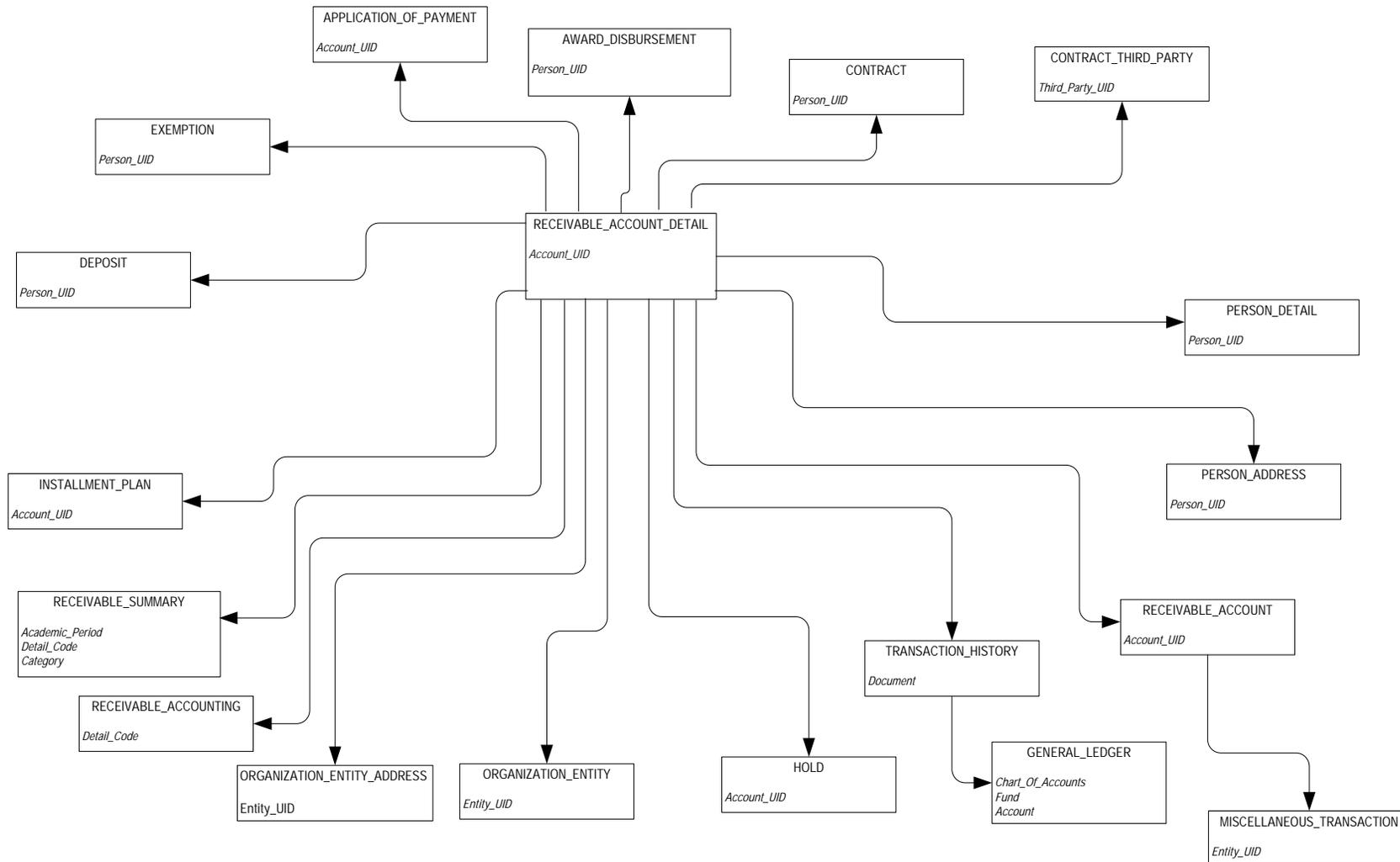
The relationships in the reporting meta data for Cognos ReportNet and Oracle Discoverer are the same. The relationship diagrams on the following pages show the relationships between ODS reporting views that are used to generate Structured Query Language (SQL) which, in turn, are used in reports. There is one diagram for each business concept. The diagrams are grouped by subject areas such as Accounts Receivable, Advancement, etc.

Accounts Receivable

Receivable Customer

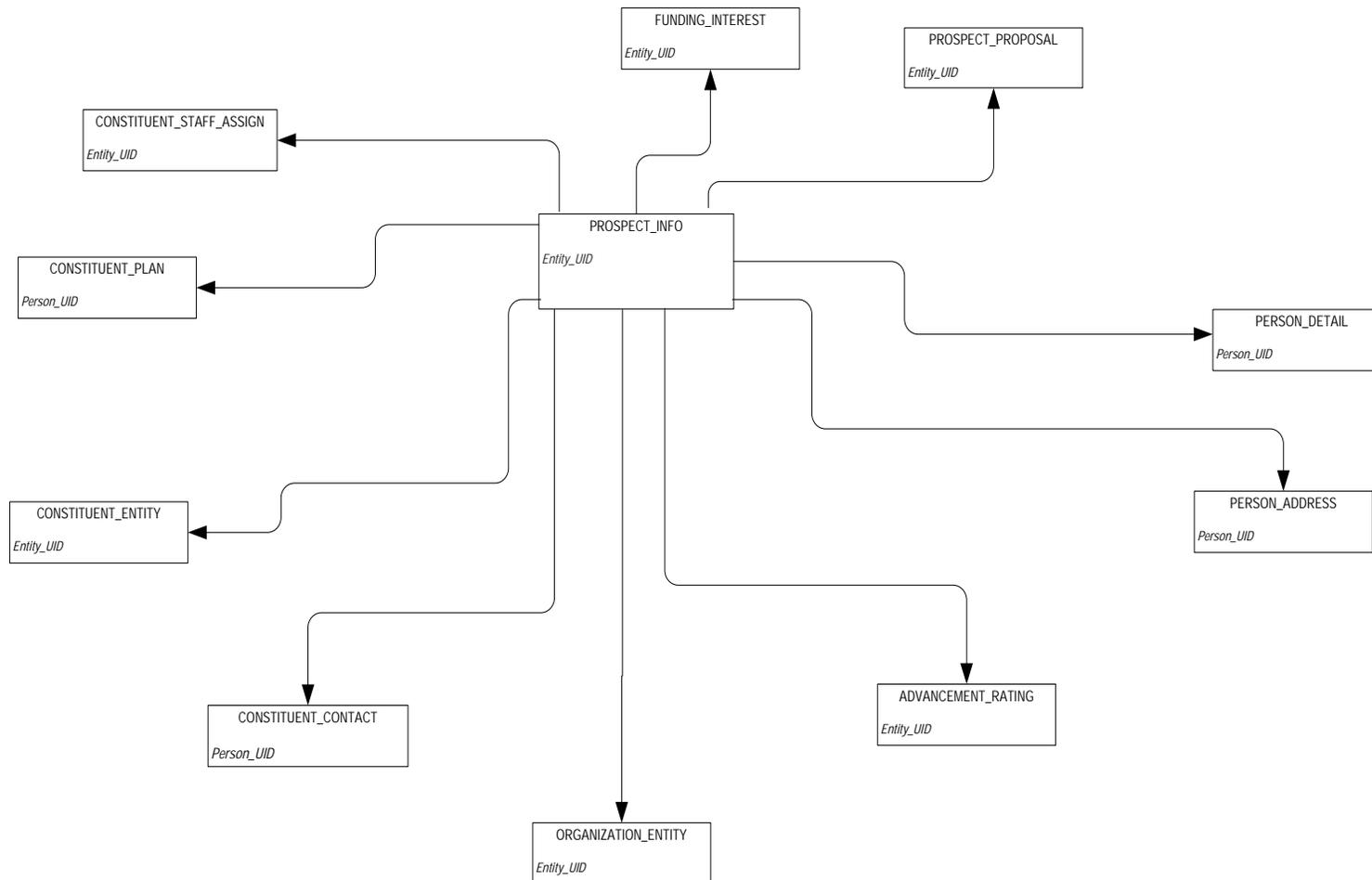


Receivable Revenue

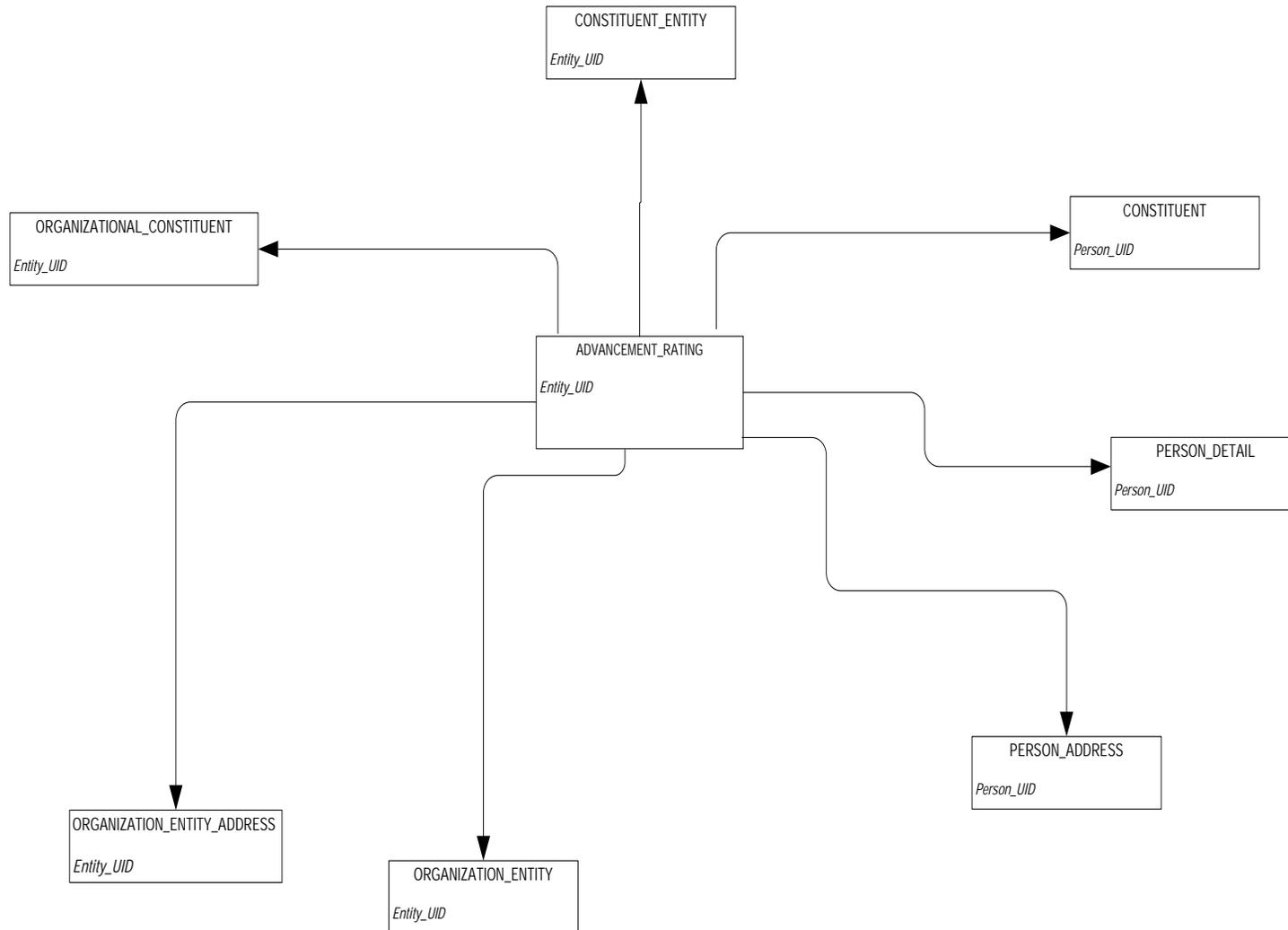


Advancement

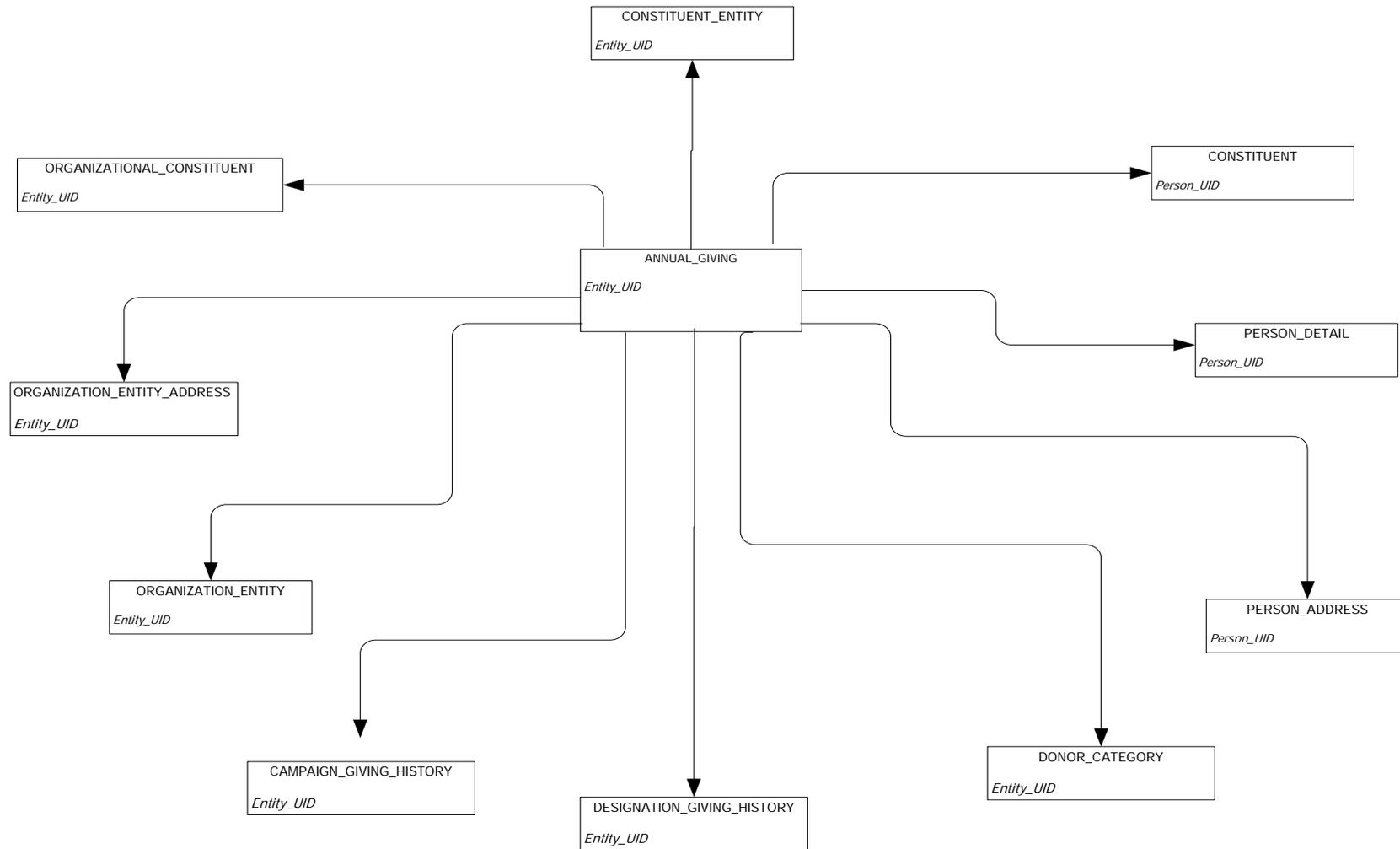
Advancement Prospect



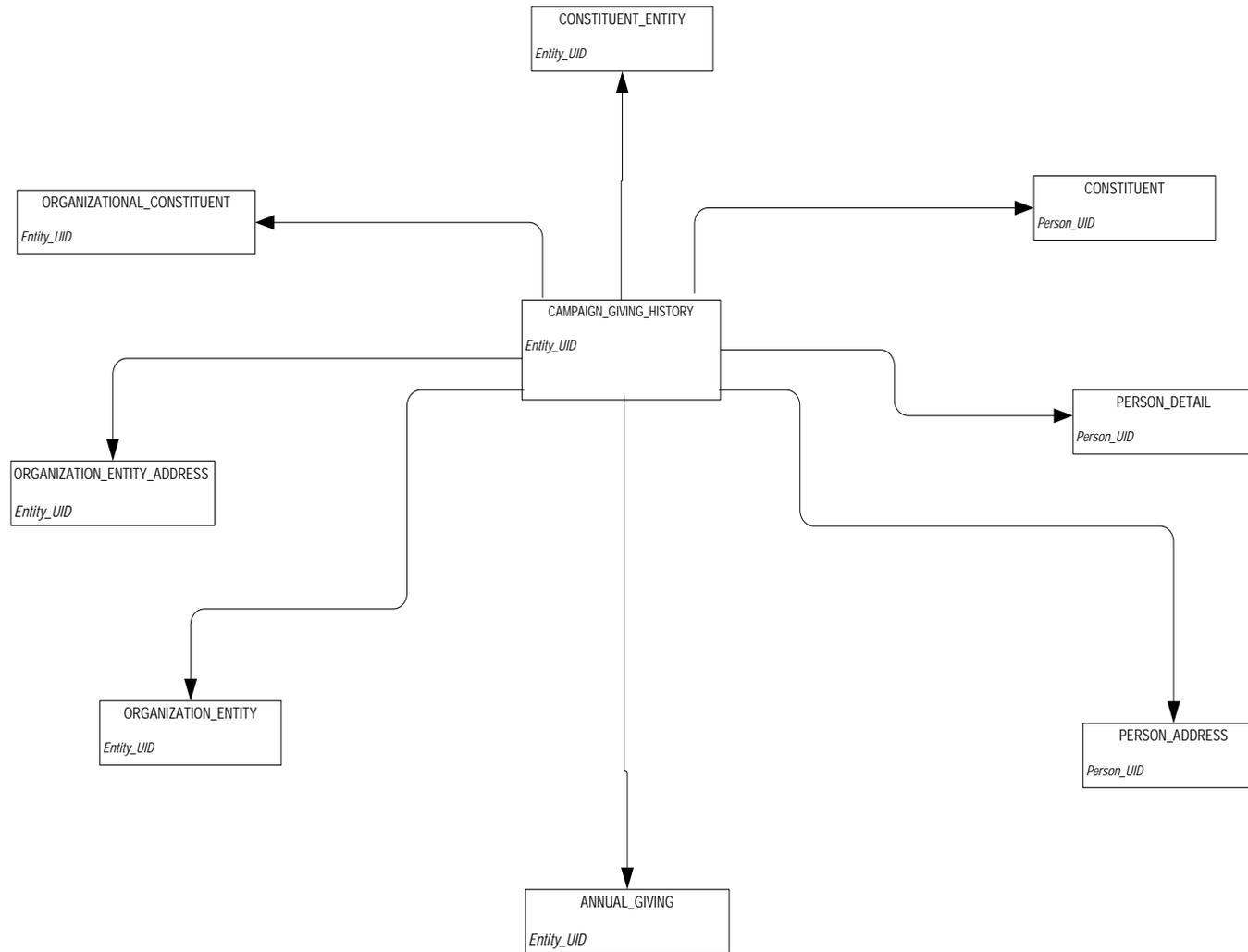
Advancement Rating



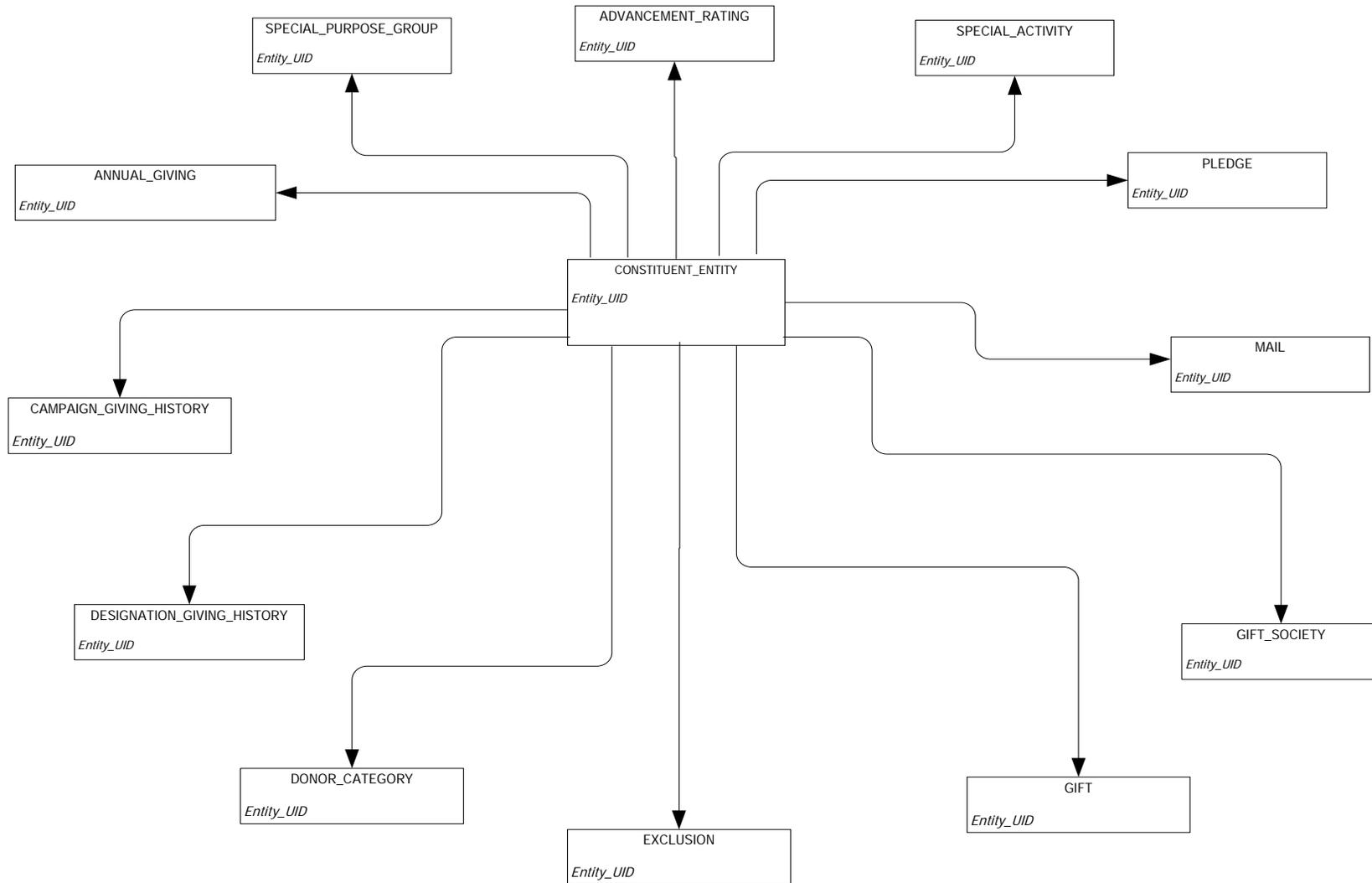
Annual Giving



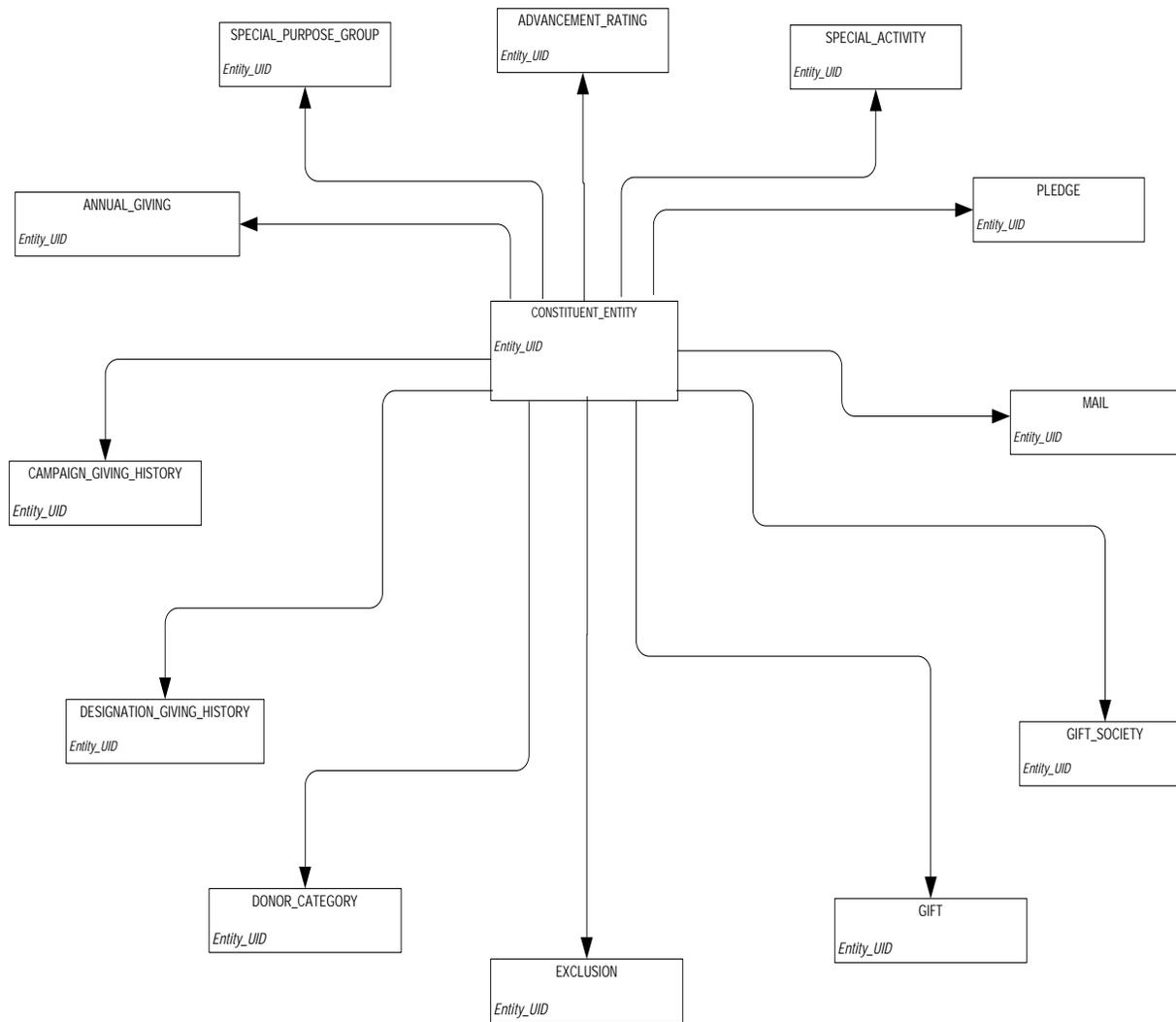
Campaign Giving History



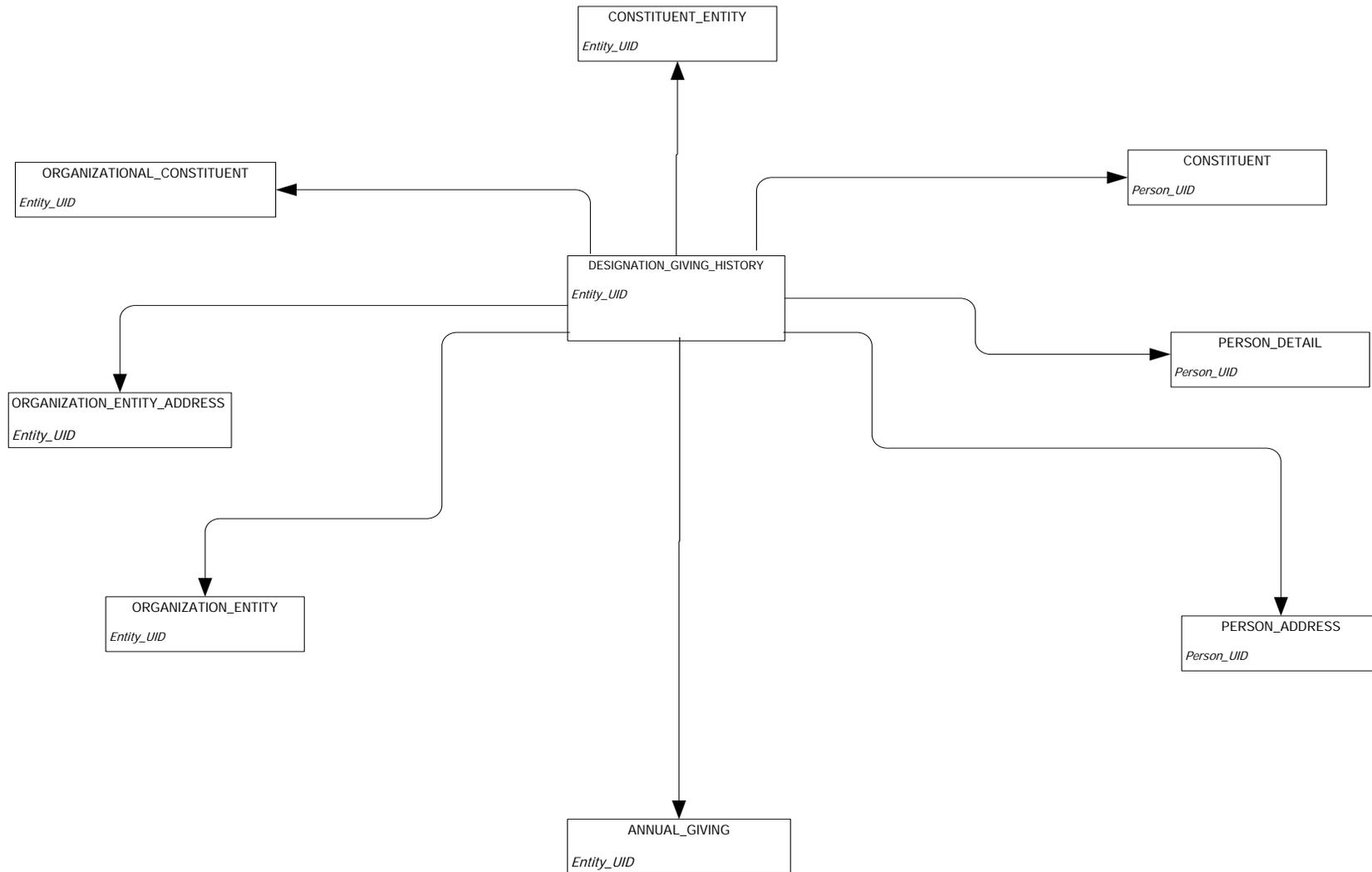
Constituent



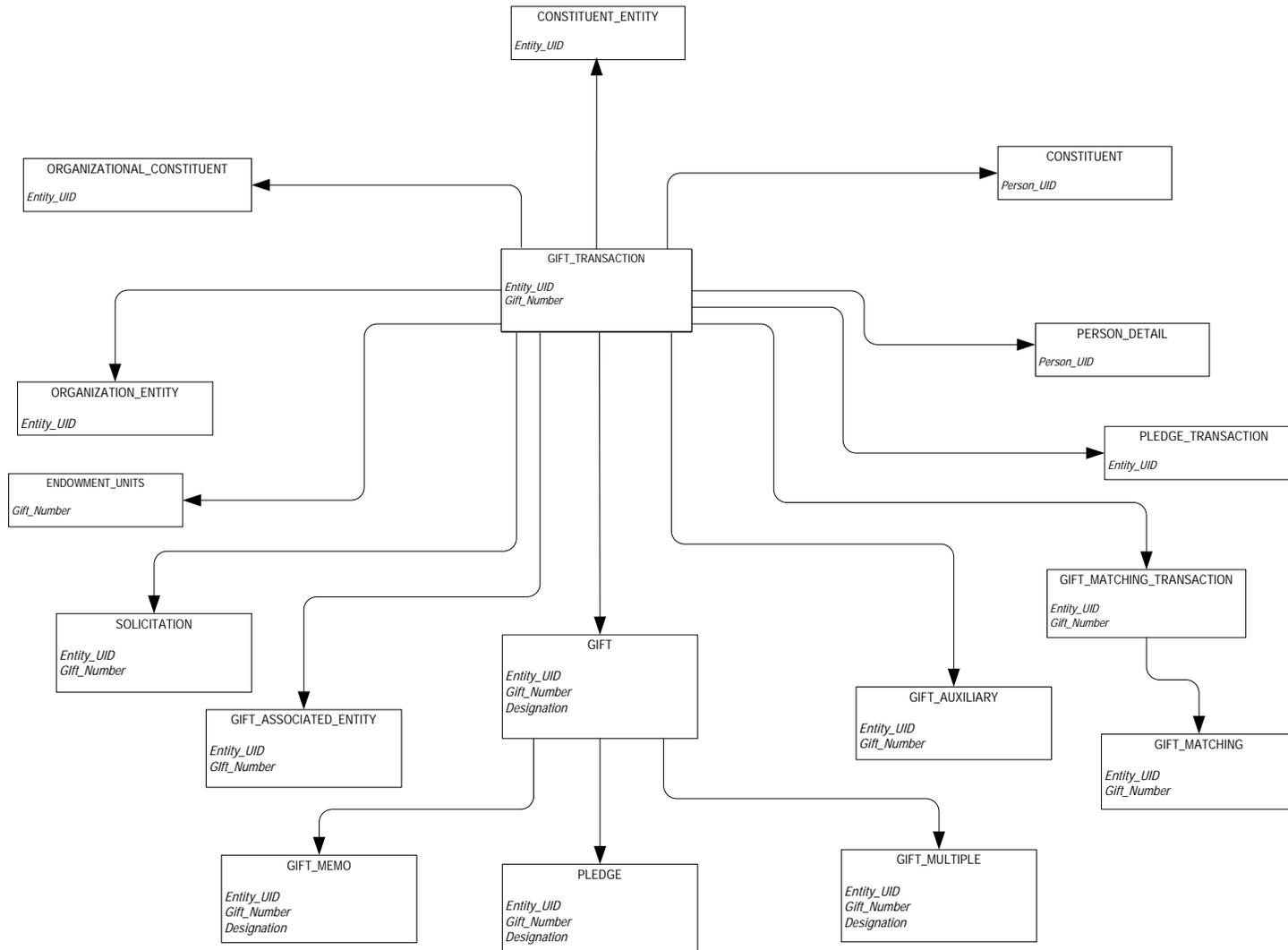
Constituent Entity



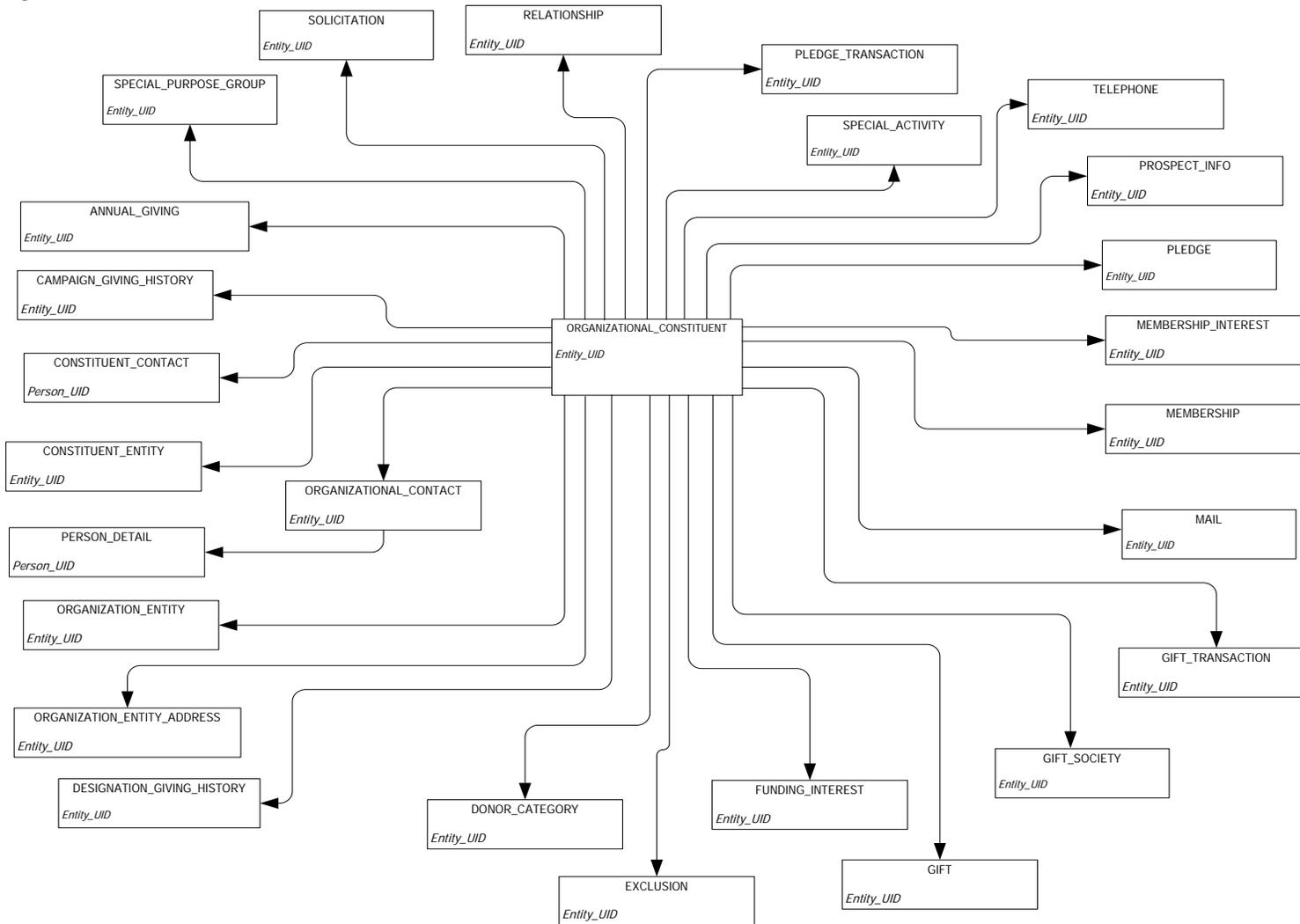
Designation Giving History



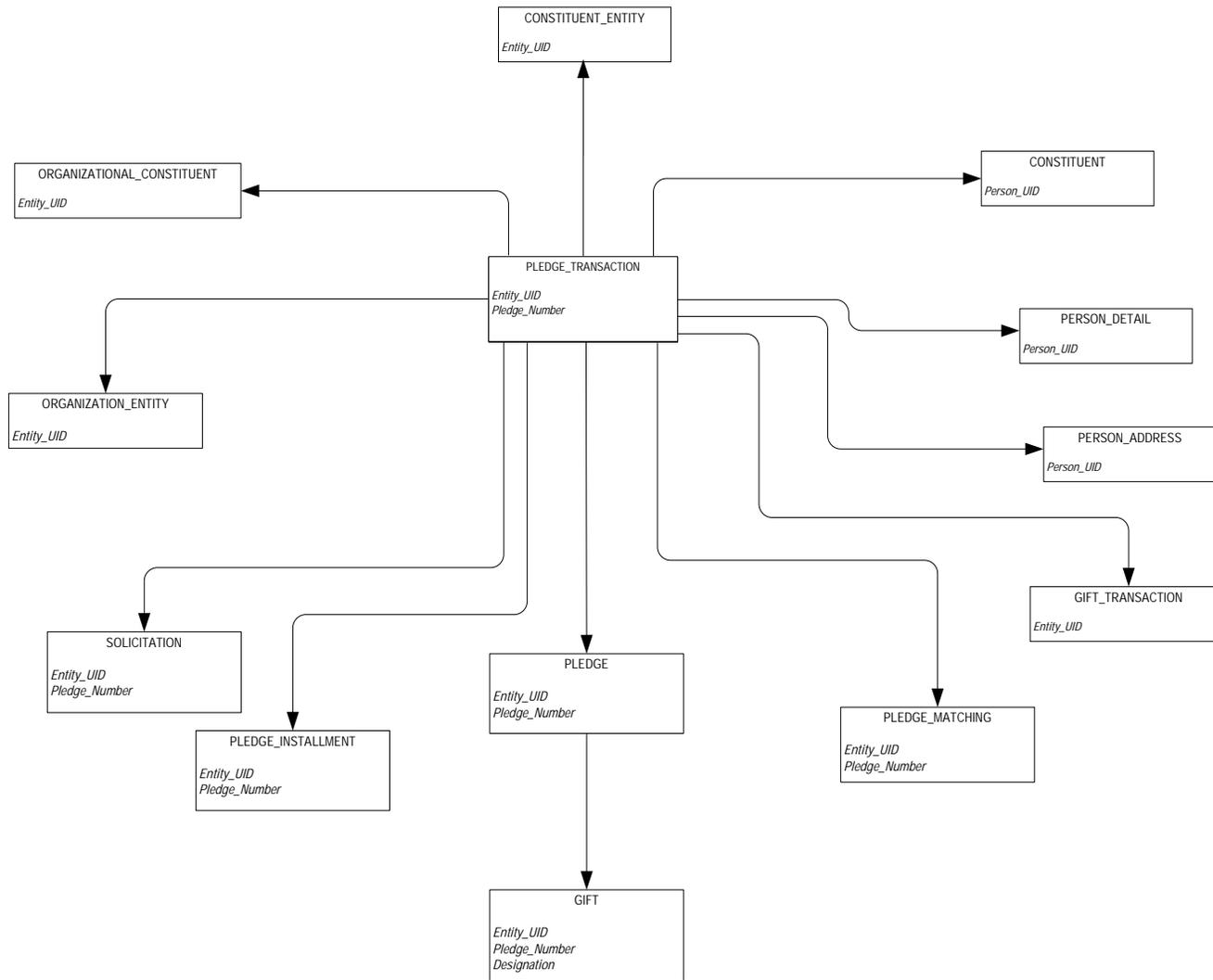
Gift



Organizational Constituent

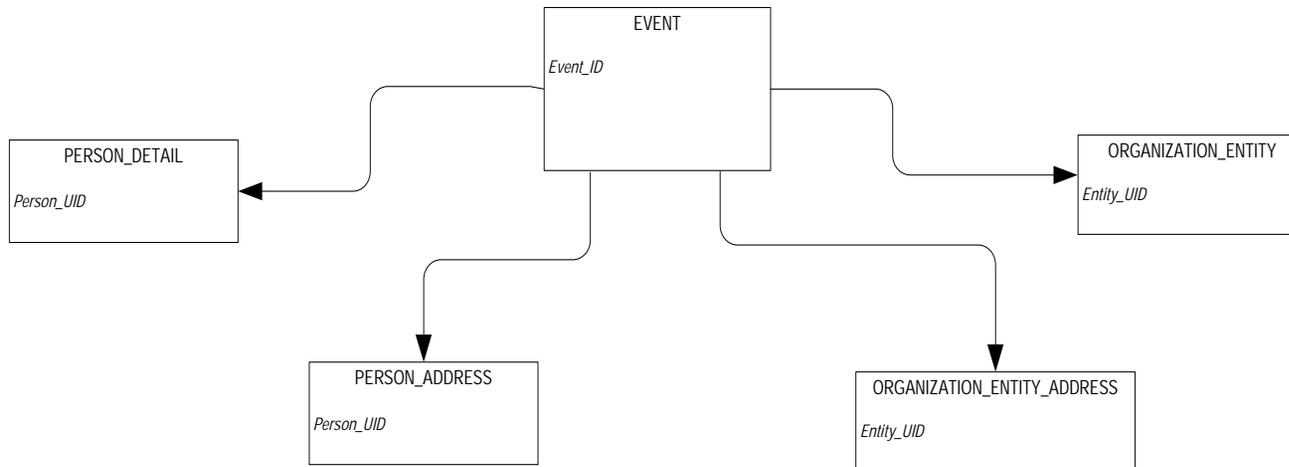


Pledge

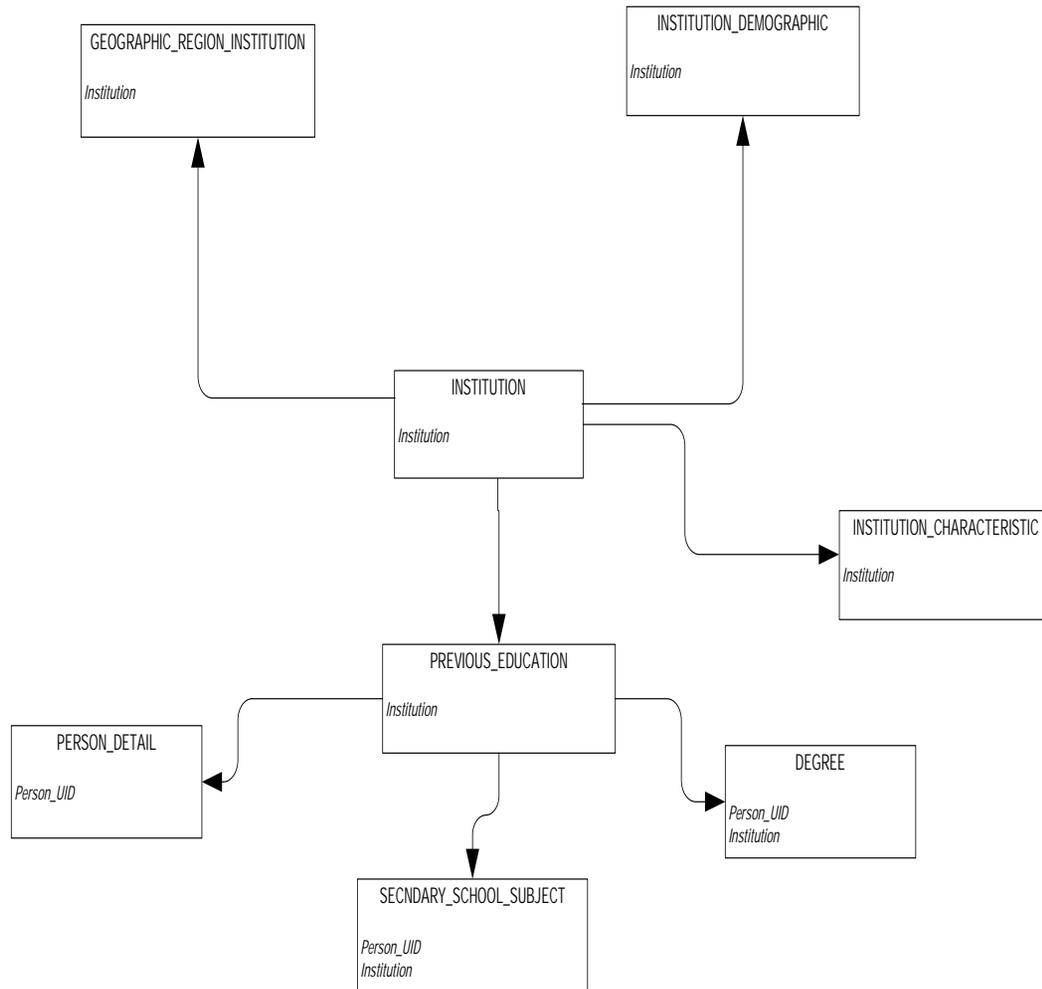


Common

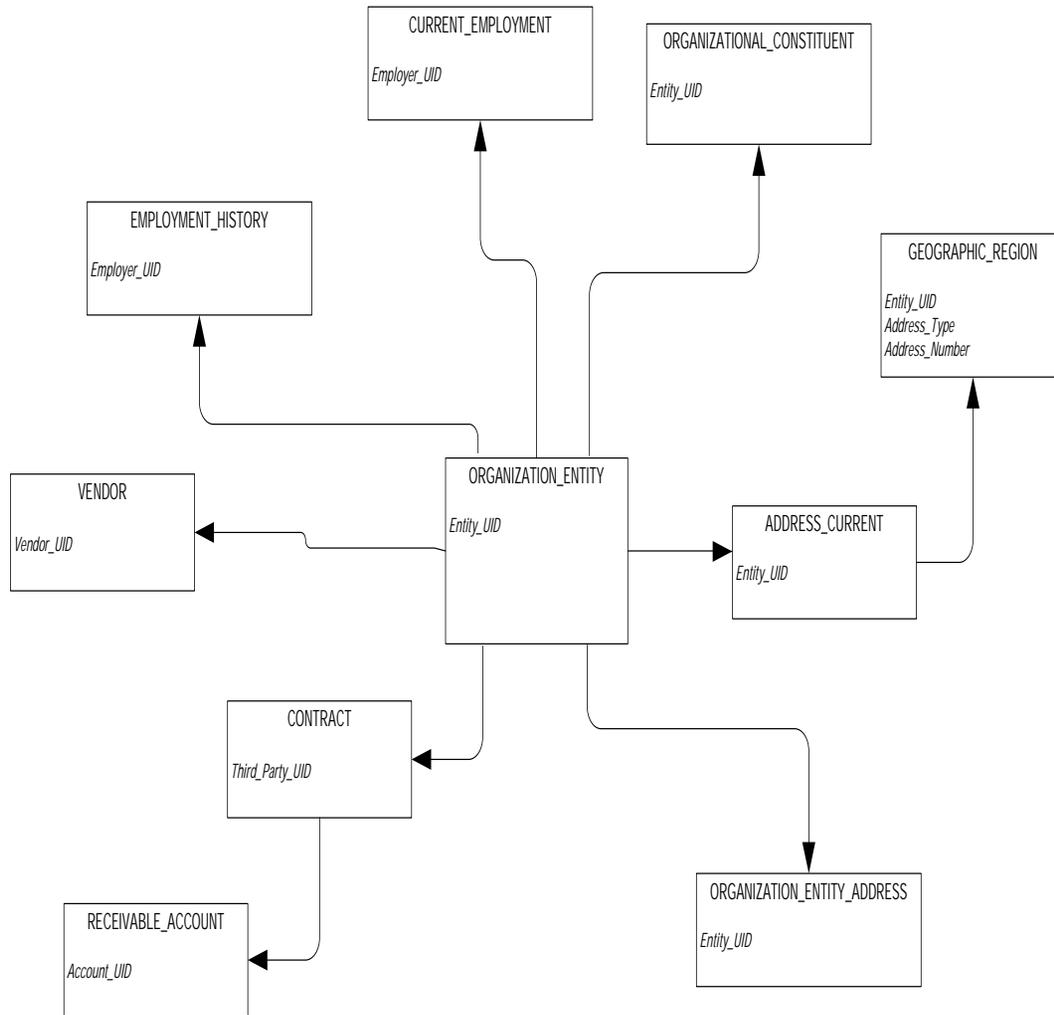
Event



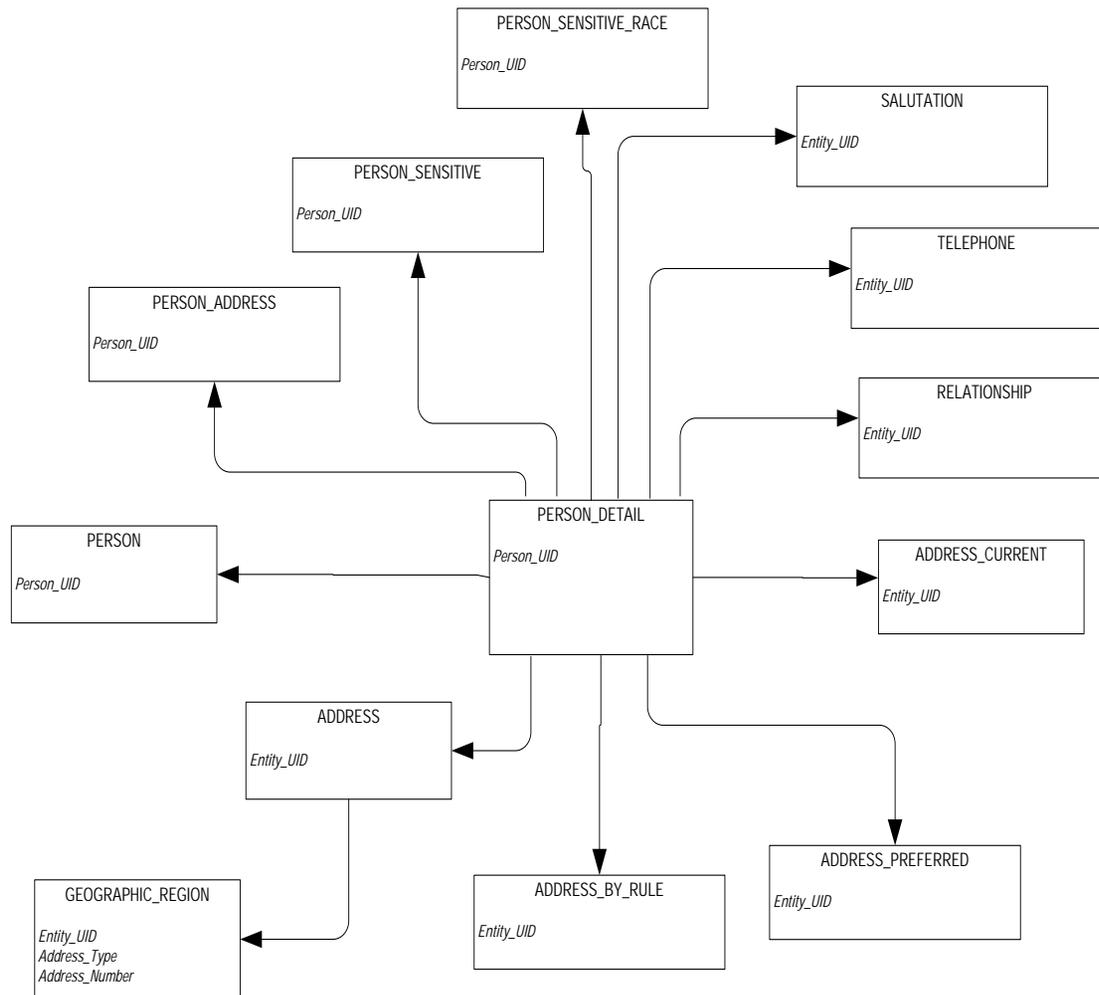
Institution



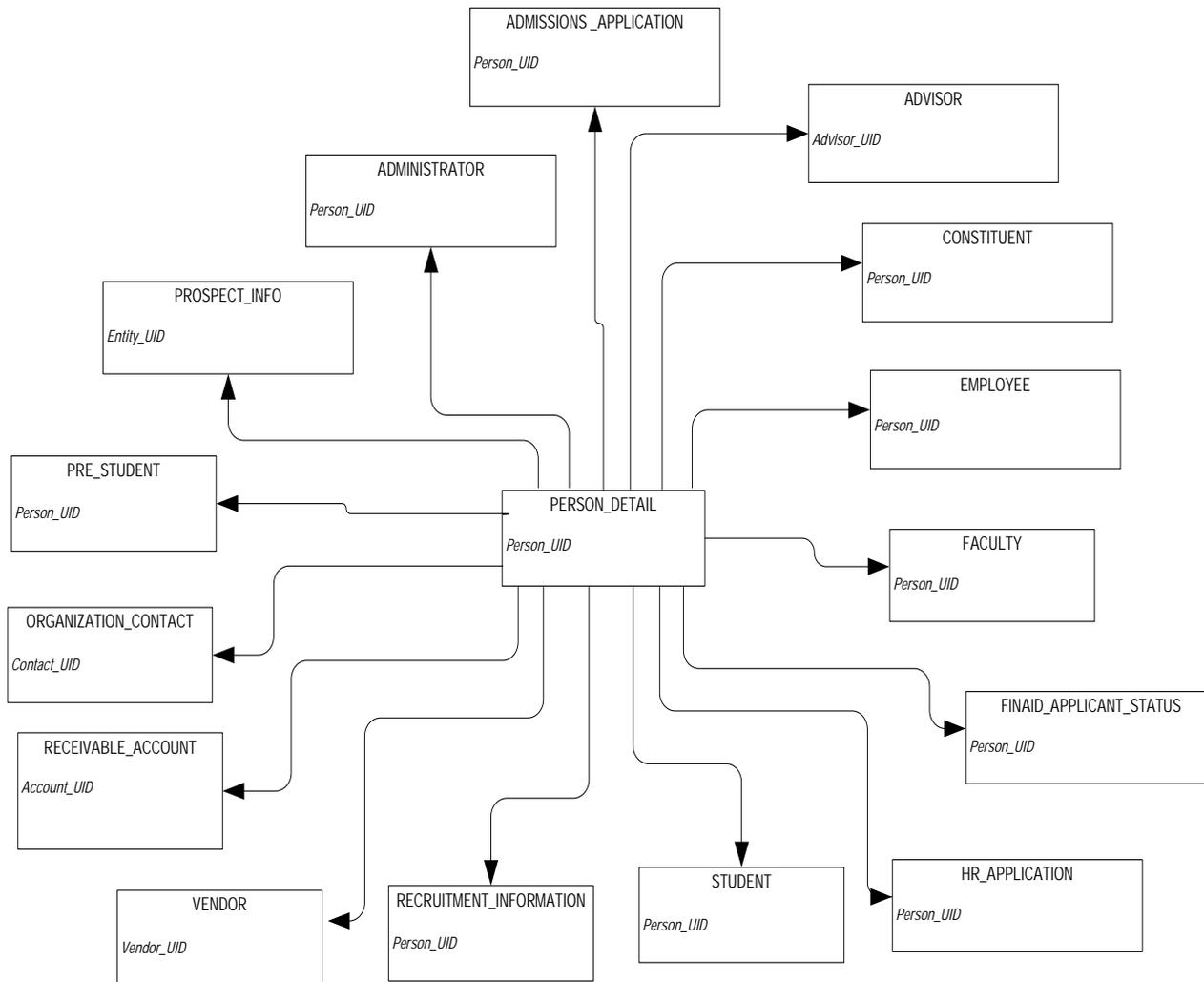
Organization Entity



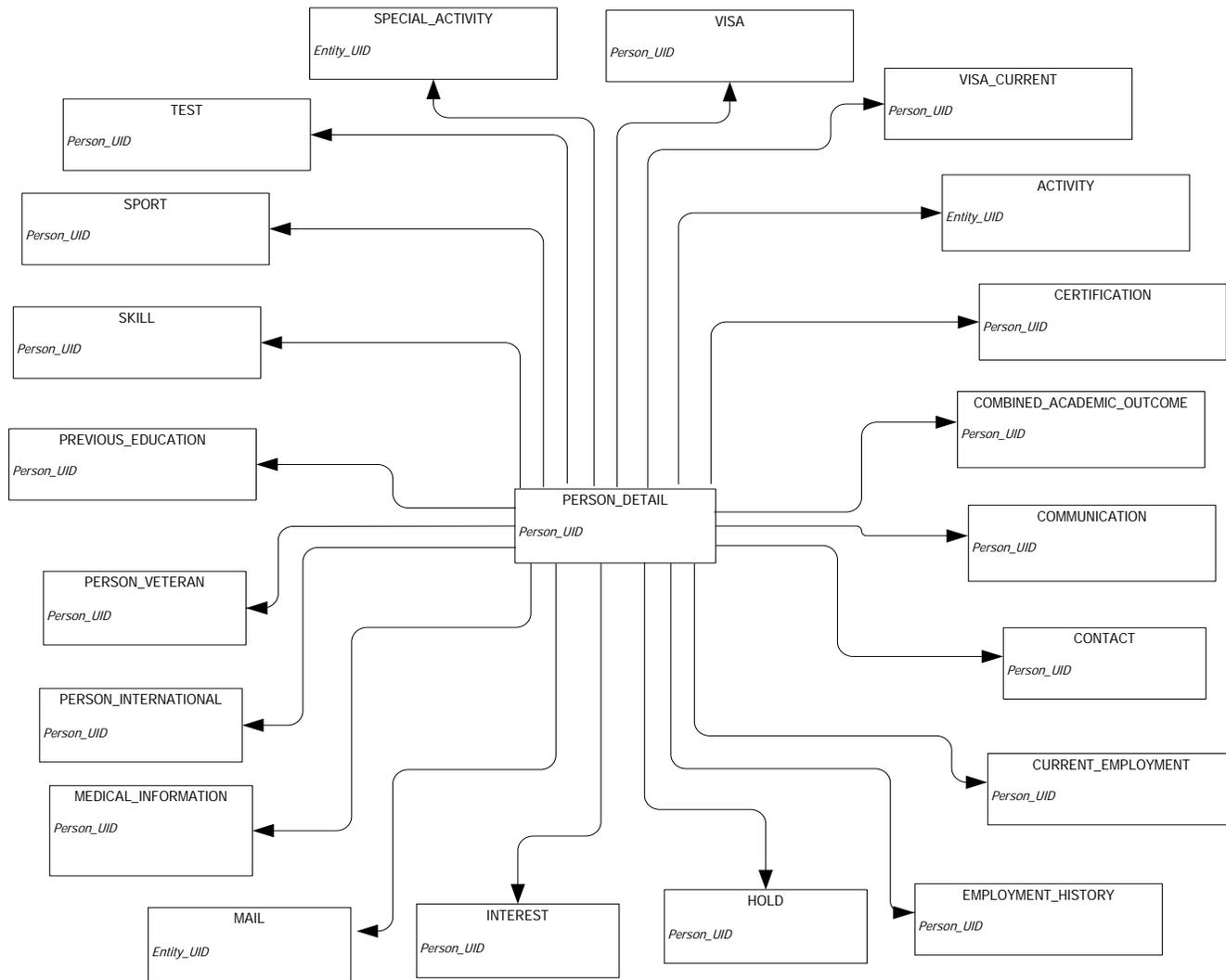
Person Demographic



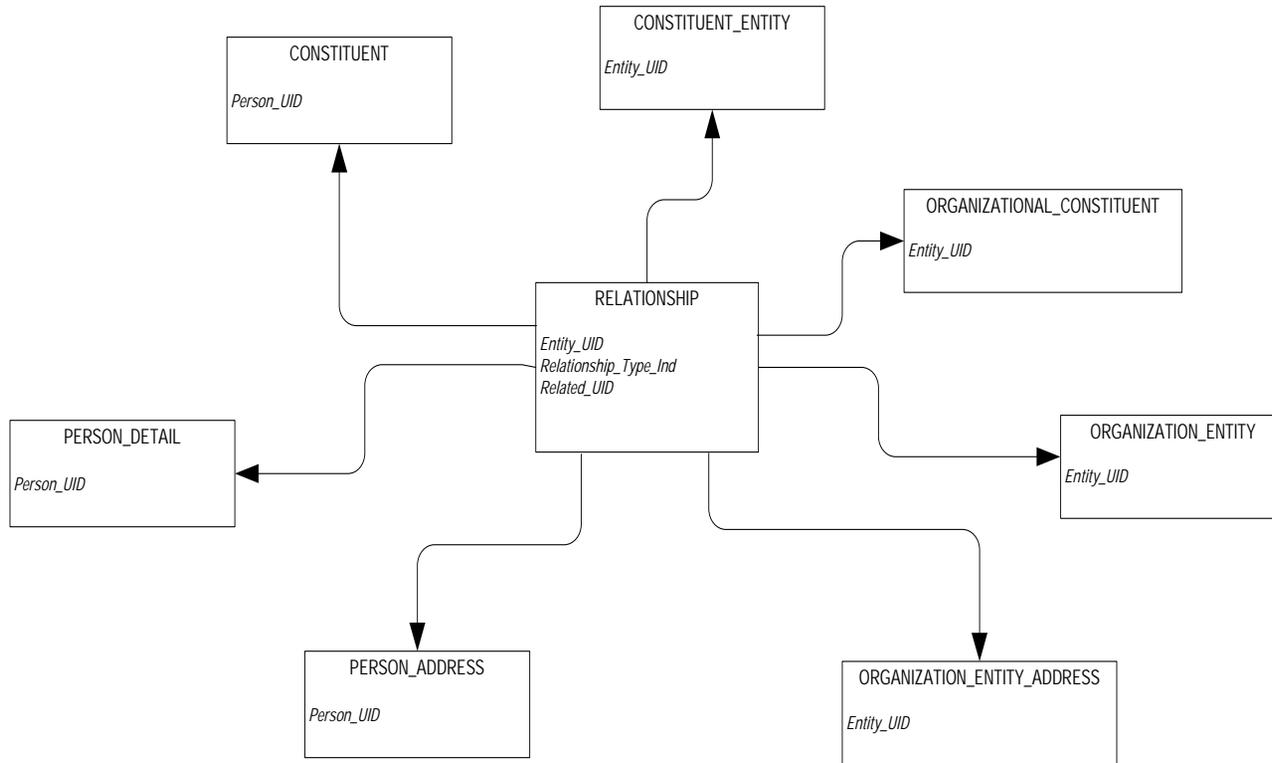
Person Role



Person Supplemental

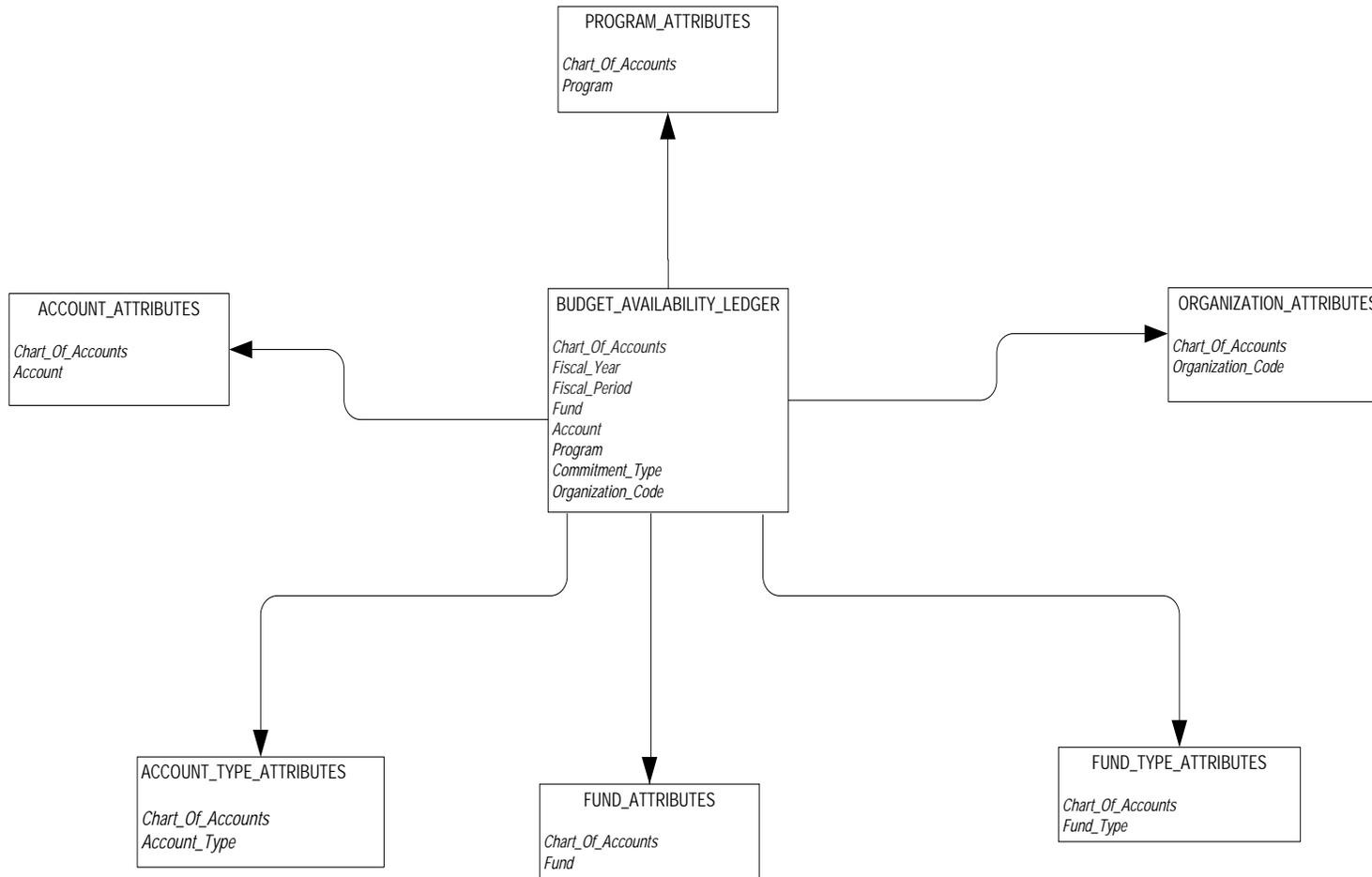


Relationship

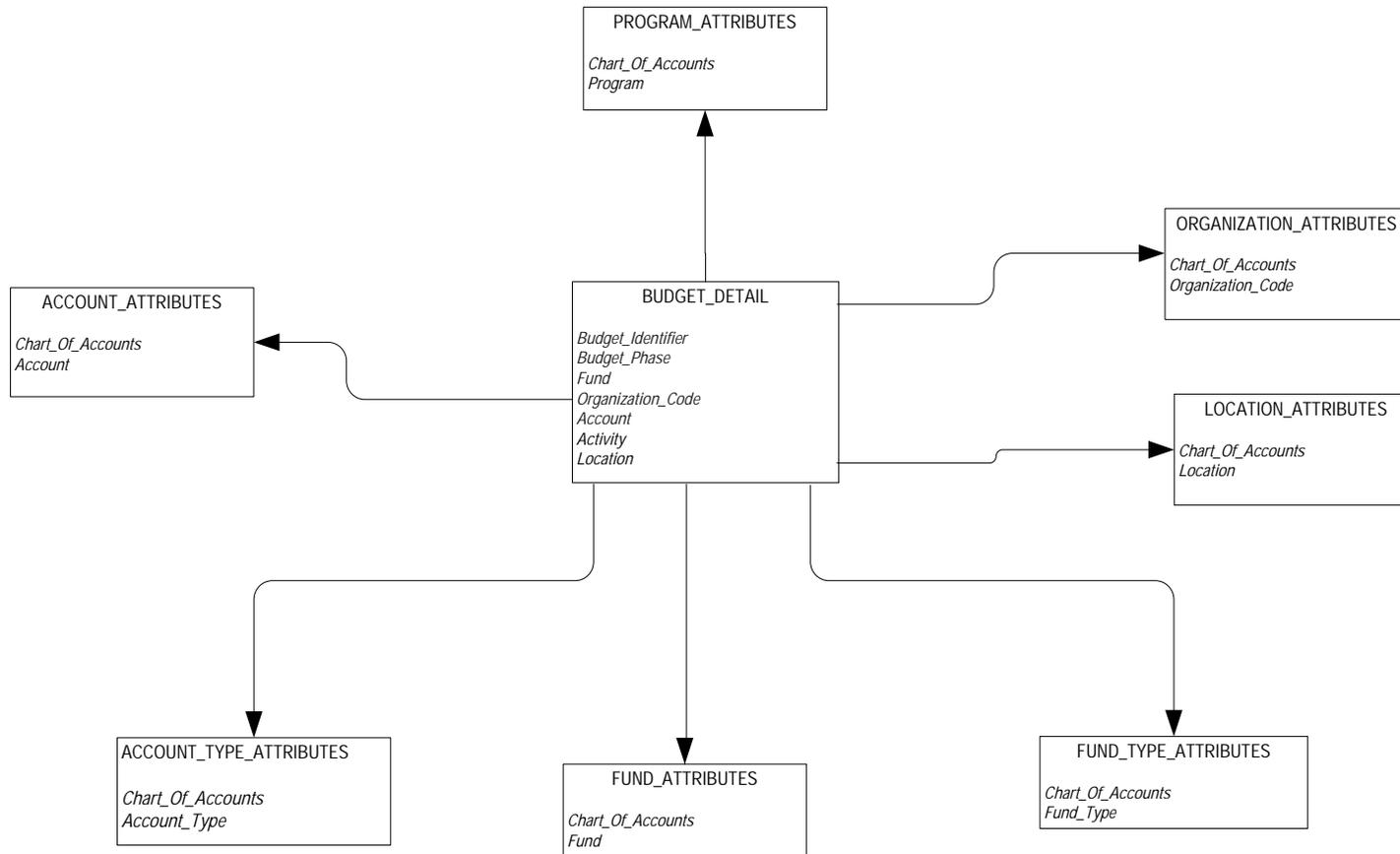


Finance

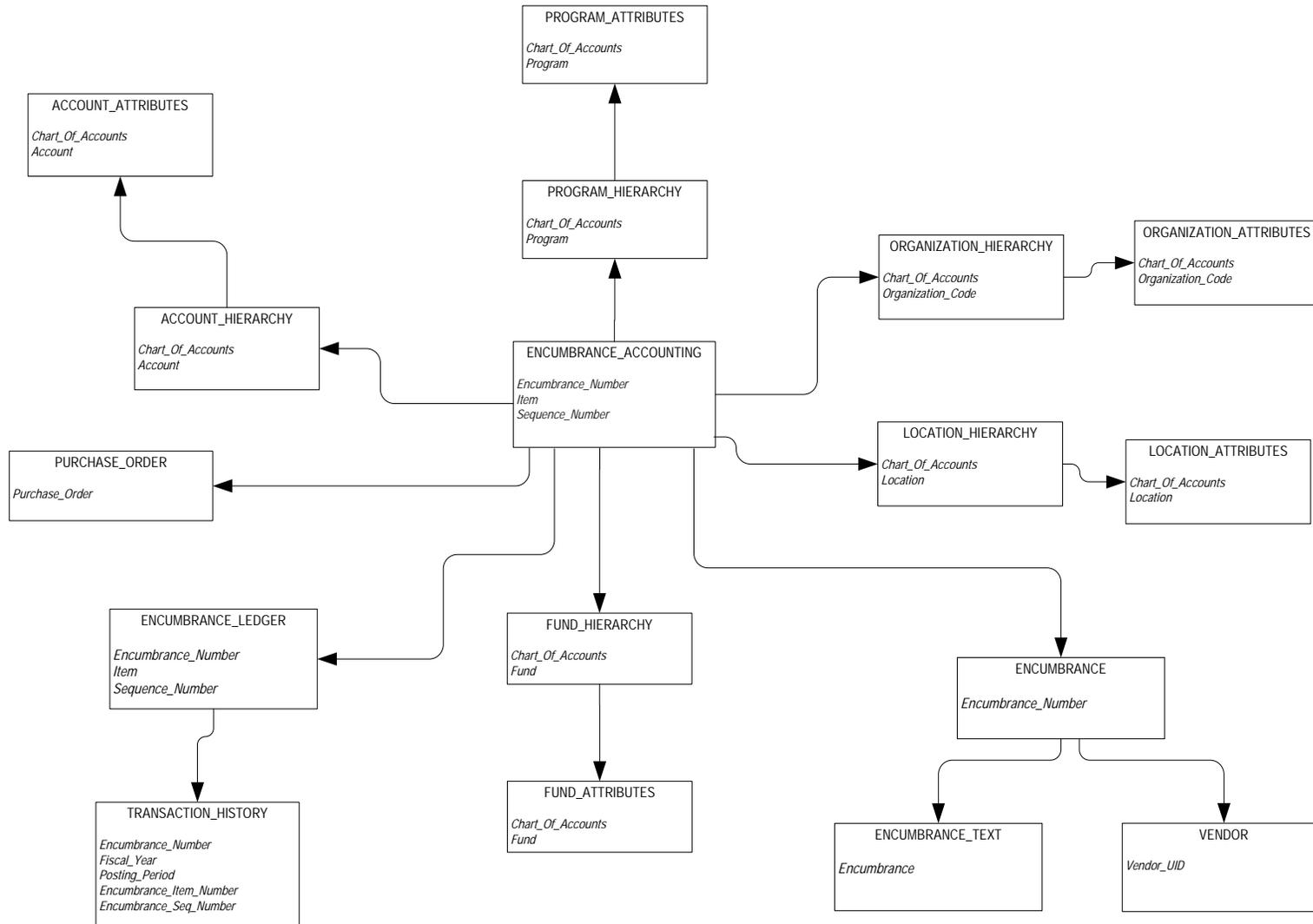
Budget Availability Ledger



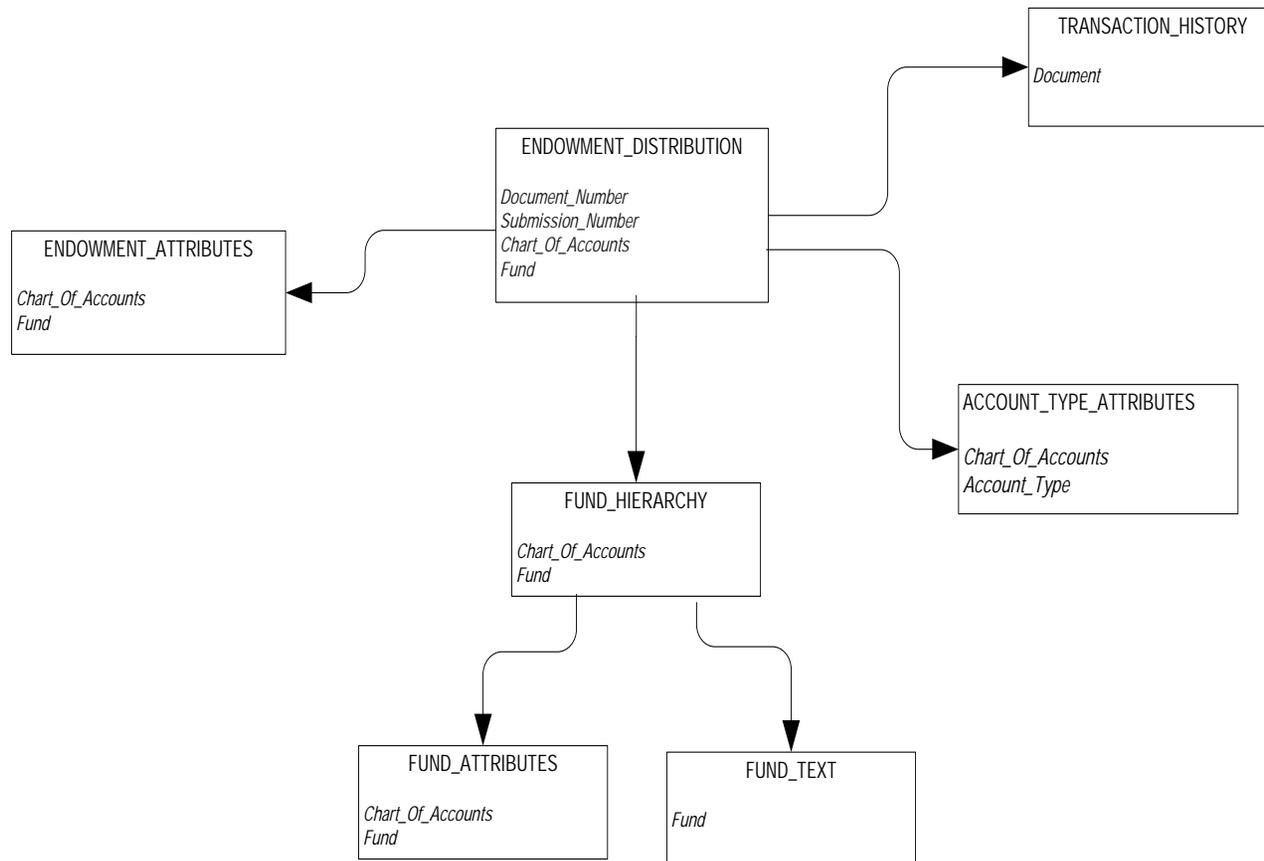
Budget Detail



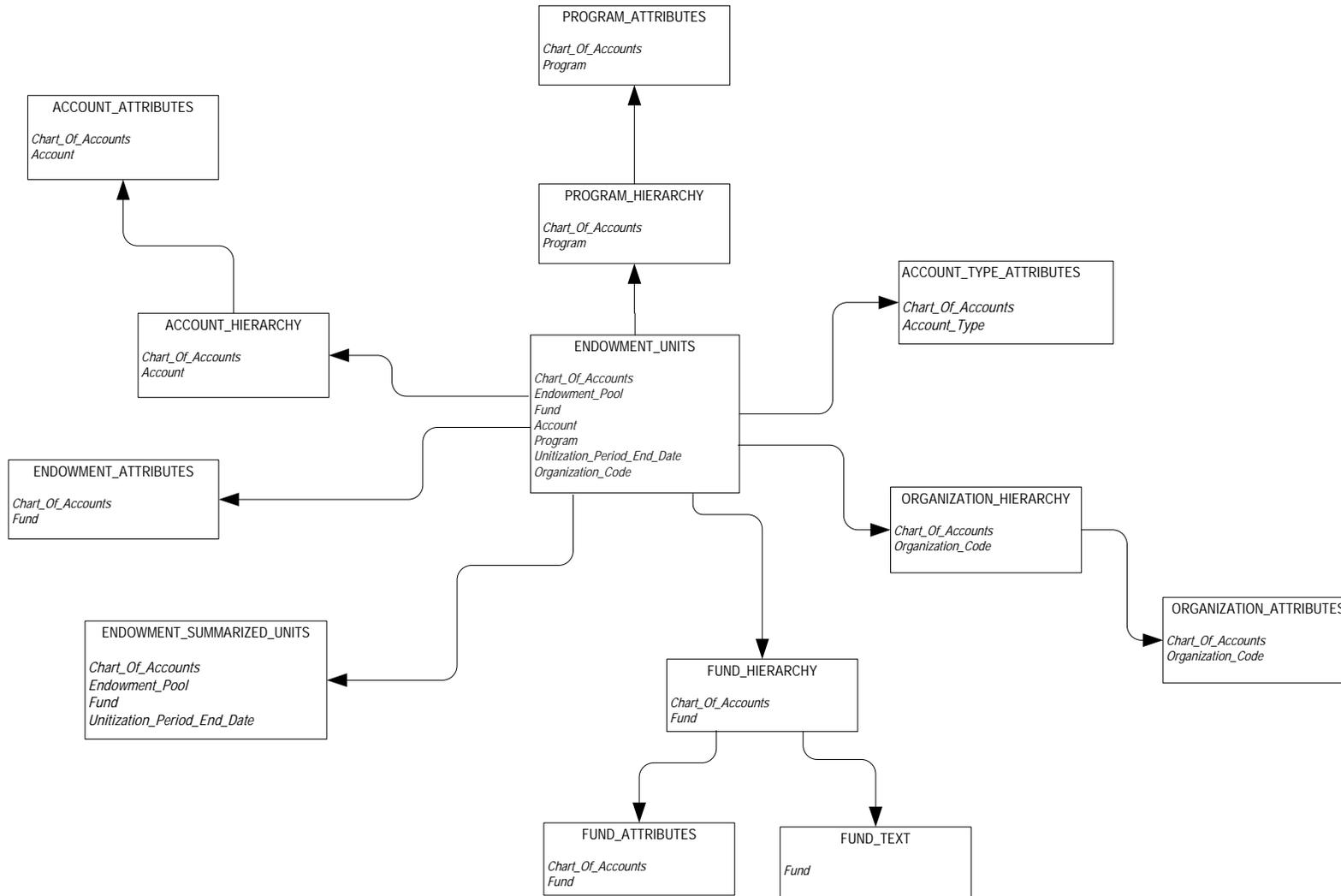
Encumbrance



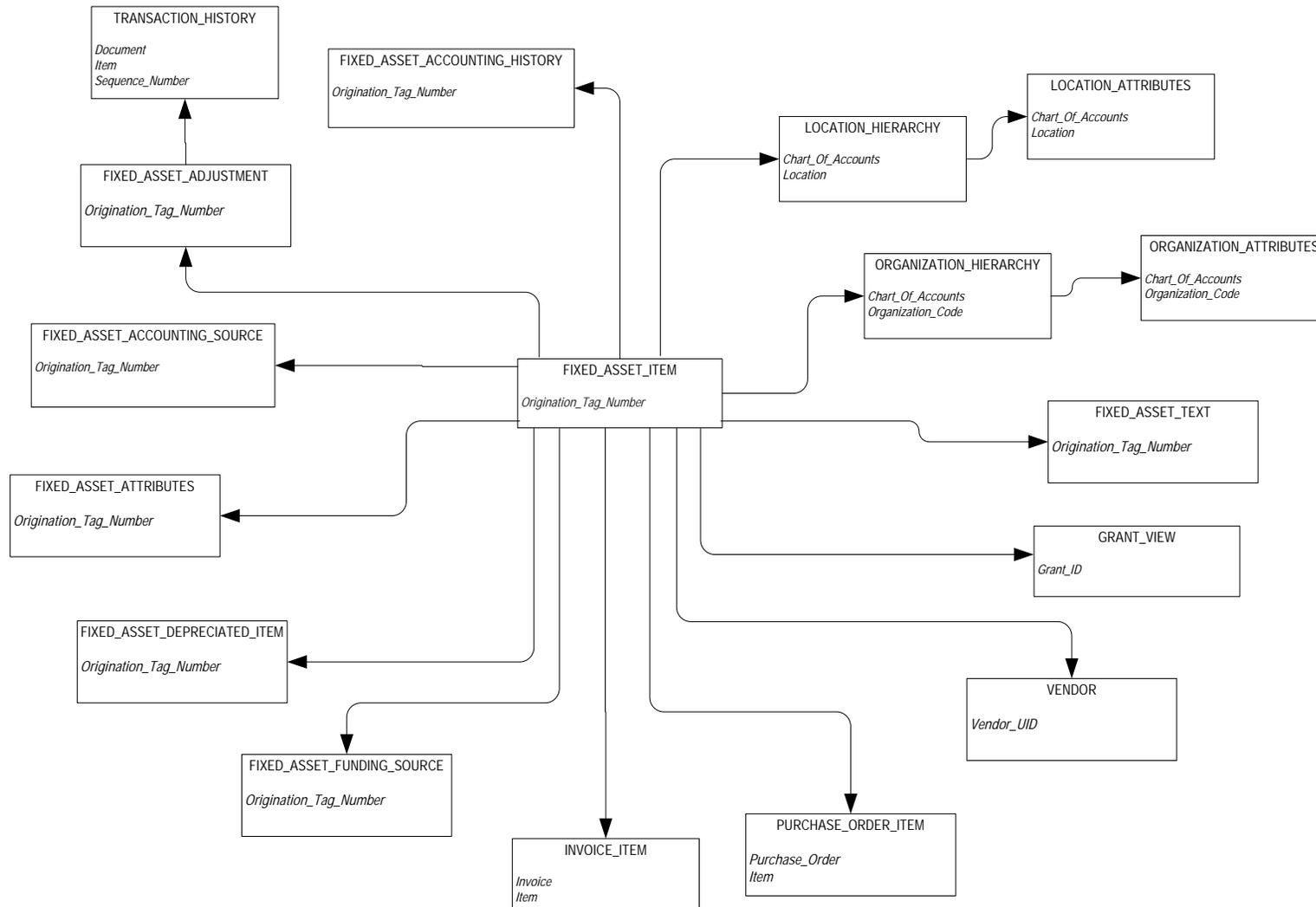
Endowment Distribution



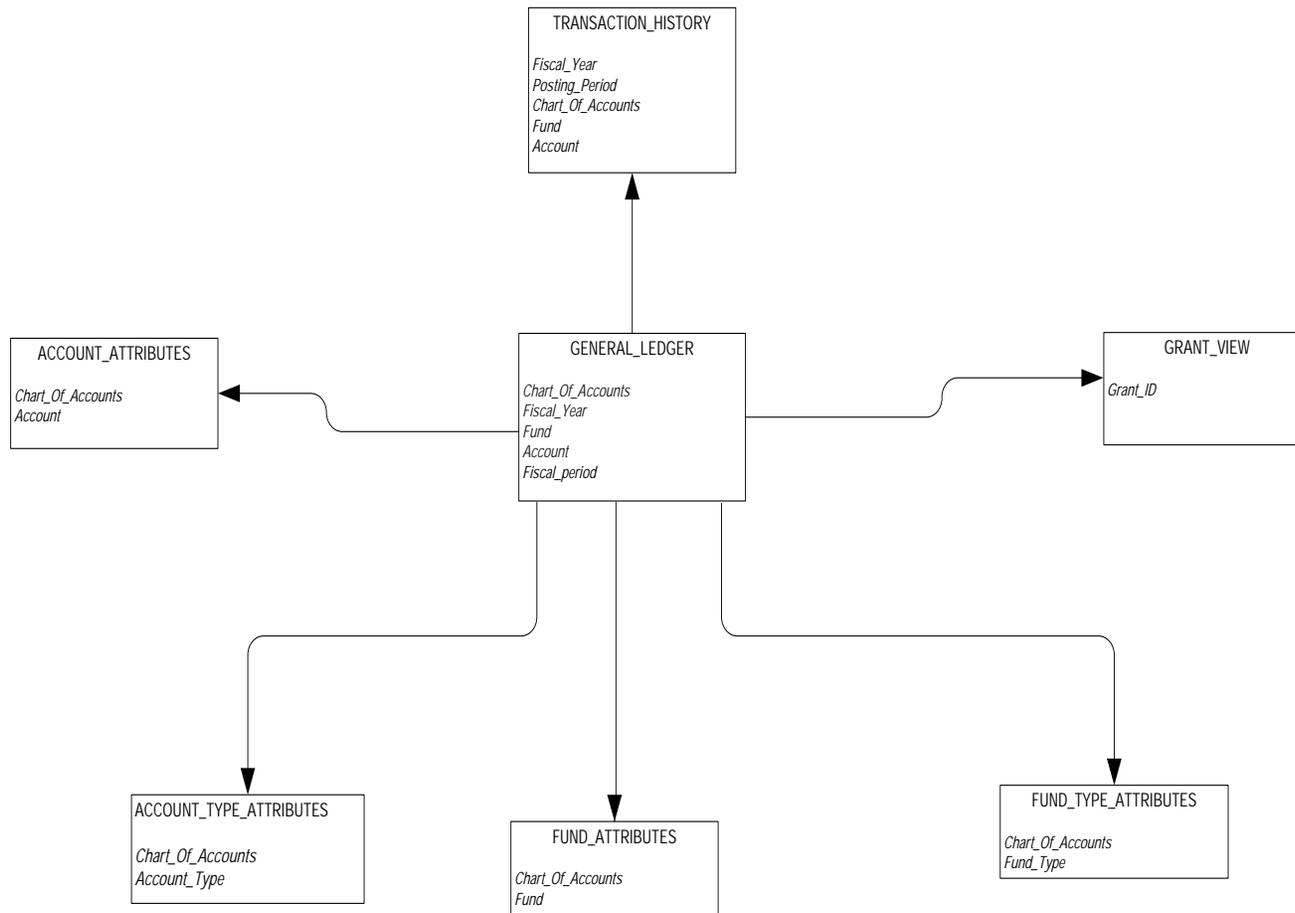
Endowment Units



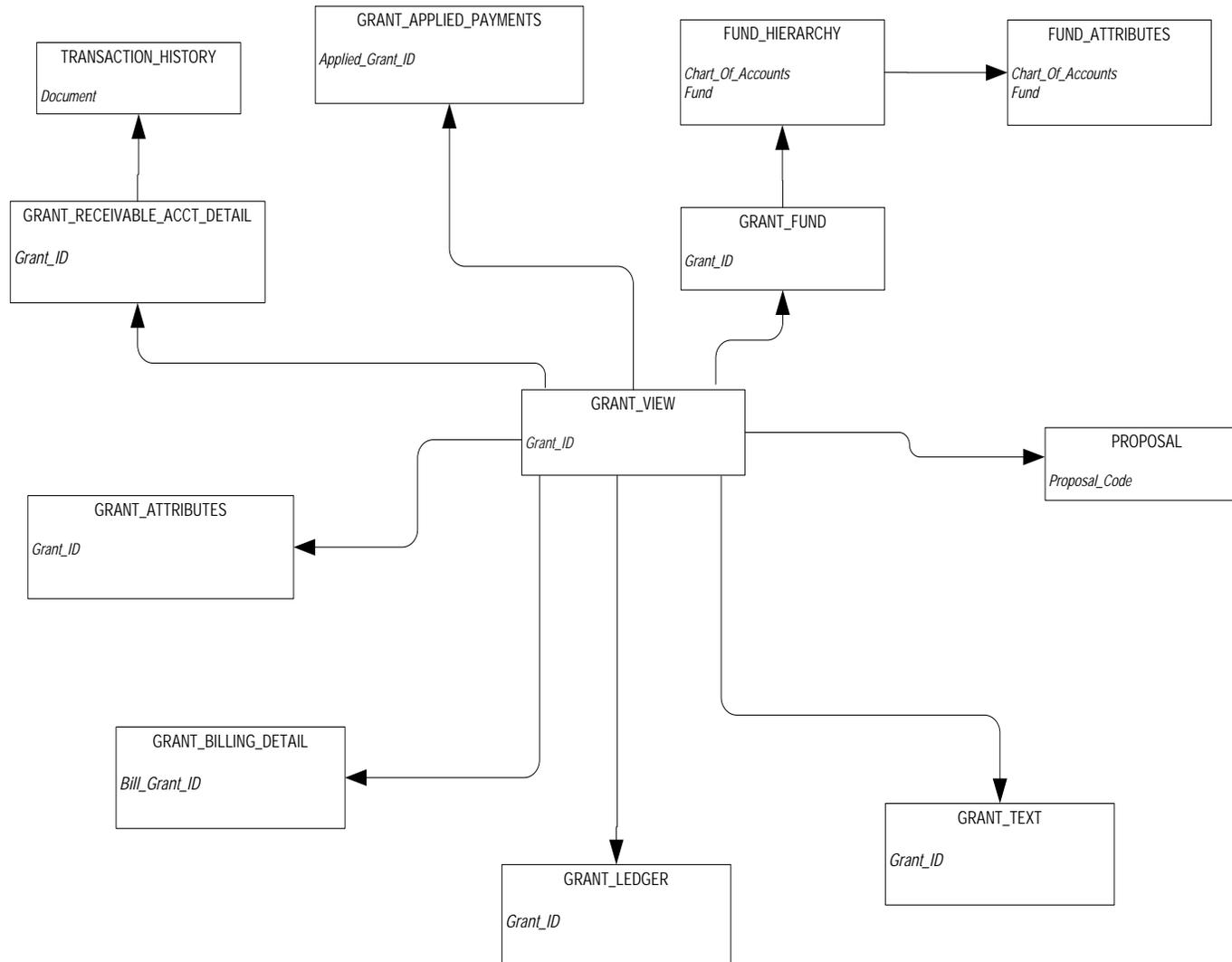
Fixed Asset



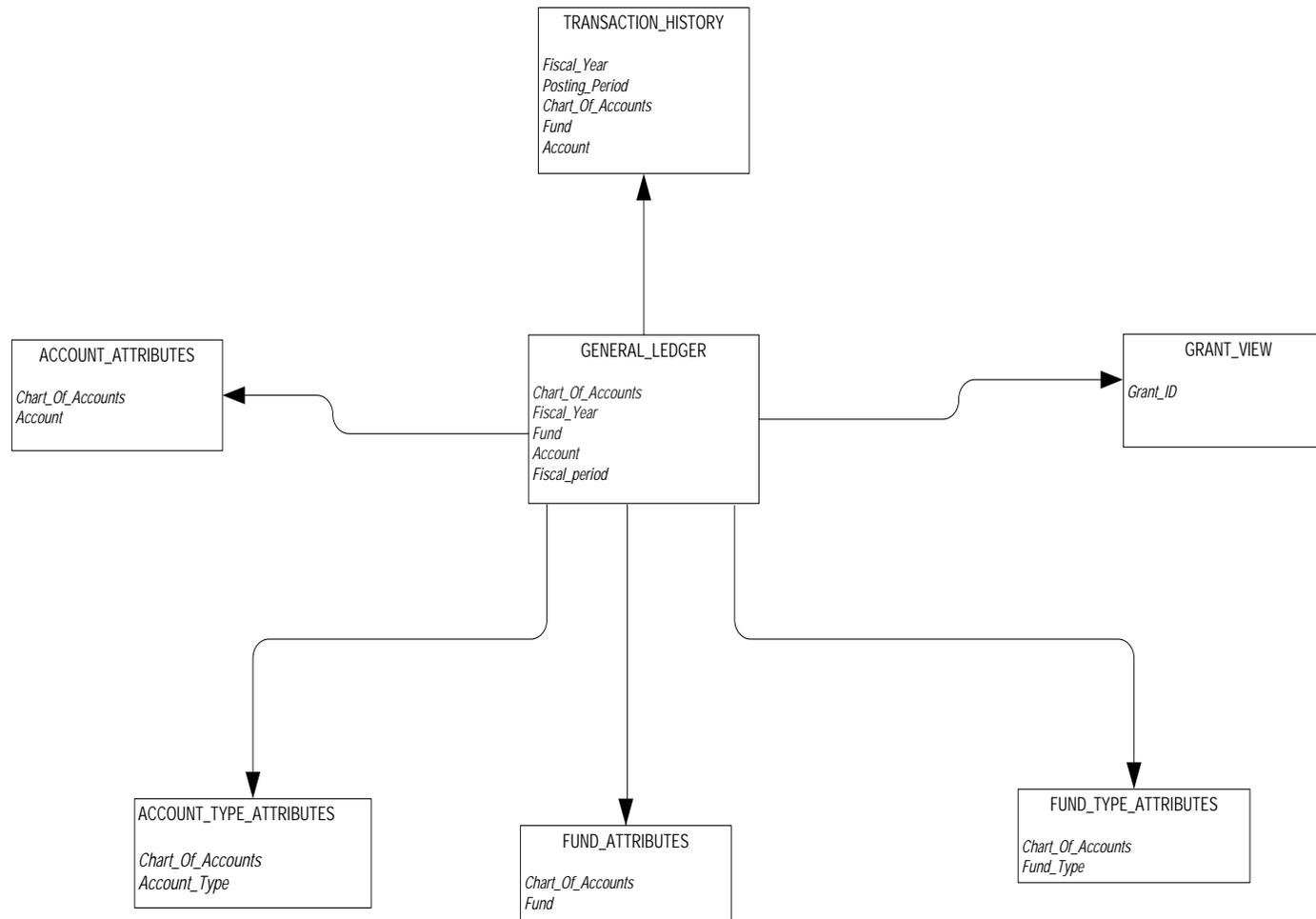
General Ledger



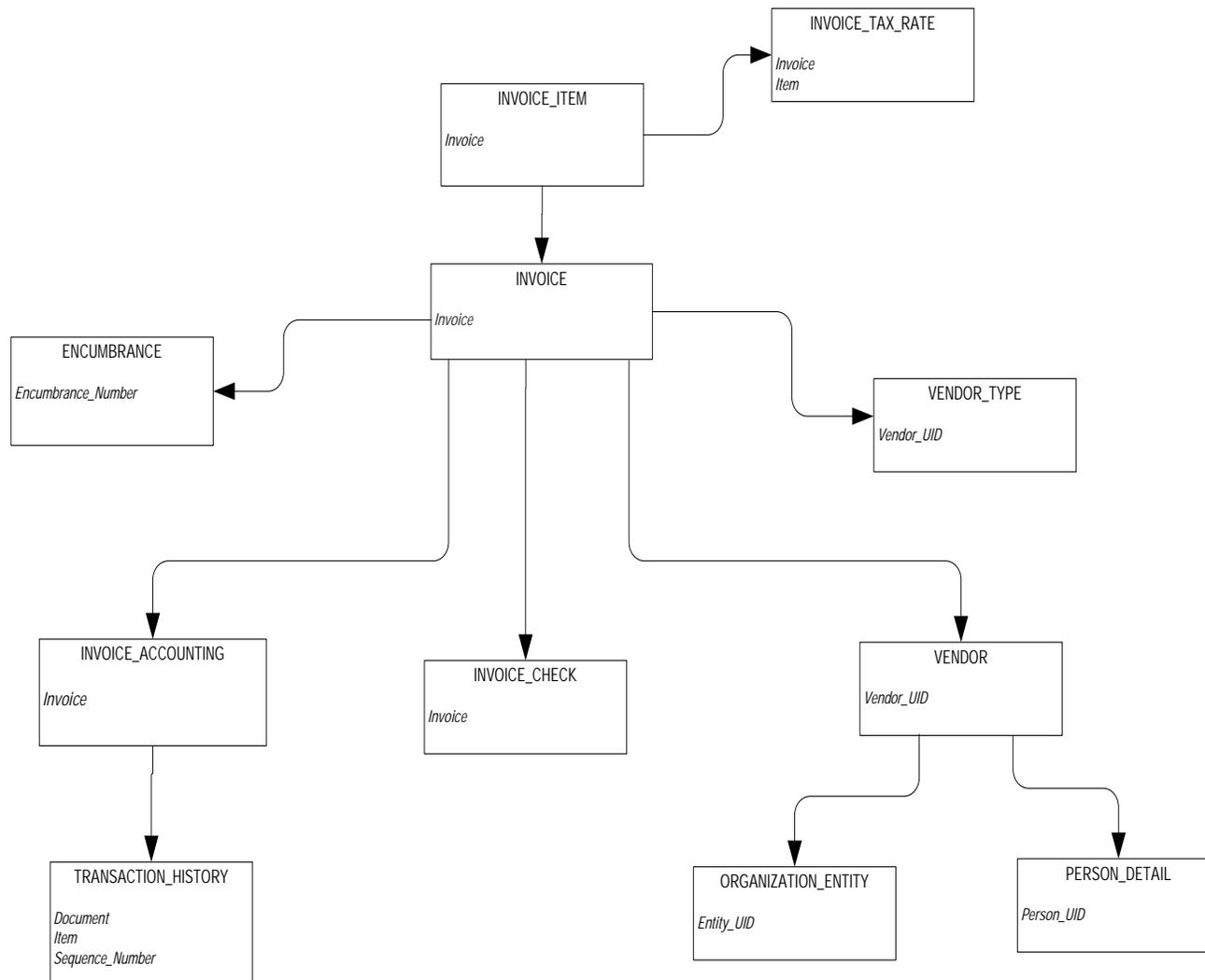
Grant and Project



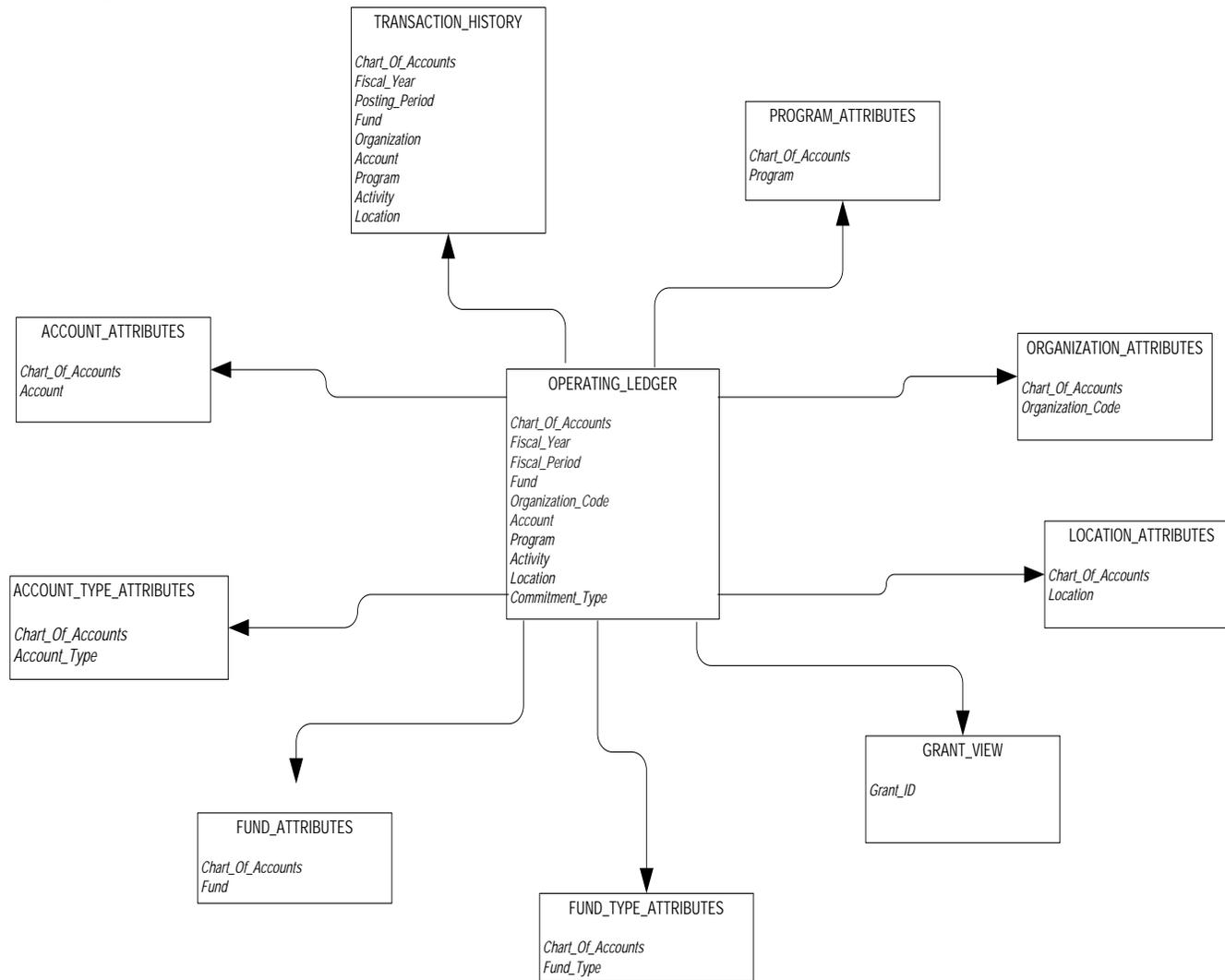
Grant Ledger



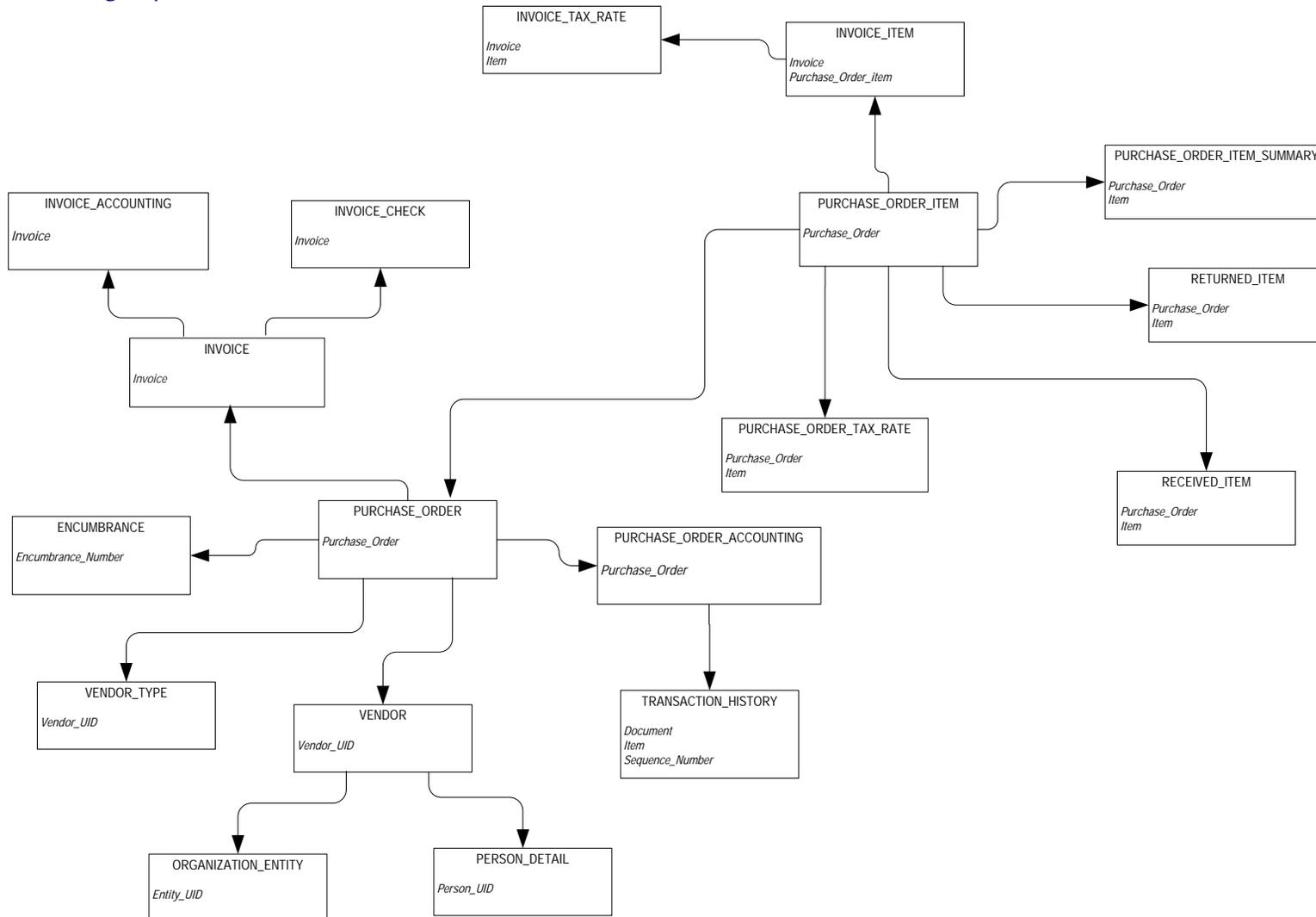
Invoice Payable



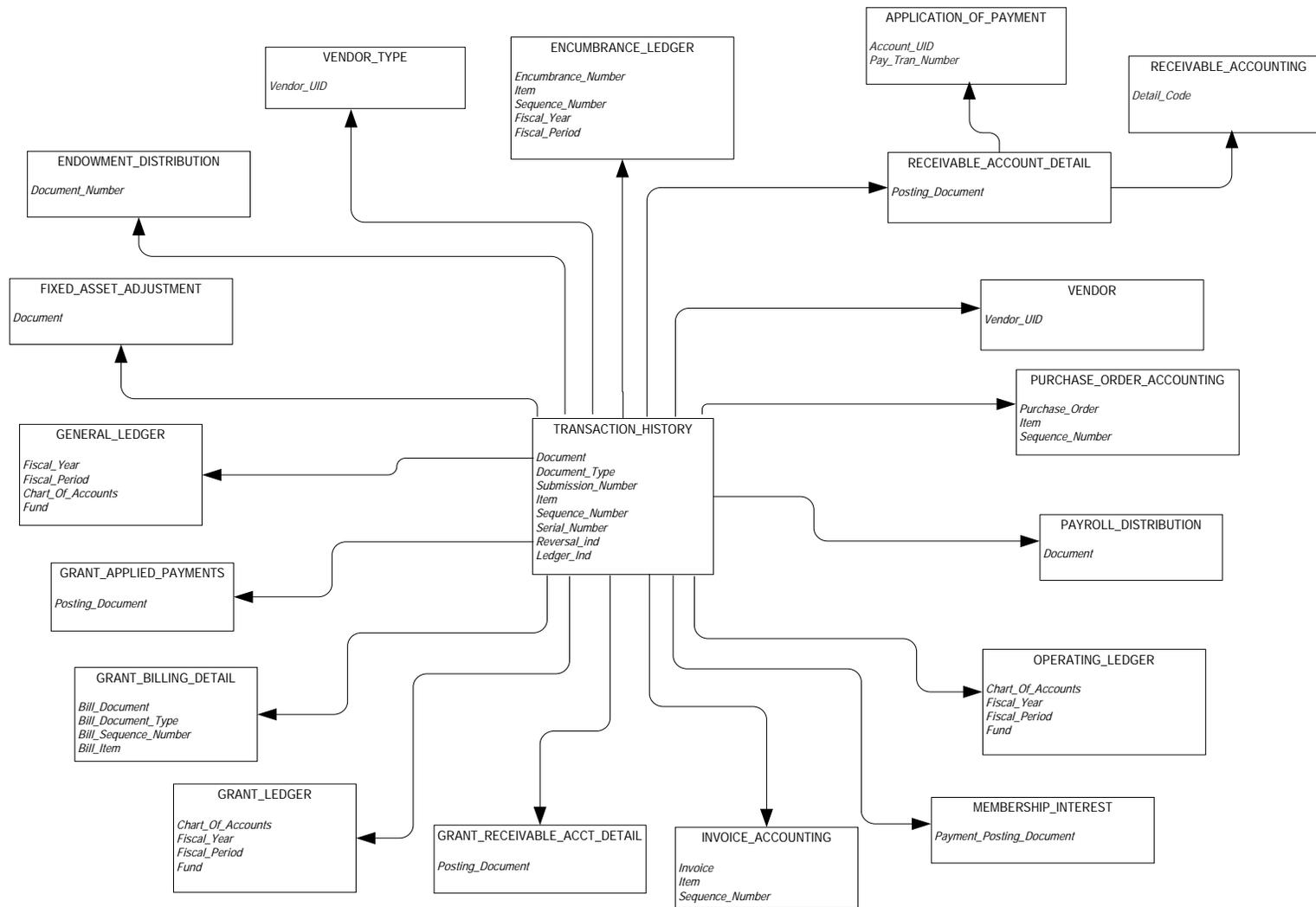
Operating Ledger



Purchasing Payable

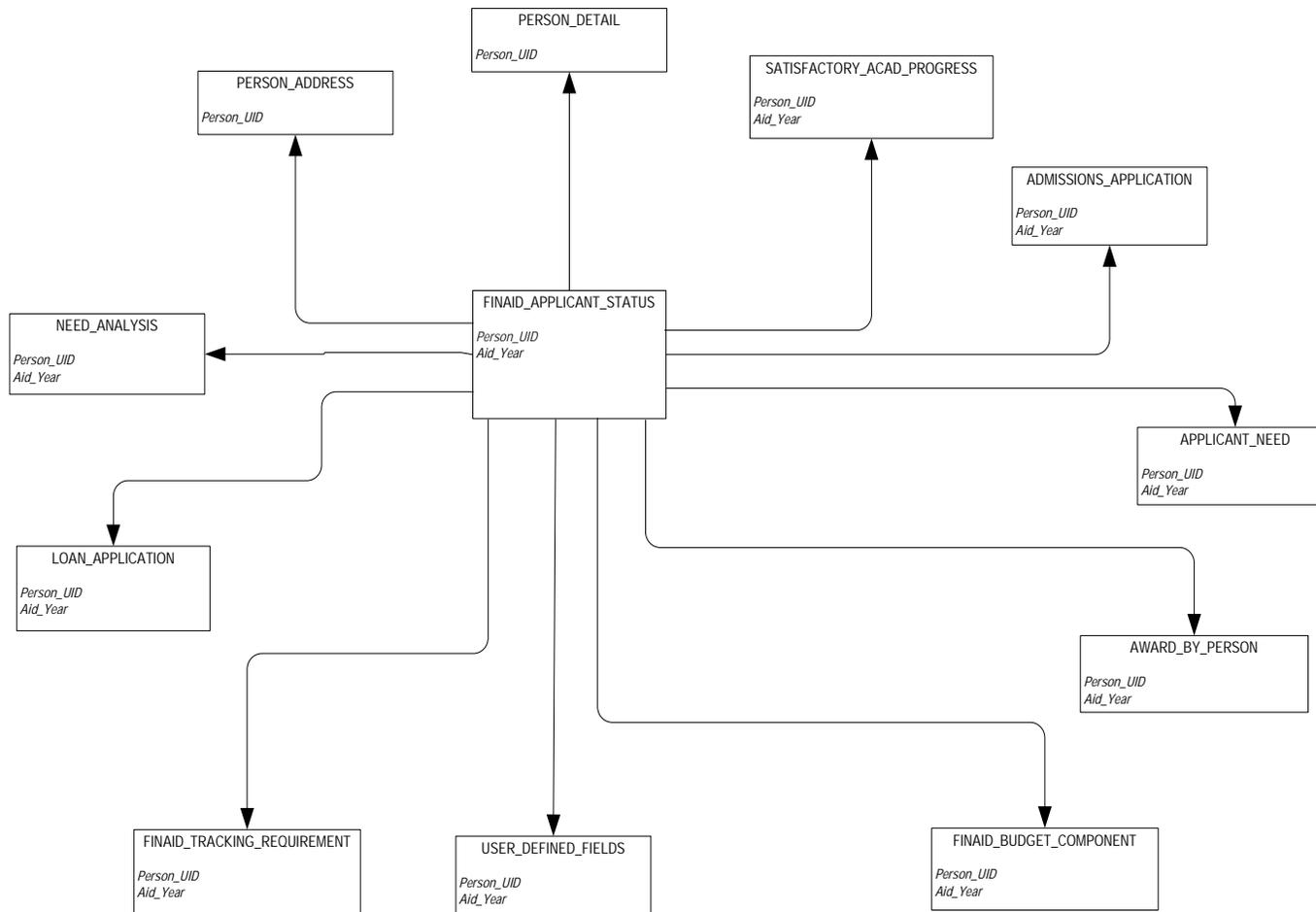


Transaction History

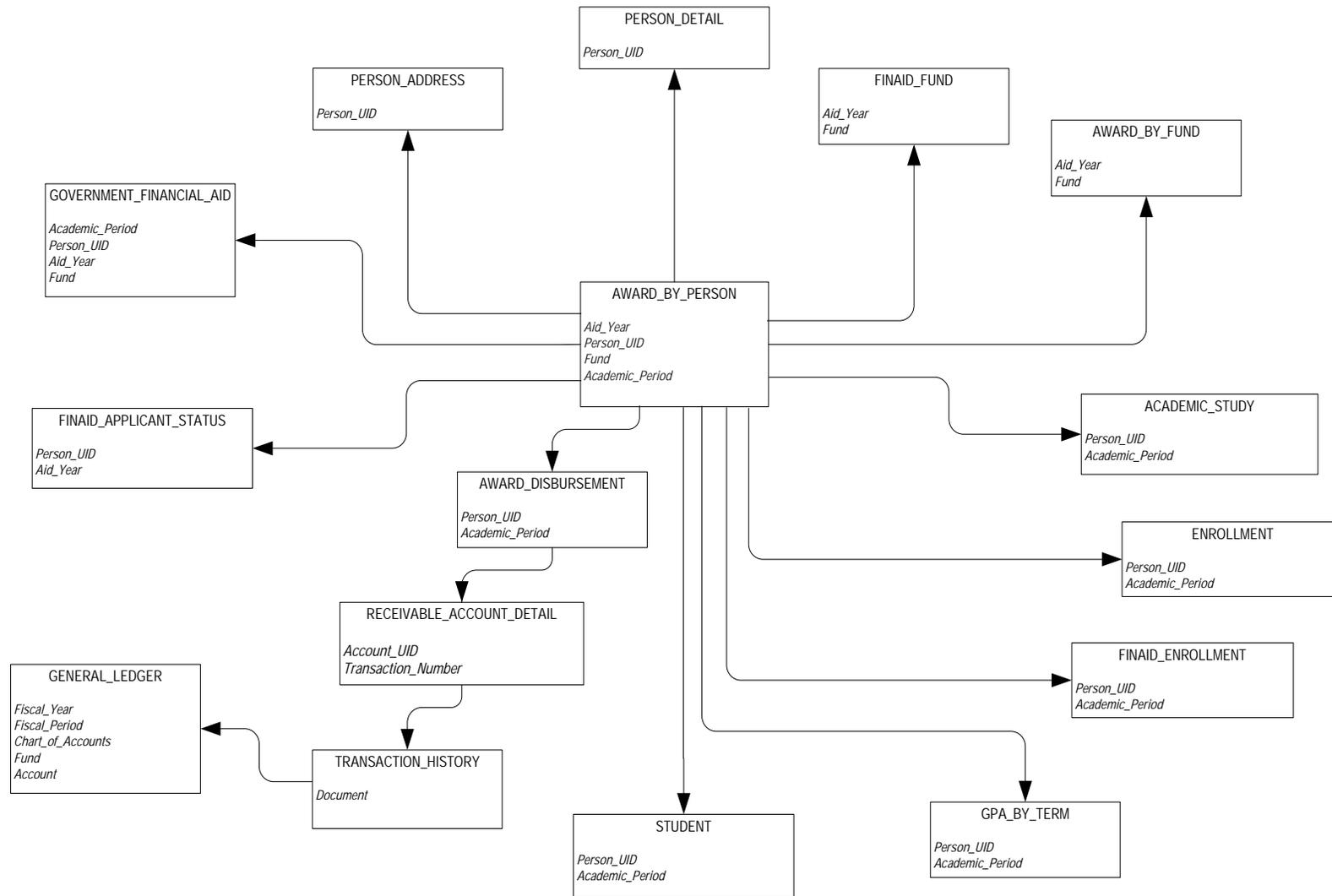


Financial Aid

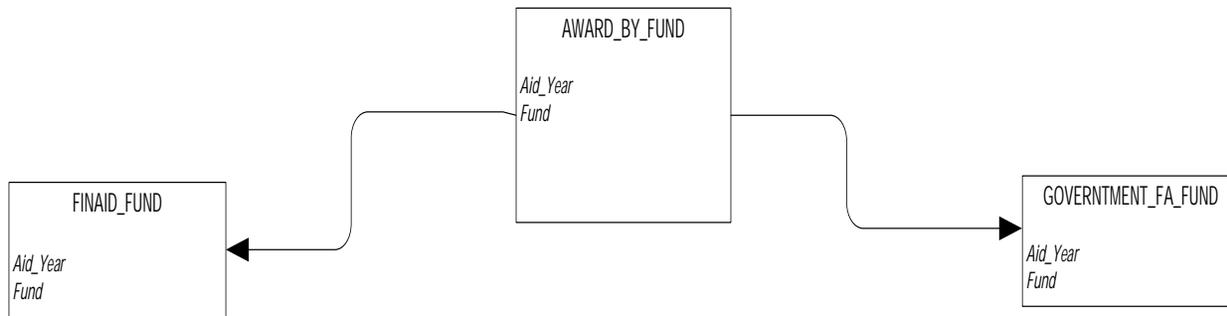
Financial Aid Application



Financial Aid Award and Disbursement

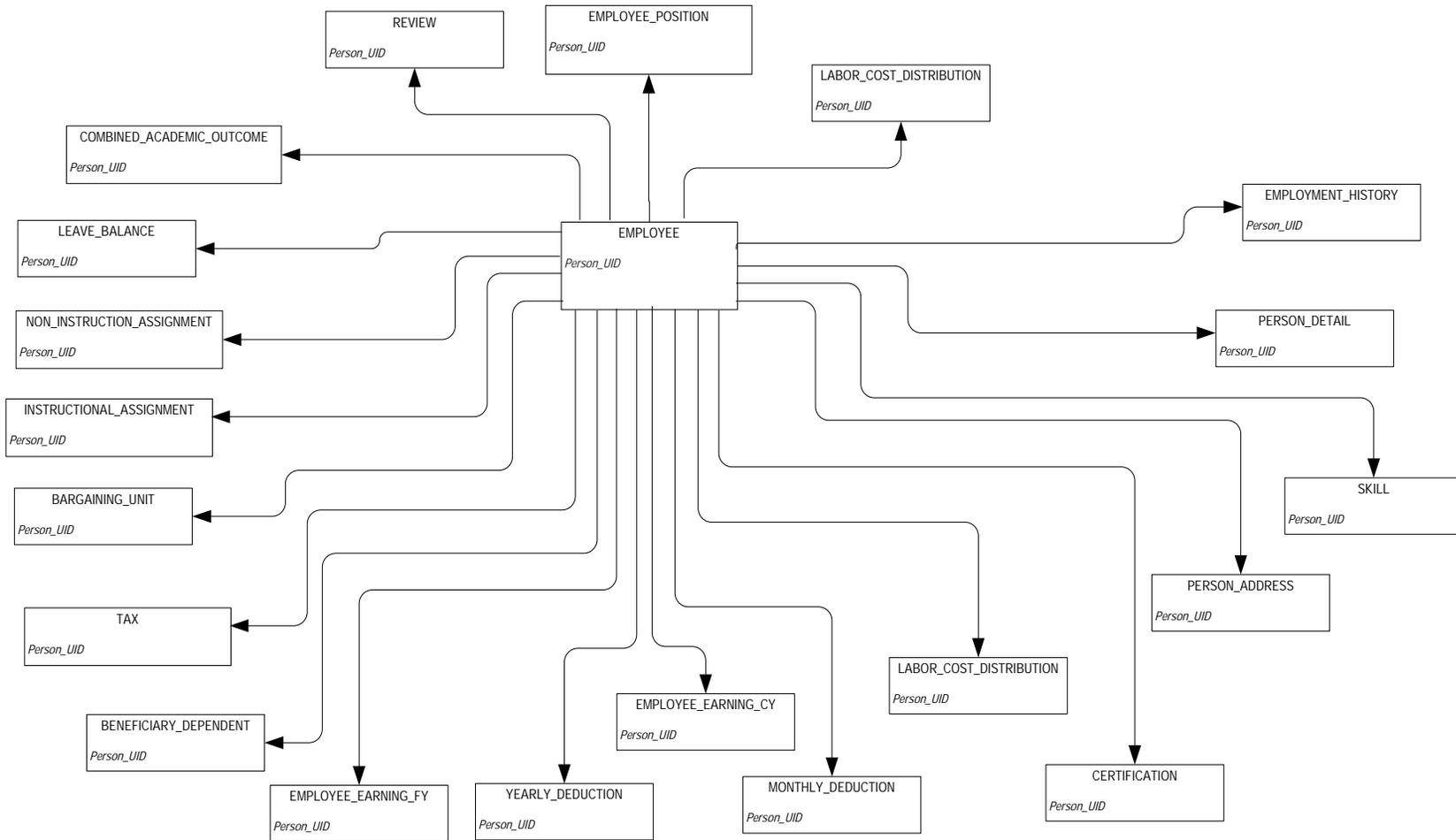


Financial Aid Fund

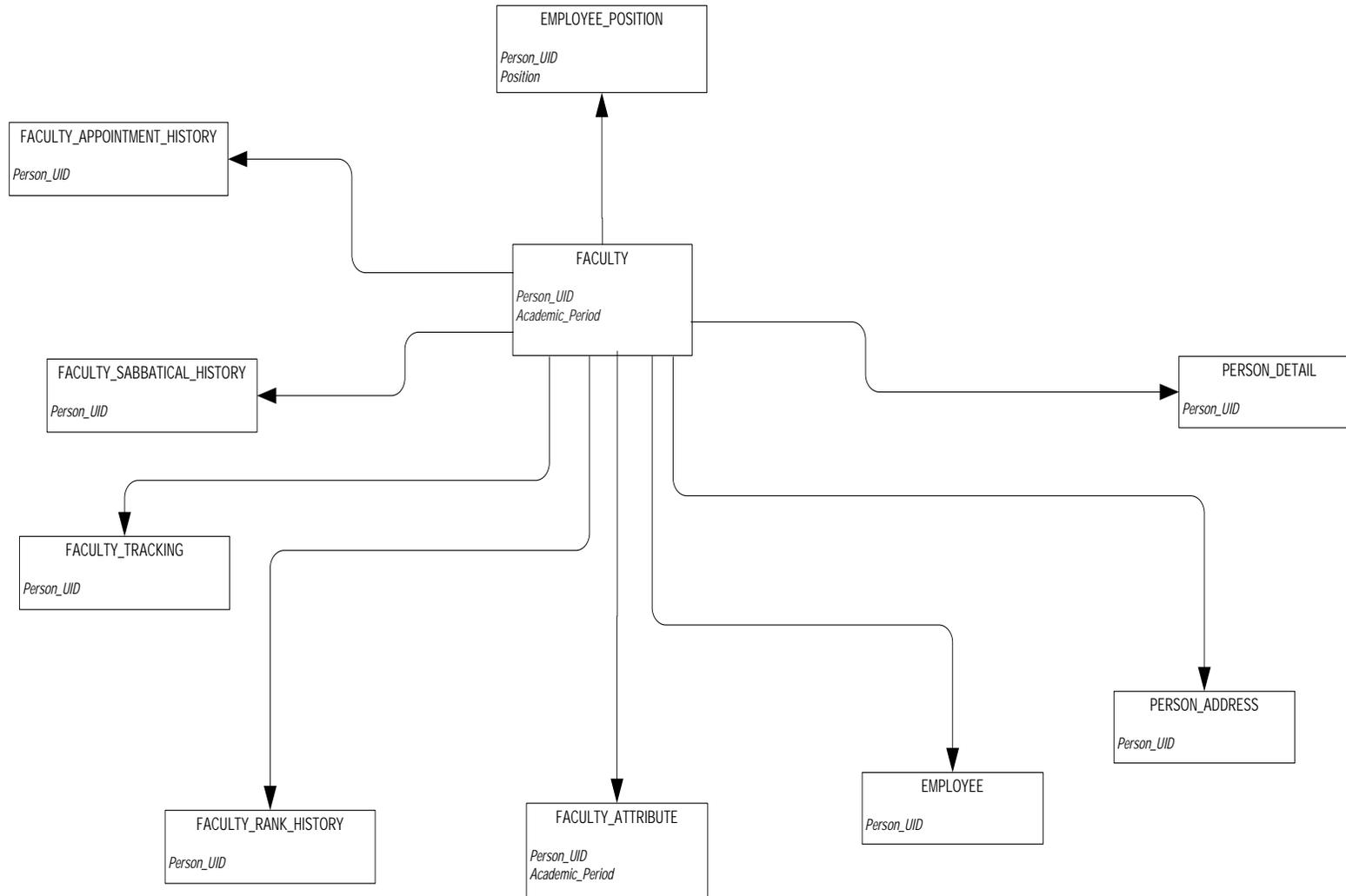


Human Resources

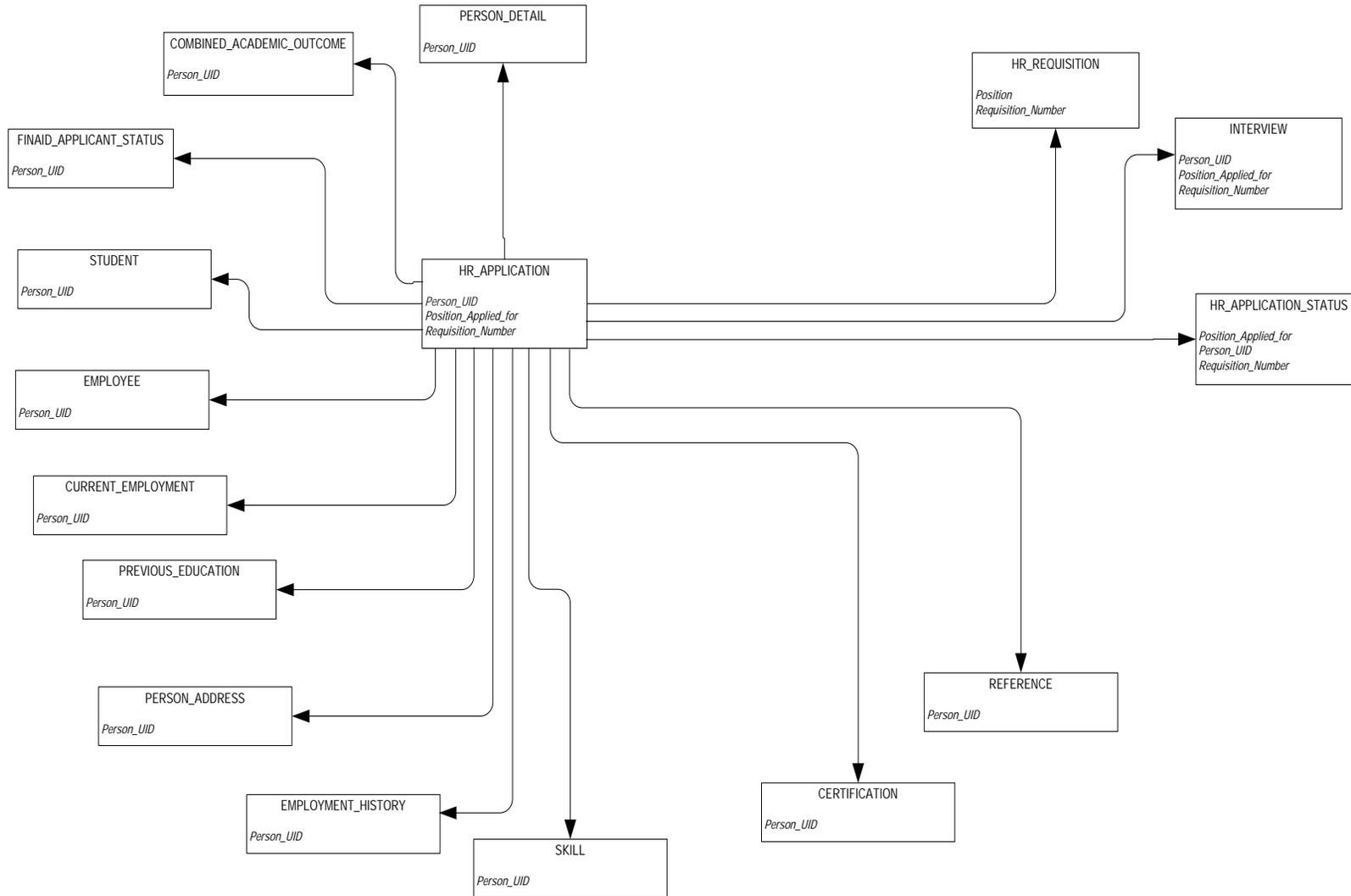
Employee



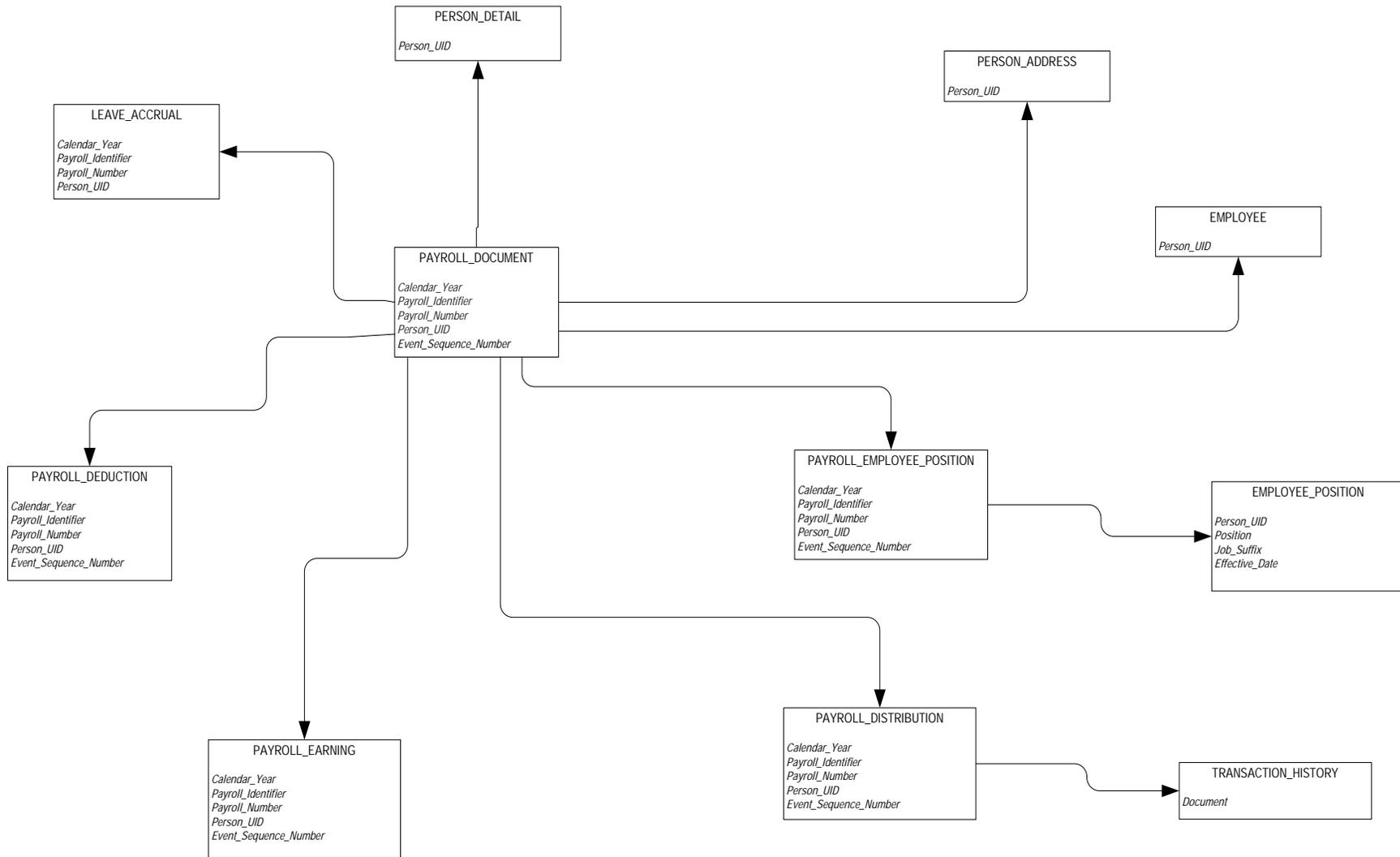
Human Resource Faculty



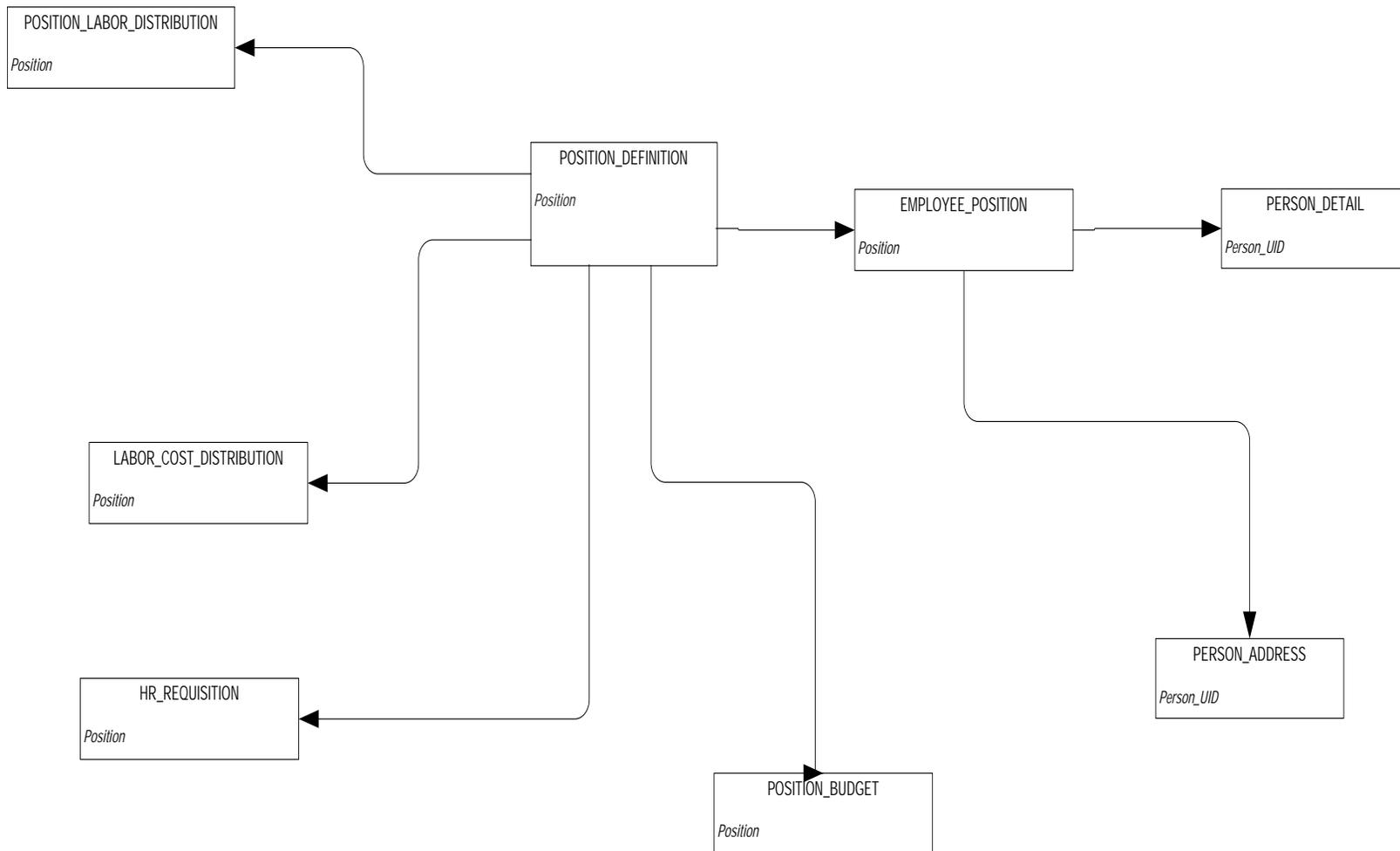
Human Resource Application



Payroll

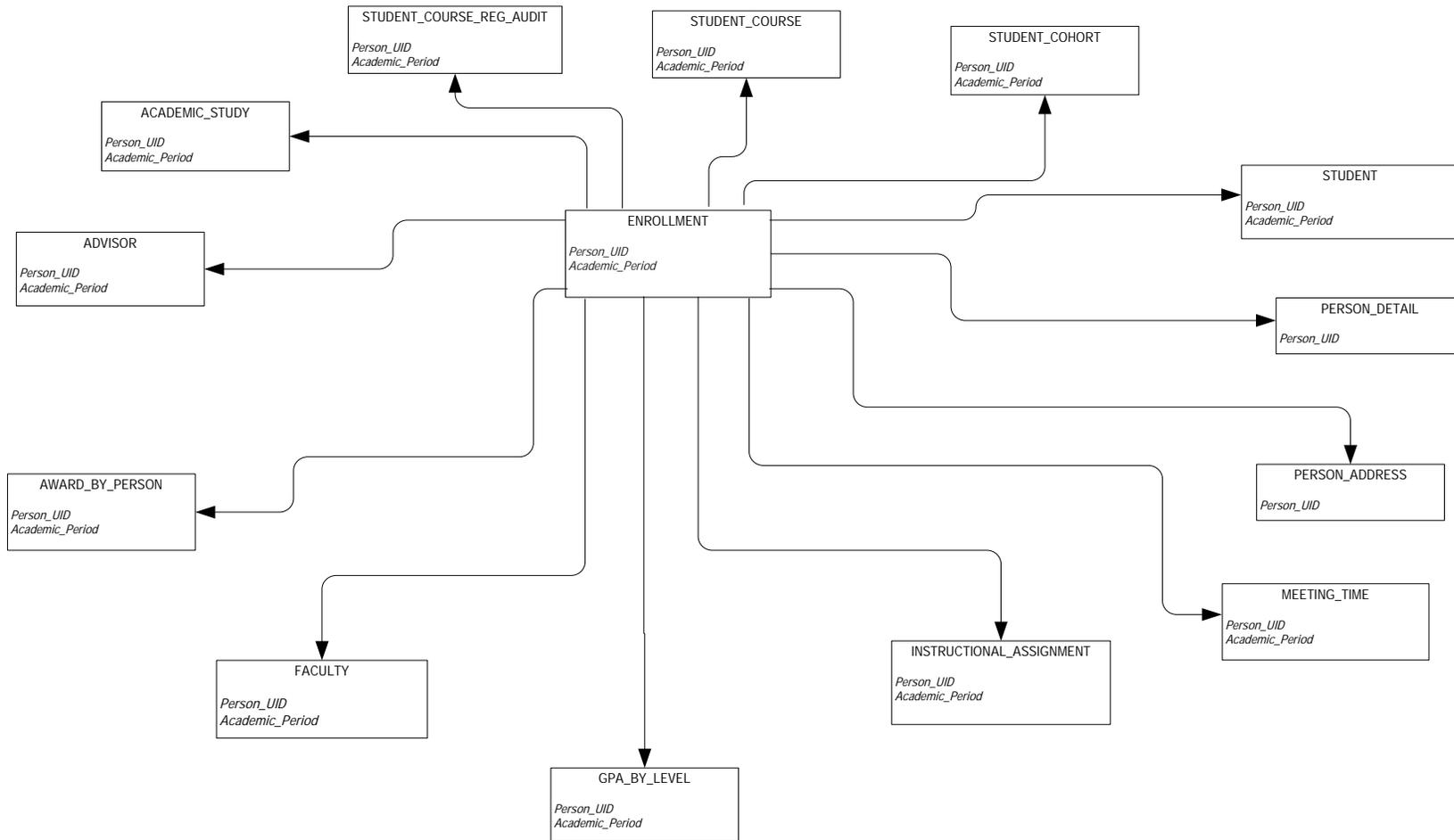


Position

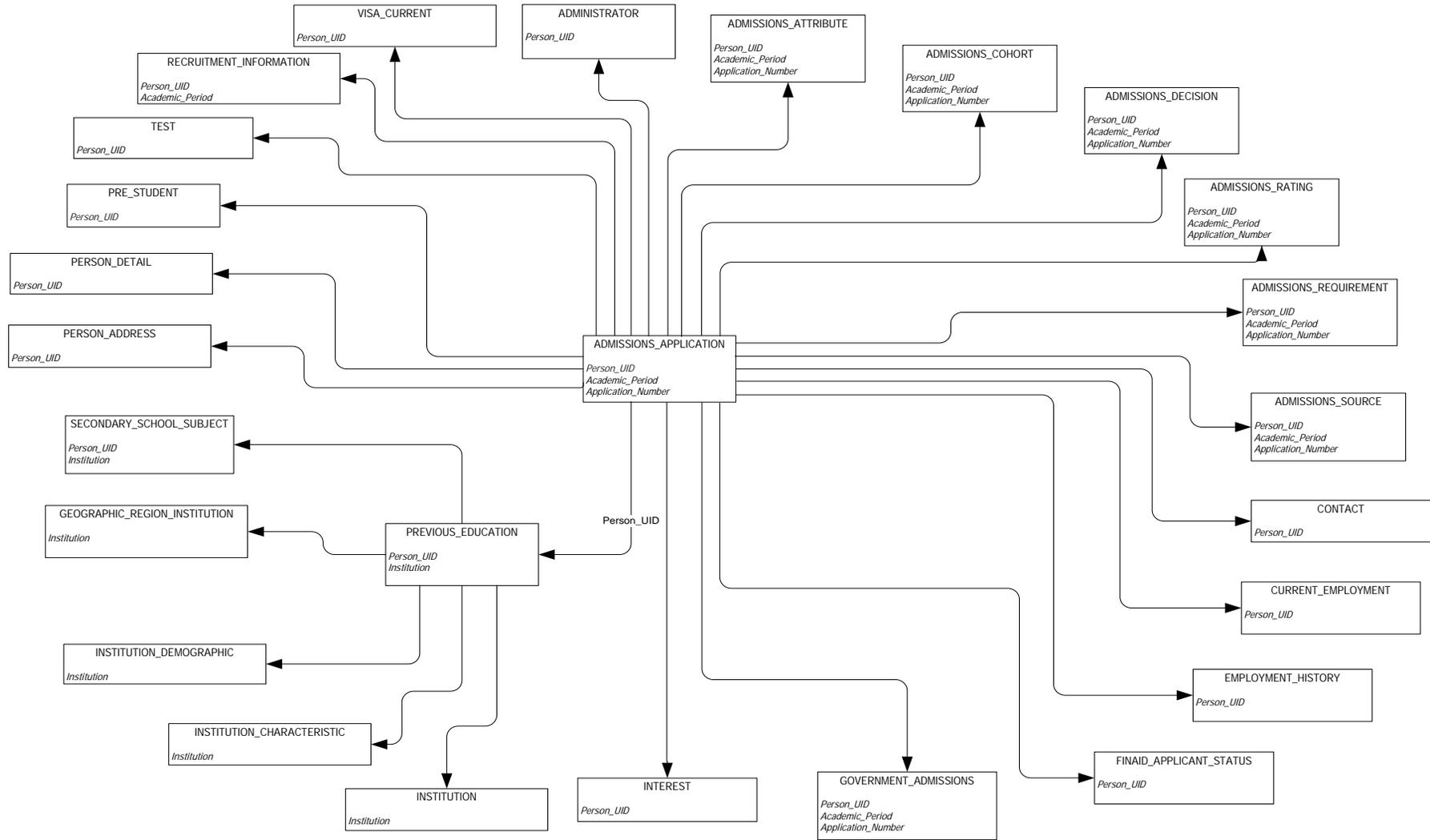


Student

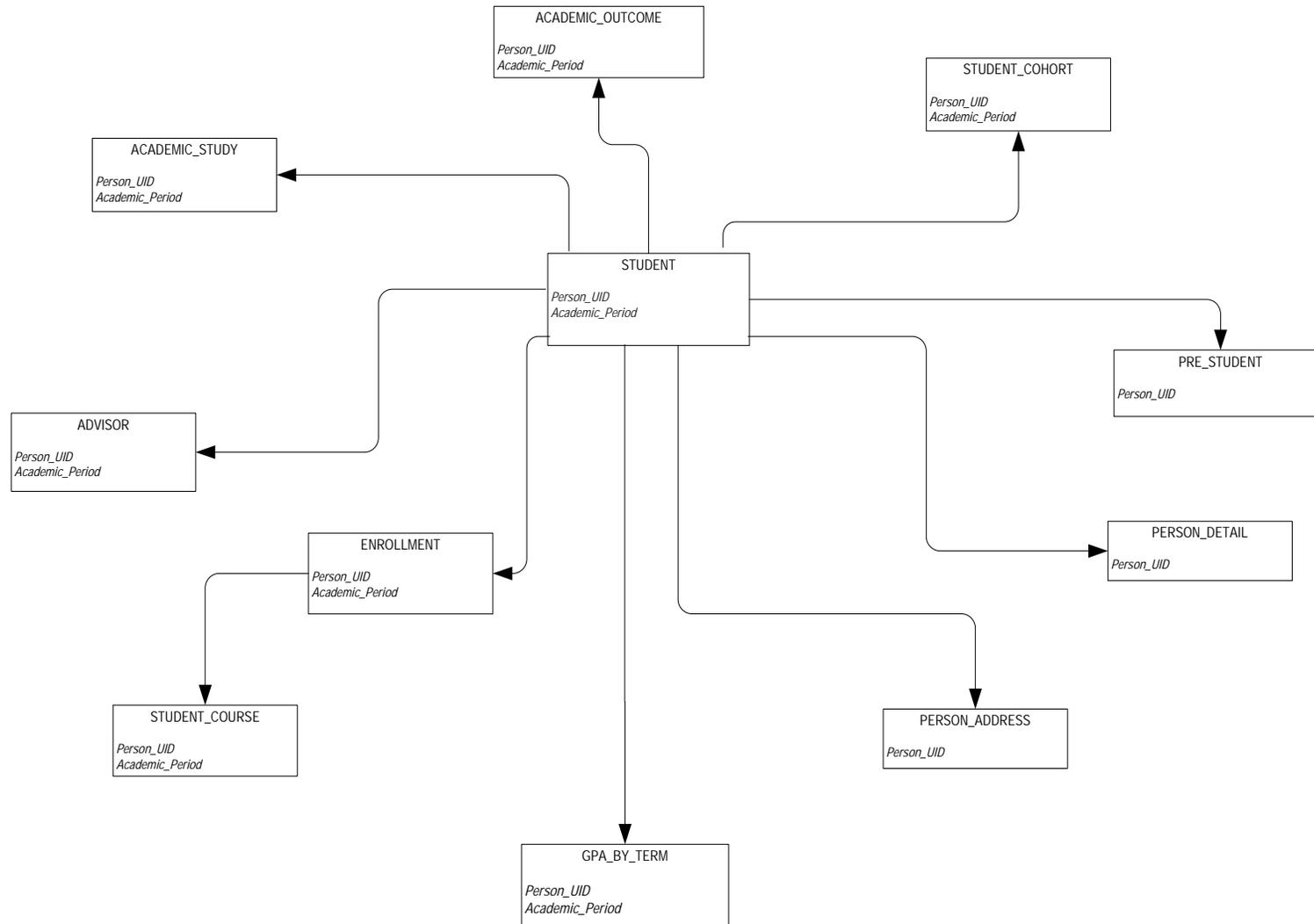
Active Registration



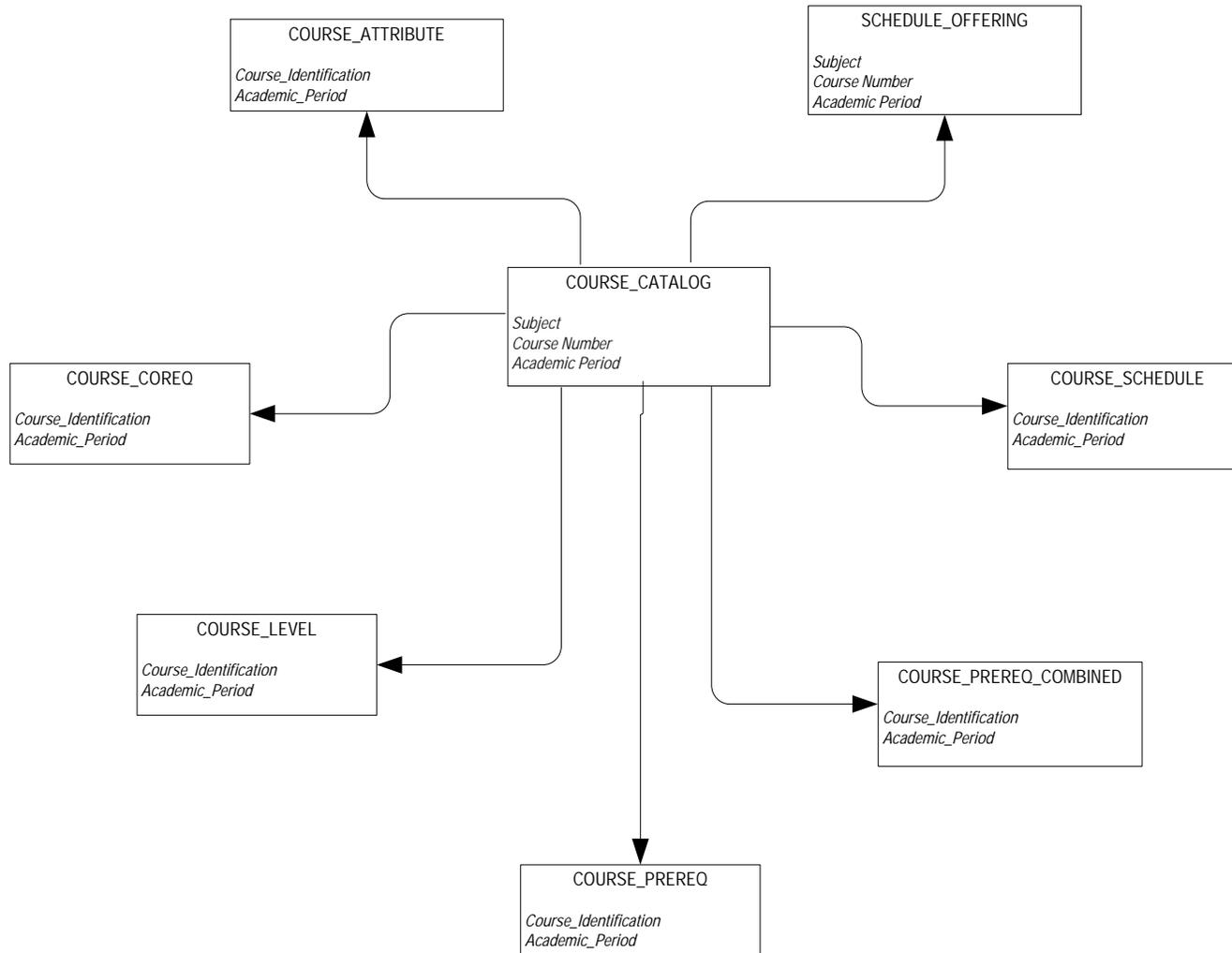
Admissions Application



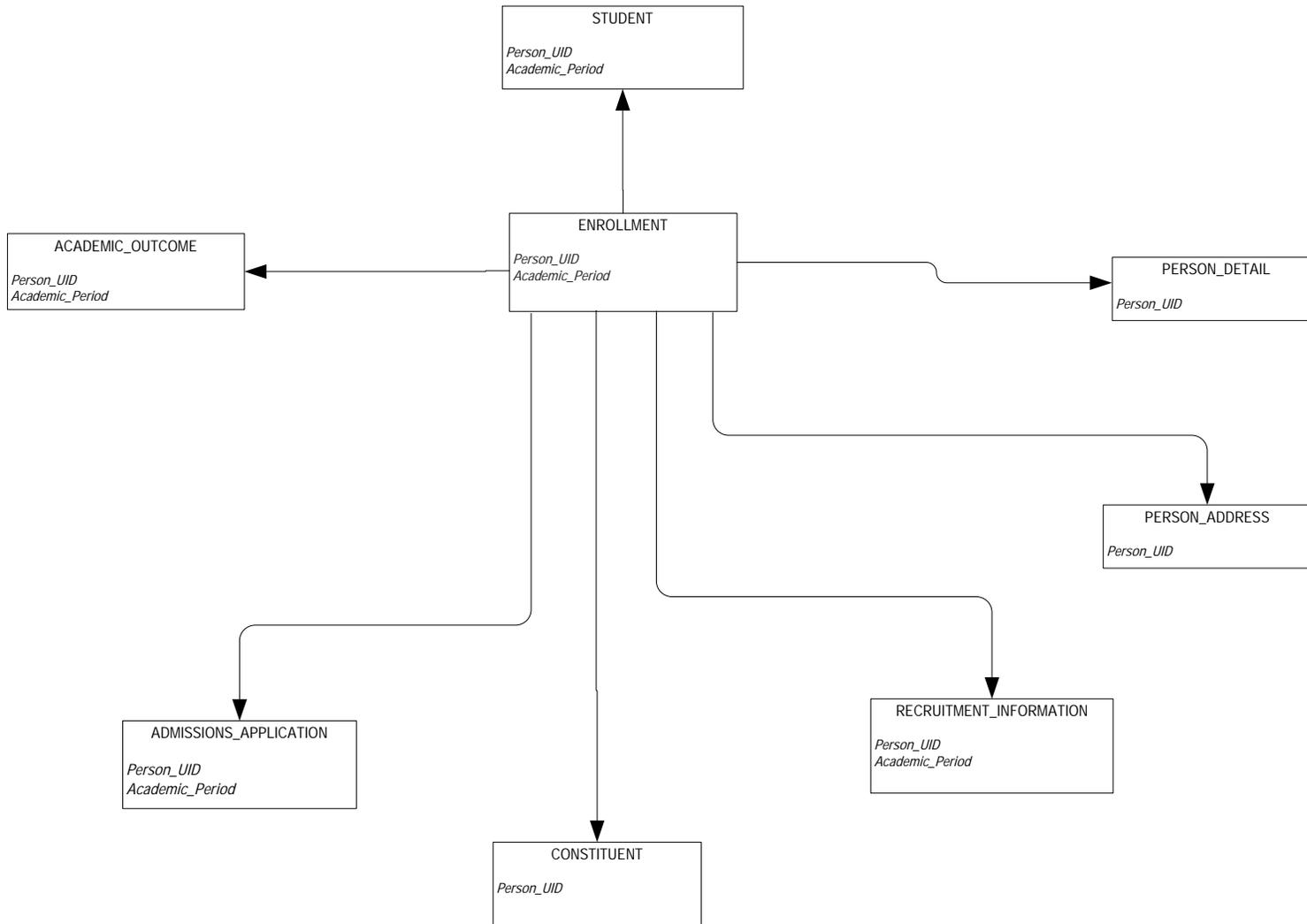
Advisor Student List



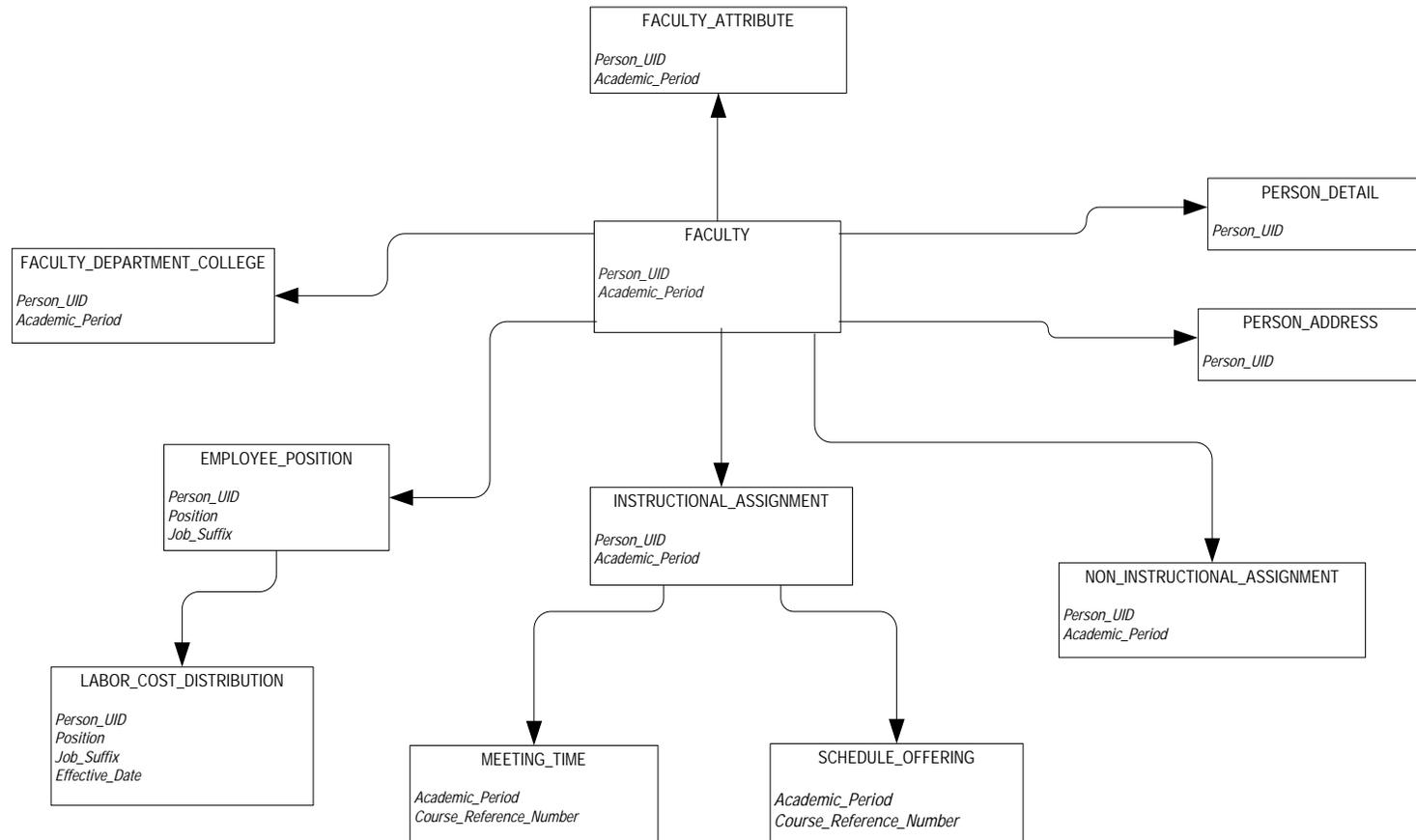
Course Catalog



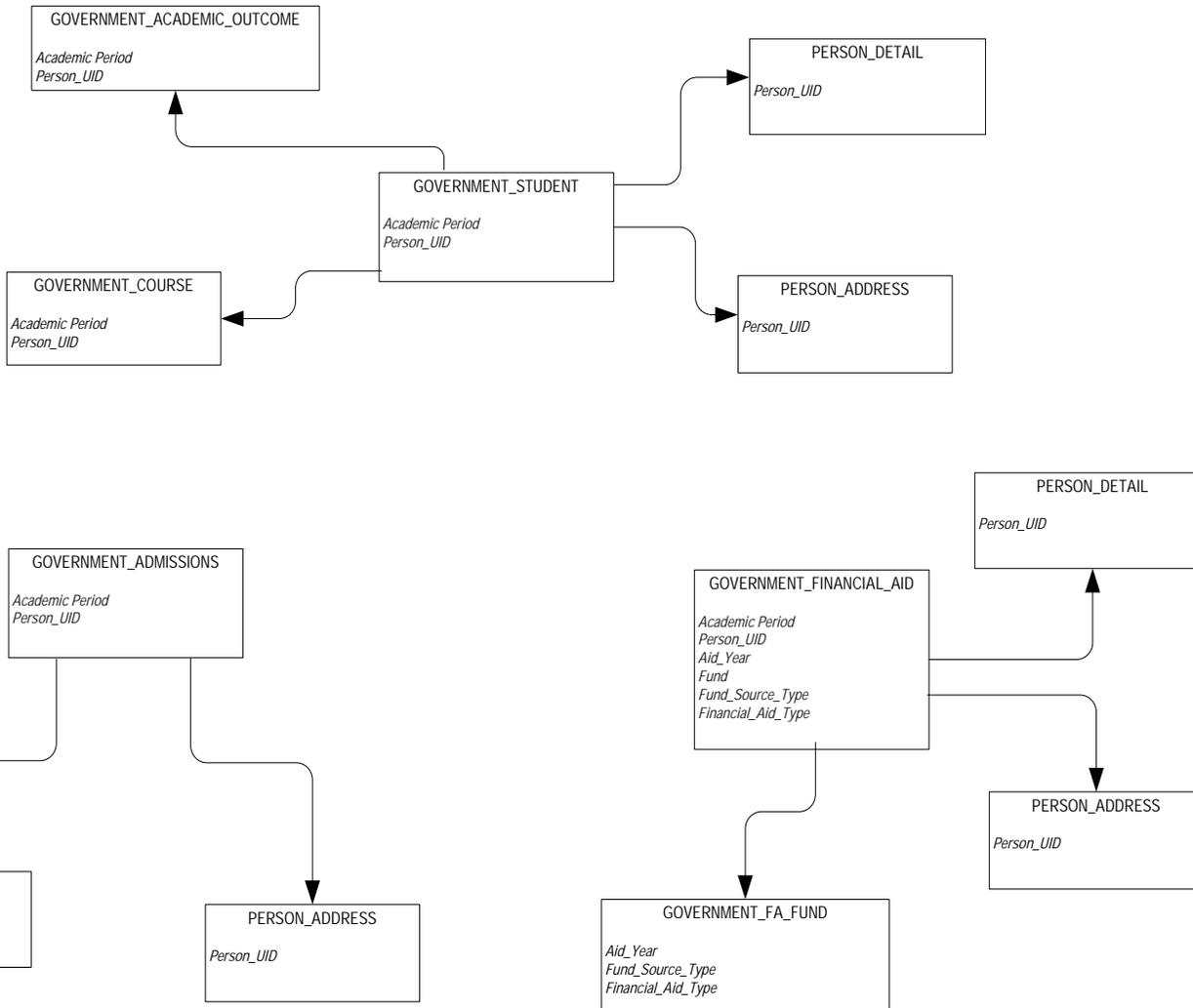
Enrollment Management



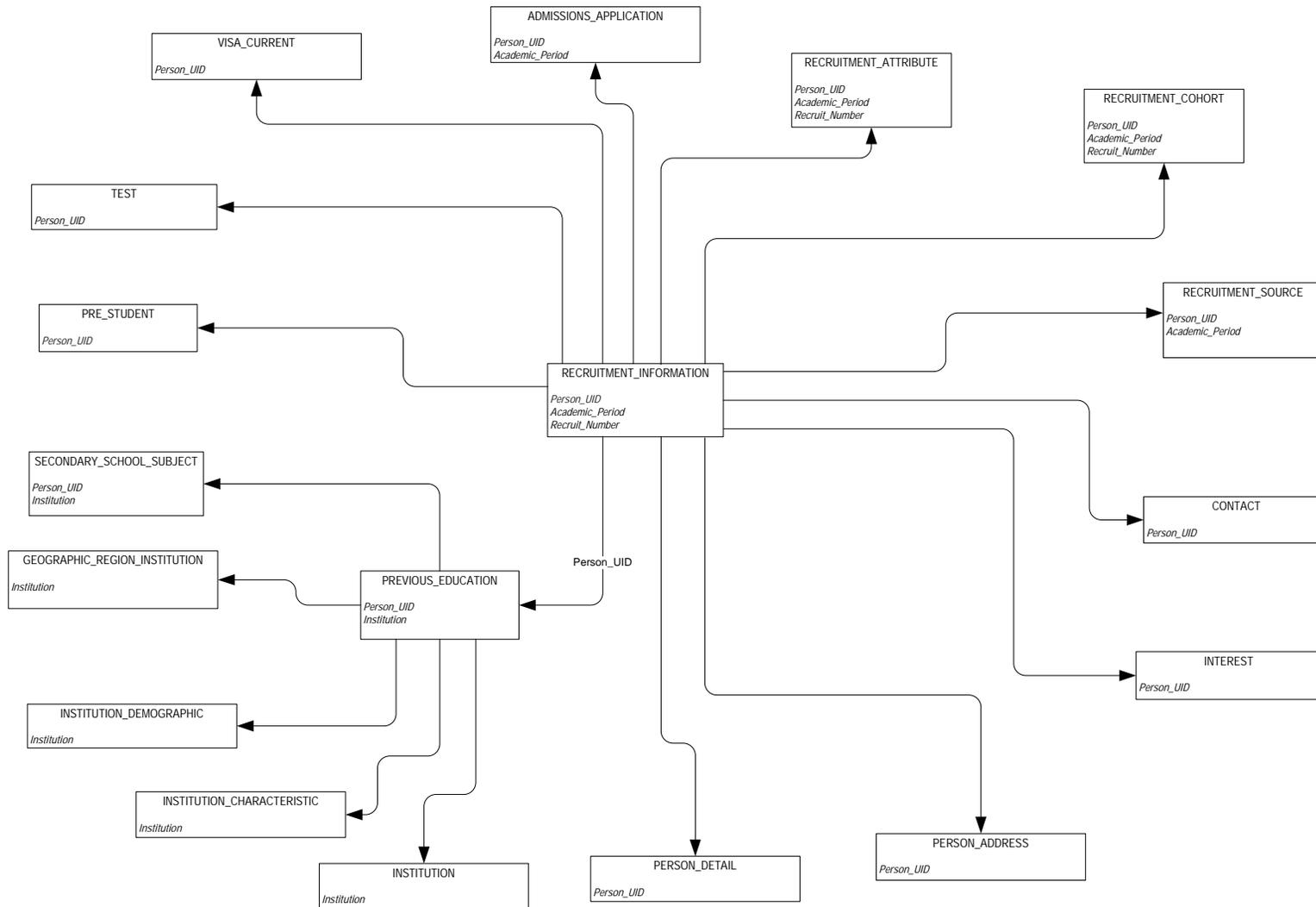
Faculty Assignment



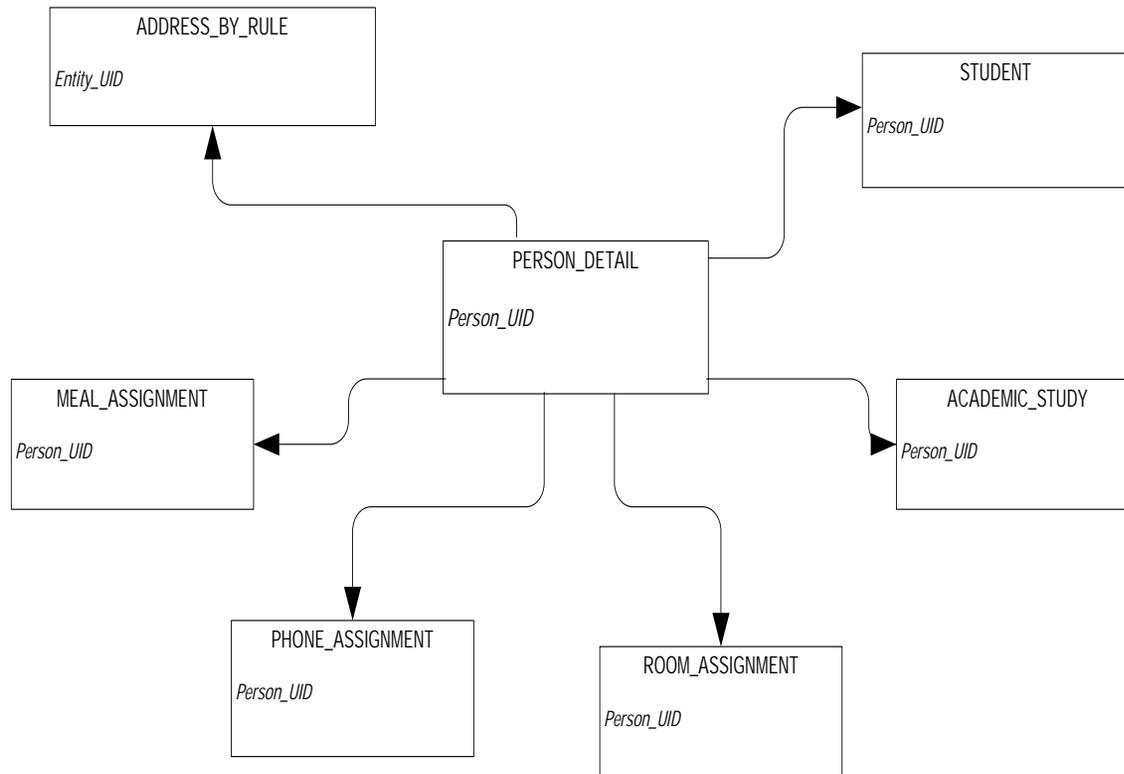
Government Reporting



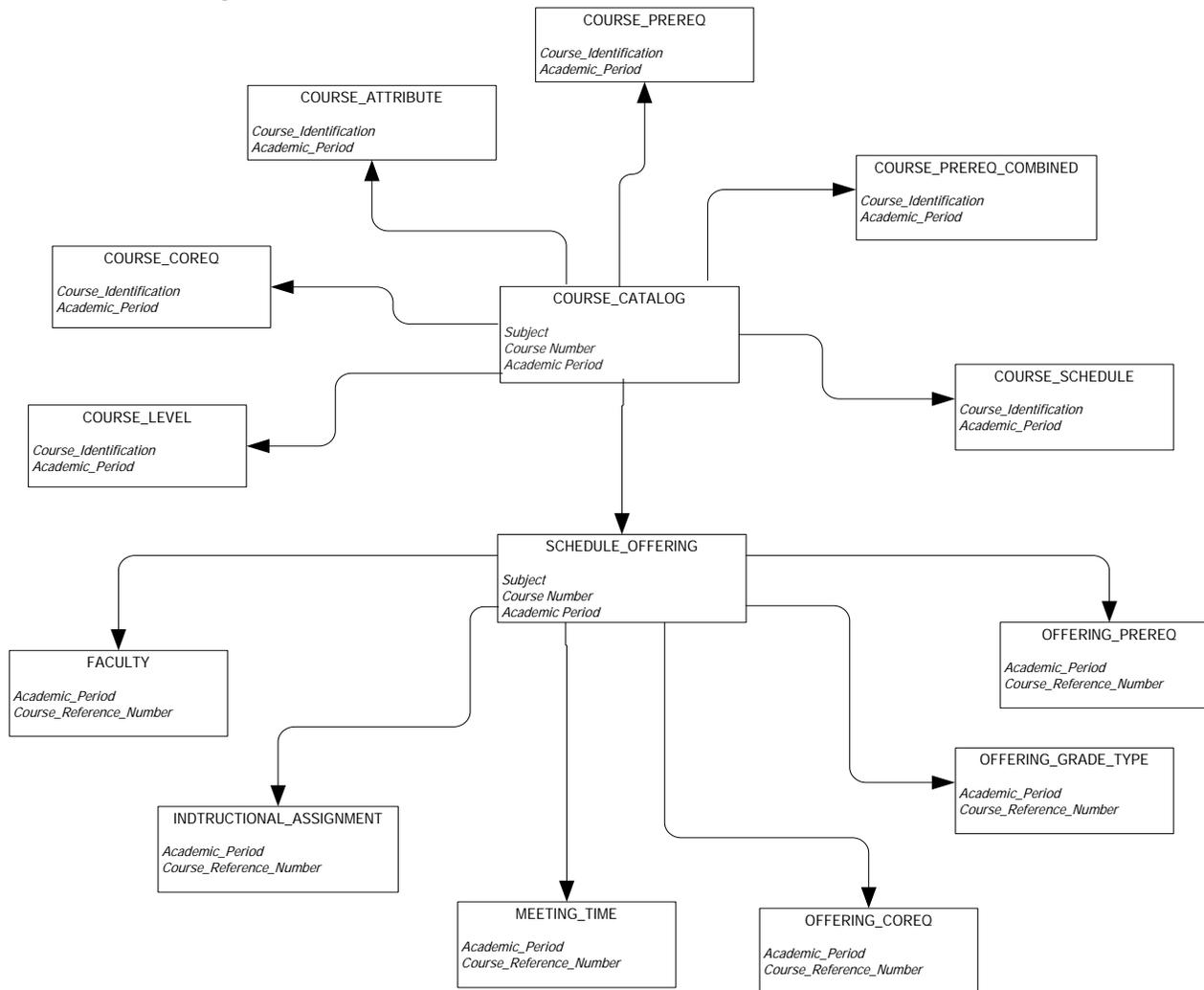
Recruitment Information



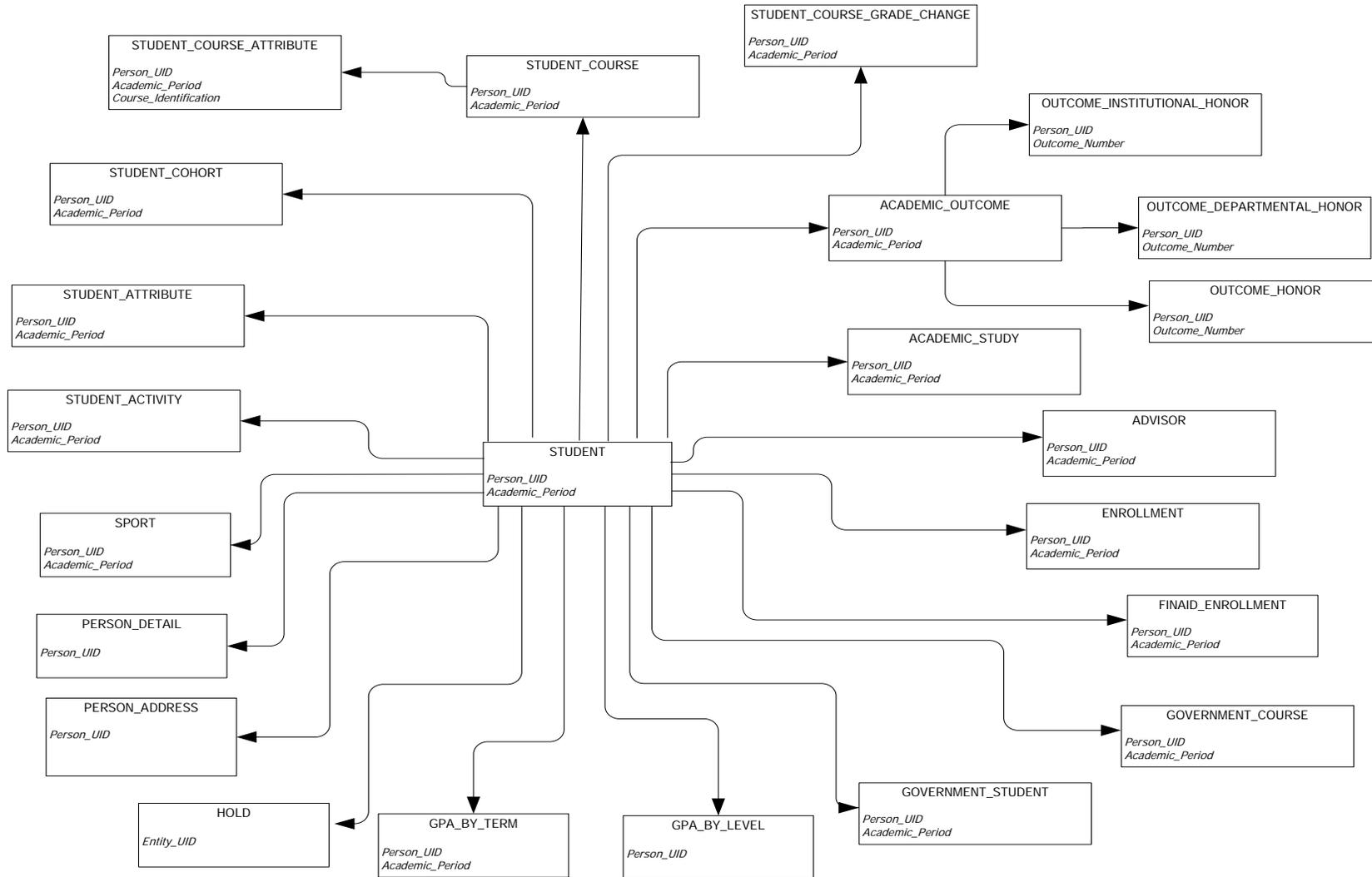
Residential Life



Schedule Offering



Student Detail



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 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 ODS.

Change Tables

In Banner, Oracle tables that capture key information when data is changed. Change tables drive the incremental refresh of the ODS process. They identify which information needs to be updated in the ODS.

Cleansing

The process of translating, decoding, or resolving anomalies within source information that resides in the operational data store.

Composite Table

A table within the 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 ODS. The ETL process pulls the information from the composite views into the composite tables of the ODS.

Control report

In the 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 ODS and EDW., and the transition of each data element from its origin in the ERP database to its location in the ODS composite tables and views and EDW star schemata.

Data Store

Also called Operational Data Store (ODS). A place that stores significant types and pieces of information for an organization, in a format that promotes ease of retrieval and analysis. The Operational Data Store (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 (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 EDW through the 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 (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.

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.

Driving Trigger

The trigger that initially populates the key fields in the composite table when the materialized view table is being refreshed. Each composite table has only one driving trigger.

Dynamic Data

Data that is automatically updated every time something changes in the Oracle database.

EDW (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 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 the operational data store (ODS) from the source database. Another set of ETL processes is used to populate the enterprise data warehouse (EDW) from the operational data store (ODS).

ETL Map Package Parameter

In the Information Access 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 ODS and EDW 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 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 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.

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 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 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 ODS includes two main categories of mappings:

- **LOAD mappings:** load data from the source system into the ODS. These mapping names have the prefix `LOAD_`.
- **REFRESH mappings:** update the 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 ODS with hundreds of mappings already defined. `LOAD` and `REFRESH` mappings exist for each composite table in the 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 compliant 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

Operational Data Store (ODS)

See Data Store.

ODS Instance

The database where all the 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 ODS. It is also the tool used to extract the data from the ODS and load it into the 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 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 multi-dimensional analysis of data stored in a relational database rather than in a multi-dimensional database (which is usually considered the OLAP standard).

Role Based Security

Security provided within the ODS that permits you to control who can access reporting information based on each person's role at the institution. The ODS uses Oracle's fine grained access to implement its security.

Row Level Trigger

A trigger that gets the key fields for each record that was changed in that specific materialized view table. In the case of a validation table, the trigger does a direct update on the description of the field.

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.

Note: Within the 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 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 EDW.

Trigger

A PL/SQL code that updates the composite table. When the production database tables are changed, the change is put into a log file. This

updates the materialized view table that fires the trigger calling the package and updating the composite table.

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.

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