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1 BPRA Products

The complete set of Banner Performance Reporting and Analytics (BPRA) products give your institution the ability to take full advantage of the data stored in your source system by turning it into applied knowledge in the warehouse. The BPRA solution set includes the following products:

- Banner Operational Data Store (Banner ODS)
- Banner Enterprise Data Warehouse (Banner EDW)
- Banner Recruiting and Admissions Performance
- Advancement Analytics for Cognos

Your institution may license some or all of these products. If you do license products in addition to the Banner EDW, it is important that you understand the relationship among all of the products as you use them. You can use the products together to help you make informed decisions, guide strategic institutional planning and forecasting based on analysis of historical trends, and enhance institutional performance.

Banner Operational Data Store

The Banner ODS enables you to extract information from your source systems, reorganize the information into a simplified format, and store the information in the Banner ODS database. End users can then create and deploy operational and ad hoc reports.

Banner ODS provides an extensive and flexible data store and business-organized reporting views with fewer columns and improved performance. You can use these views alone, or in combination with other views.

Banner Enterprise Data Warehouse

The Banner EDW is a multi-dimensional database that gives you a complete picture of your institution’s current and past business conditions. The Banner EDW offers comprehensive reporting and analysis capabilities by providing the following data objects:

- Operational stars that you can refresh with current data on a regular basis
- Snapshot stars that offer a historical snapshot of the data at a point-in-time

This combination of current and historical data allows you to do comparative reporting and analysis.
Banner EDW includes Advancement specific components intended for use with the Advancement Analytics for Cognos. It is possible to source these packages from both the Advance and Banner Advancement systems.

**Advancement Analytics for Cognos**

You can use the Cognos analytics components together with the warehouse to meet your institution’s advancement data analysis needs. You can also use other reporting or business intelligence applications with the warehouse to analyze the data.

The Advancement Analytics for Cognos product includes the following types of objects built using the Cognos Business Intelligence application:

- Reports - display trends of outcomes, summaries of current outcomes, and detailed information about constituents
- Dashboards - display several graphical performance charts for a specific business area on a single screen that you can review at a glance
- Scorecards - display institutional goals and objectives including Key Performance Indicators (KPIs) that monitor progress toward your goals and objectives and a set of strategic initiatives that are needed to produce desired outcomes

The data for these objects is stored in the Banner EDW. These objects are intended to illustrate the kind of analysis you can perform on the warehouse data. You can use the reports, dashboards, and scorecards as delivered or you can modify them to reflect the specific information you need to analyze and monitor your institution’s progress.

**Banner Recruiting and Admissions Performance**

Banner Recruiting and Admissions Performance is the reporting analytics and performance portion of the Banner Enrollment Management Suite. You can use Banner Recruiting and Admissions Performance to report, analyze, monitor and track performance; define goals and objectives; and measure progress against key performance indicators. Banner Recruiting and Admissions Performance also lets you easily access recruitment, admissions, and selected financial aid information and use it to create reports.

Banner Recruiting and Admissions Performance solution includes a package of operational reports. These reports display trends of outcomes, summaries of current outcomes and detailed lists of recruits and applicants. The solution also includes capabilities to configure organizational scorecards to reflect your organization’s specific recruitment goals, objectives, and Key Performance Indicators (KPIs).
Banner Student Retention Performance

The Banner Student Retention Performance product provides a package of reports and analytic components that support common student retention performance goals and objectives. You can use Banner Student Retention Performance to monitor student retention and student success to satisfy institution goals and objectives; extend and modify performance monitoring capabilities; and create operational reports and ad-hoc queries that meet the specific needs of your institution.

Banner ODS and Banner EDW Information

In addition to information about the Banner Enterprise Data Warehouse, this handbook includes all of the information that is in the Banner Operational Data Store Handbook. This handbook supports the following product releases:

- Banner Enterprise Data Warehouse 8.4.2
- Banner Operational Data Store 8.3

Banner EDW Stars Reference guide

The Banner EDW Stars Reference guide is a manual that supplements information about the Banner EDW. The Stars Reference guide includes summary information about each of the stars in the warehouse with hypertext links to each of the star diagrams. The guide is delivered as zip file that is compilation of PDF files including the Banner EDW Stars Reference guide and all of the warehouse star diagrams. You can download the zip file from the Documentation and Download area of the Customer Support Center under the “Cross Product - Enterprise Data Warehouse” product.

Related documentation

You can refer to the following documents for more details about the new Banner EDW components and the related Cognos components if you license them.

Warehouse components

- Banner Enterprise Data Warehouse Stars Reference Guide 8.4.1 (There were no changes to this guide for Banner EDW 8.4.2, refer to the 8.4.1 version.)
- Banner Enterprise Data Warehouse Installation Guide 8.4.2
- Banner Enterprise Data Warehouse Upgrade Guide 8.4.2
Cognos components (Handbook available if you license that product)

- Advancement Analytics for Cognos Handbook 1.1.2
- Banner Recruiting and Admissions Performance Handbook 1.2.2
- Banner Student Retention Performance Handbook 1.0.1

BPRA hardware and software recommendations

- Banner Performance Reporting & Analytics Resource Guidelines
2 Set Up Data

Getting started with the Banner Enterprise Data Warehouse (Banner EDW) or any of the performance products - Advancement Analytics for Cognos (AAC) Banner Recruiting and Admissions Performance (RAP), or Banner Student Retention Performance (SRP) - requires an understanding of the data that your institution has defined and made available.

Data evaluation and setup components

The system uses EDW Extract Parameters, Parameter Maps, and the cleansing process to define various aspects of how or what data is loaded in the warehouse. In addition, some data assumptions and decisions that were made while developing the performance products may impact what is loaded into the warehouse from the source database. The following table offers a high-level overview of these different data-related components.

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Edit before initial warehouse load?</th>
<th>Change requires warehouse reload to take effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data assumptions and decisions</td>
<td>Assumptions and decisions made about the data during development of the performance products</td>
<td>Recommended</td>
<td>No</td>
</tr>
<tr>
<td>EDW Extract Parameters</td>
<td>Customize parameters that are used within the ETL processes to populate the Banner EDW</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cleansing processes</td>
<td>Create rules that verify source system code values and translate them to standardized code values in the warehouse</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Parameter Maps</td>
<td>Define parameters maps that specify how information will display in reports that you run against the warehouse</td>
<td>Recommended, but not necessary</td>
<td>No</td>
</tr>
</tbody>
</table>
Data assumptions and decisions

Your institution has flexibility in setting up the way it captures data using the Banner or Advance products. To preserve this flexibility while providing a concise and consistent set of data for reporting in the warehouse, some data assumptions and decisions about the data were made while developing the performance products. These data decisions and the flexibility of the data capture systems require you to review specific data prior to loading the data warehouse tables to identify the values used by your institution. This will ensure that the warehouse is loaded with correct information and that your institution specific implementation of your source environment will not cause data issues when loading the warehouse.

EDW Extract Parameters overview

The EDW Extract Parameters are institution-specific values used within the ETL to populate the Banner EDW. These parameters must be set up before you initially load the data warehouse. If you change these values after the warehouse is loaded, you must reload a portion or the entire warehouse to see the changes.

Cleansing overview

Data cleansing is the process of verifying source system code values and translating them to standardized code values in the warehouse. This allows you to maximize the reporting potential of your data warehouse. Using the Administrative UI, the Banner EDW administrator can set up cleansing rules specific for your institution based on your reporting needs. These must be set up before you initially load the data warehouse. If you want to change these values after the warehouse is loaded, you must reload a portion or the entire warehouse to see the changes.

Parameter maps overview

Components within Cognos use Parameter Maps to specify how information will display within the packages and reports. As these are used within the Cognos reporting tool at the time of access and not at the point in time when ETL is loaded or refreshed, changes made to these values do not require any warehouse data reloads and will be visible immediately within Cognos.

Data set up and maintenance tasks

The tasks related to defining and maintaining the data that is loaded into the warehouse are described in later sections. Refer to those sections for specific details about these tasks.
The following data-related tasks define and or control aspects of how data will be extracted from the source system and loaded into the data warehouse. *It is required that you perform these tasks before you initially load the data warehouse.*

- “Confirm Data Assumptions Match Source Environments”
- “Define EDW Extract Parameters”
- “Set Up Cleansing”

The following data-related task controls how institution-specified information will display in Cognos packages and reports that use the warehouse data. Although you are not required to complete this task before you load the data warehouse, it is strongly recommended that you do it before loading the warehouse so that you have a holistic picture of your reporting data.

- “Set up Parameter Maps”

In addition to this handbook, you can check the Customer Support Center for FAQs related to the warehouse products. FAQs contain additional information that is updated between published handbooks and may include useful tips that can ease your implementation of the warehouse products.

## Confirm Data Assumptions Match Source Environments

To preserve the flexibility of your source data setup and still provide a concise and consistent set of data for reporting in the data warehouse, some data assumptions were made while developing the performance products. These decisions may affect the data associated with AAC, RAP, or SRP. This section describes the data items affected, related data assumption or decision, and the products affected by the decision.

You should review the descriptions in the following sections for the product you are implementing to understand whether the data assumptions and decisions have any impact on your implementation. The data assumptions are grouped in the following sections based on the performance products affected.

- “Common data assumptions/decisions” on page 2-4
- “AAC data assumptions/decisions” on page 2-5
- “RAP and SRP data assumptions/decisions” on page 2-9
- “RAP data assumptions/decisions” on page 2-11
Note

It is required that you review these assumptions/decisions and address any issues before you initially load the data warehouse.

Common data assumptions/decisions

The data assumptions and decisions described in this section affect all of the performance products - AAC, RAP, and SRP.

Counts (AAC, RAP, SRP)

In RAP and SRP counts of specific data attributes are totaled for the item. For example, courses are a total; if a course is counted within a subject or an administrative college, each occurrence is counted in the sum.

In AAC there are two types of data attribute counts: counts and record counts. In any query subject that contains both a count and record count, such as Gift Society, the (gift society) count is a distinct count of the gift society (codes) associated with the constituent. The (gift society) record count is the total count of gift society records associated with the constituent. If a query subject only has a count, such as telephone count, it is simply a total count for the item.

Headcounts (AAC, RAP, SRP)

In RAP and SRP headcounts are always be a count distinct. When the query would count a person twice, he or she is only counted once in whatever is being totaled.

In AAC the term headcount is not used since a constituent can be an entity, i.e., either a person or organization. Any entity counts that have an obvious headcount equivalency, such as Constituent Count, Alumnus Count, Donor Count, Prospect Count, will always be a count distinct.

Indicators (AAC, RAP, SRP)

Indicators are typically defined as a positive or negative value. When an indicator cannot be determined there will be a third value that specifies there is no data available to set the indicator.

Total Count (AAC, RAP, SRP)

Total Count is used when the number represents an overall total for the item. For example, Total Academic Periods Attended will always show the total number even for the first academic period. Typically there is no default aggregation on ‘total’ items.
AAC data assumptions/decisions

The data assumptions and decisions described in this section affect the AAC product.

Activity Year (AAC - Banner Only)

The Activity Year table (APRACYR) is a repeating table to the (APRACTY) activity table. Activity Years must be numeric values but there is no validation table for them. Under the assumption that your institution will enter actual years, the following three data items were created:

• Activity First Year
• Activity Last Year
• Activity Total Years.

If you use and enter Activity Years in a year format, you can leverage these data items.

Primary Assignment Ind and Primary Assignment filter (AAC)

In Advance you can have only one active Primary Assignment. There can be inactive assignments with the primary ind = Y. However, in AAC, the Primary Assignment Ind in the Primary Assignment query subject is only set to Yes (based on the source record setting), if the Assignment Active Ind = Y. In Banner, only one prospect assignment can have the primary ind = Y.

Committee Member Address Type (AAC - Advance Only)

Advance allows you to enter any address type code for a committee member mailing address type. In AAC, the system populates this data item if the constituent has an address record of this type, where the address status is (A) active.

Committee Member Fax Type

Advance allows any fax (phone) type (code) that need to be entered for committee member fax type. In AAC, the system populates this data item only if the constituent has a fax (phone) record of this type, where the phone status is (A) active.

Repeating Data Associated With a Degree Record

For any repeating data associated with a degree (major, minor, concentration, honor, and so on), when there are multiple repeating codes associated with the degree record, these codes must be unique. For example, a single degree record does not have two minors with the same (minor) code.
**Entity Population Type**

Only Entity Type clipboard list are included in the Entity Populations.

**Entity Population Active**

Only those Entity Type clipboard list which are active will be loaded.

**Entity Population Private Ind**

Entity Populations are sourced from Clipboard List (Advance) and Population Selections (Banner). In Advance these lists can be marked private by the creator. If the creator does not mark them as private, then they are available to all users. In Banner a Population Selection can be locked. Within Entity Populations in AAC a “locked” list means that it is private. Both private and public lists are available through Entity Populations.

**Entity Population**

Banner Entity Populations are sourced from GLAEXTR (GLBEXTR) and they contain the extracted PIDMS. The entity populations do not contain any of the rules or values associated with the population selections built in Banner.

**Entities within an Entity Population**

The following data assumption is made corresponding to Entity Population:

- If you use two or more entity populations as a filter in a report and an entity exists in both populations, then they will appear twice. Entity Populations are a complete extract of IDs for a given list and do not contain, intersect, merge, or union logic when combining population lists.

**Mail List Address Type**

Advance allows any address type (code) that need to be entered for the address type mailing list. In AAC, the system populates this data item only if the constituent has an address record of this type, where the address status is (A) active.

**Mail List Fax Type**

Advance allows any fax (phone) type (code) that need to be entered for the fax type mailing list. In AAC, the system populates this data item only if the constituent has a fax (phone) record of this type, where the phone status is (A) active.
SEASONAL_ADDRESS_EXISTS_IND (AAC)

A Seasonal Address Exists Indicator is included in the AAC models. This indicator is at the entity level and signifies whether the constituent has any (one or more) CURRENT seasonal properties (addresses).

Constituent Interests (AAC)

Entities can have multiple occurrences (records) with the same Interest code. If an entity has multiple interest records for the same interest code, the record with the highest sequence number is used.

Constituent Ratings - Activity Date maps to Prospect Evaluation Date (AAC)

The AMPRRT_ACTIVITY_DATE is mapped to the Prospect Evaluation Date. For prospect ratings, this activity date can provide insight into the currency of these rating records.

Constituent Ratings - Activity Date maps to (Constituent) Profile Date (AAC)

The AMREXRT_ACTIVITY_DATE is mapped to the (Constituent) Profile Date. For external ratings, this activity date can provide insight into the currency of these rating records.

Constituent Ratings - Evaluations or Profiles (AAC)

In the Manage Prospect Pipeline model constituent level ratings (Evaluations or Profiles) are for the primary entity associated with a prospect record only.

Contact Reports and Contact Report Credit (AAC)

Contact Report Credit is an Advance data construct. For Banner, the same contact report data are loaded into the Contact Report Credit tables. Therefore, for Banner the data is the same as it is at the Contact Report level.

Gift Society (AAC)

The Gift Society Family field is exposed in the model, however, this field is not exposed in Advance Web; it exists only at the table level.

The Gift Society Owner group field is exposed in the model, however, this field is not exposed in Advance Web; it exists only at the table level.
Geographic Region (AAC)

Use the SOVGEOR view logic to retrieve geographic region associations to addresses. This logic returns geographic region data results for any active (current) address for the constituent person or organization.

Membership (AAC)

All constituent memberships (including expired memberships) are included in all of the advancement-related models.

The Current Member Indicator is defined as follows:

- Advance:
  Member Stop Date > System Date or the Member Type Period= ‘L’ (indicating lifetime member)

- Banner:
  Member status is equal to ‘Y’ or ‘P’

Relationships (AAC)

For the purposes of ETL and Banner EDW table design, the following data assumption are considered a mandatory best practice:

- If a cross-reference exists for a child or spouse, there should always be a corresponding record in the (APRCHILD/Children) or (APRCSPS/Entity/Former Spouse) tables, as applicable, in Banner or Advance.

- If there is a Child or Spouse record in (APRCHILD/Children) or (APRCSPS/Entity/Former Spouse) and the child or spouse record reflects an entity to entity relationship (the child or spouse ID is populated) there should always be a corresponding and related cross-reference record in the (APRXREF/Relationship) table.

Relationships - APREHIS and APRXREF (AAC)

No relationship data is sourced from APREHIS since this data is already included in the (constituent) Employment data content. However, any employer/employee relationships that exist in the APRXREF table are included in the relationship data content along with the Name and relation/converse relation codes.

Relationships - employment data (AAC)

Employment data is stored in a separate table and is already included in the (constituent) Employment data content. No employer data is loaded for Relationships.
RELATION_SOURCE (AAC)

The RELATION_SOURCE element is a new EDW data construct, which provides the origin of the relation from source system for cross-referenced entity or non entity relationships, such as, Spouse, Child or Other Relation. For the Advance system, the element also includes Former Spouse.

RELATIONCATEGORY (AAC)

Parameter Map for grouping like relationship codes, such as, family, sphere of influence, and organization.

RAP and SRP data assumptions/decisions

The data assumptions and decisions described in this section affect both the RAP and SRP products.

Address Preferred (RAP, SRP)

Address data is obtained based on the preferred address (PREFADDR) rule set on GTVSDAX, when a record for the individual is not available in the Advancement module.

Note

The PREFADDR defined on GTVSDAX is different from the RARADDR GTVSDAX. This should be considered for reporting purposes.

Banner Communication (RAP, SRP)

Assume a Banner communication has either an academic period or a financial aid year. All Banner communications are in the data warehouse tables but only those with the academic period reported can be selected for the report because the Banner communication data is joined via the academic period to the driving population within each Business Concept in Cognos.

BRM Content (RAP, SRP)

Since Banner Relationship Management Interactions are not academic period specific, there are three sets of data in the Interactions query subject:

- All Interactions - not filtered, displays all
- Interactions within Academic Period - filtered by academic period start and end dates
- Student Interaction Since Admit Academic Period - filtered since the start date of the person’s admit academic period
BRM Organization Structure (RAP, SRP)

Assume that most of the institutions do not define more than three organization layers to tie to an interaction (manual interaction or communication may be defined to a layer below the root organization). Warehouse contains up to five layers defined as a BRM Organization but has only three layers of organization defined to the presentation view of the Cognos packages.

Enrolled Headcount (RAP, SRP)

Distinct count of persons who have an enrollment record for the academic period. This is a Banner record in the SFBETRM database table or when no enrollment data exists but there is a history record in SHRTTRM.

Financial Aid Year (RAP, SRP)

Data warehouse products currently assume that an academic period may only be associated with a single financial aid year. The financial aid year is retrieved from the Term Code Definition (STVTERM) from the FA Process Year value.

Geographic Region (RAP, SRP)

Client uses Geographic Region for students for a region type reporting. Geographic Region is defined under a Geographic Region division of 'xxxx'.

GPA (RAP, SRP)

The secondary and post-secondary GPAs must be numeric. GPAs are used as a measure in the Banner EDW in calculations such as average, composite, or combined test scores.

Primary Curriculum Only (RAP, SRP)

The Framework Manager models will include only the primary curriculum (SORLCUR). This will be the lowest curriculum sequence that is both active and current. This will keep the majority of the attributes at the person and academic period granularity since many of the business questions require reporting on attributes from academic study.

Test Score (RAP, SRP)

The test scores must be numeric. This is used as a measure in the Banner EDW in calculating average, composite, or combined test scores.
**Traditional Ind (RAP, SRP)**

Intention of this indicator is to determine if the person fits the institution definition of traditional student when they first attended the institution. If the student is less than the TRADITIONAL AGE set in the parameter map value compared to their admit age, they have the indicator set to yes.

Refer to the section, “Traditional Age parameter map” on page 2-181 for information on how to define the traditional age.

**RAP data assumptions/decisions**

The data assumptions and decisions described in this section affect the RAP products.

**Application Status (RAP)**

The EM Performance data model uses the Application Complete/Incomplete indicator. Banner delivered logic of I, C, and D determine the application status indicator in the EM Performance data model.

**BRM Funnel State definition (RAP)**

Funnel Statuses are calculated based on a prospective student's UID, Academic Period, Student Level and optional qualifier. As this data is linked to supporting Admissions Application or Recruitment data, each Funnel Status must link to either a RECRUIT or ADMISSIONS record. To maintain the integrity of the Funnel Status data/counts in conjunction with the recruitment/admission data, not more than one recruit and one admission record should exist per UID, Academic Period, and Student Level (if they do the funnel status measure may be exponentially counted (i.e. invalid)).

**Postal - Admit attributes (RAP)**

Only Institutions who are using the SOASUPL portion of the admission record to store the admit nation, admit state/province, admit county, and so on will have data populated in these fields for the Admit Demographic query subject.

**Record Number (RAP)**

All recruitment SRBRECR and application SARADAP records are included in the data (not just the first one or one with seq = 1). However, only the primary program for each recruit and admissions record with the first two majors associated to that primary program are retrieved.

**SRP data assumptions/decisions**

The data assumptions and decisions described in this section affect the SRP products.
**Academic Period First Attended (SRP)**

The earliest academic period in which the student has a registration or history record with at least one student course (SFRSTCR or SHRTCKN) and for a student level. If a student attended the institution as an undergraduate and then as a graduate, he/she will have more than one Academic Period First Attended.

**Admit Academic Study (SRP)**

Admit Academic Study Query Subject attributes (student level, program, college, degree, major, etc.) on the Learner - SORLCUR/SORLFOS record for the Academic Period Admit.

**Current Academic Period (SRP)**

There is no current academic period for student reporting. There are multiple current academic periods depending on whom and for what purpose the data is being viewed. So there are no default set up for 'current' values. Institutions may decide to add to the FM Model and follow patterns used in Recruiting and Admissions Performance as pattern if desired.

**Course Section Census Date (SRP)**

Course section census dates are populated for all sections.

**Enrolled by Census (SRP)**

Enrolled by census date is determined by verifying the student was registered and did not drop or withdraw from at least one student course by the census date for the academic period. When this cannot be determined because the registration record does not exist, the field will contain the default Null value.

**Enrollment Status (SRP)**

Persons with an enrollment status will be counted as either Registered orWithdrawn. Institution definitions on STVESTS should not have a ‘Y’ in both the include in headcount and either of the withdrawn indicators.

**Excluded Students (SRP)**

In addition to students excluded because of death or graduation, you can define specific student status codes (STVSTST) and enrollment status codes (STVESTS) to exclude from the retention rate calculations. Refer to the section, “EXCLUSION STATUS CODE” on page 2-51 for information on how to define the statuses to exclude. These exclusions will be examined for each retention period either like, sequential or multi year.
Graded Course Counts (SRP)

Only student courses with a grade will be counted in the courses attempted, courses passed, and course failed. Courses that do not have a grade will not be included in these course counts.

Graduated Students (SRP)

Students who have an outcome record (SHRDGMR) with an outcome status indicating that the outcome is awarded and the outcome record has an academic period graduation value.

Major Undeclared (SRP)

You define the undeclared major codes in the EDW Extract Parameter - MAJOR_CODE. The MAJOR_CODE parameter values that you define will be used to determine the number of academic periods attended prior to the student declaring a major.

Note
Refer to the section, “MAJOR_CODE” on page 2-56 for information on how to define the undeclared major code.

Multi Year tracking (SRP)

Multi Year headcounts are always determined by the academic period first attended and this value will be set for the person and student level. Therefore, students will have an academic period first attended by student level. If attending as an undergraduate and as a graduate, the student will have a first attended for each level.

No Student Record (SRP)

Following are the three main reasons why a record is not created in the Student fact table, the Student Progress or Student Engagement aggregate tables:

- The person does not have a general student record with a student status that permits the student to register with a term range that encompasses that academic period.

- The general student record does not have a primary program for the student in that academic period.

- The general student record does permit the student to register but the student is not a new student and they have not registered in or later than the academic period specified on the Term Control record that restricts registration activity.
Outcome Academic Study (SRP)

Outcome Academic Study query subject attributes such as student level, program, college, degree, major, and so on are on the academic period graduation Outcome - SORLCUR/ SORLFOS record for the primary curriculum (highest priority number - active and current curriculum row) that was created via the Banner roll process. If there is a second curriculum associated with single outcome number, it will not be included.

Registered by Census (SRP)

Registered by census date is determined by verifying the student is registered in the student course and did not drop or withdraw from the section prior to the census date for the course section. When this cannot be determined because the registration record does not exist, the field will contain the default Null value.

Registered Headcount (SRP)

Distinct count of persons who have at least one course registration record for the academic period. This is a Banner record in the SFRSTCR database table with an SFRSTCR_RSTS_CODE that indicates STVRSTS_INCL_SECT_ENRL = 'Y'...

Retention Rate (SRP)

Retention Rate calculation is Retention Headcount / (Registered Headcount - Excluded Headcount)

Retention Status (SRP)

Retention Status specifies a student’s registration status in the next time frame only from an academic period in which they register to next (like or sequential) academic period. The student will be assigned one of the four possible retention statuses such as no data, retained, not retained, or excluded for a specific retention period.

Retention status for multiple years will always be set to not retained for all subsequent years once the student is not retained in a year.

Student Activity (SRP)

Assume all student activities will be recorded with an academic period. All student activities are stored in the data warehouse tables but only those with the academic period reported can be selected for the report because the activity data is joined via the academic period to the driving population within each Business Concept in Cognos.
**Student Headcount (SRP)**

Assume the number of potential students is the number of students Registered + Withdrawn + Not Registered (but eligible to register) for an academic period. This means there would not be a conflict in how the indicators are set for counting the students in each of these headcounts.

**Student Records (SRP)**

Student (SGBSTDN) records will be created for all defined academic periods by student level and academic period pattern defined in the Academic Period Pattern EDW Extract Parameter. See the section “ACADEMIC_PERIOD_PATTERN” on page 2-42 for more information about this parameter.

Student data will be a single record by person and academic period only for the primary curriculum where the record has a student status that permits the student to register or where registration (SFRSTCR) or history (SHRTCKN) records exists or the student has that academic period as their academic period admit. Where the student has an open active student record, a student record will be created based on the academic periods defined (STVTERM) and the student satisfies the academic period readmission required term (SOBTERM). The student must have registered in or since the readmit academic period.

**Withdrawn Headcount (SRP)**

Distinct count of students who did register and then withdraw in the academic period recorded by changing their enrollment status to one that identifies they are no longer attending. There are two enrollment status indicators (STVESTS_WD_IND and STVESTS_THIRD_PARTY_WD_IND) that identify withdrawn but none that are labeled dropped indicator. So, the warehouse has a Withdrawn Headcount but no Dropped Headcount.
Define EDW Extract Parameters

The EDW EXTRACT PARAMETERS define various aspects about how to populate the Banner EDW. The values defined by this parameter control how certain ETL jobs operate when moving information from the Banner ODS to the Banner EDW. For warehouse constructs associated with Advancement Analytics for Cognos, data is loaded directly from the source system tables (Advance or Banner) to the Banner EDW.

Note

Your institution needs to set up the EDW EXTRACT PARAMETERS before you populate the Banner EDW so that the correct data is loaded into the Banner EDW. If you change these values after the warehouse is loaded, you must reload a portion or the entire warehouse to see the changes.

Before initially loading the warehouse, review the EDW Extract Parameters for the performance products you implement and make changes to the extract parameters as needed. The extract parameter descriptions are organized into the following product-related sections:

- “Advancement EDW Extract Parameters (support AAC)” on page 2-16
- “Baseline Banner EDW Extract Parameters (support RAP and SRP)” on page 2-37

Advancement EDW Extract Parameters (support AAC)

The following table lists the Advancement-related EDW Extract Parameters. These parameters are used by the AAC product, but are also available if you do not license AAC. Read the information in the table to determine which parameters your institution will implement, then refer to the information about each value to learn how to set up and use that EDW Extract Parameter at your institution.

Table Key

The table identifies which business concepts use each extract parameter as follows:

- ACG = Analyze Constituent Giving
- AFP = Analyze Fundraising Progress
- MPP = Manage Prospect Pipeline
- RQPP = Research and Qualify Potential Prospects

Note

Your institution needs to set up the EDW EXTRACT PARAMETERS before you populate the Banner EDW so that the correct data is loaded into the Banner EDW. If you change these values after the warehouse is loaded, you must reload a portion or the entire warehouse to see the changes.
<table>
<thead>
<tr>
<th>EDW Extract Parameter Value</th>
<th>Description</th>
<th>Bus concepts that use the parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>“ADVANCEMENT FISCAL YEAR” on page 2-19</td>
<td>Defines the first month of your institution’s fiscal year in AAC model and associated packages.</td>
<td>ACG, AFP, MPP, RQPP</td>
</tr>
<tr>
<td>“ADVANCEMENT STAGE CODE (Banner Only)” on page 2-19</td>
<td>Defines a logical sequence (or order) for stage types. The Latest Stage Order query item in AAC uses the order defined in this parameter map to display stage information.</td>
<td>ACG, AFP, MPP, RQPP</td>
</tr>
<tr>
<td>“ASSIGNED PROSPECT ASSIGNMENT TYPE” on page 2-21</td>
<td>Defines which Assignment Type codes in your source database are used to set the Prospect Assigned Ind (Banner source) and Program Prospect Assigned Ind (Advance source) to Yes value.</td>
<td>ACG, AFP, MPP, RQPP</td>
</tr>
<tr>
<td>“CONTACT ACTIVITY (Banner Only)” on page 2-22</td>
<td>Defines contact activity groups based on your institution’s Contact Type codes; used to populate the Contact Activity and Contact Credit Activity query items when warehouse information is from Banner source system.</td>
<td>ACG, MPP, RQPP</td>
</tr>
<tr>
<td>“ENTITY_LISTAPPLICATIONS (Banner Only)” on page 2-23</td>
<td>Defines Population Selection APPLICATIONS that control which population selections will populate the reporting view (wdv_pop_list_entity)</td>
<td>ACG, AFP, MPP, RQPP</td>
</tr>
<tr>
<td>“GEO_REGION_DEFAULT_ATYP” on page 2-24</td>
<td>Defines which Address Type should be used for the Default Geo Region Address filter.</td>
<td>ACG, AFP, MPP, RQPP</td>
</tr>
<tr>
<td>“HBS_ADDRESS_TYPE (Banner Only)” on page 2-25</td>
<td>Defines address groups based on your institution’s Address Type codes; used to populate the Home-Business-Seasonal query item when warehouse information is from Banner source.</td>
<td>ACG, AFP, MPP, RQPP</td>
</tr>
<tr>
<td>“MAIL PRINT DATE (Banner Only)” on page 2-26</td>
<td>Defines the print date (GURMAIL_DATE_PRINTED &gt;= ) to use to limit mail history that is loaded in the warehouse.</td>
<td>ACG, AFP, MPP, RQPP</td>
</tr>
<tr>
<td>EDW Extract Parameter Value</td>
<td>Description</td>
<td>Bus concepts that use the parameter</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>“MAIL SYSTEM (Banner Only)” on page 2-27</td>
<td>Defines which mailings should be loaded into the warehouse based on the system or systems (GURMAIL_SYSTEM_IND) the mailings originated from.</td>
<td>ACG, AFP, MPP, RQPP</td>
</tr>
<tr>
<td>“PHONE NUMBER COMBINED” on page 2-28</td>
<td>Defines the formatting characters and separators to use in the display format of the combined phone number</td>
<td>ACG, AFP, MPP, RQPP</td>
</tr>
<tr>
<td>“RETIRED JOB STATUS” on page 2-29</td>
<td>Defines the job codes that will be used to set the positive (and negative) values associated with the Retired Ind query item included in the Constituent Employment Counts and Indicator query subject.</td>
<td>ACG, AFP, MPP, RQPP</td>
</tr>
<tr>
<td>“RQPP_AGG_LOAD_EXCL_DESIGNATION” on page 2-29</td>
<td>Defines the designations within a College or Department designation that should be excluded during the Designation College and Department RQPP Aggregate loads.</td>
<td>RQPP</td>
</tr>
<tr>
<td>“RQPP_AGG_LOAD_INCL_DESG_COLL” on page 2-30</td>
<td>Defines designation colleges to be included during the Designation College aggregate loads.</td>
<td>RQPP</td>
</tr>
<tr>
<td>“RQPP_AGG_LOAD_INCL_DESG_DEPT” on page 2-31</td>
<td>Defines designation departments to include during the Designation Department aggregate loads.</td>
<td>RQPP</td>
</tr>
<tr>
<td>“RQPP_AGG_LOAD_YEARS” on page 2-33</td>
<td>Defines the number of years of giving history to load into the RQPP model.</td>
<td>RQPP</td>
</tr>
<tr>
<td>“RQPP_SHORT_LONGLAPSE_THRESH” on page 2-33</td>
<td>Defines the years of giving threshold for short lapse further segmenting those constituents who fall into the SYBUNT category.</td>
<td>RQPP</td>
</tr>
<tr>
<td>“RQPP_TOTAL_PARTICIP_COMPONENTS” on page 2-34</td>
<td>Defines which of the nine giving components will be added together to get the total participation amount and set the participation Ind to Y or N Ind.</td>
<td>RQPP</td>
</tr>
</tbody>
</table>
ADVANCEMENT FISCAL YEAR

Use the ADVANCEMENT FISCAL YEAR value of the EDW Extract Parameter to define the first month of your institution’s fiscal year.

The following table illustrates the EDW Extract Parameters ADVANCEMENT FISCAL YEAR value that was present at installation. The first row gives a definition of each field. Edit the Description value of this parameter to the name of the month that your institution will use as first month in the fiscal year.

**Internal Group**: EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Not used</td>
<td></td>
<td></td>
<td>Name of first month in your institution’s fiscal year</td>
</tr>
<tr>
<td>ADVANCEMENT FISCAL YEAR</td>
<td>START MONTH</td>
<td>1</td>
<td>7</td>
<td>July</td>
</tr>
</tbody>
</table>

ADVANCEMENT STAGE CODE (Banner Only)

**Note**

This parameter is only used if you source warehouse information from the Banner system.

Use the ADVANCEMENT STAGE CODE values of the EDW Extract Parameter to define a logical sequence (or order) for stage types. The Latest Stage Order query item in AAC uses the order defined in this parameter map to display stage information.
The following table illustrates some of the EDW Extract Parameters ADVANCEMENT STAGE CODE values that were present at installation. You can define multiple sets of values. The first row gives a definition of each field. Edit the **Internal Code 2** value of this parameter to be your institution’s Stage Code values. Edit the **External Code** to be one of the following values:

- A = Active
- C = Completed
- H = High Priority
- I = Inactive
- P = Pending
- U = Unknown

**Internal Group: EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADVANCEMENT STAGE CODE</td>
<td>PI</td>
<td>1</td>
<td>A</td>
<td>Active</td>
</tr>
<tr>
<td>ADVANCEMENT STAGE CODE</td>
<td>PR</td>
<td>1</td>
<td>A</td>
<td>Active</td>
</tr>
<tr>
<td>ADVANCEMENT STAGE CODE</td>
<td>PS</td>
<td>1</td>
<td>A</td>
<td>Active</td>
</tr>
<tr>
<td>ADVANCEMENT STAGE CODE</td>
<td>PI</td>
<td>2</td>
<td>C</td>
<td>Completed</td>
</tr>
<tr>
<td>ADVANCEMENT STAGE CODE</td>
<td>PR</td>
<td>2</td>
<td>C</td>
<td>Completed</td>
</tr>
<tr>
<td>ADVANCEMENT STAGE CODE</td>
<td>PS</td>
<td>2</td>
<td>C</td>
<td>Completed</td>
</tr>
<tr>
<td>ADVANCEMENT STAGE CODE</td>
<td>PI</td>
<td>3</td>
<td>H</td>
<td>High Priority</td>
</tr>
</tbody>
</table>
The ASSIGNED PROSPECT ASSIGNMENT TYPE value of the EDW Extract Parameter defines which Assignment Type codes in your source database are used to set the Prospect Assigned Ind (Banner source) and Program Prospect Assigned Ind (Advance source) to a value of Yes.

Use this EDW extract parameter to define which Prospect Assignment Type code (Banner) or Program Prospect Assignment Type Code (Advance) should be used when indicating that a prospect has a significant assignment. For example, you may not want an assignment code of VOL (volunteer) to count that a prospect has a significant assignment, whereas a code of CULT (cultivate) would indicate the prospect has a significant assignment and trigger the assigned indicator to be Yes.

The following table shows the EDW Extract Parameters ASSIGNED PROSPECT ASSIGNMENT TYPE value that was present at installation. The first row gives a definition of each field.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADVANCEMENT STAGE CODE</td>
<td>PR</td>
<td>3</td>
<td>H</td>
<td>High Priority</td>
</tr>
<tr>
<td>ADVANCEMENT STAGE CODE</td>
<td>PS</td>
<td>3</td>
<td>H</td>
<td>High Priority</td>
</tr>
</tbody>
</table>

### ASSIGNED PROSPECT ASSIGNMENT TYPE

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Always make this value</td>
<td>Not used</td>
<td>Your institution’s Staff Assignment Type Code (Banner) or Program Prospect Assignment Type (Advance) value</td>
<td>Description of Assignment Type</td>
</tr>
<tr>
<td>ASSIGNED PROSPECT ASSIGNMENT TYPE</td>
<td>ASSIGNMENT TYPE</td>
<td>1</td>
<td>CULT</td>
<td>Cultivator</td>
</tr>
</tbody>
</table>
CONTACT_ACTIVITY (Banner Only)

Note
This parameter is only used if you source warehouse information from the Banner system. If you source your warehouse from Advance, this data construct already exists.

The CONTACT_ACTIVITY values of the EDW Extract Parameter let you define Contact Activities that group contact types based on the activity. For example, you can create a “Visit” group that identifies all of your institution’s Contact Codes that indicate the contact was a visit with someone at the institution.

The CONTACT_ACTIVITY values defined in this parameter are used in the ACG, MPP, and RQPP business concepts to define the Contact Activity and Contact Credit Activity query items included in the Contact Reports query subject.

You can create an EDW Extract Parameter record for each Contact Type code that you want to associate with a particular contact activity group. You can define the contact activity groups. Any Contact Type that is not associated with a group in the EDW Extract Parameter will automatically be set to ‘0’ and included in the “Other” group.

Note
The default activity groups provided are: Visit, Phone, and Written. While you can modify these contact activity groups, be aware that the ‘Visit’ contact activity group is used in the Manage Prospect Pipeline FM model to define the Visit Count and Visit Credit Count pre-defined measures.

To define Contact Activity groups, create an EDW Extract Parameter record for each Contact Type code that you want to group and specify the following:

- Internal Code 1 = CONTACT_ACTIVITY
- Internal Code 2 = ‘1’ for a Written contact, ‘2’ for a Phone contact, or ‘3’ for a Visit contact; you can use other numbers to define additional contact activity groups. A ‘0’ value is reserved for an “Other” activity group.
- External Code = Contact Type you are defining
- Description = ‘Written’, ‘Phone’, ‘Visit’, or other values that you create depending on which type of Contact Activity group you are defining
The following table illustrates some of the EDW Extract Parameters CONTACT_ACTIVITY values that were present at installation. The first row gives a definition of each field.

**Internal Group: EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Indicates which group the address belongs in: 1=Witten, 2=Phone, 3=Visit, or others you define</td>
<td>Not used</td>
<td>Your institution’s Contact Type values that indicate a contact group</td>
<td>Description of Contact Activity Group</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONTACT_ACTIVITY</th>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTACT_ACTIVITY</td>
<td>1</td>
<td>1</td>
<td>LTS</td>
<td>Written</td>
<td></td>
</tr>
<tr>
<td>CONTACT_ACTIVITY</td>
<td>1</td>
<td>1</td>
<td>COR</td>
<td>Written</td>
<td></td>
</tr>
<tr>
<td>CONTACT_ACTIVITY</td>
<td>1</td>
<td>1</td>
<td>TEL</td>
<td>Written</td>
<td></td>
</tr>
<tr>
<td>CONTACT_ACTIVITY</td>
<td>2</td>
<td>2</td>
<td>PHN</td>
<td>Phone</td>
<td></td>
</tr>
<tr>
<td>CONTACT_ACTIVITY</td>
<td>2</td>
<td>2</td>
<td>PRE</td>
<td>Phone</td>
<td></td>
</tr>
<tr>
<td>CONTACT_ACTIVITY</td>
<td>3</td>
<td>3</td>
<td>PVT</td>
<td>Visit</td>
<td></td>
</tr>
<tr>
<td>CONTACT_ACTIVITY</td>
<td>3</td>
<td>3</td>
<td>PRP</td>
<td>Visit</td>
<td></td>
</tr>
<tr>
<td>CONTACT_ACTIVITY</td>
<td>3</td>
<td>3</td>
<td>TSL</td>
<td>Visit</td>
<td></td>
</tr>
</tbody>
</table>

**ENTITY_LIST_APPLICATIONS (Banner Only)**

*Note*  
This parameter is only used if you source warehouse information from the Banner system.

The ENTITY_LIST_APPLICATIONS value of the EDW Extract Parameter defines the Population Selection APPLICATIONS that control which population selections will populate the report view (wdv_pop_list_entity).

The following table shows the EDW Extract Parameters ENTITY_LIST_APPLICATIONS values that were present at installation. The first row gives a definition of each field.
**Internal Group: EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTITY_LIST_APPLICATIONS</td>
<td>ENTITY_LIST_APPLICATIONS</td>
<td>1</td>
<td>GRANTS</td>
<td>Include Grants</td>
</tr>
<tr>
<td>ENTITY_LIST_APPLICATIONS</td>
<td>ENTITY_LIST_APPLICATIONS</td>
<td>2</td>
<td>ALUMNI</td>
<td>Include Alumni</td>
</tr>
</tbody>
</table>

**GEO_REGION_DEFAULT_ATYP**

Use the GEO_REGION_DEFAULT_ATYP value of the EDW Extract Parameter to define which Address Type should be used for the Default Geo Region Address filter.

The following table illustrates the EDW Extract Parameters GEO_REGION_DEFAULT_ATYP value that was present at installation. The first row gives a definition of each field. Edit **External Code** value of this parameter record to be the Address Type that your institution will use for the Default Geo Region Address filter.

**Internal Group: EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO_REGION_DEFAULT_ATYP</td>
<td>ADDRESS</td>
<td>1</td>
<td>MA</td>
<td>Default Address Type to be used for Geographic Division analysis for addresses</td>
</tr>
</tbody>
</table>
HBS_ADDRESS_TYPE (Banner Only)

Note
This parameter is only used if you source warehouse information from the Banner system. If you source your warehouse from Advance, this data construct already exists.

The HBS_ADDRESS_TYPE values of the EDW Extract Parameter let you define groups of Address Types like Home, Business, and Seasonal. For example, you can create a “Seasonal” group which identifies all of your institution’s Address Type codes that indicate a seasonal address for the person.

The HBS_ADDRESS_TYPE values defined in this parameter are used in the Manage Prospect Pipeline and Analyze Fundraising Progress business concepts to define the Home-Business-Seasonal query item included in the Address - All Current query subject.

You can create an EDW Extract Parameter record for each Address Type that you want to associate as being a Home, Business or Seasonal type. You can also define additional address type groups. Any Address Type that is NOT associated with one of these groups in the EDW Extract Parameter, will automatically be set to ‘O’ and included in the “Other” group.

To define Address Type groups, create an EDW Extract Parameter record for each Address Type that you want to group and specify the following:

- Internal Code = HBS_ADDRESS>Type
- Internal Code 2 = ‘H’ for a Home address, ‘B’ for a Business address, or ‘S’ for and Seasonal address; you can use other letters to define additional address type groups. A ‘O’ value is reserved for an “Other” activity group.
- External Code = Address Type you are defining
- Description = ‘Home’, ‘Business’, ‘Seasonal’, or other values that you create depending on which type of address you are defining
The following table illustrates some of the EDW Extract Parameters HBS_ADDRESS_TYPE values that were present at installation. The first row gives a definition of each field.

**Internal Group:** EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Indicates which group the address belongs in: H=Home, B=Business, S=Seasonal, or others you define</td>
<td>Not used</td>
<td>Your institution’s Address Type values that indicate an address type group</td>
<td>Description of Address Type Group</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HBS_ADDRESS_TYPE</th>
<th>H</th>
<th>1</th>
<th>GU</th>
<th>Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBS_ADDRESS_TYPE</td>
<td>H</td>
<td>1</td>
<td>HR</td>
<td>Home</td>
</tr>
<tr>
<td>HBS_ADDRESS_TYPE</td>
<td>H</td>
<td>1</td>
<td>PI</td>
<td>Home</td>
</tr>
<tr>
<td>HBS_ADDRESS_TYPE</td>
<td>B</td>
<td>2</td>
<td>AG</td>
<td>Business</td>
</tr>
<tr>
<td>HBS_ADDRESS_TYPE</td>
<td>B</td>
<td>2</td>
<td>AP</td>
<td>Business</td>
</tr>
<tr>
<td>HBS_ADDRESS_TYPE</td>
<td>S</td>
<td>3</td>
<td>PS</td>
<td>Seasonal</td>
</tr>
<tr>
<td>HBS_ADDRESS_TYPE</td>
<td>S</td>
<td>3</td>
<td>S1</td>
<td>Seasonal</td>
</tr>
<tr>
<td>HBS_ADDRESS_TYPE</td>
<td>S</td>
<td>3</td>
<td>S2</td>
<td>Seasonal</td>
</tr>
</tbody>
</table>

**MAIL PRINT DATE (Banner Only)**

*Note*

This parameter is only used if you source warehouse information from the Banner system.

Use the MAIL PRINT DATE value of the EDW Extract Parameter to define the on or after print date (GURMAIL_DATE_PRINTED) to limit mail history loaded in the warehouse.
The following table illustrates the EDW Extract Parameters MAIL PRINT DATE value that was present at installation. The first row gives a definition of each field. Edit the **External Code** value of this parameter record to be the earliest date of mail information that you want to load from GUAMAIL into the warehouse. The date format should be yyyy-mm-dd. Any mail dated this date or later will be loaded into the warehouse.

**Internal Group:** EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Not used</td>
<td></td>
<td>First date (yyyy-mm-dd) of mail to load into the warehouse</td>
<td>Description of the extract parameter</td>
</tr>
</tbody>
</table>

**MAIL PRINT DATE**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIL PRINT DATE</td>
<td>PRINTED_ON _AND_AFTER</td>
<td>1</td>
<td>2003-01-01</td>
<td>Include mails printed on and after this date, YYYY-MM-DD</td>
</tr>
</tbody>
</table>

**MAIL SYSTEM (Banner Only)**

Use the MAIL SYSTEM value of the EDW Extract Parameter to define which system or systems (GURMAIL_SYSTEM_IND) associated with a mailing should be loaded into the warehouse. You can create multiple records to add more than modules as needed.

The following table illustrates the EDW Extract Parameters MAIL SYSTEM value that was present at installation. The first row gives a definition of each field. Edit the **External Code** value of this parameter record to be a mailing module value of mails that you want to include in the warehouse. You can create additional MAIL SYSTEM extract parameter records to include multiple mail modules.

**Internal Group:** EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Not used</td>
<td></td>
<td>Description of the extract parameter</td>
<td></td>
</tr>
</tbody>
</table>

**MAIL SYSTEM**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIL SYSTEM</td>
<td>MAIL_SYSTEM_IND</td>
<td>1</td>
<td>A</td>
<td>Include mails originating from this mailing module</td>
</tr>
</tbody>
</table>
PHONE NUMBER COMBINED

Use the PHONE NUMBER COMBINED values of the EDW Extract Parameter define the formatting characters and separators to use in the display format of the combined phone number. The combined components include international exchange, area code, phone number breaks and phone extensions.

The following table illustrates some of the EDW Extract Parameters PHONE NUMBER COMBINED values that were present at installation. The first row gives a definition of each field. Edit the Description value of these parameter records to define the various formatting characters and separators to use in a combined phone number.

**Internal Group:** EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Specifies which phone attribute is being defined</td>
<td></td>
<td></td>
<td>Defines the formatting characters and separators to use in the combined phone number</td>
</tr>
<tr>
<td>PHONE NUMBER COMBINED</td>
<td>International Post</td>
<td>1</td>
<td>International Post</td>
<td></td>
</tr>
<tr>
<td>PHONE NUMBER COMBINED</td>
<td>International Pre</td>
<td>0</td>
<td>International Pre</td>
<td></td>
</tr>
<tr>
<td>PHONE NUMBER COMBINED</td>
<td>Phone Area Code Post</td>
<td>3</td>
<td>Phone Area Code Post (</td>
<td></td>
</tr>
<tr>
<td>PHONE NUMBER COMBINED</td>
<td>Phone Area Code Pre</td>
<td>2</td>
<td>Phone Area Code Pre (</td>
<td></td>
</tr>
<tr>
<td>PHONE NUMBER COMBINED</td>
<td>Phone Extension Post</td>
<td>8</td>
<td>Phone Extension Post</td>
<td></td>
</tr>
<tr>
<td>PHONE NUMBER COMBINED</td>
<td>Phone Extension Pre</td>
<td>7</td>
<td>Phone Extension Pre</td>
<td></td>
</tr>
<tr>
<td>PHONE NUMBER COMBINED</td>
<td>Phone Number Post</td>
<td>6</td>
<td>Phone Number Post</td>
<td></td>
</tr>
<tr>
<td>PHONE NUMBER COMBINED</td>
<td>Phone Number Pre</td>
<td>4</td>
<td>Phone Number Pre</td>
<td></td>
</tr>
<tr>
<td>PHONE NUMBER COMBINED</td>
<td>Phone Number Separator</td>
<td>5</td>
<td>Phone Number Separator</td>
<td>-</td>
</tr>
</tbody>
</table>
RETIRED JOB STATUS

Use the RETIRED JOB STATUS value of the EDW Extract Parameter to define which job status codes on the employment history forms indicate retired. These will be used to set the positive (and negative) values associated with the Retired Ind query item included in the Constituent Employment Counts and Indicator query subject.

The following table illustrates the EDW Extract Parameters RETIRED JOB STATUS value that was present at installation. The first row gives a definition of each field. Edit the External Code value of this parameter record to define which Job Status codes on the Employment History form are considered retired. The Job Status codes are defined in the Employment Status Validation form (ATVEMPS).

Internal Group: EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Not used</td>
<td>Your institution’s Job Status code</td>
<td>Description of the extract parameter</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RETIRED JOB STATUS</th>
<th>RETIRED JOB STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>R</td>
</tr>
<tr>
<td>Retired</td>
<td></td>
</tr>
</tbody>
</table>

RQPP_AGG_LOAD_EXCL_DESIGNATION

Use the RQPP_AGG_LOAD_EXCL_DESIGNATION value of the EDW Extract Parameter to define the designations within a College or Department designation that should be excluded during the Designation College and Department RQPP Aggregate loads. The transactions associated with the designations listed in this exclusion parameter will not be loaded into the RQPP yearly designation college or designation department aggregate in the warehouse.

The following table illustrates the EDW Extract Parameters RQPP_AGG_LOAD_EXCL_DESIGNATION values that were present at installation. The first row gives a definition of each field. Edit the External Code value of this parameter record to be a Designation Code (Banner) or Allocation Code (Advance) that you want to exclude from the Designation College and Department aggregate loads.

You can run the following SQL query to get a list of all designations, then use the list to define the designations that you want to exclude.

- Banner

```sql
SELECT adbdesg.adbdesg_desg
FROM alumni.adbdesg;
```
• Advance

```sql
SELECT DISTINCT allocation.allocation_code
FROM advance.allocation;
```

If you modify the RQPP_AGG_LOAD_EXCL_DESIGNATION EDW Extract Parameters after the warehouse has been loaded, you will need to rerun the RQPP aggregate load jobs for the designation changes to take effect.

**Internal Group: EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Specifies EDW Extract Parameter being defined</td>
</tr>
<tr>
<td>RQPP_AGG_LOAD_</td>
<td>DESIGNATION</td>
<td>1</td>
<td>EEP</td>
<td>Exclude Designation EEP for RQPP Aggregate loads</td>
</tr>
<tr>
<td>EXCL_DESIGNATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RQPP_AGG_LOAD_</td>
<td>DESIGNATION</td>
<td>2</td>
<td>ISR</td>
<td>Exclude Designation ISR for RQPP Aggregate loads</td>
</tr>
<tr>
<td>EXCL_DESIGNATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RQPP_AGG_LOAD_INCL_DESG_COLL**

Use the RQPP_AGG_LOAD_INCL_DESG_COLL value of the EDW Extract Parameter to defines the designation colleges associated with a constituent’s participation for the years of giving to be loaded. Determination of participation is based on the parameters defined in the RQPP_Total_Particip_Components EDW Extract Parameters.

The following table illustrates some of the EDW Extract Parameters RQPP_AGG_LOAD_INCL_DESG_COLL values that were present at installation. The first row gives a definition of each field. Edit the **External Code** value of this parameter record to be a Designation College Code (Banner) or Allocation School Code (Advance) that you want to include in the Designation College aggregate loads. You can create multiple records of this EDW Extract Parameter to include as many colleges as you like when loading the warehouse.

You can run the following SQL query to get a list of all DESIGNATION COLLEGES, then use this list to define the Designation Colleges to include.

• Banner:

```sql
SELECT DISTINCT adbdesg.adbdesg_coll_code
FROM alumni.adbdesg;
```

• Advance:

```sql
SELECT DISTINCT allocation.alloc_school
```
FROM advance.allocation;

If you modify the RQPP_AGG_LOAD_INCL_DESG_COLL EDW Extract Parameters after the warehouse has been loaded, you will need to rerun the RQPP aggregate load jobs for the college changes to take effect.

**Internal Group: EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Seq</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQPP_AGG_LOAD_INCL_DESG_COLL</td>
<td>DESIGNATION_COLL</td>
<td>1</td>
<td>AA</td>
<td>Designation College Code (Banner) or Allocation School Code (Advance) that you want to include in warehouse loads</td>
</tr>
<tr>
<td>RQPP_AGG_LOAD_INCL_DESG_COLL</td>
<td>DESIGNATION_COLL</td>
<td>1</td>
<td>ALD</td>
<td>Include Designation College ALD for RQPP Aggregate loads</td>
</tr>
<tr>
<td>RQPP_AGG_LOAD_INCL_DESG_COLL</td>
<td>DESIGNATION_COLL</td>
<td>1</td>
<td>ARC</td>
<td>Include Designation College ARC for RQPP Aggregate loads</td>
</tr>
</tbody>
</table>

**RQPP_AGG_LOAD_INCL_DESG_DEPT**

Use the RQPP_AGG_LOAD_INCL_DESG_DEPT value of the EDW Extract Parameter to define the designation departments associated with a constituent’s participation for the years of giving to be loaded. Determination of participation is based on the parameters defined in the RQPP_Total_Particip_Components EDW Extract Parameter.

The following table illustrates the EDW Extract Parameters RQPP_AGG_LOAD_INCL_DESG_DEPT values that were present at installation. The first row gives a definition of each field. Edit the **External Code** value of this parameter record to be a Designation Department Code (Banner) or Allocation Department Code (Advance) that you want to include in the Designation Departments aggregate loads. You can create multiple records of this EDW Extract Parameter to include as many departments as you like when loading the warehouse.
You can run the following SQL query to get a list of all DESIGNATION DEPARTMENTS, then use this list to define the Designation Departments to include.

- **Banner:**
  
  ```sql
  SELECT DISTINCT adbdesg.adbdesg_dept_code
  FROM alumni.adbdesg;
  ```

- **Advance:**
  
  ```sql
  SELECT DISTINCT allocation.alloc_dept_code
  FROM advance.allocation;
  ```

If you modify the RQPP_AGG_LOAD_INCL_DESG_DEPT EDW Extract Parameters after the warehouse has been loaded, you will need to rerun the RQPP aggregate load jobs for your department changes to take effect.

**Internal Group:** EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQPP_AGG_LOAD_INCL_DESG_DEPT</td>
<td>DESIGNATION_DEPT</td>
<td>1</td>
<td>ALUM</td>
<td>(Copy and add more records as needed) Include Designation Department ALUM for RQPP Aggregate loads</td>
</tr>
<tr>
<td>RQPP_AGG_LOAD_INCL_DESG_DEPT</td>
<td>DESIGNATION_DEPT</td>
<td>1</td>
<td>ART</td>
<td>Include Designation Department ART for RQPP Aggregate loads</td>
</tr>
<tr>
<td>RQPP_AGG_LOAD_INCL_DESG_DEPT</td>
<td>DESIGNATION_DEPT</td>
<td>1</td>
<td>ATHL</td>
<td>(Copy and add more records as needed) Include Designation Department ATHL for RQPP Aggregate loads</td>
</tr>
<tr>
<td>RQPP_AGG_LOAD_INCL_DESG_DEPT</td>
<td>DESIGNATION_DEPT</td>
<td>2</td>
<td>PS</td>
<td>Include Designation Department Political Science for RQPP Aggregate loads</td>
</tr>
</tbody>
</table>
**RQPP_AGG_LOAD_YEARS**

Use the RQPP_AGG_LOAD_YEARS value of the EDW Extract Parameter to define the number of years of giving history to load into the RQPP model.

The following table illustrates the EDW Extract Parameters RQPP_AGG_LOAD_YEARS value that was present at installation. The first row gives a definition of each field. Edit the **External Code** value of this parameter record to be the number of years of giving history data that you want to load into the warehouse.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Not used</td>
<td>1</td>
<td>10</td>
<td>Number of years of giving history data to load into the warehouse</td>
</tr>
<tr>
<td>RQPP_AGG_LOAD_YEARS</td>
<td>YEARS</td>
<td></td>
<td></td>
<td>Numerical value of number of years of giving history to be loaded into the RQPP model</td>
</tr>
</tbody>
</table>

**RQPP_SHORT_LONG_LAPSE_THRESH**

Use the RQPP_SHORT_LONG_LAPSE_THRESH value of the EDW Extract Parameter to define the years of giving threshold used to designate a Short Lapse versus a Long Lapse SYBUNT donor. This number value defined in this EDW Extract Parameter counts the Year of Giving in context with the remainder counting back in years of giving. For example, if the year of giving in context is 2012 and the threshold is set to 5, a short lapse donor has no participation amount in 2012 or 2011 but did give in either 2010, 2009 or 2008. A long lapse donor has no participation amount in 2008-2012, but did give in 2007 or before.

The RQPP Short Lapse/Long Lapse Threshold is delivered with a default setting = 5. Determination of Short Long Lapse is based on the Participation amount in the RQPP yearly aggregates.

The following table illustrates the EDW Extract Parameters RQPP_SHORT_LONG_LAPSE_THRESH value that was present at installation. The first row gives a definition of each field. Edit the **External Code** value of this parameter record to be the number of years of giving threshold for short lapse.
Internal Group: **EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Not used</td>
<td>Number of years of giving threshold for short lapse</td>
<td>Description of the extract parameter</td>
<td></td>
</tr>
</tbody>
</table>

| RQPP_SHORT_LONG_LAPSE_THRESH | YEARS | 1 | 5 | Numerical value of number of years of giving threshold for short lapse. |

**RQPP_TOTAL_PARTICIP_COMPONENTS**

Use the RQPP_TOTAL_PARTICIP_COMPONENTS values of the EDW Extract Parameter to define which giving components will be used when calculating the Total Participation amount and set the participation indicator for a constituent. Each record of this EDW Extract Parameter is a possible component of the Total Participation amount, for example, pledged hard credit, pledged soft credit, outright gift hard credit, and so on (see complete list of components in the table that follows). Edit the **External Code** value of each parameter record to either Y (include in the Total Participation amount) or N (exclude from the Total Participation Amount).

The following table lists the EDW Extract Parameters RQPP_TOTAL_PARTICIP_COMPONENTS values that were present at installation. The first row gives a definition of each field.

Internal Group: **EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Not used</td>
<td>Y to include component in Total Giving; N to exclude</td>
<td>Description of the extract parameter</td>
<td></td>
</tr>
</tbody>
</table>

<p>| RQPP_TOTAL_PARTICIP.Components | PLEDGED_HARD CREDIT_AMT | 1 | N | Exclude PLEDGED_HARD_CREDIT_AMT in Total Participation Amount. |</p>
<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQPP_TOTAL_PARTICIP_COMPONENTS</td>
<td>PLEDGED_SOFT_CREDIT_AMT</td>
<td>2</td>
<td>N</td>
<td>Exclude PLEDGED_SOFT_CREDIT_AMT in Total Participation Amount.</td>
</tr>
<tr>
<td>RQPP_TOTAL_PARTICIP_COMPONENTS</td>
<td>OUTRIGHT_GIFT_HARD_CREDIT_AMT</td>
<td>3</td>
<td>Y</td>
<td>Include OUTRIGHT_GIFT_SOFT_CREDIT_AMT in Total Participation Amount.</td>
</tr>
<tr>
<td>RQPP_TOTAL_PARTICIP_COMPONENTS</td>
<td>OUTRIGHT_GIFT_SOFT_CREDIT_AMT</td>
<td>4</td>
<td>Y</td>
<td>Include OUTRIGHT_GIFT_SOFT_CREDIT_AMT in Total Participation Amount.</td>
</tr>
<tr>
<td>RQPP_TOTAL_PARTICIP_COMPONENTS</td>
<td>PLEDGE_PAYMENT_HARD_CREDIT_AMT</td>
<td>5</td>
<td>Y</td>
<td>Include PLEDGE_PAYMENT_HARD_CREDIT_AMT in Total Participation Amount.</td>
</tr>
<tr>
<td>RQPP_TOTAL_PARTICIP_COMPONENTS</td>
<td>PLEDGE_PAYMENT_SOFT_CREDIT_AMT</td>
<td>6</td>
<td>Y</td>
<td>Include PLEDGE_PAYMENT_SOFT_CREDIT_AMT in Total Participation Amount.</td>
</tr>
<tr>
<td>RQPP_TOTAL_PARTICIP_COMPONENTS</td>
<td>MATCH_HARD_CREDIT_AMT</td>
<td>7</td>
<td>N</td>
<td>Include MATCH_HARD_CREDIT_AMT in Total Participation Amount.</td>
</tr>
<tr>
<td>RQPP_TOTAL_PARTICIP_COMPONENTS</td>
<td>MATCH_SOFT_CREDIT_AMT</td>
<td>8</td>
<td>N</td>
<td>Exclude MATCH_SOFT_CREDIT_AMT in Total Participation Amount.</td>
</tr>
<tr>
<td>RQPP_TOTAL_PARTICIP_COMPONENTS</td>
<td>MATCHCLAIM_AMT</td>
<td>9</td>
<td>Y</td>
<td>Include MATCHCLAIM_AMT in Total Participation Amount.</td>
</tr>
</tbody>
</table>
UID CROSSWALK

Use the UID CROSSWALK value of the EDW Extract Parameter to define an ID relationship between entities in your Advance system that are also in your Banner system for Advancement Analytics for Cognos model and associated packages.

The following table illustrates the EDW Extract Parameters UID CROSSWALK value that was present at installation. The first row gives a definition of each field.

Internal Group: EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Not used</td>
<td>Description of the extract parameter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| UID CROSSWALK | ADVANCE TO BANNER | 1 | BNR | IDS Type Code |

YEAR OF GIVING

Use the YEAR OF GIVING value of the EDW Extract Parameter to define the current year of giving at your institution for the ETL load process used in summarized giving and giving transaction data.

The following table illustrates the EDW Extract Parameter YEAR OF GIVING value that was present at installation. The first row gives a definition of each field. Edit the Description field to be the year to use as the current year of giving in reports.

Internal Group: EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Not used</td>
<td>Description of the extract parameter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| YEAR OF GIVING | CURRENT | 1 | CURRENT | 2009 |
Baseline Banner EDW Extract Parameters (support RAP and SRP)

The following table lists the student-related EDW EXTRACT PARAMETERS parameters. There parameters are used by the RAP and SRP products, but are also available if you do not license RAP or SRP. Read the information in the table to determine which parameters your institution will implement, then refer to the information about each value to learn how to set up and use that EDW Extract Parameter at your institution.

**Table Key**

The table identifies which products and business concepts use each extract parameter as follows:

- **RAP** = Banner Recruiting and Admissions Performance
  - AE = Analyze Enrollment Funnel business concept
  - IA = Impact of Aid on New Enrollment business concept
  - MA = Manage Applicants business concept
- **SRP** = Banner Student Retention Performance
  - AS = Analyze Student Engagement business concept
  - AP = Analyze Student Progress business concept

**Note**

Your institution needs to set up the EDW EXTRACT PARAMETERS before you populate the Banner EDW so that the correct data is loaded into the Banner EDW. If you change these values after the warehouse is loaded, you must reload a portion or the entire warehouse to see the changes.

<table>
<thead>
<tr>
<th>EDW Extract Parameter Value</th>
<th>Description</th>
<th>Stars that use parameter</th>
</tr>
</thead>
</table>
| “ACADEMIC_PERIOD LIKE”      | Defines the number that must be added to your institution’s academic period code values to identify the next like academic period code value. | WFT_STUDENT  
WDT_RETENTION_TIME |
| “ACADEMIC_PERIOD MULTI_YEAR”| Defines which academic periods to store in the warehouse with multi year data. The multi year data looks from the person’s academic period first attended to the same academic period the next year and so on. | WFT_RETENTION_MULTI_YEAR  
WDT_RETENTION_TIME |
<table>
<thead>
<tr>
<th>EDW Extract Parameter Value</th>
<th>Description</th>
<th>Stars that use parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>“ACADEMIC_PERIOD_PATTERN”</td>
<td>Defines the ‘PATTERN_CONTROL’ for academic periods. For example, Student Level and the Student Level value with associated PATTERN of academic period to be loaded for that student level.</td>
<td>WFT_STUDENT</td>
</tr>
<tr>
<td>“ACADEMIC_PERIOD_SEQUENTIAL”</td>
<td>Defines the order for sequential academic periods to store in the warehouse. For example, you can define a sequential pattern where the academic period ‘10’ is followed by ‘20’ and ‘20’ is followed by ‘10’.</td>
<td>WFT_STUDENT, WDT_RETENTION_TIME</td>
</tr>
<tr>
<td>“BUDGET_COMPONENT”</td>
<td>Defines which of your institution’s Financial Aid Budget Group Component Codes should be used to calculate the subtotal amounts the student will be charged for tuition and fees for the aid year.</td>
<td>WFT_FINANCIAL_AID_APPLICATION</td>
</tr>
<tr>
<td>“BULK_OPERATIONS_SIZE”</td>
<td>Controls the number of records that are extracted into Oracle memory from ODS and staged in the INPUT tables.</td>
<td></td>
</tr>
<tr>
<td>“DEV_COURSE_ATTRIBUTE”</td>
<td>Define the Student Course Attribute Codes used to indicate the student course was identified as a developmental course. This student course attribute will then be used to identify the students that took a developmental course within the academic period.</td>
<td>WFT_STUDENT_COURSE, WFT_STUDENT</td>
</tr>
<tr>
<td>“EARNINGS”</td>
<td>Group your institution’s Earning Codes into one of three categories: regular, overtime and other.</td>
<td>WFT_EMPLOYEE_POSITION</td>
</tr>
<tr>
<td>“EXCLUSION_STATUS_CODE”</td>
<td>Identifies Enrollment Status Codes and Student Status Codes used to identify that a student is to be excluded from the retention and graduation rate counts because they have a legitimate exclusion noted for one or more academic periods.</td>
<td>WFT_STUDENT, WDT_RETENTION</td>
</tr>
<tr>
<td>EDW Extract Parameter Value</td>
<td>Description</td>
<td>Stars that use parameter</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>“GEO_REGION_DEFAULT_ATYP”</td>
<td>Defines which Address Type to use for the Default Geo Region Address filter.</td>
<td>WFT_GEOGRAPHIC_REGION</td>
</tr>
<tr>
<td>“HBS_ADDRESS_TYPE (Banner Only)”</td>
<td>Defines address groups based on your institution’s Address Type codes; used to populate the Home-Business-Seasonal query item when warehouse information is from Banner source.</td>
<td>WFT_ADDRESS</td>
</tr>
<tr>
<td>“HR_APL_STAT”</td>
<td>Define HR Application Statuses relative to employment offered, employment accepted, interview offered, and interview completed.</td>
<td>WFT_EMPLOYMENT_APPLICATION</td>
</tr>
<tr>
<td>“INSTITUTION”</td>
<td>Defines the Banner source background Institution Code that identifies the home institution.</td>
<td>WFT_POST_SECONDARY_SCHOOL</td>
</tr>
<tr>
<td>“INSTITUTION_CHARACTERISTIC”</td>
<td>Defines values for the Banner source background institution characteristics that are used for the select values defined in the warehouse.</td>
<td>WFT_INSTITUTION</td>
</tr>
<tr>
<td>“INST_GEOGRAPHIC_DIVISION”</td>
<td>Defines the Banner Geographic Division Code to be used to place the source background institution into a Banner defined geographic division and associated geographic region.</td>
<td>WFT_INSTITUTION</td>
</tr>
<tr>
<td>“MAJOR_CODE”</td>
<td>Defines the Major Code that indicates an ‘Undeclared’ major at your institution.</td>
<td>WFT_STUDENT</td>
</tr>
<tr>
<td>“MINORITY_IND”</td>
<td>Identifies your institution’s non minority race category. All race category values other then the one identified will be considered minority.</td>
<td>WDT_DEMOGRAPHIC</td>
</tr>
<tr>
<td>“MULTI_SOURCE_GROUP”</td>
<td>Define a location specific code for each institution of a multi-institution environment.</td>
<td>WDT_MULTI_SOURCE</td>
</tr>
<tr>
<td>EDW Extract Parameter Value</td>
<td>Description</td>
<td>Stars that use parameter</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>“NULL_NATION”</td>
<td>Defines the Banner source Nation Code that identifies the home nation. This also allows the ETL to load the home nation so it can be used as selection criteria.</td>
<td>WDT_POSTAL</td>
</tr>
<tr>
<td>“NULL_SECTION”</td>
<td>Defines a value to use when a course section number doesn’t exist for a course. This value is used when populating the Course Identification Section column in the warehouse.</td>
<td>WFT_STUDENT_COURSE</td>
</tr>
<tr>
<td>“PERSON_GEOGRAPHIC_DIVISION”</td>
<td>Places a person in a Banner defined geographic division and associated geographic region.</td>
<td>WFT_PROSPECTIVE_STUDENT</td>
</tr>
<tr>
<td>“STUDENT_GEOGRAPHIC_DIVISION”</td>
<td>Places a student in a geographic division and associated geographic region.</td>
<td>WFT_STUDENT</td>
</tr>
<tr>
<td>“STUDENT_LEVEL_GROUP”</td>
<td>Defines how your institution would prefer to group together student levels for extract into the warehouse.</td>
<td>WFT_RECRUITING_AND_ADMISSIONS</td>
</tr>
<tr>
<td>“STUDENT_LEVEL_GROUP_TESTS”</td>
<td>Defines for each STUDENT_LEVEL_GROUP which test information your institution prefers to extract with that group and load into the warehouse.</td>
<td>WFT_RECRUITING_AND_ADMISSIONS</td>
</tr>
<tr>
<td>“TEST”</td>
<td>Defines for each STUDENT_LEVEL_GROUP_TESTS up to seven different Banner ODS test types your institution wishes to extract with that Group Test and load into the warehouse.</td>
<td>WFT_RECRUITING_AND_ADMISSIONS</td>
</tr>
<tr>
<td>“TEST_CODE”</td>
<td>Identifies your institution’s Banner Test Codes to be used for specific test types in the warehouse.</td>
<td>WAT_STUDENT_PROGRESS</td>
</tr>
</tbody>
</table>
ACADEMIC_PERIOD_LIKE

The ACADEMIC_PERIOD_LIKE value of the EDW Extract Parameter defines the next like academic period. The number specified in this parameter value is added to an academic period code to identify the next like academic period.

Edit the External Code field value for the delivered ACADEMIC_PERIOD_LIKE record to be the addend value needed by your institution’s academic period codes to determine the next like academic period. For example, the delivered value of 100 in the External Code field is used when the academic period values are of the format 201010. This format identifies the four digit year followed by the two digit term. When 100 is added to the 201010 academic period value the result is 201110, which is the next like academic period value.

The following table illustrates the EDW Extract Parameter ACADEMIC_PERIOD_LIKE value that was present at installation. The first row gives a definition of how to define the field for ACADEMIC_PERIOD_LIKE parameter values.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Always make this value ADDEND</td>
<td>Not used</td>
<td>The value to add to an academic period to determine the next ‘like’ academic period</td>
<td>A description of the academic period</td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_LIKE</td>
<td>ADDEND</td>
<td>100</td>
<td></td>
<td>Addend used to calculate like academic periods</td>
</tr>
</tbody>
</table>

ACADEMIC_PERIOD_MULTI_YEAR

The ACADEMIC_PERIOD_MULTI_YEAR values of the EDW Extract Parameter define which academic periods to store in the warehouse with multi year data. The multi year data looks from the person’s academic period first attended to the same academic period the next year. Each ACADEMIC_PERIOD_MULTI_YEAR record of this parameter defines a value in the External Code field that identifies the last two characters of the academic periods that will add data to the WFT_RETENTION_MULTI_YEAR fact table.

Edit the External Code field values for the delivered ACADEMIC_PERIOD_MULTI_YEAR records of this parameter to reflect the academic period values used at your institution. For example, a value of 10 in the External Code field means that information will be loaded into the dimension table for students whose academic period first attended ends with the value ‘10’. You can define multiple academic periods.
The following table illustrates the EDW Extract Parameters ACADEMIC_PERIOD_MULTI_YEAR values that were present at installation. The first row gives a definition of how to define each field for ACADEMIC_PERIOD_MULTI_YEAR parameter values.

### Internal Group: EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Always make this value RETENTION/GRADUATION RATES</td>
<td>Not used</td>
<td>Your institution’s values that identify an academic period</td>
<td>A description of the academic period</td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_MULTI_YEAR</td>
<td>RETENTION/GRADUATION RATES</td>
<td>01</td>
<td>Fall</td>
<td></td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_MULTI_YEAR</td>
<td>RETENTION/GRADUATION RATES</td>
<td>02</td>
<td>Spring</td>
<td></td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_MULTI_YEAR</td>
<td>RETENTION/GRADUATION RATES</td>
<td>10</td>
<td>Fall</td>
<td></td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_MULTI_YEAR</td>
<td>RETENTION/GRADUATION RATES</td>
<td>20</td>
<td>Spring</td>
<td></td>
</tr>
</tbody>
</table>

### ACADEMIC_PERIOD_PATTERN

The ACADEMIC_PERIOD_PATTERN values of the EDW Extract Parameter define which academic periods of data to load into the data warehouse in the student star. You can specify a PATTERN_CONTROL that defines which records to load in the data warehouse.

You can load one of the following PATTERN_CONTROL values:

- **ALL** = does not restrict which records are created
- **LEVEL** (Academic Study - Student Level) = restricts the data loaded to those values defined in the academic period pattern for the level
- **PROGRAM** (Academic Study - Program) = restricts the data loaded to those values defined in the academic period pattern for the level
• CAMPUS (Academic Study - Campus) = restricts the data loaded to those values defined in the academic period pattern for the level

• COLLEGE (Academic Study - College) = restricts the data loaded to those values defined in the academic period pattern for the level

Note
You can load only ONE control pattern value into the data warehouse; either the ALL, LEVEL, PROGRAM, CAMPUS, or COLLEGE.

If your institution uses a single set of academic periods for all students and only those academic periods are set up on the Term Code Definition (STVTERM) table, you can leave the delivered ACADEMIC_PERIOD_PATTERN value as it was delivered with External Code = ‘ALL’. When the Control Pattern is ALL (the delivered default value), records are inserted into the Student star for all terms in which each student was eligible to register.

If your institution uses multiple patterns of academic periods specific to one or more student levels, change the Control Pattern record so that the External Code = ‘LEVEL’. Then you must create an ACADEMIC_PERIOD_PATTERN record for each academic period pattern for each student level that you want to load into the data warehouse. Data will only be created when there is a student level record defined for that student level. If no record exists, then no data will be loaded into the data warehouse tables.

The following table illustrates the EDW Extract Parameters ACADEMIC_PERIOD_PATTERN value that was present at installation. Always keep a PATTERN_CONTROL record defined in MTVPARM. If you change the PATTERN_CONTROL record to one of the other values, add more ACADEMIC_PERIOD_PATTERN records to define the pattern for each level, program, campus, or college that you want to load into the data warehouse.
### Internal Group: EDW EXTRACT PARAMETERS

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<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Your institution’s values that identify the Student Level to associate with the academic period in the <strong>External Code</strong> field</td>
<td>Not used</td>
<td>Your institution’s values that identify an academic period</td>
<td>A description of the student level or academic period</td>
</tr>
</tbody>
</table>

**ACADEMIC_PERIOD_PATTERN** PATTERN_CONTROL ALL
- Pattern Control that determines which academic periods will be loaded into the Student Progress and Student Engagement stars.

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**Example**

The following table illustrates an example that defines PATTERN_CONTROL records for an institution to load records for academic periods ending in 10, 20 or 30 only for undergraduate students (Student Level = ‘UG’). The ACADEMIC_PERIOD_PATTERN EDW Extract Parameter defines the PATTERN_CONTROL record as ‘LEVEL’. The additional records define which Student Level undergraduate codes with the associated ACADEMIC_PERIOD_PATTERN to load into the data warehouse.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACADEMIC_PERIOD_PATTERN</td>
<td>PATTERN_CONTROL</td>
<td>LEVEL</td>
<td>Level</td>
<td>Pattern</td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_PATTERN</td>
<td>UG</td>
<td>%10</td>
<td>Undergraduate</td>
<td></td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_PATTERN</td>
<td>UG</td>
<td>%20</td>
<td>Undergraduate</td>
<td></td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_PATTERN</td>
<td>UG</td>
<td>%30</td>
<td>Undergraduate</td>
<td></td>
</tr>
</tbody>
</table>
**Note**

You can use the % symbol as a wildcard when defining the academic period pattern. For example, a value of ‘%10’ represents all academic period values that end in 10.

In this example, any students with a student level other than 'UG' would not have records loaded into the Student star.

**ACADEMIC_PERIOD_SEQUENTIAL**

The ACADEMIC_PERIOD_SEQUENTIAL values of the EDW Extract Parameter define the order of sequential academic periods to store in the warehouse. These values are used to populate the `WDT_RETENTION_TIME` dimension table. Both the `WDT_RETENTION_TIME` and `WDT_RETENTION` dimension tables are used in the WFT `STUDENT` fact table to set the keys for the defined sequential academic periods and whether the student was retained.

Each ACADEMIC_PERIOD_SEQUENTIAL record of this parameter defines a sequential academic period relationship by defining an academic period (e.g., ‘10’) in the **Internal Code** field and its related sequential academic period (e.g., ‘20’) in the **External Code** field.

Edit the **Internal Code** and **External Code** field values for the delivered ACADEMIC_PERIOD_SEQUENTIAL records of this parameter to reflect the academic period values used at your institution. You can add more ACADEMIC_PERIOD_SEQUENTIAL records to define multiple sequential patterns. You can also define rules to include more than two academic periods in the sequence. For example, your institution may need to track three sequential academic periods.

**Examples**

Following are some examples of how you might define sequential academic periods.

- **Define Fall to Spring sequential academic periods**

  To create the sequential relationship between the Fall to Spring academic periods, create or edit an ACADEMIC_PERIOD_SEQUENTIAL record so that the value for your institution’s Fall term is in the **Internal Code** field and the related Spring term is in the **External Code** field. In the delivered records (shown in the following table) rows 2 and 4 show an example of this.

- **Define Spring to Fall sequential academic periods**

  To create the sequential relationship between the Spring to Fall academic periods, create or edit an ACADEMIC_PERIOD_SEQUENTIAL record so that the value for your institution’s Spring term is in the **Internal Code** field and the related Fall term is in the **External Code** field. In the delivered records (shown in the following table) rows 3 and 5 show an example of this.
• Define Three sequential academic periods

To create the sequential relationship for three related academic periods that use the term values ‘10’, ‘20’ and ‘30’, create an ACADEMIC_PERIOD_SEQUENTIAL record defined with the ‘10’ value in the Internal Code field and the related ‘20’ value in the External Code field. Create a second record that defines the ‘20’ value in the Internal Code field and the related ‘30’ value in the External Code field. Create a third record that defines the ‘30’ value in the Internal Code field and the related ‘10’ value in the External Code field. These three records define a three term sequential loop.

The following table illustrates the EDW Extract Parameters ACADEMIC_PERIOD_SEQUENTIAL values that were present at installation. The first row gives a definition of how to define each field for ACADEMIC_PERIOD_SEQUENTIAL parameter values.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Your institution’s values that identify the sequential academic period related to the period in the record’s External Code field</td>
<td>Not used</td>
<td>Your institution’s values that identify an academic period</td>
<td>A description of the academic period</td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_SEQUENTIAL</td>
<td>01</td>
<td>02</td>
<td>Fall to Spring</td>
<td></td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_SEQUENTIAL</td>
<td>02</td>
<td>01</td>
<td>Spring to Fall</td>
<td></td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_SEQUENTIAL</td>
<td>10</td>
<td>20</td>
<td>Fall to Spring</td>
<td></td>
</tr>
<tr>
<td>ACADEMIC_PERIOD_SEQUENTIAL</td>
<td>20</td>
<td>10</td>
<td>Spring to Fall</td>
<td></td>
</tr>
</tbody>
</table>

**BUDGET_COMPONENT**

The BUDGET_COMPONENT values of the EDW Extract Parameter define which of your institution’s Budget Component Codes (representing tuition or fees charges) should be used to calculate the cost of attendance. For example, the BUDGET_COMPONENT record for “Tuition and Fees” is used by the Load Banner EDW Financial Aid Application to sum the amount stored as the Tuition & Fees Budget to be used with financial aid data to calculate the Projected Discount Rate.
The following table illustrates the EDW Extract Parameters BUDGET_COMPONENT values that were present at installation. The first row gives a definition of each field.

**Internal Group: **EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Always make this value</td>
<td>TUITION_FEE</td>
<td>Not used</td>
<td>Your institution’s Budget Component Code values</td>
</tr>
<tr>
<td>BUDGET_COMPONENT</td>
<td>TUITION_FEE</td>
<td>FEES</td>
<td>Fees</td>
<td></td>
</tr>
<tr>
<td>BUDGET_COMPONENT</td>
<td>TUITION_FEE</td>
<td>T+F</td>
<td>Tuition and Fees</td>
<td></td>
</tr>
<tr>
<td>BUDGET_COMPONENT</td>
<td>TUITION_FEE</td>
<td>TUIT</td>
<td>Tuition</td>
<td></td>
</tr>
</tbody>
</table>

**BULK_OPERATIONS_SIZE**

The BULK_OPERATIONS_SIZE values control the number of records that are extracted into Oracle memory from ODS and staged in the INPUT tables. This parameter is used by the table functions of EDW Input load jobs. The PL/SQL BULK COLLECT feature is used to boost the performance of the INPUT load jobs. The table functions within EDW Input load jobs use the BULK_OPERATIONS_SIZE parameter to set the LIMIT clause value of BULK COLLECT.

Setting the BULK COLLECT limit in this way avoids Oracle Server PGA memory related issues when a larger number of records is loaded into the EDW INPUT stage table from ODS. This is especially important to avoid memory issues when you run a FULL LOAD job. The number of records extracted depends on the size of your institution’s database and the target Operational Star being loaded.

There are three BULK_OPERATIONS_SIZE parameter values, one each for GENERAL, FINAID and STUDENT functional modules. This lets you set the parameter values independently for each module. The value you set is directly related to the volume of data being loaded.

When delivered, each BULK_OPERATIONS_SIZE value is set to 500000 (500K) in the Description field. This value should be the optimal setting for the EDW loads based on the ODS and EDW hardware recommendations. If you need to tune the load process, you can try different values for this parameter. The goal being to lower the value enough so that the load runs successfully but not so low that it impacts the performance. The lower the number, the less PGA/memory that is needed and the process will do less I/O each time, however, it will be doing more processing overall and take longer to complete.
The following load mappings are affected by changing one of the BULK_OPERATIONS_SIZE values.

**General** (GENERAL_EXTRACT_PROCESS value)
- LOAD_EDW_BANNER_COMMUNICATION

**Financial Aid** (FINAID_EXTRACT_PROCESS value)
- LOAD_EDW_FINAID_APPLICATION
- LOAD_EDW_FINAID_AWD_AIDYR
- LOAD_EDW_FINAID_AWD_ACADPD

**Student** (STUDENT_EXTRACT_PROCESS value)
- LOAD_EDW_PROSPECTIVE.Student
- LOAD_EDW_ADMISSIONS_APPLICATION
- LOAD_EDW_TEST
- LOAD_EDW_INTEREST
- LOAD_EDW_POST_SECONDARY
- LOAD_EDW.APPLICATION_DECISION
- LOAD_EDW.APPLICATION.RATING
- LOAD_EDW.APPLICATION_ATTRIBUTE
- LOAD_EDW.APPLICATION.REQUIREMENT
- LOAD_EDW.ADMISSIONS.RECRUITMENT
- LOAD_EDW_CONTACT
- LOAD_EDW_STUDENT_ACTIVITY
- LOAD_EDW_ATHLETIC
- LOAD_EDW.STUDENT.ATTRIBUTE
- LOAD_EDW.GRADE_CHANGE
- LOAD_EDW.ACAD_OTCOM_HNR
- LOAD_EDW_STUDENT.COURSE
- LOAD_EDW_STUDENT.COURSE.ATTRIBUTE
- LOAD_EDW.ACADEMIC_OUTCOME
The recommended best practice for tuning this parameter value is to gradually lower the BULK_OPERATIONS_SIZE Description value to 250K, then 125K, then 100K and so on, testing the related load jobs after each reduction. You can then determine which value gives you the most load without degrading performance. We do not recommend that you set this value lower than 10000 (10K) as this will likely result in a degradation of the job load times.

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<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BULK_OPERATIONS_ SIZE</td>
<td>GENERAL_EXTRACT_PROCESS</td>
<td>1</td>
<td>GENERAL_EXTRACT_PROCESS</td>
<td>500000</td>
</tr>
<tr>
<td>BULK_OPERATIONS_ SIZE</td>
<td>FINAID_EXTRACT_PROCESS</td>
<td>2</td>
<td>FINAID_EXTRACT_PROCESS</td>
<td>500000</td>
</tr>
<tr>
<td>BULK_OPERATIONS_ SIZE</td>
<td>STUDENT_EXTRACT_PROCESS</td>
<td>3</td>
<td>STUDENT_EXTRACT_PROCESS</td>
<td>500000</td>
</tr>
</tbody>
</table>

**PGA size issue**

If you get the following error when running the Input Mapping load jobs, it is related to the Oracle Server PGA size configured on the database.

ORA-04030: out of process memory when trying... to allocate ‘x’ bytes

You can avoid this error by increasing the database PGA size or decreasing the BULK_OPERATIONS_SIZE value. See the description preceding the previous table for a discussion of how to approach decreasing the BULK_OPERATIONS_SIZE value.

### DEV_COURSE_ATTRIBUTE

The DEV_COURSE_ATTRIBUTE values of the EDW Extract Parameter define the Student Course Attribute Codes used to indicate the course is a developmental course. These parameter values are used to load the Developmental Course Indicator in the WFT_STUDENT_COURSE fact table. This indicator is used on the Student Progress and Student Engagement Aggregate tables to indicate that the student is registered for a developmental course in the academic period.

Edit the DEV_COURSE_ATTRIBUTE records to specify the values for your institution’s developmental Student Course Attribute Codes in the **External Code** field. You can add
as many records as needed to create a record for each of the necessary developmental course related Attribute Codes used by your institution.

The following table illustrates the EDW Extract Parameters DEV_COURSE_ATTRIBUTE values that were present at installation. The first row gives a definition of each field.

**Internal Group: EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Always make this value DEV_COURSE_ATTRIBUTE</td>
<td>Not used</td>
<td>Your institution’s Attribute Code values used to indicate a developmental course</td>
<td>Description to indicate a developmental course attribute</td>
</tr>
<tr>
<td>DEV_COURSE_ATTRIBUTE</td>
<td>DEV_COURSE_ATTRIBUTE</td>
<td>ADLN</td>
<td>Developmental Course Attribute</td>
<td></td>
</tr>
<tr>
<td>DEV_COURSE_ATTRIBUTE</td>
<td>DEV_COURSE_ATTRIBUTE</td>
<td>CAPS</td>
<td>Developmental Course Attribute</td>
<td></td>
</tr>
</tbody>
</table>

**EARNINGS**

The EARNINGS values of the EDW Extract Parameter 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 Banner EDW Employee and Load Banner EDW Employee Position jobs to group earning information before loading it into Banner EDW.

Edit the delivered EARNINGS records so that the values for your institution’s Earning Codes are in the External Code field and the appropriate group value description - OTHER, OVERTIME, or REGULAR - is in the Internal Code 2 field. You can add as many records as needed to create a record for each of the necessary Earning Codes used by your institution.

The following table illustrates some of the EDW Extract Parameters EARNINGS values that were present at installation. This is not a comprehensive list of the installed values. The first row gives a definition of each field.
Internal Group: EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Your institution’s group description</td>
<td>Not used</td>
<td>Your institution’s Earning Code values</td>
<td>Description of the Earning Code</td>
</tr>
<tr>
<td>EARNINGS</td>
<td>OTHER</td>
<td>ADJ</td>
<td></td>
<td>Adjunct Pay By Course</td>
</tr>
<tr>
<td>EARNINGS</td>
<td>OTHER</td>
<td>ADV</td>
<td></td>
<td>Advanced Pay</td>
</tr>
<tr>
<td>EARNINGS</td>
<td>OTHER</td>
<td>AIP</td>
<td></td>
<td>Administrative Increment Plan</td>
</tr>
<tr>
<td>EARNINGS</td>
<td>OVERTIME</td>
<td>OT</td>
<td></td>
<td>Overtime Earnings</td>
</tr>
<tr>
<td>EARNINGS</td>
<td>REGULAR</td>
<td>REG</td>
<td></td>
<td>Regular Earnings</td>
</tr>
</tbody>
</table>

EXCLUSION_STATUS_CODE

The EXCLUSION_STATUS_CODE values of the EDW Extract Parameter let you identify Enrollment Status Codes and Student Status Codes that identify students who have allowable exclusions that ignore them so they have no impact on the retention and graduation rate headcounts and rate calculations. Persons who have any of the codes defined by the EXCLUSION_STATUS_CODE records will not be included in the retention and graduation headcounts nor rate calculations.

For example, if a student was not retained because of required active military service in the middle of an academic period for which the student is registered, you may want to code the student with an enrollment status code that will exclude him or her in the headcounts but not penalize the student and not impact the institution overall retention rate.

The records defined by the EXCLUSION_STATUS_CODE are used when loading information into the Banner EDW. Persons with any of the defined Enrollment Status or Student Status Codes will be assigned a retention key from WDT_RETENTION and a retention multi year key from WDT_RETENTION_MULTI_YEAR to identify the person with a retention status equal to excluded.

For each student who is registered in an academic period, the exclusion status is evaluated in the like academic period. This means that the exclusion status is evaluated for every student who was registered in the prior like academic period.

**Exclude Enrollment Status Codes**

Edit the delivered EXCLUSION_STATUS_CODE records with an **Internal Code 2** of ‘STVESTS’ so that the values for the Enrollment Status Codes your institution wants to
exclude are in the **External Code** field. You can add as many records as needed to create a record for each of the necessary Enrollment Status Codes that your institution wants to exclude from the counts. Be sure that each record with an Enrollment Status Code in the **External Code** field uses an **Internal Code** of ‘STVESTS’.

**Exclude Student Status Codes**

Edit the delivered EXCLUSION_STATUS_CODE records with an **Internal Code** of ‘STVSTST’ so that the values for the Student Status Codes your institution wants to exclude are in the **External Code** field. You can add as many records as needed to create a record for each of the necessary Student Status Codes that your institution wants to exclude from the counts. Be sure that each record with a Student Status Code in the **External Code** field uses an **Internal Code** of ‘STVSTST’.

The following table illustrates the EDW Extract Parameters. EXCLUSION_STATUS_CODE values that were present at installation. The first row gives a definition of each field.

**Internal Group: EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>STVESTS or STVSTST depending on whether defining to exclude an Enrollment Status or Student Status Code in External Code field</td>
<td>Not used</td>
<td>Your institution’s Enrollment Status or Student Status Code values to exclude from retention and graduation rate counts</td>
<td>Description of the Enrollment Status or Student Status Code being excluded</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXCLUSION_STATUS_CODE</th>
<th>STVESTS</th>
<th>XXXXX</th>
<th>Enrollment Status Code which excludes persons from being part of Retention/Graduation Rate Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXCLUSION_STATUS_CODE</td>
<td>STVSTST</td>
<td>XXXXX</td>
<td>Student Status Code which excludes persons from being part of Retention/Graduation Rate Calculations</td>
</tr>
</tbody>
</table>
HR_APPL_STAT

The HR_APPL_STAT values of the EDW Extract Parameter define HR Application Statuses relative to employment offered, employment accepted, interview offered, and interview completed. These values are used by the Load Banner EDW Employment Application job to load data into Banner EDW. The HR Application Status codes defined by the institution will be counted as defined within the EDW Extract Parameters as either accepted, offered, complete or interview offered.

The following table illustrates the EDW Extract Parameters HR_APPL_STAT values that were present at installation. The first row gives a definition of each field.

**Internal Group: EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Not used</td>
<td>Your institution’s HR Application Status values</td>
<td>Description of the HR Application Status</td>
<td></td>
</tr>
<tr>
<td>HR_APPL_STAT</td>
<td>EMPLOYMENT_ACCEPTED</td>
<td>OA</td>
<td>Offer Accepted</td>
<td></td>
</tr>
<tr>
<td>HR_APPL_STAT</td>
<td>EMPLOYMENT_OFFERED</td>
<td>OP</td>
<td>Employment Offered</td>
<td></td>
</tr>
<tr>
<td>HR_APPL_STAT</td>
<td>INTERVIEW_COMPLETED</td>
<td>1I</td>
<td>Interview Completes</td>
<td></td>
</tr>
<tr>
<td>HR_APPL_STAT</td>
<td>INTERVIEW_OFFERED</td>
<td>1R</td>
<td>Interview Offered</td>
<td></td>
</tr>
</tbody>
</table>
INSTITUTION

The INSTITUTION value of the EDW Extract Parameter defines the Banner source background Institution Code that identifies the home institution. Typically this is a single value that identifies the home institution to distinguish it from the other post secondary schools defined as source background institutions (STVSBGI).

The EDW Extract Parameters parameter includes an INSTITUTION value which defines the Banner source background Institution Code that identifies the home institution. This value is used to load the post secondary school data from Banner Degrees and Other Formal Awards (SHRDGMR) into the WDT_POST_SECONDARY_SCHOOL dimension table and WFT_POST_SECONDARY_SCHOOL fact table. The data loaded in the Post Secondary School star schema is a combination of data from the Prior College information (external institutions attended) and the home institution. This identifies when the person attended the institution to which they are applying at a different level and potentially earned an award or degree from the home institution.

The following table illustrates the EDW Extract Parameters INSTITUTION value that was present at installation.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSTITUTION</td>
<td>HOME_INSTITUTION</td>
<td>4654</td>
<td></td>
<td>INSTITUTION value which indicates your home institution</td>
</tr>
</tbody>
</table>

INSTITUTION_CHARACTERISTIC

The INSTITUTION_CHARACTERISTIC values of the EDW Extract Parameter define the source Banner background institution characteristics that are used for specific values defined in Banner EDW. Since these codes can be established by your institution on the Institution Characteristic Validation Table (STVBCHR), you need to define the values specifically identified in the INSTITUTION star schema. This allows the WFT INSTITUTION star to identify the correct WDT INSTITUTION dimension table key for the source background institution. The WDT INSTITUTION dimension will identify whether the institution is a two or four year, public or private institution or whether person was home schooled.

There are five institution characteristic codes that must be defined to load the WDT_INSTITUTION dimension table. The following table illustrates the EDW Extract Parameters INSTITUTION_CHARACTERISTIC values that were present at installation. You need to change the External Code for each record to reflect your institution’s Institution Code value for the related institution characteristic defined in the Internal Code field.
**Internal Group: EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td></td>
<td>Not used</td>
<td>Your institution’s Institution Code values</td>
<td>Description of the Institution Code</td>
</tr>
<tr>
<td>INST_GEOGRAPHIC_DIVISION</td>
<td>FOUR_YEAR_INSTITUTION</td>
<td></td>
<td>R</td>
<td>Four Year Institution</td>
</tr>
<tr>
<td>INST_GEOGRAPHIC_DIVISION</td>
<td>HOMESCHOOL</td>
<td></td>
<td>E</td>
<td>Homeschool</td>
</tr>
<tr>
<td>INST_GEOGRAPHIC_DIVISION</td>
<td>PRIVATE_INSTITUTION</td>
<td></td>
<td>1</td>
<td>Private Institution</td>
</tr>
<tr>
<td>INST_GEOGRAPHIC_DIVISION</td>
<td>PUBLIC_INSTITUTION</td>
<td></td>
<td>2</td>
<td>Public Institution</td>
</tr>
<tr>
<td>INST_GEOGRAPHIC_DIVISION</td>
<td>TWO_YEAR_INSTITUTION</td>
<td></td>
<td>T</td>
<td>Two Year Institution</td>
</tr>
</tbody>
</table>

**INST_GEOGRAPHIC_DIVISION**

The INST_GEOGRAPHIC_DIVISION value of the EDW Extract Parameter defines the Banner Geographic Division code (GTVEOD) to be used to place the source background institution into a geographic division and associated geographic region. This value is used to load the institution data into the WDT_GEOGRAPHIC_REGION dimension table.

For the EDW secondary and post secondary school data, it is assumed there will be one set of geographic division and associated region codes. The Geographic Division (STVGEOD) is the code to be defined.

The following table illustrates the EDW Extract Parameters INST_GEOGRAPHIC_DIVISION value that was present at installation. The first row gives a definition of each field.
**MAJOR_CODE**

The MAJOR_CODE value of the EDW Extract Parameter defines the Major Code that identifies the student has not declared a major so they are an ‘Undeclared’ major at your institution. This value is used to determine and load the undeclared major count into the WFT_STUDENT fact table.

Edit the MAJOR_CODE record so that the **External Code** field indicates the Major Code that your institution uses to identify an ‘Undeclared’ major.

The following table illustrates the EDW Extract Parameters MAJOR_CODE value that was present at installation. The first row gives a definition of each field.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td></td>
<td>Not used</td>
<td>Your institution’s Institution Code values</td>
<td>Description of the Institution Code</td>
</tr>
<tr>
<td>INST_GEOGRAPHIC_DIVISION</td>
<td>INSTITUTION</td>
<td>ADMISSIONS</td>
<td></td>
<td>Geographic Division used for the institution geographic region</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td></td>
<td></td>
<td>Your institution’s Major Code value that indicates an ‘Undeclared’ major</td>
<td>Description of the Major Code</td>
</tr>
<tr>
<td>MAJOR_CODE</td>
<td>UNDECLARED</td>
<td>0000</td>
<td></td>
<td>Undeclared Major Code</td>
</tr>
</tbody>
</table>

**MINORITY_IND**

The MINORITY_IND record of the EDW Extract Parameter lets you identify your institution’s non-minority race category codes. Since your institution will typically have more race category codes that represent minority race values, you will use the MINORITY_IND records of this parameter to define which race category codes are **not** minorities.
If a person’s race category is a value other then those defined here by the MINORITY_IND records, the system will set WDT DEMOGRAPHIC dimension table key to a row that sets the MINORITY_IND to “Y” for that person.

The system is delivered with the default record listed in the following table for the MINORITY_IND. Review all of the RACE_CATEGORY values defined in your institution’s Banner ODS Race table (MST_RACE). Edit the delivered MINORITY_IND record to reflect your institution’s non-minority race category value. You can add as many records as needed to create a record for each race value that indicates a non-minority race as defined by your institution.

The following table illustrates the EDW Extract Parameters MINORITY_IND value that was present at installation. The first row gives a definition of each field.

**Internal Group: EDW EXTRACT PARAMETERS**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Always make this value NON_MINORITY_RACE_CATEGORY</td>
<td>Not used</td>
<td>Your institution’s non-minority race category value</td>
<td>A description of the non-minority race category</td>
</tr>
<tr>
<td>MINORITY_IND</td>
<td>NON_MINORITY_RACE_CATEGORY</td>
<td>5</td>
<td></td>
<td>Non-Minority Race Category - WDT_DEMOGRAPHIC.C.MINORITY_IND = 0</td>
</tr>
</tbody>
</table>

**Example**

Suppose your institution’s Race table includes the following race category values:

<table>
<thead>
<tr>
<th>RACECATEGORY</th>
<th>RACECATEGORY_DESC</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>White</td>
</tr>
<tr>
<td>1</td>
<td>American Indian or Alaska Native</td>
</tr>
<tr>
<td>2</td>
<td>Asian</td>
</tr>
<tr>
<td>3</td>
<td>Black or African</td>
</tr>
<tr>
<td>4</td>
<td>Native Hawaiian or Other Pacific Islander</td>
</tr>
</tbody>
</table>
To indicate that “White” is a non-minority race value, create an EDW EXTRACT PARAMETERS record where the Internal Group = EDW EXTRACT PARAMETERS and

- Internal Group = EDW EXTRACT PARAMETERS
- Internal Code 1 = MINORITY_IND
- Internal Code 2 = NON_MINORITY_RACE_CATEGORY
- External Code = 5

If the minority race value “Native Hawaiian or Other Pacific Islander” should also be considered a non-minority race at your institution, create another EDW EXTRACT PARAMETERS record where the Internal Group = EDW EXTRACT PARAMETERS and

- Internal Group = EDW EXTRACT PARAMETERS
- Internal Code 1 = MINORITY_IND
- Internal Code 2 = NON_MINORITY_RACE_CATEGORY
- External Code = 4

The result of creating these records is that any person whose race category value is “1”, “2”, or “3” will have their MINORITY_IND set to “Y”.

**MULTI_SOURCE_GROUP**

The MULTI_SOURCE_GROUP record of the EDW Extract Parameter is used by institutions using the Banner EDW in a multi-institution environment. You can create a MULTI_SOURCE_GROUP record with a location specific code for each institution of a multi-institution environment. You can then choose one of these MULTI_SOURCE_GROUP values from the Source Institution field when you schedule a Banner EDW Snapshot Mapping from the Schedule a Process page. The selected code will be associated with the institution-specific data that gets loaded into the data warehouse.

The following table illustrates the EDW Extract Parameters MULTI_SOURCE_GROUP value that was present at installation. The first row gives a definition of each field. Create a MULTI_SOURCE_GROUP record for each location of your multi-institution environment. The value in the External Code field is the location-specific value that will be associated with data when loading the data warehouse.
**Internal Group:** EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Always make this value SGHE</td>
<td>Not used</td>
<td>Value that identifies a multi-institution location</td>
<td>Description of Institution location</td>
</tr>
</tbody>
</table>

**NULL_NATION**

The NULL_NATION record of the EDW Extract Parameter defines the Banner source Nation Code that identifies the home nation. This nation value is used when loading address data.

If an institution or person is from the home nation, their Banner nation source field typically is null. However, to make report information more valuable a populated nation field is preferred in the data warehouse so that you can select groups of institutions or persons by geographic attributes like nation. Rather than load a null for nation in the Banner EDW, this NULL_NATION value is used to load the home nation data from Banner into the WDT_POSTAL dimension table and WFT_POST_SECONDARY_SCHOOL, WFT_ADMISSIONS_APPLICATION, WFT_STUDENT, and WFT_INSTITUTION fact tables.
Edit the NULL_NATION record so that the **External Code** field indicates the Nation Code of your institution’s home nation.

The following table illustrates the EDW Extract Parameters NULL_NATION value that was present at installation. The first row gives a definition of each field.

**Internal Group:** EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies EDW Extract Parameter being defined</td>
<td>Always make this value NULL_NATION_ VALUE</td>
<td>Not used</td>
<td>Your institution’s Nation Code value that indicates an the home nation</td>
<td>Description of the Nation Code</td>
</tr>
<tr>
<td>NULL_NATION</td>
<td>NULL_NATION_ VALUE</td>
<td>US</td>
<td>Nation Value which indicates your home nation</td>
<td></td>
</tr>
</tbody>
</table>

**NULL_SECTION**

The value for the Course Identification Section (stored in the WFT_STUDENT_COURSE fact table) is a concatenation of the Course Identification with the Course Section Number. Sometimes the Course Section Number can be NULL, which causes a problem when creating the Course Identification Section. The NULL_SECTION record of the EDW Extract Parameter defines a value to use when a Course Section Number doesn’t exist for a course. The value defined in the **External Code** field of this parameter record will be appended to the Course Identification for any course with a NULL Course Section Number to create the Course Identification Section.

The following table illustrates the EDW Extract Parameters NULL_NATION value that was present at installation. The first row gives a definition of each field. Edit the NULL_SECTION record so that the **External Code** field reflects the value you want to use to indicate a NULL course section number.
The PERSON_GEOGRAPHIC_DIVISION record of the EDW Extract Parameter places the person in a geographic division and associated geographic region. Banner permits the use of many combinations of the code for different offices and uses, so this should be the set of geographic regions associated with the geographic division that is used for recruiting and admissions processing at the institution. This value is used to load the prospective student data with the WDT_GEOGRAPHIC_REGION dimension table key.

The following table illustrates the EDW Extract Parameters PERSON_GEOGRAPHIC_DIVISION value that was present at installation. The first row gives a definition of each field.
**STUDENT_GEOGRAPHIC_DIVISION**

The STUDENT_GEOGRAPHIC_DIVISION record of the EDW Extract Parameter places the student in a geographic division and associated geographic region. Banner permits the use of many combinations of the code for different offices and uses, so this should be the set of geographic regions associated with the geographic division that is used for persons who have become students at the institution. This may be different than the values used for recruiting and admissions processing at the institution. This value is used to load the student data with the correct WDT_GEOGRAPHIC_REGION dimension table key. You can only have a single geographic division value specified for this EDW EXTRACT PARAMETER.

The following table illustrates the EDW Extract Parameters STUDENT_GEOGRAPHIC_DIVISION value that was present at installation. The first row gives a definition of each field.

**Internal Group:** EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT_GEOGRAPHIC_DIVISION</td>
<td>STUDENT</td>
<td>STUDENT</td>
<td>REGIONS</td>
<td>Geographic Division used to determine the student geographic region</td>
</tr>
</tbody>
</table>

**Student Groups and Tests EDW Extract Parameters**

There are three values for the EDW Extract Parameters related to student parameter groups that need to be defined specifically for use by the Load Banner EDW Recruiting and Admissions job. The parameter values are STUDENT_LEVEL_GROUP, STUDENT_LEVEL_GROUP_TESTS and TEST.

**STUDENT_LEVEL_GROUP**

Use the STUDENT_LEVEL_GROUP parameter values to define how your institution would prefer to group together student levels for extract into Banner EDW. For each STUDENT_LEVEL_GROUP your institution defines, link Banner ODS student levels to that level group. There may be one or more Banner ODS student levels linked to each extract level group. For example, the Undergraduate 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 records as you need.

**STUDENT_LEVEL_GROUP_TESTS**

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

**TEST**

Use the TEST group of parameters to specify for each STUDENT_LEVEL_GROUP_TESTS up to seven different Banner 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**

Banner ODS student levels of Undeclared (00) and Undergraduate (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). So, when the undergraduate group is selected for extraction, students with the level codes of UG and 00 are selected, as well as their test scores for tests SAT Math and SAT Verbal.

The following table illustrates some of the EDW Extract Parameters values for STUDENT_LEVEL_GROUP, STUDENT_LEVEL_GROUP_TESTS and TEST that were present at installation. This is not a comprehensive list of the installed values. The first row gives a definition of each field.
## Internal Group: EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A short description of the extract parameter group</td>
<td>N/A</td>
<td>Order for entries on Select a Process page</td>
<td>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.</td>
<td>Actual process name that appears on the administrative page</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STUDENT_LEVEL_ GROUP</th>
<th>CONTINUING_ EDUCATION</th>
<th>CE</th>
<th>Continuing Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT_LEVEL_ GROUP</td>
<td>GRADUATE</td>
<td>GR</td>
<td>Graduate</td>
</tr>
<tr>
<td>STUDENT_LEVEL_ GROUP</td>
<td>LAW</td>
<td>LW</td>
<td>Law</td>
</tr>
<tr>
<td>STUDENT_LEVEL_ GROUP_TESTS</td>
<td>GRADUATE</td>
<td>GRTEST</td>
<td>WRIT, MATH, T02</td>
</tr>
<tr>
<td>STUDENT_LEVEL_ GROUP_TESTS</td>
<td>LAW</td>
<td>LAWTEST</td>
<td>LSAT, T02</td>
</tr>
<tr>
<td>TEST</td>
<td>GRTEST</td>
<td>1</td>
<td>WRIT</td>
</tr>
<tr>
<td>TEST</td>
<td>LAWTEST</td>
<td>1</td>
<td>LSAT</td>
</tr>
</tbody>
</table>

### TEST_CODE

The TEST_CODE values of the EDW Extract Parameter identify your institution’s Banner Test Codes for specific test types, for example, SAT Combined and ACT Composite.

The TEST_CODE parameter values are used by the Load/Refresh Student Progress Aggregate job to select specific test scores before loading them into the aggregate fact table.

The SAT_COMBINED and ACT_COMBINED parameter values are used by the Load/Refresh for the Aggregate jobs where specific test scores are loaded into the aggregate fact table.
Banner source allows you to define the codes and track the tests and scores that are valid at your institution. The EDW Extract Parameter provides the institution code to be specified to load predefined content on the aggregate tables. The Test star permits the institution to load, track and report on additional content in the data warehouse.

For example, the Banner ODS Test reporting view may show SAT Math(S02), SAT Verbal (S01), and SAT COMBINED (S03). The Student Progress Aggregate requires a test of SAT COMBINED code that would require the entry of a test code value of S03 in this example.

The following table illustrates the EDW Extract Parameters TEST_CODE values that were present at installation. The first row gives a definition of each field.

Internal Group: EDW EXTRACT PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEST_CODE</td>
<td>ACT_COMPOSITE</td>
<td>A05</td>
<td></td>
<td>ACT Composite</td>
</tr>
<tr>
<td>TEST_CODE</td>
<td>GRADUATE1</td>
<td>G03</td>
<td></td>
<td>Graduate Total Converted Score</td>
</tr>
<tr>
<td>TEST_CODE</td>
<td>GRADUATE2</td>
<td>GMAT</td>
<td></td>
<td>Graduate Mgmt Admissions Test</td>
</tr>
<tr>
<td>TEST_CODE</td>
<td>IELTS</td>
<td>IELT</td>
<td></td>
<td>Intl Eng Language Testing System</td>
</tr>
<tr>
<td>TEST_CODE</td>
<td>LANGUAGE</td>
<td>SP</td>
<td></td>
<td>Language</td>
</tr>
<tr>
<td>TEST_CODE</td>
<td>MATH</td>
<td>ACM1</td>
<td></td>
<td>Math</td>
</tr>
<tr>
<td>TEST_CODE</td>
<td>PLACEMENT1</td>
<td>ACM2</td>
<td></td>
<td>ACHIEVEMENT Math II</td>
</tr>
<tr>
<td>TEST_CODE</td>
<td>PLACEMENT2</td>
<td>ACEN</td>
<td></td>
<td>ACHIEVEMENT English</td>
</tr>
<tr>
<td>TEST_CODE</td>
<td>SAT_COMBINED</td>
<td>SCS</td>
<td></td>
<td>SAT Combined</td>
</tr>
<tr>
<td>TEST_CODE</td>
<td>TOEFL</td>
<td>T02</td>
<td></td>
<td>TOEFL</td>
</tr>
</tbody>
</table>
Set Up Cleansing

Data cleansing is the process of verifying source system code values and translating them to standardized code values in the warehouse. This allows you to maximize the reporting potential of your data warehouse. Using the Administrative UI, the Banner EDW administrator can set up cleansing rules specific for your institution based on your reporting needs.

Cleansing types

The purpose of cleansing is to allow you to define custom translations for codes and descriptions for associated data elements. The types of cleansing actions can be grouped into the following general categories:

- “One-to-one cleansing translation”
- “Many-to-one cleansing translation”
- “Range translation”
- “Prefix translation”

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>External Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEST_CODE</td>
<td>TOEFL</td>
<td>S01</td>
<td></td>
<td>Verbal</td>
</tr>
<tr>
<td>TEST_CODE</td>
<td>WRITING</td>
<td>S07</td>
<td></td>
<td>Writing</td>
</tr>
</tbody>
</table>
**One-to-one cleansing translation**

In a one-to-one translation each source value translates to a single value in the warehouse. For example, see the `ETHNICITY_CATEGORY` element in the following picture.

![Select a Code Value Translation](image)

6 records are found with this Data Element. 1-6 are listed below.

<table>
<thead>
<tr>
<th>Source</th>
<th>Source Value</th>
<th>Banner EDW Value</th>
<th>Banner EDW Long Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>1</td>
<td>1</td>
<td>Black Non-Hispanic</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>2</td>
<td>2</td>
<td>Am. Indian or Alaska Native</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>3</td>
<td>3</td>
<td>Asian or Pacific Islander</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>4</td>
<td>4</td>
<td>Hispanic</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>5</td>
<td>5</td>
<td>White Non-Hispanic</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>6</td>
<td>6</td>
<td>Other</td>
</tr>
</tbody>
</table>
**Many-to-one cleansing translation**

In a many-to-one translation multiple source values translate to the same value in the warehouse. For example, see the multiple source codes that translate to one Part-Time warehouse code value for the **TIME_STATUS** element.

![Select a Code Value Translation](image)

<table>
<thead>
<tr>
<th>Source</th>
<th>Source Value</th>
<th>Banner EDW Value</th>
<th>Banner EDW Long Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>3Q</td>
<td>3Q</td>
<td>3/4 Time</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>99</td>
<td>99</td>
<td>Error Calculating Time Status</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>FT</td>
<td>FT</td>
<td>Full Time</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>GP</td>
<td>GP</td>
<td>Resubmission Pending</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>HP</td>
<td>HP</td>
<td>Resubmission Results Pending</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>HT</td>
<td>PT</td>
<td>Part-Time</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>LH</td>
<td>PT</td>
<td>Part-Time</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>PT</td>
<td>PT</td>
<td>Part-Time</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>SP</td>
<td>SP</td>
<td>Submission Pending</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>SU</td>
<td>SU</td>
<td>Suspended</td>
</tr>
</tbody>
</table>
Range translation

In a range translation groups of consecutive number source values translate into descriptive warehouse values. For example, see the multiple source codes that translate to one Part-Time warehouse code value for the GPA_4_PT_RANGE element.

![Select a Code Value Translation](image)

<table>
<thead>
<tr>
<th>Source</th>
<th>Source From Value</th>
<th>Source To Value</th>
<th>Banner EDW Value</th>
<th>Banner EDW Long Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>.01</td>
<td>.99999999999</td>
<td>.01 - .99</td>
<td>.01 - .99</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>1.00</td>
<td>1.99999999999</td>
<td>1 - 1.99</td>
<td>1 - 1.99</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>2.00</td>
<td>2.99999999999</td>
<td>2 - 2.99</td>
<td>2 - 2.99</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>3.00</td>
<td>3.99999999999</td>
<td>3 - 3.99</td>
<td>3 - 3.99</td>
</tr>
<tr>
<td>SunGard HE University of Malvern Pennsylvania</td>
<td>4.000000001</td>
<td>99999999</td>
<td>&gt; 4</td>
<td>&gt; 4</td>
</tr>
</tbody>
</table>
Prefix translation

In a prefix translation, context of a second value is needed to uniquely identify a code/description and translate it into its warehouse values. For example, see the prefix value of Chart of Accounts code that is used in conjunction with the Fund code to get the value for the FUND_CODE element.

Cleansing methods

There are two cleansing techniques used in the data warehouse:

- “Star driven cleansing”
- “Dimension driven cleansing”

The technique used to cleanse data depends on the object being loaded into the warehouse. Both techniques use the same set of cleansing rules and data elements. You can manage the definition of cleansing rules and data elements using the Administrative UI.

Star driven cleansing

The Star driven cleansing technique cleanses data for each star. It is used with the following objects:

- All Banner EDW Operational Stars except for the optional Advancement stars
- Banner EDW Snapshot Stars
- Banner Recruiting and Admissions Performance operational stars (if licensed)
• Banner Student Retention Performance operational stars (if licensed)

The following diagram illustrates the general flow of data within the cleansing process for the Star driven architecture. This cleansing method uses MGRCDES, MGRCVAL, MGTCLNZ and MTVPARM (cleansing data element) records to determine how to cleanse the records.

At the start of a refresh process, MGTCLNZ (a temporary table) is truncated and reloaded with the full set of cleansing translation definitions for each dimension based on rules defined in MGRCRUL and MGRCDIM.

The MGTCLNZ table is then used throughout the refresh process during each star’s CLEAN mapping step. Any data values that do not have a cleansing rule defined are moved to the ERROR table. After you create the missing rules or correct the source data, you can refresh these values.

**Dimension driven cleansing**

The Dimension driven cleansing technique cleanses data for each dimension and then loads the fact tables. Eventually all cleansing will be migrated to use this cleansing technique. Currently, it is used with the following stars:

• Optional Advancement stars

The following diagram illustrates the general flow of data within the Dimensional driven cleansing process. This cleansing method affects slightly different components, but makes use of the same core rules as the Star driven cleansing process.
The dimension driven data provides for increased flexibility introduced by this streamlined cleansing infrastructure.

**Only Dimension driven cleansing is optional**

Data element cleansing is optional functionality within the dimension driven method because Null value replacement processing has been removed from the data element cleansing process. You can create columns in the MGRCDIM table to define default values for a data element and its short and long description when incoming values are Null. You can still define system-wide default values in the CLEANSING_DEFAULT_VALUES parameter in MTVPARM. However, any data element cleansing defined on MGRCDIM will override the system-wide values.

The CLEANING_PARAMETERS parameter, stored within MTVPARM, lets you define whether cleansing is turned on from an overall perspective. Additionally, you can configure cleansing at the data element level through each element’s associated MGRCDIM records. See the “Create or Update a Cleansing Data Element” section for more details.

**Set Up Cleansing Processes**

The extract, transform, and load (ETL) processes use a combination of records and parameters to cleanse data. You can use the instructions in the following sections to maintain cleansing:

- “Set up a Cleansing Rule”
- “Set Up a Cleansing Data Element”
- “Set up Descriptions for Code Values”
- “Set Up Code Values from Source Data”
Additionally, refer to the “Set up cleansing parameters” section for information about maintaining the parameters related to cleansing.

Set Up a Cleansing Rule

A cleansing rule is a definition of the source data to be used for cleansing. Basically, a cleansing rule is a SQL statement that is used to extract and load the initial cleansing values. The cleansing rules that you define are stored in the Cleansing Rules (MGRCRUL) table and used by the Dimensional Data Default Cleansing Values cleansing load job.

You can create new cleansing rules or update existing cleansing rules.

Create or Update a Cleansing Rule

Perform the following steps to maintain cleansing data rule definitions, including the rules related to source data for data elements.

1. Access the Options menu.

2. Click Set Up and Maintain Cleansing Processes.

3. Click Set Up and Maintain Cleansing Rules.

4. Perform one of the following:
   - Click Create to create a new rule.
   - Select a Rule to update an existing rule.

5. Fill in the required information.

Refer to the brief descriptions in the following table and the more substantial descriptions in the subsections to understand each field that makes up a cleansing rule. An * indicates a required field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule Name *</td>
<td>Give the rule a unique name. Each Rule Name defines a cleansing data element.</td>
</tr>
<tr>
<td>Rule Source Query *</td>
<td>Enter the SQL statement to be used to populate the MGRCVAL and MGRCDES tables when the Cleansing Load process runs.</td>
</tr>
</tbody>
</table>

**Note:** If the rule requires a prefix element, include this in the appropriate location within the SQL statement; otherwise make it NULL.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefix Column</td>
<td>Select a prefix if the rule requires the addition of a prefix during cleansing processing.</td>
</tr>
<tr>
<td>Range Rule?</td>
<td>Check if the rule requires additional cleansing processing for the range.</td>
</tr>
<tr>
<td>Effective Date Rule?</td>
<td>Check if the rule requires additional cleansing processing for the effective date.</td>
</tr>
</tbody>
</table>

6. Click **Save**.

**Rule Source Query**

You need to define a Rule Source Query for each cleansing data element (defined by the Rule Name). The query defines the values out of the source system from which the default code, short description and long description values should be created. The Rule Source Query is a SQL statement, which should select distinct from the source system, the following five values in this specific order:

- Data element
- Prefix element or null if no prefix (see the “Prefix Column” section for details on when to include a prefix)
- Code value
- Long description value
- Short description value

**Note**

If the rule does not have a location in the source system from which to generate a query, you may create the default values directly in this query, using a UNION statement if more than one. For example, the GENDER cleansing rule is an example of a list type definition where values are essentially hardcoded because a validation table does not exist in the source system.

**Prefix Column**

This field is used 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.
**Range Rule**

Sometimes distinct values from the source system get combined into a range of values in the warehouse. For example, you can create a series of test score ranges for ACT Composite scores such as 0-10, 11-15, 16-20, 21-25, 26-30, and >30. You can then use these ranges to group students according to their test score. If a student has an ACT Composite score of 28, the score would be cleansed and stored in the 26-30 test score range.

This option determines whether the information being cleansed belongs to one of the data elements that uses a range of values.

**Effective Date Rule**

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.

This option determines whether the data being cleansed requires an effective date. This option should be selected to indicate which data elements within the system require an effective date.

**Set Up a Cleansing Data Element**

After you have defined cleansing rules, you need to associate data elements (or warehouse dimension table columns) with the rules. For each warehouse dimension, you need to identify the cleansing rule that will be used to populate it.

In addition, the following functionality applies depending on the cleansing method used for an object:

- **Dimensional cleansing method** - If the object being loaded uses this cleansing method, there are additional column cleansing options: to cleanse or not cleanse that column and the definition of column specific default Null code, short and long description values.

- **Star cleansing method** - If the object being loaded uses this cleansing method, the individual column option to cleanse or not does not apply.

**Create or Update a Cleansing Data Element**

Typically all rules required for baseline cleansing processing are installed with the product. When new stars are created, you can add new cleansing rules to extend the warehouse.
Perform the following steps to maintain the cleansing data elements used by the Dimensional Data Default Cleansing Values job.

1. Access the **Options** menu.

2. Click **Set Up and Maintain Cleansing Processes**.

3. Click **Set Up and Maintain Cleansing Data Elements**.

4. Perform one of the following:
   - Click **Create** to create a new data element
   - Select a Dimension Table or Column Name and click **Search** then select a Column to update a data element

5. Fill in the required information.

An * indicates a required field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension Name *</td>
<td>Enter the dimension table where the data element resides.</td>
</tr>
<tr>
<td>Column Name *</td>
<td>Enter the column name (in the warehouse dimension table) of the data element.</td>
</tr>
<tr>
<td>Default Null Value</td>
<td>Enter the desired Null value to be assigned during the cleansing process if this element has no value. If nothing is defined, the overall CLEANSING DEFAULT NULL value will be used. This is only used in the dimensional cleansing method.</td>
</tr>
<tr>
<td>Default Null Short Desc</td>
<td>Enter a short description to be assigned during the cleansing process if this element has no value. If nothing is defined, the overall CLEANSING DEFAULT NULL short description value will be used. This is only used in the dimensional cleansing method.</td>
</tr>
<tr>
<td>Default Null Long Desc</td>
<td>Enter a long description to be assigned during the cleansing process if this element has no value. If nothing is defined, the overall CLEANSING DEFAULT NULL long description value will be used. This is only used in the dimensional cleansing method.</td>
</tr>
</tbody>
</table>
Indicator columns

Indicator (IND) columns within the warehouse have different formats. Originally, IND columns were defined as a VARCHAR2(63) column with no associated short and long description. Starting with Banner EDW 8.2, the standard for dimensions changed. IND columns are now defined as a NUMBER column with associated short and long description columns. For this reason, different cleansing rules need to exist for the structure of the associated columns to ensure that they are appropriately cleansed. In addition, you can choose to give descriptive meaning to an indicator instead of just “Yes” or “No” values. This, too, requires another indicator type cleansing rule.

Indicator type cleansing rules

You can use the following three different general cleansing rule types for an indicator field.

- “VC2_INDICATOR cleansing rule for VARCHAR2(63) indicators”
- “INDICATOR cleansing rule for NUMBER non-descriptive indicators”
- “Specific cleansing rule for NUMBER descriptive indicators”

6. Click Save.
**VC2_INDICATOR cleansing rule for VARCHAR2(63) indicators**

Use the VC2_INDICATOR cleansing rule for existing dimensions with VARCHAR2(63) indicator fields. Following is an example of this type of cleansing rule.

![Update a Cleansing Rule](image-url)
**INDICATOR cleansing rule for NUMBER non-descriptive indicators**

Use the **INDICATOR** cleansing rule for dimensions with NUMBER indicator fields and associated short and long descriptions. Following is an example of this type of cleansing rule.
Specific cleansing rule for NUMBER descriptive indicators

You can create a specific cleansing rule for NUMBER indicator columns that would benefit from a more descriptive meaning than “Yes” or “No”. Your institution’s business users should determine whether or not this cleansing rule type is needed for an indicator. Following is an example of this type of cleansing rule.

Set up Descriptions for Code Values

After setting up cleansing rules and data elements, you can edit the long and short descriptions used for code values. Maintaining code value descriptions leaves the code value unchanged; it only changes the short and long descriptions in the Banner EDW.

Create a New Description for Code Values

Perform the following steps to create a new code value description.

1. Access the Options menu.
2. Click Set Up and Maintain Cleansing Processes.
3. Click Maintain Descriptions for Code Values.
4. Select a data element from the dropdown list next to Create.
5. Click Create.
6. Fill in the required information.
7. Click Save.

**Update a Description for Code Values**

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 Banner 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 MGRCDES was populated, and to make institution-specific changes as necessary.

Perform the following steps to edit a code value description:

1. Access the **Options** menu.

2. Click **Set Up and Maintain Cleansing Processes**.

3. Click **Maintain Descriptions for Code Values**.

4. Select your search criteria from the **Data Element** dropdown list. You can narrow your search by entering information in the **Banner EDW Prefix** and **Banner EDW Value** fields.

5. Click **Search**.

6. Click the **Banner EDW Long Description** for the code value description you want to edit.

7. Enter a new description in the **User Short Description** and/or **User Long Description** fields.

8. Click **Save**.

A description of each field appears below:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Element</td>
<td>Name of the field where this data is stored in Banner EDW.</td>
</tr>
<tr>
<td>Banner EDW Value</td>
<td>Code that identifies this data element in Banner EDW.</td>
</tr>
</tbody>
</table>
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.

### Set Up Code Values from Source Data

A code value translation takes a code value in the source system source data and converts it into a different value that is used in the Banner 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 Banner EDW. For example, your enterprise may use several different codes to indicate off-campus housing status. If you want to combine them all for Banner EDW reporting, you can translate all of them to a single new code.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Description</td>
<td>Short description for this data in Banner EDW. This is the short description brought over from the source system or supplied by the institution if the translation is newly created in Banner EDW. If the translation is system maintained, you cannot edit this field.</td>
</tr>
<tr>
<td>User Short Description</td>
<td>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.</td>
</tr>
<tr>
<td>Long Description</td>
<td>The long description for this data in Banner EDW. The long description is either brought over from the source system or you supply it if you create the translation in Banner EDW. If the translation is system maintained, you cannot edit this field; it is updated when you run the job.</td>
</tr>
<tr>
<td>User Long Description</td>
<td>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.</td>
</tr>
<tr>
<td>System Maintained?</td>
<td>If Yes, this description was created by the Cleansing Load process based on value in the source system. The code's Short and Long Descriptions reflect the descriptions in the source system.</td>
</tr>
</tbody>
</table>

**Academic Period Type**

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.
• Take a quantifiable data element and convert it to a series of categories that can be used to group data. For example, you create a series of test score ranges for ACT Composite scores such as 0-10, 11-15, 16-20, 21-25, 26-30, and >30.

• 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.

**Create a Code Value Translation**

Perform the following steps to create a new code value translation.

1. Access the **Options** menu.

2. Click **Set Up and Maintain Cleansing Processes**.

3. Click **Translate Code Values from Source Data**.

4. Choose the relevant data element from the dropdown list next to **Create**.

5. Click **Create**.

6. Fill in the required information.

7. Click **Save**.

If the description will be used to sort range values, consider what characters to use in the description text. Ranges may not sort correctly if there are alphabetic or special characters in the text.

**Example**

Insert a space character at the beginning of the description for <30.00 to ensure that this is the first entry in the sorted list. The column on the left is an example of a range set sorted using the <,>. The column on the right has the space at the beginning of the <30.00 to force it to the top.

| 30.00 - 69.99 | <30.00 |
| 70.00 - 99.99 | 30.00 - 69.99 |
| <30.00 | 70.00 - 99.99 |
| >100.00 | >100.00 |
Edit Code Value Translation from Source Data

1. Access the Options menu.

2. Click Set Up and Maintain Cleansing Processes.

3. Click Translate Code Values from Source Data.

4. Select your search criteria from the Data Element dropdown list. You can narrow your search by entering information in the Source, Source Prefix and Source From Value fields.

5. Click Search.

6. Click the Banner EDW Long Description for the code value translation you want to edit.

7. Enter a value in the Source To Value and/or Banner EDW Value fields.

A description of each field appears in the following table:

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

8. Click Save.

Set up cleansing parameters

In addition to setting up the cleansing rules, associating the rules with dimension columns and maintaining the translations and descriptions of the cleansing rules, there are additional cleansing parameters that you need to maintain.

A parameter can include multiple values unless specified in the parameter definition. The values for a single parameter all use the same Internal Code. Use the Internal Code to choose a parameter for editing on the Set Up a Parameter page. The parameters used for cleansing purposes and defined in this section include:
CLEANSING DATA ELEMENTS parameter

This parameter is used during the Star cleansing process when building the dimension tables for Banner EDW star schemas. This parameter defines the data elements that exist for each star 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 for every star. The following table illustrates a sample of the values as delivered. This is just a sample. The first row gives a definition of each field.

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

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

During the cleansing process, there are several default values that affect how data is loaded across the warehouse. You should set these values before you initially load data into the warehouse. If the values are changed after data is loaded, there may be impacts to your data. See the “Cleanse Default Values records” section for more information about the impact of the default values you define.

This parameter is delivered with one record for value, short description, and long description for each field that gets loaded with a default value when the data is bad, null, multi-source, or zero. The Description field value will be loaded into the warehouse for the related field. For example, a value that had an error during cleansing, will use the “#####################” value defined in the BAD_CLEANSE_VALUE Description field.

To customize the default value, short and long description that are entered in bad, null, multi-source, or zero data fields, change the Description field for that record.

**Internal Group:** CLEANSING DEFAULT VALUES

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAD_CLEANSE_LONG</td>
<td>Not used</td>
<td>1</td>
<td>BAD_CLEANSE_LONG</td>
<td><em><strong>Warehouse Description Undefined</strong></em></td>
</tr>
<tr>
<td>BAD_CLEANSE_SHORT</td>
<td>Not used</td>
<td>1</td>
<td>BAD_CLEANSE_SHORT</td>
<td>Desc Undefined</td>
</tr>
<tr>
<td>BAD_CLEANSE_VALUE</td>
<td>1</td>
<td>BAD_CLEANSE_VALUE</td>
<td>#</td>
<td></td>
</tr>
<tr>
<td>MULTI_SOURCE_CLEANS_LONG</td>
<td>N/A</td>
<td>1</td>
<td>MULTI_SOURCE_CLEANS_LONG</td>
<td>Default long description for your institution.</td>
</tr>
<tr>
<td>MULTI_SOURCE_CLEANS_SHORT</td>
<td>N/A</td>
<td>1</td>
<td>MULTI_SOURCE_CLEANS_SHORT</td>
<td>Default short description for your institution.</td>
</tr>
<tr>
<td>MULTI_SOURCE_CLEANS_VALUE</td>
<td>N/A</td>
<td>1</td>
<td>MULTI_SOURCE_INST</td>
<td>Default code for your institution</td>
</tr>
<tr>
<td>NULL_CLEANSE_LONG</td>
<td>1</td>
<td>NULL_CLEANSE_LONG</td>
<td>#</td>
<td><em><strong>Data Not Available</strong></em></td>
</tr>
</tbody>
</table>
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” or bad data field, change the description for that field. However, be sure your custom value or descriptions are not “Null”.

Cleanse Default Values records

It is important to understand the implications of the default values you assign. Refer to the following sections for each type of default value record.

Bad Cleanse records

The Bad Cleanse values are used during the cleansing process to identify which data element’s values do not have a valid cleansing rule defined. Keep the following points in mind when maintaining the Bad Cleanse values.

- Bad Cleanse values are internal to the cleansing process and not seen by the end-users.
- There is no impact if you change the Bad Cleanse values over time.
- Bad Cleanse records must have values, cannot ever be “Null”.

Multi Source Cleanse records

You will only use these values if your institution implements a Multi-Entity Processing (MEP) warehouse environment. The Multi Source Cleanse records store default code, short description and long description values for each institution in the MEP environment. Keep the following points in mind when maintaining the Multi Source Cleanse values.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NULL_CLEANSE_SHORT</td>
<td>1</td>
<td>NULL_CLEANSE_SHORT</td>
<td>Data Not Avail</td>
<td></td>
</tr>
<tr>
<td>NULL_CLEANSE_VALUE</td>
<td>1</td>
<td>NULL_CLEANSE_VALUE</td>
<td>No Data</td>
<td></td>
</tr>
<tr>
<td>ZERO_CLEANSE_LONG</td>
<td>1</td>
<td>ZERO_CLEANSE_LONG</td>
<td><em><strong>Data Not Available</strong></em></td>
<td></td>
</tr>
<tr>
<td>ZERO_CLEANSE_SHORT</td>
<td>1</td>
<td>ZERO_CLEANSE_SHORT</td>
<td>Data Not Avail</td>
<td></td>
</tr>
<tr>
<td>ZERO_CLEANSE_VALUE</td>
<td>1</td>
<td>ZERO_CLEANSE_VALUE</td>
<td>No Data</td>
<td></td>
</tr>
</tbody>
</table>
• Changing the Multi Source Cleanse values after data has already been loaded will have a major impact on your warehouse.

If you change the Multi Source Cleanse value after data is already loaded in your warehouse, previously loaded data will never be joined to newly loaded data due to the different Null code values. If you want to change the Multi Source Cleanse values after data has already been loaded into the warehouse, you will need to do a full warehouse reload. Alternately, you can follow the steps in the section “Change Multi Source Records of the Cleansing Default Values Parameter”.

• The default Multi Source Cleanse value should be UPPER CASE and should not contain any special characters. The short and long descriptions may be mixed case and or contain special characters.

• Unless you are a MEP implementation, the values of the Multi Source Cleanse records will not be seen in the reporting layer and thus will remain internal to the warehouse.

• The Multi Source values must match the values in the CLEANSING SOURCES parameter unless you are a MEP implementation.

• Multi Source records must have values, cannot ever be “Null”.

**Null Cleanse records**

The Null Cleanse records store default code, short description and long description values for any source values that are Null. These values are used throughout the warehouse as the default value for each and every data element in every dimension, so the impact of these values is great. Keep the following points in mind when maintaining the Null values.

• Changing the Null Cleanse values after data has already been loaded will have a major impact to your warehouse.

If you change the Null Cleanse value after data is already loaded in your warehouse, previously loaded data will never be joined to newly loaded data due to the different Null code values. If you change the Null Cleanse values after data has already been loaded into the warehouse, you will need to do a full warehouse reload.

• The Null Cleanse values are seen throughout the reporting data, so you should carefully consider your institution’s default Null values.

Some things to consider when defining the Null Cleanse values include how the values will sort and display in reports. If you anticipate that end users will want to change these values frequently, consider making a translation change in the Reporting Model layer instead of the warehouse.

• The NULL_CLEANSE_VALUE should not match any other code value within the warehouse cleansing values.

For example, if you have an ‘NA’ code for one of your institution’s withdrawal reason codes, do not make ‘NA’ the default Null cleansing value. This will cause Unique Constraint violations when loading the warehouse.
• The Null Cleanse records must have values, cannot ever be null.

**Zero Cleanse records**

The Zero cleanse records are used to populate dimension records with a key of “0”. These are the default records in each dimension where every element in the dimension is Null. Keep the following points in mind when maintaining the Zero Cleanse values.

• If you are a Banner client, the Zero Cleanse values should match your Null Cleanse parameter values.

• If you are an Advance client, the `ZERO_CLEANSE_VALUE` field should be a space and the `ZERO_CLEANSE_SHORT` and `ZERO_CLEANSE_LONG` description fields should match the `NULL_CLEANSE_SHORT` and `NULL_CLEANSE_LONG` description fields.

•Changing Zero cleanse values after data has already been loaded will have a major impact to the warehouse.

Previously loaded data will never be joined to newly loaded data due to the different Null code values. If you change the Zero Cleanse values after data has already been loaded into the warehouse, you will need to do a full warehouse reload.

• The Zero cleanse values are seen throughout the reporting data, so you should carefully consider your institution’s default null values.

Some things to consider when defining the Null Cleanse values include how the values will sort and display in reports. If you anticipate that end users will want to change this value frequently, consider making a translation change in the Reporting Model layer instead of the warehouse.

• The `ZERO_CLEANSE_VALUE` should not match any other code value within the warehouse cleansing values.

For example, if you have an ‘NA’ code for one of your institution’s withdrawal reason codes, do not make ‘NA’ the default Null cleansing value. This will cause Unique Constraint violations when loading the warehouse.

• Must have values, cannot ever be Null.

**Default Null Cleansing value**

While it may seem like a small change, this value plays a major role in the warehouse. For every dimensional attribute, if there is a Null value, that value is populated with this Default Null Value. It is used with every data element in every dimension in every star across the entire warehouse.

There is a unique row for every combination of code values (not long/short descriptions, just the codes) within a dimension. If there is a new combination of code values when loading a star, a new dimension record is created and assigned a new, unique surrogate key. However, when loading a star if the combination of codes already exists no new row
is created but the descriptions are updated with the descriptions associated with the records being processed.

The surrogate keys join the dimensions to the fact tables and join fact tables to other fact tables. If some of the data uses one set of default Null code values and other data uses a different set of default Null code values, they will have different dimension records. They will also have different surrogate keys. When the system tries to combine data from different fact tables, there will be no match. This is why if you change the Default Null Value after data already exists in the warehouse, the entire warehouse must be reloaded if it is changed.

**CLEANSING SOURCES parameter**

Use this parameter to find the cleansing rules for a specific source system. It defines the data sources to Banner 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 first row gives a definition of each field.

**Internal Group:** CLEANSING SOURCES

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The source code actually used in extract and cleansing jobs.</td>
<td>N/A</td>
<td>N/A</td>
<td>The data source.</td>
<td></td>
</tr>
<tr>
<td>MULTI_SOURCE_INST</td>
<td>N/A</td>
<td>1</td>
<td>Multi-Source Institution Description</td>
<td>Banner ODS Default Source</td>
</tr>
</tbody>
</table>

**Note**

The value for MTVPARM_INTERNAL_CODE must match the MULTI_SOURCE values loaded from Banner ODS. Therefore, the MTVPARM_INTERNAL_CODE for the delivered CLEANSING SOURCES should match the MTVPARM_DESC for the CLEANSING DEFAULT VALUES that should have an MTVPARM_INTERNAL_CODE of MULTI_SOURCE_CLEANSE_VALUE.

**CLEANSING PARAMETERS parameter**

The Cleansing Parameters parameter is used with Dimensional driven cleansing only. It lets you control whether to turn on cleansing when loading the warehouse. When this parameter is set to ‘Y’ the cleansing values defined by the other cleansing-related parameters will be use to cleanse data.
This parameter is delivered with one entry that defines whether to turn the cleansing functionality On or Off. The following table illustrates the delivered Cleansing Parameters value. Edit the External Code of this record to ‘Y’ to turn cleansing On or ‘N’ to turn cleansing Off.

If you turn cleansing Off, values and descriptions will be entered into the warehouse exactly as they were in the source system. Null elements will still be translated to the default Null or data element Null values and descriptions, defined in the “CLEANSING DEFAULT VALUES parameter”, even if cleansing is Off.

**Internal Group:** CLEANSING PARAMETERS

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the parameter record</td>
<td>N/A</td>
<td>N/A</td>
<td>Specifies whether to turn cleansing on or off.</td>
<td>Describes the value of this parameter record. Not used in processing but is required.</td>
</tr>
<tr>
<td>CLEANSING ON</td>
<td>N/A</td>
<td>N/A</td>
<td>Y</td>
<td>Overall cleansing parameter, Y indicates cleansing should occur.</td>
</tr>
</tbody>
</table>

### Load Cleansing Data Rules

Use the Load Banner EDW Dimensional Data Default Cleansing Values job to initially populate the Cleansing Values (MGRCVAL) and Cleansing Descriptions (MGRCDES) tables. You run the Load Banner EDW Dimensional Data Default Cleansing Values job from the following menus in the Administrative UI: **Options>Schedule a Process>Banner EDW Utilities**.

You need to set up the Cleansing parameters used by the Dimensional Data Default Cleansing Values load job to properly configure this cleansing process. Refer to the “**Set up cleansing parameters**” section for instructions on how to set up the parameters.

### Load Cleansing Values load jobs

The Data Cleansing Values table (MGRCVAL) stores code values from the source system with the code values they translate to in the Banner EDW. The Data Cleansing Descriptions table (MGRCDES) stores the descriptions for every Banner EDW code value defined in the MGRCVAL table. Values for these tables get loaded from the source system
into the Banner EDW using the Load Banner EDW Dimensional Data Default Cleansing Values cleansing load process.

You can run this process during the Banner EDW installation and rerun it whenever values in the source system are updated. Running this Cleansing Load process generates a Control Report that lists the number of cleansing values brought over into Banner 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 MGRCDES tables. Records loaded using the Cleansing Load processes 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 processes are rerun. Follow the steps below to set up and maintain cleansing processes at your institution.

Note

You must set up all cleansing information before you run any jobs to load data into the Banner EDW. This is crucial to ensure that accurate, consistent information is loaded into the Banner EDW. It is especially important to verify that the various Event codes and descriptions meet your institution’s needs.

Change Multi_Source Records of the Cleansing Default Values Parameter

After the initial installation of the Banner EDW, you may find that you need to change the three MULTI_SOURCE records of the Cleansing Default Values parameter. If this is the case, you also need to change some parameter values for the CLEANSING SOURCES and the EDW EXTRACT PARAMETERS parameters to make all of the new parameter values match correctly. The following table shows the new parameter values that should match across the three different parameters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Internal Code 1</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLEANSING DEFAULT VALUES</td>
<td>MULTI_SOURCE_CLEANSE_LONG</td>
<td>&lt;new institution long description&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MULTI_SOURCE_CLEANSE_SHORT</td>
<td>&lt;new institution short description&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MULTI_SOURCE_CLEANSE_VALUE</td>
<td>&lt;new institution code&gt;</td>
<td></td>
</tr>
</tbody>
</table>
There are other tasks you need to perform when you change the three MULTI_SOURCE records of the CLEANSING DEFAULT VALUES parameter. Perform the following steps to make the parameter changes complete in the Banner EDW.

1. Change the values for these CLEANSING DEFAULT VALUES parameter records:
   - MULTI_SOURCE_CLEANSE_VALUE: Description = <new institution code>
   - MULTI_SOURCE_CLEANSE_SHORT: Description = <new institution short description>
   - MULTI_SOURCE_CLEANSE_LONG: Description = <new institution long description>

Note
You can change the CLEANSING DEFAULT VALUES parameter by running an update script or using the Banner EDW Administrative User Interface (Administrative UI). You should perform either step 1.1 or step 1.2.

1.1. Run an update script like the following in the IA_ADMIN schema:

```sql
UPDATE MTVPARM
SET MTVPARM_DESC = '<new institution code>'
WHERE MTVPARM_INTERNAL_CODE_GROUP = 'CLEANSING DEFAULT VALUES'
    AND MTVPARM_INTERNAL_CODE = 'MULTI_SOURCE_CLEANSE_VALUE';
UPDATE MTVPARM
SET MTVPARM_DESC = '<new institution short description>'
WHERE MTVPARM_INTERNAL_CODE_GROUP = 'CLEANSING DEFAULT VALUES'
    AND MTVPARM_INTERNAL_CODE = 'MULTI_SOURCE_CLEANSE_SHORT';
UPDATE MTVPARM
SET MTVPARM_DESC = '<new institution long description>'
WHERE MTVPARM_INTERNAL_CODE_GROUP = 'CLEANSING DEFAULT VALUES'
    AND MTVPARM_INTERNAL_CODE = 'MULTI_SOURCE_CLEANSE_LONG';
```
1.2. Use the Banner EDW Administrative UI to change the CLEANSING DEFAULT VALUES parameter values.

**Note**
If you already ran the script in step 1.1, you can skip to step 2.

1.2.1. In the Banner EDW Administrative UI, select **Options**.

1.2.2. Select **Set Up Parameters**.

1.2.3. Choose **CLEANSING DEFAULT VALUES** from the Internal Groups list.

1.2.4. Click **Search**.

1.2.5. Find the record with an Internal Code 1 of `MULTI_SOURCE_CLEANSE_VALUE` and click its **Description**.

1.2.6. Change the **Description** to the value that your institution would like to use for the `MULTI_SOURCE_CLEANSE_VALUE` in the Banner EDW.

1.2.7. Click **Save**.

1.2.8. Return to the list of Cleansing Default Values and repeat steps 1.2.5 to 1.2.7 for both the `MULTI_SOURCE_CLEANSE_SHORT`, and `MULTI_SOURCE_CLEANSE_LONG` values.

2. Change these values of the CLEANSING SOURCES parameter:

- Internal Code 1 = `<new institution code>`
- Description = `<new institution short description>`
- External Code = `<new institution long description>`

**Note**
You can change the CLEANSING SOURCES parameter by running an update script or using the Banner EDW Administrative UI. You should perform either step 2.1 or step 2.2. If you are changing the Internal Code 1 value, you need to perform step 2.1 and use the script method.

2.1. Run an update script like the following in the **IA_ADMIN** schema:

```sql
UPDATE MTVPARM
SET MTVPARM_INTERNAL_CODE = '<new institution code>'
    MTVPARM_DESC = '<new institution short description>'
```
MTVPARM_EXTERNAL_CODE = '<new institution long
description>'

WHERE MTVPARM_INTERNAL_CODE_GROUP = 'CLEANSING SOURCES'
AND MTVPARM_SYS_REQ_IND = 'Y';

COMMIT;

Make sure that the values you enter here, match the new institution code, short
and long description values that you used for the related CLEANSING
DEFAULT VALUES in step 1.

2.2. Use the Banner EDW Administrative UI to change the CLEANSING
SOURCES parameter values.

Note
If you already ran the script in step 2.1, you can skip to step 3.

2.2.1. In the Banner EDW Administrative UI, select Options.
2.2.2. Select Set Up Parameters.
2.2.3. Choose CLEANSING SOURCES from the Internal Groups list.
2.2.4. Click Search.
2.2.5. Click the Description for this value.
2.2.6. Change the values for the following fields of this parameter
• Internal Code 1 = <new institution code> You cannot change this
  value in the Banner EDW Administrative UI. If you need to make a change
to the Internal Code 1 value, perform step 2.1 and use the script method.
• Description = <new institution short description>
• External Code = <new institution long description>

Make sure that the values you enter here, match the new institution code, short
and long description values that you used for the related CLEANSING
DEFAULT VALUES in step 1.

3. Change these values of the MULTI_SOURCE_GROUP record for the EDW EXTRACT
PARAMETERS parameter:
• External Code = <new institution code>
• Description = <new institution long description>
• Internal Code 2 = <new institution code>

Note
You can change the EDW EXTRACT PARAMETERS parameter by
running an update script or using the Banner EDW Administrative UI. You
should perform either step 3.1 or step 3.2.

### 3.1. Run an update script like the following in the IA_ADMIN schema:

```sql
UPDATE MTVPARM
    SET MTVPARM_DESC = '<new institution long description>'
    MTVPARM_EXTERNAL_CODE = '<new institution code>'
    MTVPARM_INTERNAL_CODE_2 = '<new institution code>'
    WHERE MTVPARM_INTERNAL_CODE_GROUP = 'EDW_EXTRACT_PARAMETERS'
    AND MTVPARM_INTERNAL_CODE = 'MULTI_SOURCE_GROUP'
    AND MTVPARM_SYS_REQ_IND = 'Y';
COMMIT;
```

### 3.2. Use the Banner EDW Administrative UI to change the EDW EXTRACT PARAMETERS parameter values.

#### 3.2.1. In the Banner EDW Administrative UI, select **Options**. Note: If you already ran the script in step 3.1, you can skip to step 4.

#### 3.2.2. Select **Set Up Parameters**.

#### 3.2.3. Choose **EDW EXTRACT PARAMETERS** from the Internal Groups list.

#### 3.2.4. Click **Search**.

#### 3.2.5. Find the record with an Internal Code 1 of **MULTI_SOURCE_GROUP** and click its **Description**.

#### 3.2.6. Change the values for the following fields of this parameter

- **External Code** = `<new institution code>`
- **Description** = `<new institution long description>`
- **Internal Code 2** = `<new institution code>`

Make sure that the values you enter here, match the new institution code and long description values that you used for the related CLEANSING DEFAULT VALUES in step 1.

#### 3.2.7. Click **Save**.

### 4. Truncate the MGRCVAL table then truncate the MGRCDES table. Be sure to truncate the MGRCVAL table first.

#### 4.1. Truncate the MGRCVAL table using the following command

```
TRUNCATE TABLE "MGRCVAL"
```
4.2. Truncate the MGRCDES table using the following command

   TRUNCATE TABLE "MGRCVAL"

5. Access the Banner EDW Administrative UI and reload the default cleansing values.

   Note
   This step updates a different set of cleansing values and descriptions than those updated by the mgrcdes_mgrcval_data_edw.sql script in the previous step.

   5.1. In the Banner EDW Administrative UI, select Options.

   5.2. Select Schedule a Process.

   5.3. Select Banner EDW Utilities.

   5.4. Select Load Banner EDW Data Default Cleansing Values.

   5.5. Keep the default value of Load_All_Elements in the Cleansing Element to Load field.

   5.6. Enter NOW in the Run Date and Run Time fields or you can select another date and time for the process to run.

   5.7. Click Submit.

6. (Optional) Reset the sequence used for WDT_MULTI_SOURCE and delete the existing record from WDT_MULTI_SOURCE.

7. Change the MULTI_SOURCE values in the WDT_MULTI_SOURCE dimension table to match the new institution code, short and long descriptions.

   Note
   You can change the MULTI_SOURCE values by changing them directly in the WDT_MULTI_SOURCE table or by reloading the Banner EDW Operational and Snapshot stars. You should perform either step 7.1 or step 7.2.

   7.1. Access the WDT_MULTI_SOURCE table and change the following values:

   • MULTI_SOURCE = <new institution code>
   • MULTI_SOURCE_SD = <new institution short description>
   • MULTI_SOURCE_LD = <new institution long description>

   7.2. Reload the Banner EDW operational stars and supporting dimensions. Perform the sub-steps of this step for each of these processes:

   • Load/Refresh Calendar Date Dimension
   • Load/Refresh Event Dimension
- Load/Refresh Indicator Dimension
- Load/Refresh All Banner EDW General
- Load/Refresh All Banner EDW Student

**Note**

If you already made changes to the WDT_MULTI_SOURCE table in step 7.1, you are finished and can skip the remaining steps. If you choose to follow step 7.2 and reload the stars, the new MULTI_SOURCE values will only take effect in the reloaded stars. Any stars that you do not reload will use the previous MULTI_SOURCE values.

7.2.1. In the Banner EDW Administrative UI, select **Options**.

7.2.2. Select **Schedule a Process**.

7.2.3. Select **Schedule Banner EDW Operational Mappings**.

7.2.4. Click one of the processes identified in the bulleted list of this step, for example, **Load/Refresh All Banner EDW General**.

7.2.5. Choose **L - (L)oad** in the **Process Indicator** field.

7.2.6. Enter **NOW** in the **Run Date** and **Run Time** fields or you can select another date and time for the process to run.

7.2.7. Click **Submit**.

7.2.8. Repeat steps 7.2.1 through 7.2.7 for each mapping and dimension identified in the bulleted list of this step.

**Troubleshoot cleansing errors**

During a load or refresh of the Banner EDW, the defined cleansing rules will be used to process the source system values into the warehouse. If a source system code does not have a cleansing translation defined (for example, when a code doesn’t have a match in the cleansing rules or a value falls outside of the defined ranges) a cleansing warning is included in the control report. The cleansing warning tells you which data element and source system value could not be processed.

Records that have cleansing errors are not loaded or refreshed in the warehouse. Until the cleansing issue is resolved and the data reloaded, your warehouse will have fewer records than expected. This could affect measures in your warehouse. Evaluating and fixing any cleansing warnings should be part of any load or refresh process.
Fix cleansing errors

When troubleshooting a cleansing error, you must first decide if the value that was not cleansed is a valid value. Based on the answer to that question, you should take the following action.

**Example**

If the cleansing error is for a GPA value of 88.8 (which falls outside of the ranges defined for the data element GPA_4_PT_RANGE used to cleanse the value) you need to decide whether the 88.8 is a valid or expected value.

If the cleansing error value is valid, then you must update the cleansing rules to process that value. You could do one of the following:

- Update the GPA_4_PT_RANGE data element’s ranges to include the 88.8 value
- If the GPA_4_PT_RANGE is not appropriate (because your institution uses a 100 point GPA range) change the data element used to cleanse that value to GPA_100_PT_RANGE instead.

If the cleansing error value is not valid, you need to correct the errant data in the source system then validate it was corrected after your next warehouse refresh. You can use the data in the star’s ERROR table located in the EDWSTG schema to retrieve additional information, such as PIDMs, to track down the source system record in question.

**Cleansing values derived from source values not being updated**

For cleansing data elements that are derived from source system values, these cleansing values are refreshed during every refresh process. This means that if you add a new code to Banner then the new code will have a cleansing translation created for it automatically during the next refresh. If you experience a cleansing error with a value you know is defined within Banner, check the Rule Source Query for the defined Cleansing Rule to
ensure that the rule is querying the desired source table to define the default cleansing rules for that element. You can either update the Rule Source Query to the table you desire to set the default values for that cleansing element OR update the source table to include the missing values.

**Range cleansing rule changes**

When making changes to range cleansing rules after data has already been loaded in the warehouse, keep the following in mind. If just the upper range of the highest range defined or lower range of the lowest range defined is being updated, then you only need to refresh the star’s data to have the error records reprocessed. You don’t need to do additional changes or loads. If all of the ranges are being modified and new ranges established, then you need to reload that entire star to have the new ranges used within the dimension.

**Example**

If a GPA value of -.12 caused a cleansing error and the **From** and **To** values “< 2.00” range are set to 0 and 2.00 respectively, the -.12 would be out of that range, despite the label. If desired, you could update the lower limit of that range to be a large negative number instead of 0 and refresh the records with no need to update the rest of the star’s data.

**Creating cleansing elements to catch errant values**

You can create cleansing values to “catch” errant values. For example, if your institution uses a GPA range of 0 - 4.0 and a value of -.5 or of 6.0 exists in the source system, you could create valid cleansing record ranges to collect errant values that are too low or too high. This approach allows these records to be processed into the warehouse without error, however, no alerts are generated during the cleansing process. The errant data is then propagated into the warehouse and may affect reports. Consider the implications of this method before implementing it.

**Configure Dimensional Data Default Cleansing Values load process**

The Load Banner EDW Dimensional Data Default Cleansing Values job initially populates the Cleansing Values (MGRCVAL) and Cleansing Descriptions (MGRCDDES) tables. This job uses the configuration data stored in the Cleansing Data Rules (MGRCRUL) and Cleansing Data Elements (MGRCDIM) tables to perform the load.

The MGRCDIM and MGRCRUL tables contain all the information needed to:

- Define which cleansing elements to load
- Specify where to get the source cleansing value or description data
- Define special processing rules, for example, effective dating or elements that use additional data when defining unique values (using prefixes)

You run the Load Banner EDW Dimensional Data Default Cleansing Values job from the following menus in the Administrative UI: **Options>Schedule a Process>Banner EDW Utilities**.

You can maintain the data in the MGRCRUL and MGRCDIM tables using the Administrative UI to create, update, and/or delete individual data element information. Refer to the **“Set Up Cleansing”** section for more information about setting up the rules and elements.

**Cleansing Data Elements (MGRCDIM)**

The Cleansing Data Elements (MGRCDIM) table contains the information that defines a cleansing data element. These elements are the actual dimension columns that are cleansed in the warehouse during standard ETL processing. The keys to the data element information are the Dimension Name and Column Name, which are unique within the system. Each data element is associated with a Cleansing Rule from the MGRCRUL table.

Additional attributes of a Cleansing Data Element include:

- **Enabled flag** - controls whether the columns is cleansed during the ETL processes
- **Default null value** - defines a common translation value for data that is null in the source system, for example, “???”
- **Default null short description** - defines a common translation short description for data that is null in the source system, for example, “Data NA”
- **Default null long description** - defines a common translation long description for data that is null in the source system, for example, “Data Not Available”

These cleansing data elements are maintained via Administrative UI screens, within the “Options->Set Up Cleansing Processes” menu. The Administrative UI screens provide the ability to create/update/delete data element definitions. Typically all rules required for baseline processing are installed with the product but new rules can be added to extend the EDW as new stars are created.

**Verify MGRCVAL and MGRCDES Load**

When Banner EDW is installed, the two cleansing processes - Data Default Cleansing Load and Dimensional Data Default Cleansing - are run. During the cleansing load process, values are loaded into the MGRCVAL and MGRCDES tables with information from the source system tables. Some additional code descriptions are defined using translation, range, and effective date logic in the Load process.

Verify that the cleansing processes successfully loaded data into the MGRCVAL and MGRCDES tables using the Administrative UI. To verify the information, see **“Update a**
Components of the Performance products (Banner Recruiting and Admissions Performance, Banner Student Retention Performance, and Advancement Analytics for Cognos) use Parameter Maps to specify how information will display in reports that you run against the warehouse. For example, you use parameter maps to define the current year of giving, age ranges, and your institution’s fiscal start month or credit ranges for grouping students.

If you are using any of the Performance products with the Banner EDW, you need to review each of the Parameter Maps, determine which maps affect data used by your institution, and create your institution’s desired Parameter Map values using the Administrative UI. To determine which Parameter Maps your institution needs to review and update, refer to the table in the “Parameter Map parameter” section, which lists each Parameter Map and which Performance products use it.

Note
It is best to set up Parameter Maps before you initially load the warehouse but it is not imperative that you do. You can set up the parameter maps after warehouse data has been loaded.

Parameter Map parameter

Parameter maps control how certain data items will be extracted and loaded into the warehouse. You specify your institution’s Parameter Map values in the Parameter Map parameter defined in the Administrative UI. The system uses the values of this parameter to organize and display data from the data warehouse through the Cognos packages. Each parameter map value (or record) controls how one or more query items will display when data is retrieved through the delivered business concepts in the Cognos FM Model packages.

All parameter records with an **Internal Group Code** = “Parameter Map” define one value of a parameter map. The **Internal Code 1** field identifies which parameter map the record defines. Each Parameter Map may require one or more parameter records.

The following table lists the Parameter Maps used by the Performance products. If you license any of the Performance products, review each of these Parameter Maps and update them as necessary before you run the ETL load jobs to populate the warehouse.
Table Key

The table identifies which products and business concepts use each parameter map as follows:

- **RAP = Banner Recruiting and Admissions Performance**
  - AEF = Analyze Enrollment Funnel business concept
  - IANE = Impact of Aid on New Enrollment business concept
  - MA = Manage Applicants business concept
- **SRP = Banner Student Retention Performance**
  - ASE = Analyze Student Engagement business concept
  - ASP = Analyze Student Progress business concept
- **AAC = Advancement Analytics for Cognos**
  - AFP = Analyze Fundraising Progress business concept
  - MPP = Manage Prospect Pipeline business concept
  - ACG = Analyze Constituent Giving
  - RQPP = Research and Qualify Potential Prospects

<table>
<thead>
<tr>
<th>Parameter map</th>
<th>Description</th>
<th>RAP</th>
<th>SRP</th>
<th>AAC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>“Academic Year Range parameter map”</strong></td>
<td>Defines the start and end academic year to be retrieved when this filter is used either in the Cognos FM Model and associated packages or when using the package to load data into a cube.</td>
<td></td>
<td></td>
<td>ASP</td>
</tr>
</tbody>
</table>
| **“Advancement Age Range parameter map”** | Defines ranges and their order for constituents current age in Advancement Analytics for Cognos FM Model and associated packages. |     |     | ACG  
|                                      |                                                                            |     |     | AFP  
|                                      |                                                                            |     |     | MPP  
|                                      |                                                                            |     |     | RQPP |
| **“Age Range parameter map”**       | Defines ranges and their order for the age groups applied to Admit Age, Enrolled Age and Current Age within all the business concepts that include these ages. |     |     | ASE, 
<p>|                                      |                                                                            |     |     | ASP  |
| <strong>“Application Rating Range parameter map”</strong> | Define ranges and their order for the ranges associated with application ratings within your Cognos FM Model and associated packages. |     |     | MA   |</p>
<table>
<thead>
<tr>
<th>Parameter map</th>
<th>Description</th>
<th>RAP</th>
<th>SRP</th>
<th>AAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Ask Amount Range parameter map”</td>
<td>Defines ranges and their order for the rated amount, target, latest ask, and result amounts used in Advancement Analytics for Cognos FM Model and associated packages.</td>
<td></td>
<td></td>
<td>ACG</td>
</tr>
<tr>
<td></td>
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<td>MPP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RQPP</td>
</tr>
<tr>
<td>“Assignment Category parameter map”</td>
<td>Defines description to be used for categorizing and grouping constituent’s assignments.</td>
<td></td>
<td></td>
<td>ACG</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RQPP</td>
</tr>
<tr>
<td>“Campaign Duration Aging parameter map”</td>
<td>Defines ranges and their order for the number of days that have passed since a campaign began within the Campaign query subject.</td>
<td>AEF</td>
<td>ASE</td>
<td></td>
</tr>
<tr>
<td>“Cohort Graduation Status parameter map”</td>
<td>Defines the translation for the cohort graduation status codes. The delivered default values include NE = Not Expected, EX = Expected, PE = Past Expected and No Data = Data Not Available.</td>
<td></td>
<td></td>
<td>ASE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ASP</td>
</tr>
<tr>
<td>“Communication parameter map”</td>
<td>Define descriptions to be used when data is available for a query item in the Banner Communication query subject within the Cognos FM Model and associated packages.</td>
<td>MA</td>
<td>IANE</td>
<td>ASP</td>
</tr>
<tr>
<td>“Consecutive Years of Giving Range parameter map”</td>
<td>Defines ranges and their order for constituent's consecutive years of giving in Advancement Analytics for Cognos FM Model and associated packages.</td>
<td></td>
<td></td>
<td>ACG</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RQPP</td>
</tr>
<tr>
<td>“Contact Report Aging parameter map”</td>
<td>Define ranges and their order for the number of days that have passed since a contact was made in Advancement Analytics for Cognos FM Model and associated packages.</td>
<td></td>
<td></td>
<td>ACG</td>
</tr>
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<td></td>
<td></td>
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<td>MPP</td>
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<td></td>
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<td></td>
<td></td>
<td>RQPP</td>
</tr>
<tr>
<td>“Contact Source parameter map”</td>
<td>Defines the description for a Contact Source, there can be only three values, Constituent Contact, Prospect Contact, and No Contact.</td>
<td></td>
<td></td>
<td>ACG</td>
</tr>
<tr>
<td></td>
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<td>MPP</td>
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<td></td>
<td></td>
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<td>RQPP</td>
</tr>
<tr>
<td>Parameter map</td>
<td>Description</td>
<td>RAP</td>
<td>SRP</td>
<td>AAC</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>---------</td>
</tr>
<tr>
<td>“Current Advancement Campaign parameter map”</td>
<td>Defines which Campaign codes in your source database to associate with the Current Annual, Current Capital, and Current Comprehensive Campaigns filters in the Analyze Fundraising Progress business concept in Advancement Analytics for Cognos FM Model and associated packages.</td>
<td></td>
<td></td>
<td>ACG AFP</td>
</tr>
<tr>
<td>“Donor Retention Status parameter map”</td>
<td>Defines the code and description to be used as the donor retention status for a constituent for a year of giving in context.</td>
<td></td>
<td></td>
<td>ACG</td>
</tr>
<tr>
<td>“Exclusion Status parameter map (Banner Only)”</td>
<td>Defines the description to be used in segmenting exclusions.</td>
<td></td>
<td></td>
<td>ACG AFP MPP RQPP</td>
</tr>
<tr>
<td>“Finaid Contribution Range parameter map”</td>
<td>Defines ranges and their order for the ranges associated with financial aid contribution within the Financial Aid Information query subject.</td>
<td>IANE</td>
<td></td>
<td>ACG</td>
</tr>
<tr>
<td>“Finaid Income Range parameter map”</td>
<td>Defines ranges and their order for the ranges associated with financial aid income within the Financial Aid Information query subject.</td>
<td>IANE</td>
<td></td>
<td>ACG</td>
</tr>
<tr>
<td>“Finaid Need Met Percentage Range parameter map”</td>
<td>Defines ranges and their order for the ranges associated with financial aid met need within the Financial Aid Information query subject.</td>
<td>AEF, IANE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Finaid Need Not Met Percent Range parameter map”</td>
<td>Defines ranges and their order for the ranges associated with financial aid unmet need within the Financial Aid Information query subject.</td>
<td>IANE</td>
<td>ASE, ASP</td>
<td></td>
</tr>
<tr>
<td>“Finaid Need Range parameter map”</td>
<td>Defines ranges and their order for the ranges associated with financial aid need within the Financial Aid Information query subject.</td>
<td>AEF, IANE</td>
<td>ASE, ASP</td>
<td></td>
</tr>
<tr>
<td>“Funnel Status parameter map”</td>
<td>Define funnel statuses and their order.</td>
<td>AEF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parameter map</td>
<td>Description</td>
<td>RAP</td>
<td>SRP</td>
<td>AAC</td>
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</tr>
<tr>
<td>“Funnel Status Aging parameter map”</td>
<td>Define ranges and their order for the number of days that have passed since a student entered the enrollment funnel.</td>
<td>AEF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Geographic Division”</td>
<td>Defines which geographic division or divisions should be loaded into the warehouse. The parameter map can be duplicated to add additional geographic divisions.</td>
<td></td>
<td></td>
<td>ACG</td>
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<td></td>
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<td>AFP</td>
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<td></td>
<td>RQPP</td>
<td></td>
</tr>
<tr>
<td>“Giving History Range parameter map”</td>
<td>Defines ranges and their order for the ranges associated with giving history used in Advancement Analytics for Cognos FM Model and associated packages.</td>
<td></td>
<td></td>
<td>ACG</td>
</tr>
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<td></td>
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<td>MPP</td>
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<td></td>
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<td></td>
<td>RQPP</td>
<td></td>
</tr>
<tr>
<td>“GPA Range parameter map”</td>
<td>Defines ranges and their order for the ranges associated with GPAs within the Academic Performance query subject.</td>
<td></td>
<td></td>
<td>ASE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ASP</td>
<td></td>
</tr>
<tr>
<td>“IM Parent Home Equity Range parameter map”</td>
<td>Defines ranges and their order for the equity parents have in their home within the Cognos FM Model and associated packages</td>
<td></td>
<td>IANE</td>
<td></td>
</tr>
<tr>
<td>“Last Contact Days parameter map”</td>
<td>Defines ranges and their order for the number of days that have passed since the last contact was made within the Contact query subject in the Latest Contact folder.</td>
<td></td>
<td>AEF</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>IANE</td>
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<td>ASE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AS</td>
<td></td>
</tr>
<tr>
<td>“LYBUNT SYBUNT parameter map”</td>
<td>Defines the code and description to be used for a constituent who donated some year, but unfortunately not this year (SYBUNT) or last year but unfortunately not this year (LYBUNT) or other for the year of giving in context.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Mail Phone Exclusion parameter map”</td>
<td>Defines the description to be used in the Cognos packages, based on the mail and/or phone exclusion flags associated with an exclusion code on ATVEXCL.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>ACG</td>
<td></td>
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<td>AFP</td>
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<td></td>
<td>RQPP</td>
<td></td>
</tr>
<tr>
<td>Parameter map</td>
<td>Description</td>
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<td>----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>“Month Duration parameter map”</td>
<td>Defines the duration ranges and their order for the several query items used in the Advancement Analytics for Cognos FM Model and associated packages.</td>
<td></td>
<td></td>
<td>ACG MPP RQPP</td>
</tr>
<tr>
<td>“Negative Indicators (0) parameter map”</td>
<td>Defines the negative ‘No’ description for the fact-based indicators used in the Cognos FM Models and associated packages.</td>
<td>AEF, IANE, MA</td>
<td>ASE, ASP</td>
<td>ACG, AFP MPP RQPP</td>
</tr>
<tr>
<td>“Pledge Balance Range parameter map”</td>
<td>Define ranges and their order for the overall pledge ranges used in Advancement Analytics for Cognos FM Model and associated packages.</td>
<td></td>
<td></td>
<td>ACG AFP</td>
</tr>
<tr>
<td>“Positive Indicators (1) parameter map”</td>
<td>Defines the positive ‘Yes’ description for the fact-based indicators used in the Cognos FM Model and associated packages.</td>
<td>AEF, IANE, MA</td>
<td>ASE, ASP</td>
<td>ACG AFP MPP RQPP</td>
</tr>
<tr>
<td>“Reactivated Donor Status parameter map”</td>
<td>Defines the description for a constituent who gave this year and some year prior but not last year.</td>
<td></td>
<td></td>
<td>RQPP</td>
</tr>
<tr>
<td>“Relation Category parameter map”</td>
<td>Defines groups of Relationship type codes like Family, Organizational and Sphere Of Influence.</td>
<td></td>
<td></td>
<td>ACG AFP MPP RQPP</td>
</tr>
<tr>
<td>“Release Information parameter map”</td>
<td>Defines the current product and release number.</td>
<td>AEF, IANE, MA</td>
<td>ASE, ASP</td>
<td>ACG AFP MPP RQPP</td>
</tr>
<tr>
<td>“Report Default Selections parameter map”</td>
<td>Defines the query items within the Report Default Selections query subject.</td>
<td>AEF, IANE, MA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Report Help Text parameter map”</td>
<td>Defines the contact information and email address that display on each Help page.</td>
<td>AEF, IANE, MA</td>
<td>ASE, ASP</td>
<td>ACG AFP MPP RQPP</td>
</tr>
<tr>
<td><strong>Parameter map</strong></td>
<td><strong>Description</strong></td>
<td><strong>RAP</strong></td>
<td><strong>SRP</strong></td>
<td><strong>AAC</strong></td>
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<td>--------------</td>
</tr>
<tr>
<td><strong>“Retained Donor Status parameter map”</strong></td>
<td>Defines the descriptions for a constituent who gave this year and last year and whether the amount was constant, upgraded, or downgraded.</td>
<td></td>
<td></td>
<td>AFP, RQPP, ACG</td>
</tr>
<tr>
<td><strong>“Retained Donor Type parameter map”</strong></td>
<td>Defines the descriptions to group retained donors, new donor retained, previous donor retained, and other.</td>
<td></td>
<td></td>
<td>RQPP</td>
</tr>
<tr>
<td><strong>“Scorecard Academic Year parameter map”</strong></td>
<td>Defines the academic year to be used when viewing scorecard information.</td>
<td></td>
<td></td>
<td>ASE</td>
</tr>
<tr>
<td><strong>“Short Long Lapse SYBUNT parameter map”</strong></td>
<td>Defines the description to be used to further segment SYBUNT.</td>
<td></td>
<td></td>
<td>ACG, RQPP</td>
</tr>
<tr>
<td><strong>“Student Course parameter map”</strong></td>
<td>Defines the labels used to define the sources for the student course records. The default labels are History, Registration and Transfer.</td>
<td></td>
<td></td>
<td>ASP</td>
</tr>
<tr>
<td><strong>“Student Level parameter map”</strong></td>
<td>Defines which of your institution’s Student Level Codes correspond to the Undergraduate, Graduate, and Professional levels within your Cognos FM Model and associated packages.</td>
<td>AEF, IANE, MA</td>
<td>ASE, ASP</td>
<td></td>
</tr>
<tr>
<td><strong>“Test Type parameter map”</strong></td>
<td>Defines which of your institution’s Test Type Codes correspond to the test types used in your Cognos FM Model and associated packages.</td>
<td>AEF, MA</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>“Total Years of Participation Range parameter map”</strong></td>
<td>Defines ranges and their order for a constituent’s total years of participation for use in the Advancement Analytics for Cognos and associated FM packages.</td>
<td></td>
<td></td>
<td>ACG, RQPP</td>
</tr>
<tr>
<td><strong>“Traditional Age parameter map”</strong></td>
<td>Defines the highest current age of a student to use when calculating the Traditional Student Indicator.</td>
<td>AEF, IANE, MA</td>
<td>ASE, ASP</td>
<td></td>
</tr>
</tbody>
</table>
The Academic Year Range parameter map lets you define a range of academic years to filter the detail of data retrieved when using the FM Model packages that include the Academic Year Range filter. The Academic Year Range filter is used to limit the number of academic years of data that are loaded into a cube.

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Academic Year Range’ define the FROM YEAR and TO YEAR that define the range of academic years for which data should be selected. The two academic years identify the first and last year of data to be loaded.

- **FROM YEAR record** - defines the start academic year
- **TO YEAR record** - defines the final academic year

The following table illustrates the PARAMETER MAP Academic Year Range values that were present at installation. The first row gives a definition of each field. Edit the Descriptions associated with the FROM YEAR and TO YEAR records to create your institution’s desired Academic Year Range defined as a filter within the Cognos FM Model packages.

<table>
<thead>
<tr>
<th>Parameter map</th>
<th>Description</th>
<th>RAP</th>
<th>SRP</th>
<th>AAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Transaction Amount Range parameter map”</td>
<td>Defines ranges and their order for the transaction amount ranges used in Advancement Analytics for Cognos FM Model and associated packages.</td>
<td></td>
<td></td>
<td>ACG AFP</td>
</tr>
<tr>
<td>“UID Crosswalk parameter map (Advance with Banner)”</td>
<td>Defines an ID relationship between entities in your Advance system that are also in your Banner systems for Advancement Analytics for Cognos FM Model and associated packages.</td>
<td></td>
<td></td>
<td>ACG AFP RQPP</td>
</tr>
<tr>
<td>“Year Of Giving parameter map”</td>
<td>Defines key years of giving at your institution for Advancement Analytics for Cognos FM Model and associated packages.</td>
<td></td>
<td></td>
<td>AFP</td>
</tr>
</tbody>
</table>
Internal Group: PARAMETER MAP

### Advancement Age Range parameter map

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Advancement Age Range’ define age ranges and their order for a constituent’s current age in Advancement Analytics for Cognos FM Model and associated packages.

To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Advancement Age Range parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - specifies the highest number of days to include in the range for that tier
- **RANGE# DESC record** - defines the description of the range tier that will display on reports in Cognos
- **RANGE# ORDER record** - defines the description and the sequence in which the range tier should display when using the Advancement Age Range query item in the Cognos FM Models and associated packages

#### Note

The highest range tier requires you define only the range description and range order since the range itself is the number of days greater than the previous tier.

The following table illustrates the PARAMETER MAP Advancement Age Range values that were present at installation. The first row gives a definition of each field. You should edit the delivered **External Code** and **Description** associated with the Advancement Age Range:

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Identifies which year of the range the record defines: beginning (FROM) and ending (TO) years</td>
<td>1</td>
<td>FROM YEAR</td>
<td>1982</td>
</tr>
<tr>
<td></td>
<td>Do not change these values</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACADEMIC YEAR RANGE</td>
<td>FROM YEAR</td>
<td>2</td>
<td>TO YEAR</td>
<td>1989</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Range records to create your institution’s desired Range values, Range Descriptions and Range Orders.

Internal Group: PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Identifies which tier of range is being defined</td>
<td>Specifies order for this tier of range</td>
<td>Identifies which tier of range is being defined</td>
<td>Defines range tier description or highest value in range tier</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range1</td>
<td>1</td>
<td>Range1</td>
<td>20</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range1 Desc</td>
<td>2</td>
<td>Range1 Desc</td>
<td>Under 20</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range1 Order</td>
<td>3</td>
<td>Range1 Order</td>
<td>01. Under 20</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range2</td>
<td>4</td>
<td>Range2</td>
<td>25</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range2 Desc</td>
<td>5</td>
<td>Range2 Desc</td>
<td>20 - 24</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range2 Order</td>
<td>6</td>
<td>Range2 Order</td>
<td>02. 20 - 24</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range3</td>
<td>7</td>
<td>Range3</td>
<td>30</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range3 Desc</td>
<td>8</td>
<td>Range3 Desc</td>
<td>25 - 29</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range3 Order</td>
<td>9</td>
<td>Range3 Order</td>
<td>03. 25 - 29</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range4</td>
<td>10</td>
<td>Range4</td>
<td>40</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range4 Desc</td>
<td>11</td>
<td>Range4 Desc</td>
<td>30 - 39</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range4 Order</td>
<td>12</td>
<td>Range4 Order</td>
<td>04. 30 - 39</td>
</tr>
<tr>
<td>ADVANCEMENT AGE RANGE</td>
<td>Range5</td>
<td>13</td>
<td>Range5</td>
<td>50</td>
</tr>
</tbody>
</table>
### Age Range parameter map

The Age Range parameter map lets you define ranges and their order for the age information to be used within the Cognos FM Models and associated packages. These ranges are used in the Analyze Student Engagement and Analyze Student Progress business concepts to define the ranges used with the Age Range and Age Range Order query items included in the Person query subject as Current Age, the Student Enrollment query subject as Enrolled Age, and the Admit Demographics folder in the Student query subject.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADVANCEMENT</td>
<td>Range5 Desc</td>
<td>14</td>
<td>Range5 Desc</td>
<td>40 - 49</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>Range5 Order</td>
<td>15</td>
<td>Range5 Order</td>
<td>05. 40 - 49</td>
</tr>
<tr>
<td>Range6</td>
<td>Range6 Desc</td>
<td>16</td>
<td>Range6 Desc</td>
<td>50 - 59</td>
</tr>
<tr>
<td>Range6 Order</td>
<td>Range6 Order</td>
<td>17</td>
<td>Range6 Order</td>
<td>06. 50 - 59</td>
</tr>
<tr>
<td>Range7</td>
<td>Range7</td>
<td>18</td>
<td>Range7</td>
<td>70</td>
</tr>
<tr>
<td>Range7 Desc</td>
<td>Range7 Desc</td>
<td>19</td>
<td>Range7 Desc</td>
<td>60 - 79</td>
</tr>
<tr>
<td>Range7 Order</td>
<td>Range7 Order</td>
<td>20</td>
<td>Range7 Order</td>
<td>07. 60 - 79</td>
</tr>
<tr>
<td>Range8 Desc</td>
<td>Range8 Desc</td>
<td>21</td>
<td>Range8 Desc</td>
<td>80 and Over</td>
</tr>
<tr>
<td>Range8 Order</td>
<td>Range8 Order</td>
<td>22</td>
<td>Range8 Order</td>
<td>08. 70 and Over</td>
</tr>
<tr>
<td>Null Desc</td>
<td>Null Desc</td>
<td>23</td>
<td>Null Desc</td>
<td>No Age Data Exists</td>
</tr>
<tr>
<td>Null Order</td>
<td>Null Order</td>
<td>24</td>
<td>Null Order</td>
<td>99. No Age Data Exists</td>
</tr>
</tbody>
</table>

---
The records of the Parameter Map parameter with an **Internal Code 1 = ‘Age Range’** define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Age Range parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - defines the highest amount to include in the range for that tier
- **RANGE# DESC record** - defines the description of the range
- **RANGE# ORDER record** - defines the sequence in which the range tier should display when using any of the Age Range Order Query Items in the Cognos FM Models and associated packages

**Note**

The highest range tier requires you define only the Range Description and Range Order since the range itself is everything greater than the previous tier.

The following table illustrates some of the PARAMETER MAP Age Range values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the Age Range records to create your institution’s desired Range values, Range Descriptions (that display on reports) and Range Orders (used when ordering ranges using the Cognos FM Model packages.)

**Internal Group: PARAMETER MAP**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Identifies which tier of range is being defined</td>
<td>Specifies order for this tier of range</td>
<td>Identifies which tier of range is being defined</td>
<td>Defines range tier description or highest value in range tier</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE1</td>
<td>1</td>
<td>RANGE1</td>
<td>18</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE1 DESC</td>
<td>2</td>
<td>RANGE1 DESC</td>
<td>Under 18</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE1 ORDER</td>
<td>3</td>
<td>RANGE1 ORDER</td>
<td>01. Under 18</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE2</td>
<td>4</td>
<td>RANGE2</td>
<td>20</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE2 DESC</td>
<td>5</td>
<td>RANGE2 DESC</td>
<td>18 - 19</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE2 ORDER</td>
<td>6</td>
<td>RANGE2 ORDER</td>
<td>02. 18 - 19</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE3</td>
<td>7</td>
<td>RANGE3</td>
<td>22</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE3 DESC</td>
<td>8</td>
<td>RANGE3 DESC</td>
<td>20 - 21</td>
</tr>
</tbody>
</table>
The Application Rating Range parameter map lets you define ranges and their order for the ranges associated with application ratings within your Cognos FM Model and associated packages. These ranges are used in the Manage Applicants business concept to define the ranges used with the Application Rating Range and Application Rating Range Order query items included in the Admissions Application query subject.

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Application Rating Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three GPA Range parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - defines the highest amount to include in the range for that tier
- **RANGE# DESC record** - defines the description of the range tier that will display on reports in Cognos

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE RANGE</td>
<td>RANGE3 ORDER</td>
<td>9</td>
<td>RANGE3 ORDER</td>
<td>03. 20 - 21</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE4</td>
<td>10</td>
<td>RANGE4</td>
<td>25</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE4 DESC</td>
<td>11</td>
<td>RANGE4 DESC</td>
<td>22 - 24</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE4 ORDER</td>
<td>12</td>
<td>RANGE4 ORDER</td>
<td>04. 22 - 24</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE9</td>
<td>25</td>
<td>RANGE9</td>
<td>65</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE9 DESC</td>
<td>26</td>
<td>RANGE9 DESC</td>
<td>50 - 64</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE9 ORDER</td>
<td>27</td>
<td>RANGE9 ORDER</td>
<td>09. 50 - 64</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE10 DESC</td>
<td>28</td>
<td>RANGE10 DESC</td>
<td>65 and Over</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>RANGE10 ORDER</td>
<td>29</td>
<td>RANGE10 ORDER</td>
<td>10. 65 and Over</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>NULL DESC</td>
<td>30</td>
<td>NULL DESC</td>
<td>No Data Exists</td>
</tr>
<tr>
<td>AGE RANGE</td>
<td>NULL ORDER</td>
<td>31</td>
<td>NULL ORDER</td>
<td>99. No Data Exists</td>
</tr>
</tbody>
</table>

**Application Rating Range parameter map**

The Application Rating Range parameter map lets you define ranges and their order for the ranges associated with application ratings within your Cognos FM Model and associated packages. These ranges are used in the Manage Applicants business concept to define the ranges used with the Application Rating Range and Application Rating Range Order query items included in the Admissions Application query subject.

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Application Rating Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three GPA Range parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - defines the highest amount to include in the range for that tier
- **RANGE# DESC record** - defines the description of the range tier that will display on reports in Cognos
• RANGE# ORDER record - defines the description and the sequence in which the range tier should display when using the associated Range Order Query Item in Cognos FM Model and associated packages

**Note**

The highest range tier requires you define only the Range Description and Range Order since the range itself is everything greater than the previous tier.

The following table illustrates some of the PARAMETER MAP Application Rating Range values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the GPA Range records to create your institution’s desired Range values, Range Descriptions (that display on reports) and Range Orders (used when ordering ranges in reports.)

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map</td>
<td>Identifies which tier of range is being defined</td>
<td>Specifies order for this tier of range</td>
<td>Identifies which tier of range is being defined</td>
<td>Defines range tier description or highest value in range tier</td>
</tr>
<tr>
<td>APPLICATION RATING RANGE</td>
<td>RANGE1</td>
<td>1</td>
<td>RANGE1</td>
<td>1</td>
</tr>
<tr>
<td>APPLICATION RATING RANGE</td>
<td>RANGE1 DESC</td>
<td>2</td>
<td>RANGE1 DESC</td>
<td>1 or Less</td>
</tr>
<tr>
<td>APPLICATION RATING RANGE</td>
<td>RANGE1 ORDER</td>
<td>3</td>
<td>RANGE1 ORDER</td>
<td>01. 1 or Less</td>
</tr>
<tr>
<td>APPLICATION RATING RANGE</td>
<td>RANGE2</td>
<td>4</td>
<td>RANGE2</td>
<td>2</td>
</tr>
<tr>
<td>APPLICATION RATING RANGE</td>
<td>RANGE2 DESC</td>
<td>5</td>
<td>RANGE2 DESC</td>
<td>1 to 2</td>
</tr>
<tr>
<td>APPLICATION RATING RANGE</td>
<td>RANGE2 ORDER</td>
<td>6</td>
<td>RANGE2 ORDER</td>
<td>02. 1 to 2</td>
</tr>
<tr>
<td>APPLICATION RATING RANGE</td>
<td>RANGE3</td>
<td>7</td>
<td>RANGE3</td>
<td>3</td>
</tr>
<tr>
<td>APPLICATION RATING RANGE</td>
<td>RANGE3 DESC</td>
<td>8</td>
<td>RANGE3 DESC</td>
<td>2 to 3</td>
</tr>
<tr>
<td>APPLICATION RATING RANGE</td>
<td>RANGE3 ORDER</td>
<td>9</td>
<td>RANGE3 ORDER</td>
<td>02. 2 to 3</td>
</tr>
</tbody>
</table>
The Ask Amount Range parameter map lets you define ranges and their order for the rated amount, target, latest ask, and result amounts used in Advancement Analytics for Cognos FM Model and associated packages. These ranges are used in the ACG, AFP, MPP, and RQPP business concepts to define the ranges used with the various Amount Range and Amount Range Order query items included in several of the query subjects, such as Prospect Rating, Program Prospect Rating, Proposal Results, and others.

The records of the Parameter Map parameter with an Internal Code 1 = ‘Ask Amount Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Ask Amount Range parameter records associated with each range tier define the following aspects of the range:

- RANGE# record - defines the highest amount to include in the range for that tier
- RANGE# DESC record - defines the description of the range tier that will display on reports in Cognos
- RANGE# ORDER record - defines the description and the sequence in which the range tier should display when using the Range Order Query Item in the Cognos FM Model and associated packages

Note
The lowest and highest range tiers require you define only the range description and range order since the range itself is ‘0’ for the lowest tier and everything greater than the previous tier for the highest tier.

The following table illustrates some of the PARAMETER MAP Ask Amount Range values that were present at installation. The first row gives a definition of each field. Edit the Descriptions associated with the Ask Amount Range records to create your
institution’s desired Range values, Range Descriptions (that display on reports) and Range Orders (used when ordering ranges in reports.)

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Identifies which tier of range is being defined</td>
<td>Specifies order for this tier of range</td>
<td>Identifies which tier of range is being defined</td>
<td>Defines range tier description or highest value in range tier</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE0 DESC</td>
<td>1</td>
<td>RANGE0 DESC</td>
<td>0 - No Amount</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE0 ORDER</td>
<td>2</td>
<td>RANGE0 ORDER</td>
<td>00. 0 - No Amount</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE1</td>
<td>3</td>
<td>RANGE1</td>
<td>25000</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE1 DESC</td>
<td>4</td>
<td>RANGE1 DESC</td>
<td>&lt; 25K</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE1 ORDER</td>
<td>5</td>
<td>RANGE1 ORDER</td>
<td>01. &lt; 25K</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE2</td>
<td>6</td>
<td>RANGE2</td>
<td>100000</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE2 DESC</td>
<td>7</td>
<td>RANGE2 DESC</td>
<td>25K - 99K</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE2 ORDER</td>
<td>8</td>
<td>RANGE2 ORDER</td>
<td>02. 25K - 99K</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE3</td>
<td>9</td>
<td>RANGE3</td>
<td>250000</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE3 DESC</td>
<td>10</td>
<td>RANGE3 DESC</td>
<td>100K - 249K</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE3 ORDER</td>
<td>11</td>
<td>RANGE3 ORDER</td>
<td>03. 100K - 249K</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE7 DESC</td>
<td>21</td>
<td>RANGE7 DESC</td>
<td>10M +</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>RANGE7 ORDER</td>
<td>22</td>
<td>RANGE7 ORDER</td>
<td>07. 10M +</td>
</tr>
</tbody>
</table>
Example

When delivered the first tier of the Ask Amount Range is “less than 25,000.” The values of the Parameter Map parameter that create that range are the following:

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Sequence</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>NULL DESC</td>
<td>24</td>
<td>Data Not Available</td>
</tr>
<tr>
<td>ASK AMOUNT RANGE</td>
<td>NULL ORDER</td>
<td>25</td>
<td>99. Data Not Available</td>
</tr>
</tbody>
</table>

Suppose your institution wants the first tier of the range to include all amounts “less than 10,000.” You need to make the following changes to the Ask Amount Range RANGE1 values:

- Change the RANGE1 record Description to ‘10000’
- Change the RANGE1 DESC record Description to ‘< 10K’
- Change the RANGE1 ORDER record Description to ‘01. < 10K’

Assignment Category parameter map

The record of the Parameter Map parameter with an Internal Code 1 = ‘Assignment Category’ defines descriptions to be used for categorizing and grouping constituents based on their assignments. The Prospect Assignment Category will use the parameter map values such as Prospect Assignment, Program Assignment, and Proposal Assignment to categorize or group assignments. A prospect assignment must be one of these values. If there is no assignment exists for a constituent, the value of the prospect assignment should be 'No Prospect Assignment'.
The following table illustrates the PARAMETER MAP Assignment Category values that were present at installation. The first row gives a definition of each field. You should edit the delivered External Code and Description values to create the constituent’s prospect assignments.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Specifies the assignment indicators</td>
<td>Not used</td>
<td>Specifies the assignment indicators</td>
<td>Type of the assignment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ASSIGNMENT CATEGORY</th>
<th>PROSPECT</th>
<th>1</th>
<th>PROSPECT ASSIGNMENT IND</th>
<th>Prospect Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSIGNMENT CATEGORY</td>
<td>PGM PROSPECT</td>
<td>2</td>
<td>PGM PROSPECT ASSIGNMENT IND</td>
<td>Program Assignment</td>
</tr>
<tr>
<td>ASSIGNMENT CATEGORY</td>
<td>PROPOSAL</td>
<td>3</td>
<td>PROPOSAL ASSIGNMENT IND</td>
<td>Proposal Assignment</td>
</tr>
<tr>
<td>ASSIGNMENT CATEGORY</td>
<td>OTHER</td>
<td>4</td>
<td>OTHER</td>
<td>No Prospect Assignment</td>
</tr>
</tbody>
</table>

**Campaign Duration Aging parameter map**

The Campaign Duration Aging parameter map lets you define ranges and their order for the number of days that have passed since a campaign began. These ranges are used in the Analyze Student Engagement business concept to define the aging ranges used with the Person Campaign Aging and Person Campaign Aging Order query items within the Campaign query subject.

The records of the Parameter Map parameter with an **Internal Code 1 = ‘Campaign Duration Aging’** define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Campaign Duration Aging parameter records associated with each range tier define the following aspects of the range:

- RANGE# record - specifies the highest number of days to include in the range for that tier
- RANGE# DESC record - defines the description of the range tier that will display on reports in Cognos
- **RANGE# ORDER record** - defines the description and the sequence in which the range tier should display when using the Person Campaign Aging Order query item in the Cognos FM Models and associated packages.

**Note**

The highest range tier requires you define only the range description and range order since the range itself is the number of days greater than the previous tier.

The following table illustrates some of the PARAMETER MAP Campaign Duration Aging values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the Campaign Duration Aging records to create your institution’s desired Range values, Range Descriptions and Range Orders.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAMPAIGN DURATION AGING</td>
<td>RANGE1 DESC</td>
<td>2</td>
<td>RANGE1 DESC</td>
<td>0 - 29 Days</td>
</tr>
<tr>
<td>CAMPAIGN DURATION AGING</td>
<td>RANGE1 ORDER</td>
<td>3</td>
<td>RANGE1 ORDER</td>
<td>01. 0 - 29 Days</td>
</tr>
<tr>
<td>CAMPAIGN DURATION AGING</td>
<td>RANGE2 DESC</td>
<td>5</td>
<td>RANGE2 DESC</td>
<td>30 - 59 Days</td>
</tr>
<tr>
<td>CAMPAIGN DURATION AGING</td>
<td>RANGE2 ORDER</td>
<td>6</td>
<td>RANGE2 ORDER</td>
<td>02. 30 - 59 Days</td>
</tr>
<tr>
<td>CAMPAIGN DURATION AGING</td>
<td>RANGE3</td>
<td>7</td>
<td>RANGE3</td>
<td>120</td>
</tr>
</tbody>
</table>
The Cohort Graduation Status parameter map defines the Cohort Graduation Status codes in the Student query subject within the Student Cohort folder. These values are determined when the data is loaded into the data warehouse tables but the descriptions are defined by this parameter map.

The Student Cohort Graduation Status that is loaded for a student is defined as follows: when a student has a student cohort with a Cohort End Academic Period that End Academic Period is used with the student/academic period being loaded to define the student’s Cohort Graduation Status as EX (Expected), NE (Not Expected) or PE (Past Expected) to graduate.

The records of the Parameter Map parameter with an Internal Code 1 = ‘Cohort Graduation Status’ define the description values for the Cohort Graduation Statuses.

The following table illustrates the PARAMETER MAP Cohort Graduation Status values that were present at installation. The first row gives a definition of each field. Edit each of the delivered parameter records by changing the External Code value to your institution’s Cohort Graduation Status desired description to display when using the Cognos FM Models and packages with this attribute.
Internal Group: PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Identifies which type of campaign the record defines</td>
<td>Not used</td>
<td>Specifies the Cohort Graduation Status codes</td>
<td>Description of the cohort graduation status code being defined by your institution</td>
</tr>
<tr>
<td>COHORT GRADUATION STATUS</td>
<td>No Data</td>
<td>1</td>
<td>No Data</td>
<td>Data Not Available</td>
</tr>
<tr>
<td>COHORT GRADUATION STATUS</td>
<td>NR</td>
<td>2</td>
<td>NE</td>
<td>Not Expected</td>
</tr>
<tr>
<td>COHORT GRADUATION STATUS</td>
<td>E</td>
<td>3</td>
<td>EX</td>
<td>Expected</td>
</tr>
<tr>
<td>COHORT GRADUATION STATUS</td>
<td>P</td>
<td>4</td>
<td>PE</td>
<td>Past Expected</td>
</tr>
</tbody>
</table>

**Communication parameter map**

The Communication parameter map lets you define descriptions to be used in place of data not available for a query item in the Banner Communication query subject, which is available in a number of FM Model packages.

The Banner Communication data is input by each of the Banner products or modules. When the data is input it may have a communication (letter code) or a material code or both. When the data is loaded into the data warehouse tables, some data is not available when the piece of data was not recorded on the Banner side. These parameter map values supply a meaningful description to be used when this data was not recorded in Banner. For example, if the Banner communication has a material code but no communication code, you may want to display Communication Only in the Material query item and not ‘Data Not Avail’ which is the default value for this parameter.

The records of the Parameter Map parameter with an Internal Code 1 = `Communication' define the values to display depending on the data missing from the loaded data. The following table illustrates the PARAMETER MAP Communication values that were present at installation. The first row gives a definition of each field. Edit the Descriptions associated with each record to create your institution’s desired default descriptions when the Banner data does not include a query item specified in the Cognos FM Model packages.
### Internal Group: PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td></td>
<td>Order for all records</td>
<td></td>
<td>Enter the values your institution will use to identify whether various communication plans are available</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>?</td>
<td>1</td>
<td>?</td>
<td>No Data</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>DNA</td>
<td>2</td>
<td>DNA</td>
<td>Data Not Avail</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td><em><strong>DNA</strong></em></td>
<td>3</td>
<td><em><strong>DNA</strong></em></td>
<td><em><strong>Data Not Available</strong></em></td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>Communication</td>
<td>4</td>
<td>Communication</td>
<td>Material</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>Communication SD</td>
<td>5</td>
<td>Communication SD</td>
<td>Material Only</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>Communication LD</td>
<td>6</td>
<td>Communication LD</td>
<td>Material Only</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>Material</td>
<td>7</td>
<td>Material</td>
<td>Communication</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>Material SD</td>
<td>8</td>
<td>Material SD</td>
<td>Communication Only</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>Material LD</td>
<td>9</td>
<td>Material LD</td>
<td>Communication Only</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>Communication Plan</td>
<td></td>
<td>Communication Plan</td>
<td>No Plan</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>Communication Plan SD</td>
<td></td>
<td>Communication Plan SD</td>
<td>No Communication Plan</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>Communication Plan LD</td>
<td></td>
<td>Communication Plan LD</td>
<td>No Communication Plan</td>
</tr>
</tbody>
</table>
Consecutive Years of Giving Range parameter map

The record of the Parameter Map parameter with an **Internal Code 1** = ‘Consecutive Years of Giving Range’ defines ranges and their order for a constituent’s consecutive years of giving in Advancement Analytics for Cognos FM Model and associated packages.

To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Consecutive Years Of Giving Range parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - specifies the highest number of days to include in the range for that tier
- **RANGE# DESC record** - defines the description of the range tier that will display on reports in Cognos
- **RANGE# ORDER record** - defines the description and the sequence in which the range tier should display when using the Consecutive Years of Giving Range query item in the Cognos FM Models and associated packages

**Note**

The highest range tier requires you define only the range description and range order since the range itself is the number of days greater than the previous tier.

The following table illustrates some of the PARAMETER MAP for the Consecutive Years of Giving Range values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the Consecutive Years of Giving Range records to create your institution’s desired Range values, Range Descriptions and Range Orders.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Identifies which tier of range is being defined</td>
<td>Specifies order for this tier of range</td>
<td>Identifies which tier of range is being defined</td>
<td>Defines range tier description or highest value in range tier</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Rangel1</td>
<td>1</td>
<td>Rangel1</td>
<td>1</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Rangel Desc</td>
<td>2</td>
<td>Rangel Desc</td>
<td>No Consecutive Years</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Rangel Order</td>
<td>3</td>
<td>Rangel Order</td>
<td>00. No Consecutive Years</td>
</tr>
<tr>
<td>Internal Code 1</td>
<td>Internal Code 2</td>
<td>Seq.</td>
<td>External Code</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
<td>------</td>
<td>---------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range2</td>
<td>4</td>
<td>Range2</td>
<td>4</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range2 Desc</td>
<td>5</td>
<td>Range2 Desc</td>
<td>1-3 Consecutive Years</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range2 Order</td>
<td>6</td>
<td>Range2 Order</td>
<td>01. 1-3 Consecutive Years</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range3</td>
<td>7</td>
<td>Range3</td>
<td>6</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range3 Desc</td>
<td>8</td>
<td>Range3 Desc</td>
<td>4-5 Consecutive Years</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range3 Order</td>
<td>9</td>
<td>Range3 Order</td>
<td>02. 4-5 Consecutive Years</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range4</td>
<td>10</td>
<td>Range4</td>
<td>8</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range4 Desc</td>
<td>11</td>
<td>Range4 Desc</td>
<td>6-7 Consecutive Years</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range4 Order</td>
<td>12</td>
<td>Range4 Order</td>
<td>03. 6-7 Consecutive Years</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range5</td>
<td>13</td>
<td>Range5</td>
<td>11</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range5 Desc</td>
<td>14</td>
<td>Range5 Desc</td>
<td>8-10 Consecutive Years</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range5 Order</td>
<td>15</td>
<td>Range5 Order</td>
<td>04. 8-10 Consecutive Years</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range6 Desc</td>
<td>16</td>
<td>Range6 Desc</td>
<td>11+ Consecutive Years</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Range6 Order</td>
<td>17</td>
<td>Range6 Order</td>
<td>05. 11+ Consecutive Years</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Null Desc</td>
<td>18</td>
<td>Null Desc</td>
<td>No Data Exists</td>
</tr>
<tr>
<td>CONSECUTIVE YEARS OF GIVING RANGE</td>
<td>Null Order</td>
<td>19</td>
<td>Null Order</td>
<td>99. No Data Exists</td>
</tr>
</tbody>
</table>
Contact Report Aging parameter map

The Contact Report Aging parameter map lets you define ranges and their order for the number of days that have passed since a contact was made. These ranges are used in the Manage Prospect Pipeline business concept to define the aging ranges used with the Latest Prospect Contact Aging, Latest Prospect Contact Aging Order, Latest Constituent Contact Aging, and Latest Constituent Contact Aging Order query items within the Contact Reports - Latest query subject.

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Contact Report Aging’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Contact Report Aging parameter records associated with each range tier define the following aspects of the range:

- RANGE# record - specifies the highest number of days to include in the range for that tier
- RANGE# DESC record - defines the description of the range tier that will display on reports in Cognos
- RANGE# ORDER record - defines the description and the sequence in which the range tier should display when using the Latest Prospect Contact Order query item in the Cognos FM Model and associated packages

**Note**

The highest range tier requires you define only the range description and range order since the range itself is the number of days greater than the previous tier.

The following table illustrates some of the PARAMETER MAP Contact Report Aging values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the Contact Report Aging records to create your institution’s desired Range values, Range Descriptions (that display on reports) and Range Orders (used when ordering aging ranges in reports.)

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTACT REPORT AGING</td>
<td>RANGE1</td>
<td>1</td>
<td>RANGE1</td>
<td>31</td>
</tr>
</tbody>
</table>

Specifies parameter map being defined
Identifies which tier of range is being defined
Specifies order for this tier of range
Identifies which tier of range is being defined
Defines range tier description or highest number of days in range tier
The record of the Parameter Map parameter with an **Internal Code 1** = ‘CONTACT SOURCE’ defines the description for a Contact Source, there can be only three values, Constituent Contact, Prospect Contact, and No Contact.

The following table illustrates the PARAMETER MAP Contact Source values that were present at installation. The first row gives a definition of each field. You should edit the delivered **External Code** and **Description** values to create the contact sources.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTACT REPORT AGING</td>
<td>RANGE1 DESC</td>
<td>2</td>
<td>RANGE1 DESC</td>
<td>Less Than 1 Month</td>
</tr>
<tr>
<td>CONTACT REPORT AGING</td>
<td>RANGE1 ORDER</td>
<td>3</td>
<td>RANGE1 ORDER</td>
<td>01. Less Than 1 Month</td>
</tr>
<tr>
<td>CONTACT REPORT AGING</td>
<td>RANGE2 DESC</td>
<td>4</td>
<td>RANGE2 DESC</td>
<td>1 - 2 Months</td>
</tr>
<tr>
<td>CONTACT REPORT AGING</td>
<td>RANGE2 ORDER</td>
<td>6</td>
<td>RANGE2 ORDER</td>
<td>02. 1 - 2 Months</td>
</tr>
<tr>
<td>CONTACT REPORT AGING</td>
<td>RANGE3 DESC</td>
<td>8</td>
<td>RANGE3 DESC</td>
<td>3 - 5 Months</td>
</tr>
<tr>
<td>CONTACT REPORT AGING</td>
<td>RANGE3 ORDER</td>
<td>9</td>
<td>RANGE3 ORDER</td>
<td>03. 3 - 5 Months</td>
</tr>
<tr>
<td>CONTACT REPORT AGING</td>
<td>RANGE7 DESC</td>
<td>19</td>
<td>RANGE7 DESC</td>
<td>Greater Than 24 Months</td>
</tr>
<tr>
<td>CONTACT REPORT AGING</td>
<td>RANGE7 ORDER</td>
<td>20</td>
<td>RANGE7 ORDER</td>
<td>07. Greater Than 24 Months</td>
</tr>
<tr>
<td>CONTACT REPORT AGING</td>
<td>NULL DESC</td>
<td>21</td>
<td>NULL DESC</td>
<td>No Contact</td>
</tr>
<tr>
<td>CONTACT REPORT AGING</td>
<td>NULL ORDER</td>
<td>22</td>
<td>NULL ORDER</td>
<td>99. No Contact</td>
</tr>
</tbody>
</table>
Internal Group: PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Specifies the contact source</td>
<td>Not used</td>
<td>Specifies the contact source</td>
<td>Description for the contact source</td>
</tr>
<tr>
<td>CONTACT SOURCE</td>
<td>CONSTITUENT CONTACT</td>
<td>1</td>
<td>CONSTITUENT CONTACT</td>
<td>Constituent Contact</td>
</tr>
<tr>
<td>CONTACT SOURCE</td>
<td>PROSPECT CONTACT</td>
<td>2</td>
<td>PROSPECT CONTACT</td>
<td>Prospect Contact</td>
</tr>
<tr>
<td>CONTACT SOURCE</td>
<td>NO CONTACT</td>
<td>3</td>
<td>NO CONTACT</td>
<td>No Contact</td>
</tr>
</tbody>
</table>

Current Advancement Campaign parameter map

The Current Advancement Campaign parameter map defines which Campaign codes in your source database to associate with the Current Annual, Current Capital, and Current Comprehensive Campaigns filters located in the Campaign Filters Query Subject of the Analyze Fundraising Progress business concept.

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Current Advancement Campaign’ define these filter values.

The following table illustrates the PARAMETER MAP Current Advancement Campaign values that were present at installation. The first row gives a definition of each field. Edit each of the delivered Current Advancement Campaign parameter records by changing the **External Code** value to your institution’s Campaign code that indicates the current annual, capital, or comprehensive campaign. You can also edit the Description to reflect your institution’s Campaign code.

Internal Group: PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT ADVANCEMENT CAMPAIGN</td>
<td>ANNUAL</td>
<td>1</td>
<td>2000</td>
<td>Advancement Current Annual Campaign</td>
</tr>
</tbody>
</table>
Donor Retention Status parameter map

The record of the Parameter Map parameter with an Internal Code 1 = ‘Donor Retention Status’ defines the code and description to be used as the donor retention status for a constituent for year of giving in context. A donor retention status can be:

- Non Donor
- Retained
- Acquired
- Reactivated
- Lapsed.

The following table illustrates the PARAMETER MAP Donor Retention Status values that were present at installation. The first row gives a definition of each field. You should edit the delivered External Code and Description values to define the code and description to be used as the donor retention status.

Internal Group: PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT ADVANCEMENT CAPITAL</td>
<td>CAPITAL</td>
<td>2</td>
<td>MIL</td>
<td>Advancement Current Capital Campaign</td>
</tr>
<tr>
<td>CURRENT ADVANCEMENT COMPREHENSIVE</td>
<td>COMPREHENSIVE</td>
<td>3</td>
<td>GFC</td>
<td>Advancement Current Comprehensive Campaign</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DONOR RETENTION STATUS</td>
<td>NON DONOR IND</td>
<td>1</td>
<td>NON DONOR IND</td>
<td>Non Donor</td>
</tr>
<tr>
<td>DONOR RETENTION STATUS</td>
<td>DONOR ACQUIRED IND</td>
<td>2</td>
<td>DONOR ACQUIRED IND</td>
<td>Acquired</td>
</tr>
<tr>
<td>DONOR RETENTION STATUS</td>
<td>DONOR RETAINED IND</td>
<td>3</td>
<td>DONOR RETAINED IND</td>
<td>Retained</td>
</tr>
</tbody>
</table>
Exclusion Status parameter map (Banner Only)

The record of the Parameter Map parameter with an **Internal Code 1** = ‘Exclusion Status’ defines the description to be used in segmenting exclusions. The logic built into the ETL that looks at the end or stop date for the specific exclusion determines the exclusion status.

The following table illustrates the PARAMETER MAP Exclusion Status value that was present at installation. The first row gives a definition of each field. You should edit the delivered **External Code** and **Description** values to reflect the exclusion status.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DONOR RETENTION STATUS</td>
<td>DONOR LAPSED IND</td>
<td>4</td>
<td>DONOR LAPSED IND</td>
<td>Lapsed</td>
</tr>
<tr>
<td>DONOR RETENTION STATUS</td>
<td>DONOR REACTIVATED IND</td>
<td>5</td>
<td>DONOR REACTIVATED IND</td>
<td>Reactivated</td>
</tr>
<tr>
<td>DONOR RETENTION STATUS</td>
<td>NULL DESC</td>
<td>6</td>
<td>NULL DESC</td>
<td>Data Not Avail</td>
</tr>
</tbody>
</table>

**Finaid Contribution Range parameter map**

The Finaid Contribution Range parameter map lets you define ranges and their order for the ranges associated with the expected contribution used within the Cognos FM Models.
and associated packages. These ranges are used in Performance business concepts where federal or institution needs analysis data is used for reporting. Based on the calculated value of the formula, the contribution is placed in the correct Contribution Range for the person and made available in the Financial Aid Information or Financial Aid Application query subject depending on the business concept and query items displayed.

The records of the Parameter Map parameter with an Internal Code 1 = ‘Finaid Contribution Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Finaid Contribution Range parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - defines the highest amount to include in the range for that tier
- **RANGE# DESC record** - defines the description of the range tier that will display in the Cognos FM Model packages
- **RANGE# ORDER record** - defines the description and the sequence in which the range tier should display when using the associated Range Order Query Item in the Cognos FM Models and associated packages

⚠️ Note

The highest range tier requires you define only the Range Description and Range Order since the range itself is everything greater than the previous tier.

The following table illustrates the PARAMETER MAP Finaid Contribution Range values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the Finaid Contribution Range records to create your institution’s desired Range values, Range Descriptions and Range Orders available within the Cognos FM Models and associated packages.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINAID CONTRIBUTION RANGE</td>
<td>RANGE1</td>
<td>1</td>
<td>RANGE1</td>
<td>1000</td>
</tr>
<tr>
<td>FINAID CONTRIBUTION RANGE</td>
<td>RANGE1 DESC</td>
<td>2</td>
<td>RANGE1 DESC</td>
<td>0 - 999</td>
</tr>
<tr>
<td>Internal Code 1</td>
<td>Internal Code 2</td>
<td>Seq.</td>
<td>External Code</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
<td>------</td>
<td>---------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>FINAID</td>
<td>CONTRIBUTION</td>
<td>3</td>
<td>RANGE1 ORDER</td>
<td>01. 0 - 999</td>
</tr>
<tr>
<td>RANGE</td>
<td>ORDER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RANGE2 ORDER</td>
<td>4</td>
<td>RANGE2</td>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>RANGE2 DESC</td>
<td>5</td>
<td>RANGE2 DESC</td>
<td>1,000 - 1,999</td>
<td></td>
</tr>
<tr>
<td>RANGE2 ORDER</td>
<td>6</td>
<td>RANGE2 ORDER</td>
<td>02. 1,000 - 1,999</td>
<td></td>
</tr>
<tr>
<td>RANGE3 ORDER</td>
<td>7</td>
<td>RANGE3</td>
<td>3000</td>
<td></td>
</tr>
<tr>
<td>RANGE3 DESC</td>
<td>8</td>
<td>RANGE3 DESC</td>
<td>2,000 - 2,999</td>
<td></td>
</tr>
<tr>
<td>RANGE3 ORDER</td>
<td>9</td>
<td>RANGE3 ORDER</td>
<td>03. 2,000 - 2,999</td>
<td></td>
</tr>
<tr>
<td>RANGE8 DESC</td>
<td>20</td>
<td>RANGE7 DESC</td>
<td>100,000 and Over</td>
<td></td>
</tr>
<tr>
<td>RANGE8 ORDER</td>
<td>21</td>
<td>RANGE7 ORDER</td>
<td>07. 100,000 and Over</td>
<td></td>
</tr>
<tr>
<td>Null Desc</td>
<td>22</td>
<td>Null Desc</td>
<td>No Data Exists</td>
<td></td>
</tr>
<tr>
<td>Null Order</td>
<td>23</td>
<td>Null Order</td>
<td>99. No Data Exists</td>
<td></td>
</tr>
</tbody>
</table>
# Finaid Income Range parameter map

The Finaid Income Range parameter map lets you define ranges and their order for the ranges associated with financial aid Total Family Income Range used within the Cognos FM Models and associated packages. These ranges are used in the Analyze Student Engagement and Analyze Student Progress business concepts to associate the correct FM and IM Total Family Income Range for the person that is available in the Financial Aid Information query subject.

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Finaid Income Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Finaid Income Range parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - defines the highest amount to include in the range for that tier
- **RANGE# DESC record** - defines the description of the range tier that will display in the Cognos FM Model packages
- **RANGE# ORDER record** - defines the description and the sequence in which the range tier should display when using the associated Range Order Query Item in the Cognos FM Models and associated packages

**Note**

The highest range tier requires you define only the Range Description and Range Order since the range itself is everything greater than the previous tier.

The following table illustrates the PARAMETER MAP Finaid Income Range values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the Finaid Income Range records to create your institution’s desired Range values, Range Descriptions and Range Orders available within the Cognos FM Models and associated packages.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINAID INCOME RANGE</td>
<td>RANGE1</td>
<td>1</td>
<td>RANGE1</td>
<td>6000</td>
</tr>
<tr>
<td>FINAID INCOME RANGE</td>
<td>RANGE1 DESC</td>
<td>2</td>
<td>RANGE1 DESC</td>
<td>0 - 5,999</td>
</tr>
</tbody>
</table>
The Finaid Need Met Percentage Range parameter map lets you define ranges and their order for the ranges associated with financial aid met need used within the Cognos FM Models and associated packages. These ranges are used in the Analyze Student Engagement and Analyze Student Progress business concepts to define the ranges within the Financial Aid Information query subject.

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Finaid Need Met Percentage Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Finaid Need Met Percentage Range parameter records associated with each range tier define the following aspects of the range:

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINAID INCOME RANGE</td>
<td>RANGE1 ORDER</td>
<td>3</td>
<td>RANGE1 ORDER</td>
<td>01. 0 - 5,999</td>
</tr>
<tr>
<td>FINAID INCOME RANGE</td>
<td>RANGE2</td>
<td>4</td>
<td>RANGE2</td>
<td>12000</td>
</tr>
<tr>
<td>FINAID INCOME RANGE</td>
<td>RANGE2 DESC</td>
<td>5</td>
<td>RANGE2 DESC</td>
<td>6,000 - 11,999</td>
</tr>
<tr>
<td>FINAID INCOME RANGE</td>
<td>RANGE2 ORDER</td>
<td>6</td>
<td>RANGE2 ORDER</td>
<td>02. 6,000 - 11,999</td>
</tr>
<tr>
<td>FINAID INCOME RANGE</td>
<td>RANGE3</td>
<td>7</td>
<td>RANGE3</td>
<td>24000</td>
</tr>
<tr>
<td>FINAID INCOME RANGE</td>
<td>RANGE3 DESC</td>
<td>8</td>
<td>RANGE3 DESC</td>
<td>12,000 - 23,999</td>
</tr>
<tr>
<td>FINAID INCOME RANGE</td>
<td>RANGE3 ORDER</td>
<td>9</td>
<td>RANGE3 ORDER</td>
<td>03. 12,000 - 23,999</td>
</tr>
<tr>
<td>FINAID INCOME RANGE</td>
<td>RANGE8 DESC</td>
<td>23</td>
<td>RANGE8 DESC</td>
<td>100,000 and Over</td>
</tr>
<tr>
<td>FINAID INCOME RANGE</td>
<td>RANGE8 ORDER</td>
<td>24</td>
<td>RANGE8 ORDER</td>
<td>08. 100,000 and Over</td>
</tr>
<tr>
<td>FINAID INCOME RANGE</td>
<td>Null Desc</td>
<td>30</td>
<td>Null Desc</td>
<td>No Data Exists</td>
</tr>
<tr>
<td>FINAID INCOME RANGE</td>
<td>Null Order</td>
<td>31</td>
<td>Null Order</td>
<td>99. No Data Exists</td>
</tr>
</tbody>
</table>
• RANGE# record - defines the highest amount to include in the range for that tier
• RANGE# DESC record - defines the description of the range tier that will display in the Cognos FM Model packages
• RANGE# ORDER record - defines the description and the sequence in which the range tier should display when using the associated Range Order Query Item in the Cognos FM Models and associated packages

**Note**
The highest range tier requires you define only the Range Description and Range Order since the range itself is everything greater than the previous tier.

The following table illustrates some of the PARAMETER MAP Finaid Need Met Percentage Range values that were present at installation. The first row gives a definition of each field. Edit the *Descriptions* associated with the Finaid Need Met Percentage Range records to create your institution’s desired Range values, Range Descriptions and Range Orders available within the Cognos FM Models and associated packages.

<table>
<thead>
<tr>
<th>Internal Group: PARAMETER MAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Code 1</td>
</tr>
<tr>
<td>Specifies parameter map being defined</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
<tr>
<td>Internal Code 1</td>
</tr>
<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
<tr>
<td>FINAID NEED MET PERCENTAGE RANGE</td>
</tr>
</tbody>
</table>
**Finaid Need Not Met Percent Range parameter map**

The Finaid Need Not Met Percentage Range parameter map lets you define ranges and their order for the ranges associated with financial aid unmet need used within the Cognos FM Models and associated packages. These ranges are used in the Analyze Student Engagement and Analyze Student Progress business concepts to define the ranges within the Financial Aid Information query subject.

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Finaid Need Not Met Percentage Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Finaid Need Not Met Percentage Range parameter records associated with each range tier define the following aspects of the range:

- RANGE# record - defines the highest amount to include in the range for that tier
- RANGE# DESC record - defines the description of the range tier that will display in the Cognos FM Model packages
- RANGE# ORDER record - defines the description and the sequence in which the range tier should display when using the associated Range Order Query Item in the Cognos FM Models and associated packages

⚠️ **Note**

The highest range tier requires you define only the Range Description and Range Order since the range itself is everything greater than the previous tier.

The following table illustrates some of the PARAMETER MAP Finaid Need Not Met Percentage Range values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the Finaid Need Not Met Percentage Range records to create your institution’s desired Range values, Range Descriptions and Range Orders available within the Cognos FM Models and associated packages.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>RANGE1</td>
<td>1</td>
<td>RANGE1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Specifies parameter map being defined

Identifies which tier of range is being defined

Specifies order for this tier of range

Identifies which tier of range is being defined

Defines range tier description or highest value in range tier
<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>RANGE1 DESC</td>
<td>2</td>
<td>RANGE1 DESC</td>
<td>0 - 9.99%</td>
</tr>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>RANGE1 ORDER</td>
<td>3</td>
<td>RANGE1 ORDER</td>
<td>01. 0 - 9.99%</td>
</tr>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>RANGE2</td>
<td>4</td>
<td>RANGE2</td>
<td>0.2</td>
</tr>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>RANGE2 DESC</td>
<td>5</td>
<td>RANGE2 DESC</td>
<td>10 - 19.99%</td>
</tr>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>RANGE2 ORDER</td>
<td>6</td>
<td>RANGE2 ORDER</td>
<td>02. 10 - 19.99%</td>
</tr>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>RANGE3</td>
<td>7</td>
<td>RANGE3</td>
<td>0.3</td>
</tr>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>RANGE3 DESC</td>
<td>8</td>
<td>RANGE3 DESC</td>
<td>20 - 29.99%</td>
</tr>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>RANGE3 ORDER</td>
<td>9</td>
<td>RANGE3 ORDER</td>
<td>03. 20 - 29.99%</td>
</tr>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>RANGE6 DESC</td>
<td>16</td>
<td>RANGE6 DESC</td>
<td>100% and Over</td>
</tr>
</tbody>
</table>
The Finaid Need Range parameter map lets you define ranges and their order for the ranges associated with financial aid need used within the Cognos FM Models and associated packages. These ranges are used in the Analyze Student Engagement and Analyze Student Progress business concepts to define the ranges within the Financial Aid Information query subject.

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Finaid Need Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Finaid Need Range parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - defines the highest amount to include in the range for that tier
- **RANGE# DESC record** - defines the description of the range tier that will display in the Cognos FM Model packages
- **RANGE# ORDER record** - defines the description and the sequence in which the range tier should display when using the associated Range Order Query Item in the Cognos FM Models and associated packages

**Note**

The highest range tier requires you define only the Range Description and Range Order since the range itself is everything greater than the previous tier.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>RANGE6 ORDER</td>
<td>17</td>
<td>RANGE6 ORDER</td>
<td>06. 100% and Over</td>
</tr>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>Null Desc</td>
<td>18</td>
<td>Null Desc</td>
<td>No Data Exists</td>
</tr>
<tr>
<td>FINAID NEED NOT MET PERCENTAGE RANGE</td>
<td>Null Order</td>
<td>19</td>
<td>Null Order</td>
<td>99. No Data Exists</td>
</tr>
</tbody>
</table>

The following table illustrates some of the PARAMETER MAP Finaid Need Range values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the Finaid Need Range records to create your...
institution’s desired Range values, Range Descriptions and Range Orders available within
the Cognos FM Models and associated packages.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINAID NEED</td>
<td>RANGE0</td>
<td>1</td>
<td>RANGE0</td>
<td>1</td>
</tr>
<tr>
<td>RANGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE0 DESC</td>
<td>2</td>
<td>RANGE0 DESC</td>
<td>0 - No</td>
</tr>
<tr>
<td>RANGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE0 ORDER</td>
<td>3</td>
<td>RANGE0 ORDER</td>
<td>00. No</td>
</tr>
<tr>
<td>RANGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE1</td>
<td>4</td>
<td>RANGE1</td>
<td>10000</td>
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<tr>
<td>RANGE</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE1 DESC</td>
<td>5</td>
<td>RANGE1 DESC</td>
<td>1 - 9,999</td>
</tr>
<tr>
<td>RANGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE1 ORDER</td>
<td>6</td>
<td>RANGE1 ORDER</td>
<td>01. 1 - 9,999</td>
</tr>
<tr>
<td>RANGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE2</td>
<td>7</td>
<td>RANGE2</td>
<td>15000</td>
</tr>
<tr>
<td>RANGE</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE2 DESC</td>
<td>8</td>
<td>RANGE2 DESC</td>
<td>10,000 - 14,999</td>
</tr>
<tr>
<td>RANGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE2 ORDER</td>
<td>9</td>
<td>RANGE2 ORDER</td>
<td>02. 10,000 - 14,999</td>
</tr>
<tr>
<td>RANGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE3</td>
<td>10</td>
<td>RANGE3</td>
<td>20000</td>
</tr>
<tr>
<td>RANGE</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE3 DESC</td>
<td>11</td>
<td>RANGE3 DESC</td>
<td>15,000 - 19,999</td>
</tr>
<tr>
<td>RANGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE3 ORDER</td>
<td>12</td>
<td>RANGE3 ORDER</td>
<td>03. 15,000 - 19,999</td>
</tr>
<tr>
<td>RANGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAID NEED</td>
<td>RANGE7 DESC</td>
<td>22</td>
<td>RANGE7 DESC</td>
<td>100,000 and Over</td>
</tr>
<tr>
<td>RANGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Funnel Status parameter map

The records of the Parameter Map parameter with an Internal Code 1 = ‘Funnel Status’ let you define funnel statuses and their order. The values defined in this parameter map are used in the Analyze Enrollment Funnel business concept to define the Funnel Status query items within the Funnel Status query subject.

The following table illustrates some of the PARAMETER MAP Funnel Status values that were present at installation.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code Seq.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FUNNEL STATUS</td>
<td>1 Funnel Status</td>
<td>1</td>
<td>1 Funnel Status</td>
<td>Prospect</td>
</tr>
<tr>
<td>FUNNEL STATUS</td>
<td>1 Funnel Status</td>
<td>2</td>
<td>1 Funnel Status</td>
<td>Order 0</td>
</tr>
<tr>
<td>FUNNEL STATUS</td>
<td>2 Funnel Status</td>
<td>3</td>
<td>2 Funnel Status</td>
<td>Inquiry</td>
</tr>
<tr>
<td>FUNNEL STATUS</td>
<td>2 Funnel Status</td>
<td>4</td>
<td>2 Funnel Status</td>
<td>Order 1</td>
</tr>
<tr>
<td>FUNNEL STATUS</td>
<td>3 Funnel Status</td>
<td>5</td>
<td>3 Funnel Status</td>
<td>Applicant</td>
</tr>
<tr>
<td>FUNNEL STATUS</td>
<td>3 Funnel Status</td>
<td>6</td>
<td>3 Funnel Status</td>
<td>Order 2</td>
</tr>
<tr>
<td>FUNNEL STATUS</td>
<td>4 Funnel Status</td>
<td>7</td>
<td>4 Funnel Status</td>
<td>Admit</td>
</tr>
</tbody>
</table>
Funnel Status Aging parameter map

The Funnel Status Aging parameter map lets you define ranges and their order for the number of days that have passed since a student entered the enrollment funnel. These ranges are used in the Analyze Enrollment Funnel business concept to define the aging ranges used with the Funnel Aging and Funnel Aging Order query items within the Funnel Status query subject.

The records of the Parameter Map parameter with an Internal Code 1 = ‘Funnel Status Aging’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Funnel Status Aging parameter records associated with each range tier define the following aspects of the range:

- RANGE# record - specifies the highest number of days to include in the range for that tier
- RANGE# DESC record - defines the description of the range tier that will display on reports in Cognos
- RANGE# ORDER record - defines the description and the sequence in which the range tier should display when using the Funnel Aging Order query item in the Cognos FM Model and associated packages

Note

The highest range tier requires you define only the range description and range order since the range itself is the number of days greater than the previous tier.

The following table illustrates some of the PARAMETER MAP Funnel Status Aging values that were present at installation. The first row gives a definition of each field. Edit the Descriptions associated with the Funnel Status Aging records to create your institution’s desired Range values, Range Descriptions (that display on reports) and Range Orders (used when ordering aging ranges in reports.)

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FUNNEL STATUS</td>
<td>4 Funnel Status Order</td>
<td>8</td>
<td>4 Funnel Status Order</td>
<td>3</td>
</tr>
<tr>
<td>FUNNEL STATUS</td>
<td>5 Funnel Status Order</td>
<td>9</td>
<td>5 Funnel Status Confirm</td>
<td></td>
</tr>
<tr>
<td>FUNNEL STATUS</td>
<td>5 Funnel Status Order</td>
<td>10</td>
<td>5 Funnel Status Order</td>
<td>4</td>
</tr>
</tbody>
</table>
### Internal Group: PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Identifies which tier of range is being defined</td>
<td>Specifies order for this tier of range</td>
<td>Identifies which tier of range is being defined</td>
<td>Defines range tier description or highest number of days in range tier</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FUNNEL STATUS AGING</th>
<th>RANGE1</th>
<th>1</th>
<th>RANGE1</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>RANGE1 DESC</td>
<td>2</td>
<td>RANGE1 DESC</td>
<td>0 - 29 Days</td>
</tr>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>RANGE1 ORDER</td>
<td>3</td>
<td>RANGE1 ORDER</td>
<td>01. 0 - 29 Days</td>
</tr>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>RANGE2</td>
<td>4</td>
<td>RANGE2</td>
<td>60</td>
</tr>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>RANGE2 DESC</td>
<td>5</td>
<td>RANGE2 DESC</td>
<td>30 - 59 Days</td>
</tr>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>RANGE2 ORDER</td>
<td>6</td>
<td>RANGE2 ORDER</td>
<td>02. 30 - 59 Days</td>
</tr>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>RANGE3</td>
<td>7</td>
<td>RANGE3</td>
<td>120</td>
</tr>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>RANGE3 DESC</td>
<td>8</td>
<td>RANGE3 DESC</td>
<td>60 - 119 Days</td>
</tr>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>RANGE3 ORDER</td>
<td>9</td>
<td>RANGE3 ORDER</td>
<td>03. 60 - 119 Days</td>
</tr>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>RANGE4 DESC</td>
<td>10</td>
<td>RANGE4 DESC</td>
<td>120 or More Days</td>
</tr>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>RANGE4 ORDER</td>
<td>11</td>
<td>RANGE4 ORDER</td>
<td>04. 120 or More Days</td>
</tr>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>NULL DESC</td>
<td>12</td>
<td>NULL DESC</td>
<td>No Data Exists</td>
</tr>
<tr>
<td>FUNNEL STATUS AGING</td>
<td>NULL ORDER</td>
<td>13</td>
<td>NULL ORDER</td>
<td>99. No Data Exists</td>
</tr>
</tbody>
</table>
**Geographic Division**

The record of the Parameter Map parameter with an Internal Code 1 = ‘Geographic Division’ defines which geographic division or divisions should be loaded into the warehouse. The parameter map can be duplicated to add additional geographic divisions.

The following table illustrates the PARAMETER MAP Geographic Division values that were present at installation. The first row gives a definition of each field. You should edit the delivered External Code and Description values to create the geographic divisions.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOGRAPHIC DIVISION</td>
<td>ALUM</td>
<td>1</td>
<td>ALUM</td>
<td>Office of Alumni Relations</td>
</tr>
<tr>
<td>GEOGRAPHIC DIVISION</td>
<td>DEVEL</td>
<td>2</td>
<td>DEVEL</td>
<td>Development Office</td>
</tr>
<tr>
<td>GEOGRAPHIC DIVISION</td>
<td>INST/ADV</td>
<td>3</td>
<td>INST/ADV</td>
<td>Institutional Advancement</td>
</tr>
</tbody>
</table>

**Giving History Range parameter map**

The Giving History Range parameter map lets you define ranges and their order for the ranges associated with giving history used within your Cognos FM Model and associated packages. These ranges are used in the Manage Prospect Pipeline business concept to define the ranges within the Constituent Entity Giving History query subject.

The records of the Parameter Map parameter with an Internal Code 1 = ‘Giving History Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Giving History Range parameter records associated with each range tier define the following aspects of the range:

- RANGE# record - defines the highest amount to include in the range for that tier
- RANGE# DESC record - defines the description of the range tier that will display on reports in Cognos
• RANGE# ORDER record - defines the description and the sequence in which the range tier should display when using the Range Order Query Item in the Cognos FM Model and associated packages

**Note**

The lowest and highest range tiers require you define only the range description and range order since the range itself is ‘0’ for the lowest tier and everything greater than the previous tier for the highest tier.

The following table illustrates the PARAMETER MAP Giving History Range values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the Giving History Range records to create your institution’s desired Range values, Range Descriptions (that display on reports) and Range Orders (used when ordering ranges in reports.)

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Specifies parameter map being defined</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Identifies which tier of range is being defined</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Specifies order for this tier of range</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Identifies which tier of range is being defined</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Defines range tier description or highest value in range tier</td>
</tr>
<tr>
<td>GIVING HISTORY RANGE</td>
<td>RANGE0 DESC</td>
<td>1</td>
<td>RANGE0 DESC</td>
<td>0 - No Giving History</td>
</tr>
<tr>
<td>GIVING HISTORY RANGE</td>
<td>RANGE0 ORDER</td>
<td>2</td>
<td>RANGE0 ORDER</td>
<td>00. 0 - No Giving History</td>
</tr>
<tr>
<td>GIVING HISTORY RANGE</td>
<td>RANGE1</td>
<td>3</td>
<td>RANGE1</td>
<td>10000</td>
</tr>
<tr>
<td>GIVING HISTORY RANGE</td>
<td>RANGE1 DESC</td>
<td>4</td>
<td>RANGE1 DESC</td>
<td>&lt; 10K</td>
</tr>
<tr>
<td>GIVING HISTORY RANGE</td>
<td>RANGE1 ORDER</td>
<td>5</td>
<td>RANGE1 ORDER</td>
<td>01. &lt; 10K</td>
</tr>
<tr>
<td>GIVING HISTORY RANGE</td>
<td>RANGE2</td>
<td>6</td>
<td>RANGE2</td>
<td>50000</td>
</tr>
<tr>
<td>GIVING HISTORY RANGE</td>
<td>RANGE2 DESC</td>
<td>7</td>
<td>RANGE2 DESC</td>
<td>10K - 49K</td>
</tr>
<tr>
<td>GIVING HISTORY RANGE</td>
<td>RANGE2 ORDER</td>
<td>8</td>
<td>RANGE2 ORDER</td>
<td>02. 10K - 49K</td>
</tr>
</tbody>
</table>
The GPA Range parameter map lets you define ranges and their order for the ranges associated with GPAs used within your the Cognos FM Models and associated packages. These ranges are used in the Analyze Student Engagement and Analyze Student Progress business concepts to define the ranges within the Academic Performance, Secondary School and Post Secondary School query subjects.

The records of the Parameter Map parameter with an **Internal Code 1** = ‘GPA Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range and Range Order for each tier within the range. The two GPA Range parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - defines the highest amount to include in the range for that tier
- **RANGE# ORDER record** - defines the description and the sequence in which the range tier should display when using the associated Range Order Query Item in the Cognos FM Models and associated packages

**Note**

The highest range tier requires you define only the Range Order since the range itself is everything greater than the previous tier.

The following table illustrates some of the PARAMETER MAP GPA Range values that were present at installation. The first row gives a definition of each field. Edit the **Range Order** associated with the GPA Range records to create your institution’s desired Range Order values that will be used when ordering ranges using one of the FM Model packages.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIVING</td>
<td>RANGE3</td>
<td>9</td>
<td>RANGE3</td>
<td>100000</td>
</tr>
<tr>
<td>HISTORY RANGE</td>
<td>RANGE3 DESC</td>
<td>10</td>
<td>RANGE3 DESC</td>
<td>50K - 99K</td>
</tr>
<tr>
<td>GIVING</td>
<td>RANGE3 ORDER</td>
<td>11</td>
<td>RANGE3 ORDER</td>
<td>03. 50K - 99K</td>
</tr>
<tr>
<td>HISTORY RANGE</td>
<td>RANGE7 DESC</td>
<td>21</td>
<td>RANGE7 DESC</td>
<td>1M +</td>
</tr>
<tr>
<td>GIVING</td>
<td>RANGE7 ORDER</td>
<td>22</td>
<td>RANGE7 ORDER</td>
<td>07. 1M +</td>
</tr>
</tbody>
</table>

**GPA Range parameter map**
**IM Parent Home Equity Range parameter map**

The IM Parent Home Equity Range parameter map lets you define ranges and their order used within your Cognos FM Model and associated packages for the ranges associated with the equity parents have in their home. These ranges are used in the Impact of Aid on New Enrollment business concept to define the ranges used in the IM Parent Home Equity Range and IM Parent Home Equity Range Order query items within the Financial Aid Application query subject.

The records of the Parameter Map parameter with an **Internal Code 1 = ‘IM Parent Home Equity Range’** define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three IM Parent Home Equity Range parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - defines the highest amount to include in the range for that tier
- **RANGE# DESC record** - defines the description of the range tier that will display on reports in Cognos

<table>
<thead>
<tr>
<th><strong>Internal Code 1</strong></th>
<th><strong>Internal Code 2</strong></th>
<th><strong>Internal Code Seq.</strong></th>
<th><strong>External Code</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA RANGE</td>
<td>RANGE1</td>
<td>1</td>
<td>RANGE1</td>
<td>0</td>
</tr>
<tr>
<td>GPA RANGE</td>
<td>RANGE1 ORDER</td>
<td>2</td>
<td>RANGE1 ORDER</td>
<td>01. 0</td>
</tr>
<tr>
<td>GPA RANGE</td>
<td>RANGE2</td>
<td>3</td>
<td>RANGE2</td>
<td>.01 - .99</td>
</tr>
<tr>
<td>GPA RANGE</td>
<td>RANGE2 ORDER</td>
<td>4</td>
<td>RANGE2 ORDER</td>
<td>02. .01 - .99</td>
</tr>
<tr>
<td>GPA RANGE</td>
<td>RANGE3</td>
<td>5</td>
<td>RANGE3</td>
<td>1 - 1.99</td>
</tr>
<tr>
<td>GPA RANGE</td>
<td>RANGE3 ORDER</td>
<td>6</td>
<td>RANGE3 ORDER</td>
<td>03. 1 - 1.99</td>
</tr>
<tr>
<td>GPA RANGE</td>
<td>RANGE7</td>
<td>13</td>
<td>RANGE7</td>
<td>&gt; 4</td>
</tr>
<tr>
<td>GPA RANGE</td>
<td>RANGE7 ORDER</td>
<td>14</td>
<td>RANGE7 ORDER</td>
<td>07. &gt; 4</td>
</tr>
<tr>
<td>GPA RANGE</td>
<td>Null Desc</td>
<td>15</td>
<td>Null Desc</td>
<td>No Data Exists</td>
</tr>
<tr>
<td>GPA RANGE</td>
<td>Null Order</td>
<td>16</td>
<td>Null Order</td>
<td>99. No Data Exists</td>
</tr>
</tbody>
</table>

### Internal Group: PARAMETER MAP

<table>
<thead>
<tr>
<th><strong>Internal Code 1</strong></th>
<th><strong>Internal Code 2</strong></th>
<th><strong>Internal Code Seq.</strong></th>
<th><strong>External Code</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Identifies which tier of range is being defined</td>
<td>Specifies order for this tier of range</td>
<td>Identifies which tier of range is being defined</td>
<td>Defines range tier description or highest value in range tier</td>
</tr>
</tbody>
</table>
• RANGE# ORDER record - defines the description and the sequence in which the range tier should display when using the associated Range Order Query Item in the Cognos FM Model and associated packages

**Note**
The highest range tier requires you define only the Range Description and Range Order since the range itself is everything greater than the previous tier.

The following table illustrates the PARAMETER MAP IM Parent Home Equity Range values that were present at installation. The first row gives a definition of each field. Edit the Descriptions associated with the IM Parent Home Equity Range records to create your institution’s desired Range values, Range Descriptions (that display on reports) and Range Orders (used when ordering ranges in reports.)

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM PARENT HOME EQUITY RANGE</td>
<td>RANGE1</td>
<td>1</td>
<td>RANGE1</td>
<td>100000</td>
</tr>
<tr>
<td>IM PARENT HOME EQUITY RANGE</td>
<td>RANGE1 DESC</td>
<td>2</td>
<td>RANGE1 DESC</td>
<td>0 - 99,999</td>
</tr>
<tr>
<td>IM PARENT HOME EQUITY RANGE</td>
<td>RANGE1 ORDER</td>
<td>3</td>
<td>RANGE1 ORDER</td>
<td>01. 0 - 99,999</td>
</tr>
<tr>
<td>IM PARENT HOME EQUITY RANGE</td>
<td>RANGE2</td>
<td>4</td>
<td>RANGE2</td>
<td>150000</td>
</tr>
<tr>
<td>IM PARENT HOME EQUITY RANGE</td>
<td>RANGE2 DESC</td>
<td>5</td>
<td>RANGE2 DESC</td>
<td>100,000 - 149,999</td>
</tr>
<tr>
<td>IM PARENT HOME EQUITY RANGE</td>
<td>RANGE2 ORDER</td>
<td>6</td>
<td>RANGE2 ORDER</td>
<td>02. 100,000 - 149,999</td>
</tr>
<tr>
<td>IM PARENT HOME EQUITY RANGE</td>
<td>RANGE3</td>
<td>7</td>
<td>RANGE3</td>
<td>175000</td>
</tr>
<tr>
<td>IM PARENT HOME EQUITY RANGE</td>
<td>RANGE3 DESC</td>
<td>8</td>
<td>RANGE3 DESC</td>
<td>150,000 - 174,999</td>
</tr>
<tr>
<td>IM PARENT HOME EQUITY RANGE</td>
<td>RANGE3 ORDER</td>
<td>9</td>
<td>RANGE3 ORDER</td>
<td>03. 150,000 - 174,999</td>
</tr>
</tbody>
</table>
The Last Contact Days parameter map lets you define ranges and their order for the number of days that have passed since the last contact was made. These ranges are used in the Analyze Student Engagement and Analyze Student Progress business concepts to define the aging ranges used with the Latest Contact Aging and Latest Contact Aging Order query items within the Latest Contact folder in the Contact query subject.

The records of the Parameter Map parameter with an Internal Code 1 = ‘Last Contact Days’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Last Contact Days parameter records associated with each range tier define the following aspects of the range:

- RANGE# record - specifies the highest number of days to include in the range for that tier
- RANGE# DESC record - defines the description of the range tier that will display in the Cognos FM Model packages
- RANGE# ORDER record - defines the description and the sequence in which the range tier should display when using the Latest Prospect Contact Order query item in the Cognos FM Models and associated packages

**Note**

The highest range tier requires you define only the range description and range order since the range itself is the number of days greater than the previous tier.

The following table illustrates some of the PARAMETER MAP Last Contact Days values that were present at installation. The first row gives a definition of each field. Edit the Descriptions associated with the Last Contact Days records to create your institution’s
desired Range values, Range Descriptions (that display on reports) and Range Orders (used when ordering aging ranges in reports.)

**Internal Group: PARAMETER MAP**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Identifies which tier of range is being defined</td>
<td>Specifies order for this tier of range</td>
<td>Identifies which tier of range is being defined</td>
<td>Defines range tier description or highest number of days in range tier</td>
</tr>
<tr>
<td>LAST CONTACT DAYS</td>
<td>RANGE1 DESC</td>
<td>2</td>
<td>RANGE1 DESC</td>
<td>0 - 15 Days</td>
</tr>
<tr>
<td>LAST CONTACT DAYS</td>
<td>RANGE1 ORDER</td>
<td>3</td>
<td>RANGE1 ORDER</td>
<td>01. 0 - 15 Days</td>
</tr>
<tr>
<td>LAST CONTACT DAYS</td>
<td>RANGE2 DESC</td>
<td>5</td>
<td>RANGE2 DESC</td>
<td>16 - 30 Days</td>
</tr>
<tr>
<td>LAST CONTACT DAYS</td>
<td>RANGE2 ORDER</td>
<td>6</td>
<td>RANGE2 ORDER</td>
<td>02. 16 - 30 Days</td>
</tr>
<tr>
<td>LAST CONTACT DAYS</td>
<td>RANGE3 DESC</td>
<td>8</td>
<td>RANGE3 DESC</td>
<td>31 - 45 Days</td>
</tr>
<tr>
<td>LAST CONTACT DAYS</td>
<td>RANGE3 ORDER</td>
<td>9</td>
<td>RANGE3 ORDER</td>
<td>03. 31 - 45 Days</td>
</tr>
<tr>
<td>LAST CONTACT DAYS</td>
<td>RANGE5 DESC</td>
<td>13</td>
<td>RANGE5 DESC</td>
<td>61 or More Days</td>
</tr>
<tr>
<td>LAST CONTACT DAYS</td>
<td>RANGE5 ORDER</td>
<td>14</td>
<td>RANGE5 ORDER</td>
<td>05. 61 or More Days</td>
</tr>
<tr>
<td>LAST CONTACT DAYS</td>
<td>NULL DESC</td>
<td>15</td>
<td>NULL DESC</td>
<td>No Data Exists</td>
</tr>
<tr>
<td>LAST CONTACT DAYS</td>
<td>NULL ORDER</td>
<td>16</td>
<td>NULL ORDER</td>
<td>99. No Data Exists</td>
</tr>
</tbody>
</table>
LYBUNT SYBUNT parameter map

The record of the Parameter Map parameter with an **Internal Code 1** = ‘LYBUNT SYBUNT’ defines the code and description to be used for a constituent who donated some year, but unfortunately not this year (SYBUNT) or last year but unfortunately not this year (LYBUNT) or other for the year of giving in context.

The following table illustrates the PARAMETER MAP LYBUNT SYBUNT values that were present at installation. The first row gives a definition of each field. You should edit the delivered **External Code** and **Description** values to define LYBUNT SYBUNT parameter.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Specifies the code</td>
<td>Not used</td>
<td>Specifies the code</td>
<td>Defines the description for the code</td>
</tr>
<tr>
<td>LYBUNT SYBUNT</td>
<td>LYBUNT</td>
<td>1</td>
<td>LYBUNT</td>
<td>LYBUNT</td>
</tr>
<tr>
<td>LYBUNT SYBUNT</td>
<td>SYBUNT</td>
<td>2</td>
<td>SYBUNT</td>
<td>SYBUNT</td>
</tr>
<tr>
<td>LYBUNT SYBUNT</td>
<td>OTHER</td>
<td>3</td>
<td>OTHER</td>
<td>Other</td>
</tr>
<tr>
<td>LYBUNT SYBUNT</td>
<td>NULL DESC</td>
<td>4</td>
<td>NULL DESC</td>
<td>Data Not Avail</td>
</tr>
</tbody>
</table>

Mail Phone Exclusion parameter map

The record of the Parameter Map parameter with an **Internal Code 1** = ‘Mail Phone Exclusion’ defines the description to be used in the Cognos packages, based on the mail and/or phone exclusion flags associated with an exclusion code on ATVEXCL.

The following table illustrates the PARAMETER MAP Mail Phone Exclusion values that were present at installation. The first row gives a definition of each field. You should edit the delivered **External Code** and **Description** values to define the mail and/or phone exclusion flags.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Specifies the mail and/or phone exclusion flags.</td>
<td>Not used</td>
<td>Specifies the mail and/or phone exclusion flags.</td>
<td>Species the name of the exclusion flag</td>
</tr>
<tr>
<td>MAIL PHONE EXCLUSION</td>
<td>EXCLUDE MAIL</td>
<td>1</td>
<td>EXCLUDE MAIL</td>
<td>Mail Exclusion</td>
</tr>
</tbody>
</table>
### Month Duration parameter map

The Month Duration parameter map lets you define the duration ranges and their order for the following query items used in the Advancement Analytics for Cognos FM Model and associated packages:

- **Content Durations** - based on the start date and either the end date for closed items or the system date for the open items:
  - Prospect Interest Duration/Duration Order
  - Proposal Duration/Duration Order
  - Proposal Purpose Duration/Duration Order

- **Latest Stage or Latest Status Durations** - based on the start date and the system date:
  - Latest Prospect Stage Duration/Duration Order
  - Latest Program Prospect Stage Duration/Duration Order
  - Latest Proposal Stage Duration/Duration Order
  - Latest Proposal Purpose Stage Duration/Duration Order

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Month Duration’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Month Duration parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - specifies the highest number of days to include in the range for that tier
- **RANGE# DESC record** - defines the description (in months) of the range tier that will display on reports in Cognos
- **RANGE# ORDER record** - defines the description and the sequence in which the range tier should display when using the Latest Prospect Contact Order query item in the Cognos FM Model and associated packages

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIL PHONE EXCLUSION</td>
<td>EXCLUDE PHONE</td>
<td>2</td>
<td>EXCLUDE PHONE</td>
<td>Phone Exclusion</td>
</tr>
<tr>
<td>MAIL PHONE EXCLUSION</td>
<td>EXCLUDE MAIL-PHONE</td>
<td>3</td>
<td>EXCLUDE MAIL-PHONE</td>
<td>Mail-Phone Exclusion</td>
</tr>
<tr>
<td>MAIL PHONE EXCLUSION</td>
<td>OTHER</td>
<td>4</td>
<td>OTHER</td>
<td>Non Mail-Phone Exclusion</td>
</tr>
</tbody>
</table>
The following table illustrates some of the PARAMETER MAP Month Duration values that were present at installation. The first row gives a definition of each field. Edit the *Descriptions* associated with the Contact Report Aging records to create your institution’s desired Range values, Range Descriptions (that display on reports) and Range Orders (used when ordering aging ranges in reports.)

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Identifies which tier of range is being defined</td>
<td>Specifies order for this tier of range</td>
<td>Identifies which tier of range is being defined</td>
<td>Defines range tier description or highest number of days in range tier</td>
</tr>
<tr>
<td>MONTH DURATION</td>
<td>RANGE1 DESC</td>
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<td>RANGE1 DESC</td>
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Some indicators available in the Cognos FM Models and associated packages are based on information from the warehouse fact tables. These indicators don’t include descriptions. The Negative Indicators (0) parameter map defines the negative ‘No’ description for the fact-based indicators used within the Cognos FM Models and associated packages.

The following table illustrates the PARAMETER MAP Negative Indicators (0) values, used with the Banner Student Retention Performance product, that were present at installation. You do not need to edit these parameter records.

### Internal Group: PARAMETER MAP

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<th>Description</th>
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</table>
Pledge Balance Range parameter map

The Pledge Balance Range parameter map lets you define ranges and their order for the overall pledge ranges used within your Cognos FM Model and associated packages. These ranges are used in the Analyze Fundraising Progress business concept to define the Overall Pledge Balance Range and Overall Pledge Balance Range Order query items within the Giving Transaction Amounts query subject.

The records of the Parameter Map parameter with an Internal Code 1 = ‘Pledge Balance Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Pledge Balance Range parameter records associated with each range tier define the following aspects of the range:

- **RANGE# record** - defines the highest amount to include in the range for that tier
- **RANGE# DESC record** - defines the description of the range tier that will display on reports in Cognos
- **RANGE# ORDER record** - defines the description and the sequence in which the range tier should display when using the Overall Pledge Balance Range Order query item in the Cognos FM Model and associated packages

**Note**

The lowest and highest range tiers require you define only the range description and range order since the range itself is ‘0’ for the lowest tier and everything greater than the previous tier for the highest tier.

The following table illustrates some of the PARAMETER MAP Pledge Balance Range values that were present at installation. The first row gives a definition of each field. Edit the Descriptions associated with the Pledge Balance Range records to create your institution’s desired Range values, Range Descriptions (that display on reports) and Range Orders (used when ordering ranges in reports.)

**Internal Group:** PARAMETER MAP

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<td>Specifies order</td>
<td>Identifies which</td>
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<td>value in range tier</td>
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<td>RANGE9 ORDER</td>
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**Positive Indicators (1) parameter map**

Some indicators available in the Cognos FM Models and associated packages are based on information from the warehouse fact tables. These indicators don’t include descriptions. The Positive Indicators (1) parameter map defines the positive ‘Yes’ description for the fact-based indicators used within the Cognos FM Models and associated packages.
The following table illustrates the PARAMETER MAP Positive Indicators (1) values, used with the Banner Student Retention Performance product, that were present at installation. You do not need to edit these parameter records.

**Internal Group: PARAMETER MAP**

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<th>Internal Code Seq.</th>
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</table>

**Reactivated Donor Status parameter map**

The record of the Parameter Map parameter with an **Internal Code 1** = ‘REACTIVATED DONOR STATUS’ defines the description for a constituent who gave this year and some year prior but not last year and gave this year at the same amount this year.

The following table illustrates the PARAMETER MAP Reactivated Donor Status value that was present at installation. The first row gives a definition of each field. You should edit the delivered **External Code** and **Description** values to define the reactivated donor status.
### Relation Category parameter map

The RELATION_CATEGORY values of the EDW Extract Parameter let you define groups of Relationship type codes like Family, Organizational and Sphere Of Influence. For example, you can create a “Family” category which identifies all of your institution’s Relationship type codes that indicate a family relation for the constituent.

The RELATION_CATEGORY values defined in this parameter are used in the Manage Prospect Pipeline and Analyze Fundraising Progress business concepts to define the Relation Category query item included in the Relationship query subject.

You can create an EDW Parameter Map record for each Relationship Type code that you want to associate to Relation Category. You can define any Relation Categories you want to use. Any relationship type code that is NOT associated with one of these categories in the EDW Extract Parameter will automatically be set to a Relation Category of ‘NA’ (not applicable).

The following table illustrates the PARAMETER MAP Relation Category values that were present at installation. The first row gives a definition of each field. Edit the Internal Code 2, External Code and Description to create your institution’s Relation Categories within the Cognos FM Model packages.

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<th>Internal Code 1</th>
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<td>Specifies parameter map being defined</td>
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</tr>
<tr>
<td>Great Grandparent</td>
<td>31</td>
<td>GGP</td>
<td>Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Great Niece/Nephew</td>
<td>32</td>
<td>GNN</td>
<td>Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandparent</td>
<td>33</td>
<td>GPA</td>
<td>Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-Law Child</td>
<td>34</td>
<td>ILC</td>
<td>Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-Law Parent</td>
<td>35</td>
<td>ILP</td>
<td>Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-Law Sibling</td>
<td>36</td>
<td>ILS</td>
<td>Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share Issuer</td>
<td>37</td>
<td>ISS</td>
<td>Organizational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joint Venture Company</td>
<td>38</td>
<td>JVC</td>
<td>Organizational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joint Venture Parent</td>
<td>39</td>
<td>JVP</td>
<td>Organizational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local Corporate Office</td>
<td>40</td>
<td>LOC</td>
<td>Organizational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Niece/Nephew</td>
<td>42</td>
<td>NIN</td>
<td>Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Now Known As Corporation</td>
<td>43</td>
<td>NKA</td>
<td>Organizational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent</td>
<td>44</td>
<td>PAR</td>
<td>Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philanthropic Foundation</td>
<td>45</td>
<td>PFD</td>
<td>Organizational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philantropic Fnd Trustee</td>
<td>46</td>
<td>PFT</td>
<td>Organizational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic Partner</td>
<td>47</td>
<td>PTN</td>
<td>Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retiree's Company</td>
<td>48</td>
<td>RCO</td>
<td>Organizational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative</td>
<td>49</td>
<td>REL</td>
<td>Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retired Employee</td>
<td>50</td>
<td>REM</td>
<td>Organizational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roommate</td>
<td>51</td>
<td>RMT</td>
<td>Sphere of Influence</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Release Information parameter map**

The record of the Parameter Map parameter with an Internal Code 1 = ‘Release Information’ defines the current product and release number.

The following table illustrates the PARAMETER MAP Release Information values that were present at installation. The first row gives a definition of each field. You should edit the delivered Description values to reflect the current product and release number installed at your institution.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>External Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Specifies whether record defines the Product or Release Number</td>
<td>Not used</td>
<td>Specifies whether record defines the Product or Release Number</td>
<td>Description of the current product or release number at your institution</td>
</tr>
<tr>
<td>RELEASE INFORMATION</td>
<td>Product</td>
<td>1</td>
<td>Product</td>
<td>Banner EDW</td>
</tr>
<tr>
<td>RELEASE INFORMATION</td>
<td>Release Number</td>
<td>2</td>
<td>Release Number</td>
<td>8.3</td>
</tr>
</tbody>
</table>
Report Default Selections parameter map

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Report Default Selections’ are used within the some of the Banner Recruiting and Admissions Performance business concepts to establish the value to be used when opening a performance chart or other report and you want some values displayed and not have to take a second step to see your data displayed. This technique is used when dependent on timing there is a clear single value for these parameters. This is the reason this was not pre-defined for use in any of the Banner Student Retention Performance delivered reports.

One or more of the default report values are used in the Impact of Aid on New Enrollment and Manage Applicants business concepts to define the query items within the Report Default Selections query subject.

<table>
<thead>
<tr>
<th>Internal Code 2 value</th>
<th>Report Default Selection query item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Academic Period</td>
<td>Current Academic Period</td>
</tr>
<tr>
<td>Current Academic Period Type</td>
<td>Current Academic Period Type</td>
</tr>
<tr>
<td>Current Academic Year</td>
<td>Current Academic Year</td>
</tr>
<tr>
<td>Current Aid Year</td>
<td>Impact of Aid on New Enrollment/ Time Filters/Current Aid Year</td>
</tr>
<tr>
<td>Default Academic Period</td>
<td>Academic Period Prompt</td>
</tr>
<tr>
<td>Default Academic Period Type</td>
<td>Academic Period Type Prompt</td>
</tr>
<tr>
<td>Default Academic Year</td>
<td>Academic Year Prompt</td>
</tr>
<tr>
<td>Default Student Level</td>
<td>Default Student Level</td>
</tr>
</tbody>
</table>

The following table illustrates the PARAMETER MAP Report Default Selections values that were present at installation. The first row of the table gives a definition of each field. Edit the **Description** for each record to indicate the current and default values to use in your institution’s reports.
Internal Group: PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Specifies the query item value being defined by the record</td>
<td>Order for all records</td>
<td>Specifies the query item value being defined by the record</td>
<td>Define your institution’s current and default values</td>
</tr>
<tr>
<td>REPORT DEFAULT SELECTIONS</td>
<td>Current Academic Period</td>
<td>1</td>
<td>Current Academic Period</td>
<td>200710</td>
</tr>
<tr>
<td>REPORT DEFAULT SELECTIONS</td>
<td>Current Academic Period Type</td>
<td>2</td>
<td>Current Academic Period Type</td>
<td>Fall</td>
</tr>
<tr>
<td>REPORT DEFAULT SELECTIONS</td>
<td>Current Academic Year</td>
<td>3</td>
<td>Current Academic Year</td>
<td>2007</td>
</tr>
<tr>
<td>REPORT DEFAULT SELECTIONS</td>
<td>Current Aid Year</td>
<td>4</td>
<td>Current Aid Year</td>
<td>0607</td>
</tr>
<tr>
<td>REPORT DEFAULT SELECTIONS</td>
<td>Default Academic Period</td>
<td>5</td>
<td>Default Academic Period</td>
<td>200810</td>
</tr>
<tr>
<td>REPORT DEFAULT SELECTIONS</td>
<td>Default Academic Period Type</td>
<td>6</td>
<td>Default Academic Period Type</td>
<td>Fall</td>
</tr>
<tr>
<td>REPORT DEFAULT SELECTIONS</td>
<td>Default Academic Year</td>
<td>7</td>
<td>Default Academic Year</td>
<td>2008</td>
</tr>
<tr>
<td>REPORT DEFAULT SELECTIONS</td>
<td>Default Student Level</td>
<td>8</td>
<td>Default Student Level</td>
<td>UG</td>
</tr>
</tbody>
</table>

**Report Help Text parameter map**

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Report Help Text’ define the contact information and email address that display on each Help page.

The following table illustrates the PARAMETER MAP Report Help Text values that were present at installation. You should edit the delivered Description values to reflect the contact information message and contact email for your institution.
The record of the Parameter Map parameter with an **Internal Code 1** = ‘RETAINED DONOR STATUS’ defines the descriptions for a constituent who gave this year and last and whether the amount was constant, upgraded, or downgraded.

The following table illustrates the PARAMETER MAP Retained Donor Status values that were present at installation. The first row gives a definition of each field. You should edit the delivered **External Code** and **Description** values to define the retained donor status.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPORT HELP TEXT</td>
<td>General Help Text</td>
<td>1</td>
<td>General Help Text</td>
<td>If you have any questions about this report...</td>
</tr>
<tr>
<td>REPORT HELP TEXT</td>
<td>Email</td>
<td>2</td>
<td>Email</td>
<td><a href="mailto:helpdesk@institution.edu">helpdesk@institution.edu</a></td>
</tr>
</tbody>
</table>

**Retained Donor Status parameter map**

The record of the Parameter Map parameter with an **Internal Code 1** = ‘RETAINED DONOR STATUS’ defines the descriptions for a constituent who gave this year and last and whether the amount was constant, upgraded, or downgraded.

The following table illustrates the PARAMETER MAP Retained Donor Status values that were present at installation. The first row gives a definition of each field. You should edit the delivered **External Code** and **Description** values to define the retained donor status.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Specifies the retained donor status indicator</td>
<td>Not used</td>
<td>Specifies the retained donor status indicator</td>
<td>Defines the retained donor status</td>
</tr>
<tr>
<td>RETAINED DONOR STATUS</td>
<td>DONOR CONSTANT IND</td>
<td>1</td>
<td>DONOR CONSTANT IND</td>
<td>Retained Constant</td>
</tr>
<tr>
<td>RETAINED DONOR STATUS</td>
<td>DONOR DOWNGRADE IND</td>
<td>2</td>
<td>DONOR DOWNGRADE IND</td>
<td>Retained Downgrade</td>
</tr>
<tr>
<td>RETAINED DONOR STATUS</td>
<td>DONOR UPGRADE IND</td>
<td>3</td>
<td>DONOR UPGRADE IND</td>
<td>Retained Upgrade</td>
</tr>
<tr>
<td>RETAINED DONOR STATUS</td>
<td>OTHER</td>
<td>4</td>
<td>OTHER</td>
<td>Other</td>
</tr>
</tbody>
</table>
Retained Donor Type parameter map

The record of the Parameter Map parameter with an Internal Code 1 = ‘RETAINED DONOR TYPE’ defines the descriptions to group retained donors, new donor retained, previous donor retained, and other.

The following table illustrates the PARAMETER MAP Retained Donor Type values that were present at installation. The first row gives a definition of each field. You should edit the delivered External Code and Description values to define the retained donor type.

<table>
<thead>
<tr>
<th>Internal Group: PARAMETER MAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Code 1</td>
</tr>
<tr>
<td>Specifies parameter map being defined</td>
</tr>
<tr>
<td>RETAINED DONOR TYPE</td>
</tr>
<tr>
<td>RETAINED DONOR TYPE</td>
</tr>
<tr>
<td>RETAINED DONOR TYPE</td>
</tr>
</tbody>
</table>

Retired Job Status (indicator) parameter map

The RETIRED_JOB_STATUS values defined in this parameter are used in all of the advancement-related business concepts to define the positive (and negative) values associated with the Retired Ind query item included in the Constituent Employment Counts and Indicators query subject.

You can create an EDW Extract Parameter record for each Employment Status code that you want to have a positive (1/yes) value for the Retired Ind. You can define multiple Employment Status codes as necessary. Any Employment Status code that is not defined in these EDW Extract parameter records will result in a negative (0/no) indicator value.

The following table illustrates the PARAMETER MAP Retired Job Status values that were present at installation. The first row gives a definition of each field. Edit the External Code and Description to create your institution’s Employment Status Codes that should be used to designate a “positive” value (1/yes) for the Retired Ind for each individual employment record within the Cognos FM Model packages.
**Internal Group: PARAMETER MAP**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RETIRED_JOB_ STATUS</td>
<td>Retired Job Status</td>
<td>1</td>
<td>R</td>
<td>Retired</td>
</tr>
</tbody>
</table>

### Scorecard Academic Year parameter map

The Scorecard Academic Year parameter map is used to get the difference between current year value and prior year value for calculating metric type like ‘Increase Undergraduate Retention Rate’ in the Scorecard reports.

The following table illustrates the PARAMETER MAP Scorecard Academic Year value that was present at installation. The first row gives a definition of each field. You should edit the delivered External Code and Description values to reflect the academic year that you want to display in the scorecard.

**Internal Group: PARAMETER MAP**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCORECARD ACADEMIC YEAR</td>
<td>DEFAULT</td>
<td>1</td>
<td>DEFAULT</td>
<td>2010</td>
</tr>
</tbody>
</table>

### Short Long Lapse SYBUNT parameter map

The records of the Parameter Map parameter with an **Internal Code 1** = ‘SHORT LONG LAPSE SYBUNT’ define the descriptions to be used to further segment a SYBUNT donor as a Short Lapse donor or a Long Lapse donor.

The record with an **Internal Code 2** = ‘SHORT LAPSE SYBUNT’ defines the description for a short lapse donor. A short lapse donor has no participation amount for this year or last year; but gave in some other year through the threshold year of giving. The record with an **Internal Code 2** = ‘LONG LAPSE SYBUNT’ defines the description for a long lapse donor. A long lapse donor has no participation amount for this year or last year; but did give in some other year after the threshold year of giving. The threshold year of giving is defined by the EDW Extract Parameter RQPP_SHORT_LONG_LAPSE_THRESH.
The following table illustrates the PARAMETER MAP Short Long Lapse SYBUNT values that were present at installation. The first row gives a definition of each field. You should edit the delivered External Code and Description values to define the short and long lapse donor descriptions.

**Internal Group: PARAMETER MAP**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Specifies the SYBUNT type</td>
<td>Not used</td>
<td>Specifies the SYBUNT type code</td>
<td>Defines the description to be used for short and long lapse donors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHORT LONG LAPSE SYBUNT</td>
<td>SHORT LAPSE SYBUNT</td>
<td>1</td>
<td>SHORT LAPSE SYBUNT</td>
<td>Short Lapse Donor</td>
</tr>
<tr>
<td>SHORT LONG LAPSE SYBUNT</td>
<td>LONG LAPSE SYBUNT</td>
<td>2</td>
<td>LONG LAPSE SYBUNT</td>
<td>Long Lapse Donor</td>
</tr>
<tr>
<td>SHORT LONG LAPSE SYBUNT</td>
<td>OTHER</td>
<td>3</td>
<td>OTHER</td>
<td>Other</td>
</tr>
<tr>
<td>SHORT LONG LAPSE SYBUNT</td>
<td>NULL DESC</td>
<td>4</td>
<td>NULL DESC</td>
<td>Data Not Avail</td>
</tr>
</tbody>
</table>

**Student Course parameter map**

The records of the Parameter Map parameter with an Internal Code 1 = ‘Student Course’ define the description to be displayed for the three Course Source values. These values are used to load the data warehouse in the Analyze Student Progress business concept to define the Banner source table for the student course. Course Source Types include History, Registration, and Transfer.

The following table illustrates the PARAMETER MAP Student Course values that were present at installation. You should edit the delivered Description values only if your institution uses different words to describe whether the course is a graded institution course in ‘History’, a current in progress course in ‘Registration’ or a course taken at another institution and recorded as a ‘Transfer’ course.

**Internal Group: PARAMETER MAP**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT COURSE</td>
<td>History</td>
<td>1</td>
<td>History</td>
<td>History</td>
</tr>
</tbody>
</table>
Student Level parameter map

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Student Level’ let you define which of your institution’s Student Level Codes correspond to the Undergraduate, Graduate, and Professional levels within your Cognos FM Model and associated packages.

The following table illustrates the PARAMETER MAP Student Level values that were present at installation. The first row of the table gives a definition of each field. Edit each Description to reflect your institution’s Student Level Code that should be used for Undergraduate, Graduate, and Professional levels in your reports.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDENT COURSE</td>
<td>Registration</td>
<td>2</td>
<td>Registration</td>
<td>Registration</td>
</tr>
<tr>
<td>STUDENT COURSE</td>
<td>Transfer</td>
<td>3</td>
<td>Transfer</td>
<td>Transfer</td>
</tr>
</tbody>
</table>

Test Type parameter map

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Test Type’ let you define which of your institution’s Test Type Codes correspond to the test types used in your Cognos FM Model and associated packages in the Banner Recruiting and Admissions Performance product. The Banner Student Retention Performance product
uses EDW Extract Parameters to specify the test scores to be used so does not use this parameter map.

The following table illustrates some of the PARAMETER MAP Test Type values that were present at installation. There are a total of 29 tests defined in this set of parameter maps. The first row of the table gives a definition of each field. Edit each Description to reflect your institution’s Test Type Code that should be used for the associated test type in your reports.

**Internal Group: PARAMETER MAP**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Specifies Test Code to be used in the RAP product</td>
<td></td>
<td>Specifies Test Code values</td>
<td>Test codes defined by your institution as the code for the specific test type</td>
</tr>
<tr>
<td>TEST TYPE</td>
<td>SAT Verbal</td>
<td>1</td>
<td>SAT Verbal</td>
<td>S01</td>
</tr>
<tr>
<td>TEST TYPE</td>
<td>SAT Mathematics</td>
<td>2</td>
<td>SAT Mathematics</td>
<td>S02</td>
</tr>
<tr>
<td>TEST TYPE</td>
<td>SAT Critical Reading</td>
<td>3</td>
<td>SAT Critical Reading</td>
<td>S03</td>
</tr>
</tbody>
</table>

**Total Years of Participation Range parameter map**

The record of the Parameter Map parameter with an Internal Code 1 = ‘Total Years of Participation Range’ defines ranges and their order for a constituent's total years of participation for use in the Advancement Analytics for Cognos and associated FM packages. The participation is based on the participation components identified in the EDW Extract Parameter (RQPP_TOTAL_PARTICIP_COMPONENTS) and what is used to set the participation indicator for a year of giving.

To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Total Years of Participation Range parameter records associated with each range tier define the following aspects of the range:

- RANGE# record - specifies the highest number of days to include in the range for that tier
- RANGE# DESC record - defines the description of the range tier that will display on reports in Cognos
• RANGE# ORDER record - defines the description and the sequence in which the range tier should display when using the Total Years of Participation Range query item in the Cognos FM Models and associated packages

**Note**

The highest range tier requires you define only the range description and range order since the range itself is the number of days greater than the previous tier.

The following table illustrates some of the PARAMETER MAP Total Years of Participation Range values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the Total Years of Participation Range records to create your institution’s desired Range values, Range Descriptions and Range Orders.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies parameter map being defined</td>
<td>Identifies which tier of range is being defined</td>
<td>Specifies order for this tier of range</td>
<td>Identifies which tier of range is being define</td>
<td>Defines range tier description or highest value in range tier</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Rangel1</td>
<td>1</td>
<td>Rangel1</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Rangel1 Desc</td>
<td>2</td>
<td>Rangel1 Desc</td>
<td>No Giving Years</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Rangel1 Order</td>
<td>3</td>
<td>Rangel1 Order</td>
<td>00. No Giving Years</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range2</td>
<td>4</td>
<td>Range2</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range2 Desc</td>
<td>5</td>
<td>Range2 Desc</td>
<td>1-5 Giving Years</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range2 Order</td>
<td>6</td>
<td>Range2 Order</td>
<td>01. 1-5 Giving Years</td>
</tr>
<tr>
<td>Internal Code 1</td>
<td>Internal Code 2</td>
<td>Seq.</td>
<td>External Code</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
<td>------</td>
<td>---------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range3</td>
<td>7</td>
<td>Range3</td>
<td>11</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range3 Desc</td>
<td>8</td>
<td>Range3 Desc</td>
<td>6-10 Giving Years</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range3 Order</td>
<td>9</td>
<td>Range3 Order</td>
<td>02. 6-10 Giving Years</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range4</td>
<td>10</td>
<td>Range4</td>
<td>16</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range4 Desc</td>
<td>11</td>
<td>Range4 Desc</td>
<td>11-15 Giving Years</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range4 Order</td>
<td>12</td>
<td>Range4 Order</td>
<td>03. 11-15 Giving Years</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range5</td>
<td>13</td>
<td>Range5</td>
<td>21</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range5 Desc</td>
<td>14</td>
<td>Range5 Desc</td>
<td>16-20 Giving Years</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range5 Order</td>
<td>15</td>
<td>Range5 Order</td>
<td>04. 16-20 Giving Years</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range6 Desc</td>
<td>16</td>
<td>Range6 Desc</td>
<td>21+ Giving Years</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Range6 Order</td>
<td>17</td>
<td>Range6 Order</td>
<td>05. 21+ Giving Years</td>
</tr>
</tbody>
</table>
Traditional Age parameter map

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Traditional Age’ lets you define the maximum age of a student to use when calculating the Traditional Student Indicator. If a student’s Current Age is less than or equal to the value defined in this parameter, then the Traditional Student Indicator is set to **Yes**. If a student’s Current Age is greater than the value defined in this parameter, the Traditional Student Indicator is set to **No**. The Traditional Student Indicator is included in the Person query subject.

The following table illustrates the PARAMETER MAP Traditional Age value that was present at installation. Edit the Description to reflect the maximum age value to be used when calculating the Traditional Student Indicator.

**Internal Group:** PARAMETER MAP

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Null Desc</td>
<td>18</td>
<td>Null Desc</td>
<td>No Data Exists</td>
</tr>
<tr>
<td>TOTAL YEARS OF PARTICIPATION RANGE</td>
<td>Null Order</td>
<td>19</td>
<td>Null Order</td>
<td>99. No Data Exists</td>
</tr>
</tbody>
</table>

Transaction Amount Range parameter map

The Transaction Amount Range parameter map lets you define ranges and their order for the transaction amount ranges used within your Cognos FM Model and associated packages. These ranges are used in the Analyze Constituent Giving and Analyze Fundraising Progress business concepts to define the Transaction Amount Range and Transaction Amount Range Order query items within the Giving Transaction Amounts query subject.

The records of the Parameter Map parameter with an **Internal Code 1** = ‘Transaction Amount Range’ define the needed range items. To define a range, you need to set up a parameter value for the Range, Range Description, and Range Order for each tier within the range. The three Transaction Amount Range parameter records associated with each range tier define the following aspects of the range:
• RANGE# record - defines the highest amount to include in the range for that tier
• RANGE# DESC record - defines the description of the range tier that will display on reports in Cognos
• RANGE# ORDER record - defines the description and the sequence in which the range tier should display when using the Overall Pledge Balance Range Order query item in the Cognos FM Model and associated packages

**Note**
The lowest and highest range tiers require you define only the range description and range order since the range itself is '0' for the lowest tier and everything greater than the previous tier for the highest tier.

The following table illustrates some of the PARAMETER MAP Transaction Amount Range values that were present at installation. The first row gives a definition of each field. Edit the **Descriptions** associated with the Transaction Amount Range records to create your institution’s desired Range values, Range Descriptions (that display on reports) and Range Orders (used when ordering ranges in reports.)

<table>
<thead>
<tr>
<th>Internal Group: PARAMETER MAP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal Code 1</strong></td>
</tr>
<tr>
<td>Specifies parameter map being defined</td>
</tr>
<tr>
<td>TRANSACTION AMOUNT RANGE</td>
</tr>
<tr>
<td>TRANSACTION AMOUNT RANGE</td>
</tr>
<tr>
<td>TRANSACTION AMOUNT RANGE</td>
</tr>
<tr>
<td>TRANSACTION AMOUNT RANGE</td>
</tr>
<tr>
<td>TRANSACTION AMOUNT RANGE</td>
</tr>
<tr>
<td>TRANSACTION AMOUNT RANGE</td>
</tr>
<tr>
<td>TRANSACTION AMOUNT RANGE</td>
</tr>
</tbody>
</table>
The record of the Parameter Map parameter with an Internal Code 1 = ‘UID Crosswalk’ allows you to define an ID relationship between entities in your Advance system that are also in your Banner systems. You do this by specifying the IDS_TYPE_CODE defined in the IDS_BASE table of your Advance system. This parameter map setting will then ensure that the Banner PIDM defined in the OTHER_ID column that equates to the Advance ID in the ID_NUMBER column will be correctly loaded into the WDT_WAREHOUSE_ENTITY dimension.

**Note**

You only need to define this parameter if you are an Advance client also using Banner products to source data in your warehouse.

The following table illustrates the PARAMETER MAP UID Crosswalk value that was present at installation. Edit the delivered Description value to reflect the IDS_TYPE_CODE value set by your institution.
**Internal Group: PARAMETER MAP**

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UID CROSSWALK</td>
<td>ADVANCE TO BANNER</td>
<td>1</td>
<td>BNR</td>
<td>IDS_TYPE_CODE</td>
</tr>
</tbody>
</table>

**Year Of Giving parameter map**

The records of the Parameter Map parameter with an Internal Code 1 = ‘Year of Giving’ let you define key years of giving at your institution. These values define the Year of Giving Filters used in the Analyze Fundraising Progress business concept.

You can define your institution’s current and prior fiscal year of giving. You can also define an “initial” year of giving, which specifies the first year of giving information to include in reports when the Initial Year of Giving filter is applied. For example, when the Initial Year of Giving parameter value is set to “2000” and you apply the Initial Year of Giving filter to a report, the report will return only records with a Year of Giving >= 2000.

The following table illustrates the PARAMETER MAP Year of Giving values present at installation. Edit the delivered Description values to reflect your institution’s desired year of giving values.

- For the record with an Internal Code 2 = ‘CURRENT’, change the Description to your institution’s current fiscal year of giving.
- For the record with an Internal Code 2 = ‘PRIOR’, change the Description to your institution’s prior fiscal year of giving.
- For the record with an Internal Code 2 = ‘INITIAL’, change the Description to the year that you want to be the first year of giving information displayed on reports when the Initial Year of Giving filter is applied.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR OF GIVING</td>
<td>CURRENT</td>
<td>1</td>
<td>CURRENT</td>
<td>2009</td>
</tr>
<tr>
<td>YEAR OF GIVING</td>
<td>PRIOR</td>
<td>2</td>
<td>PRIOR</td>
<td>2008</td>
</tr>
<tr>
<td>YEAR OF GIVING</td>
<td>INITIAL</td>
<td>3</td>
<td>INITIAL</td>
<td>2000</td>
</tr>
</tbody>
</table>
Set Up Goals

The goals feature lets you set up fundraising and campaign goals that you can use with the Advancement Analytics for Cognos performance product. Using the goals you can analyze the fundraising goals for a tiered, transaction-based campaign giving, and pyramid in Advancement Analytics for Cognos FM Model and associated packages.

The goal details are entered in the following dimension tables in the data warehouse:

- WDT_FUNDRAISER_GOAL
- WDT_FUNDRAISING_ANNUAL_GOAL
- WDT_CAMPAIGN_PYRAMID_GOAL

The following table provides an overview of the query subjects that are used to filter the data from the dimension tables based on the requirements:

<table>
<thead>
<tr>
<th>Dimension tables and columns</th>
<th>Query subject and corresponding data items used</th>
<th>Business concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDT_FUNDRAISER_GOAL:</td>
<td>Contact Credit Goals:</td>
<td>MPP</td>
</tr>
<tr>
<td>CREDIT_RECIPIENT_ID</td>
<td>• Contact Goal Fundraiser</td>
<td></td>
</tr>
<tr>
<td>GOAL_TYPE</td>
<td>• Contact Goal Fundraiser ID</td>
<td></td>
</tr>
<tr>
<td>START_DATE</td>
<td>• Contact Goal Type</td>
<td></td>
</tr>
<tr>
<td>END_DATE</td>
<td>• Contact Goal Start Date</td>
<td></td>
</tr>
<tr>
<td>CONTACT_GOAL</td>
<td>• Contact Goal End Date</td>
<td></td>
</tr>
<tr>
<td>VISIT_GOAL</td>
<td>• Overall Contact Goal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Overall Contact Goal Rate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Overall Credit Goal Rate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Visit Goal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Visit Goal Rate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Visit Credit Goal Rate</td>
<td></td>
</tr>
</tbody>
</table>
The Goal Setup feature of the system lets you configure these goals (fundraiser, campaign annual, and campaign pyramid level goals) using an Excel spreadsheet. This centralizes the goal data and provides a simple process for configuring these goals. After you configure the goals in the spreadsheet, you can deploy the spreadsheet to a directory. The next data load will load the goals to the data warehouse and store them in the corresponding dimension tables.

You need to enter the goal data in the corresponding files in .xls format. This file will be used to reference your institution’s goals in the warehouse. The following template files corresponding to each dimension table are delivered in the install directory (edw\edw8.4.1\edwmgr\base\tables):

- WDT_FUNDRAISER_GOAL.xlsm
- WDT_FUNDRAISING_ANNUAL_GOAL.xlsm
- WDT_CAMPAIGN_PYRAMID_GOAL.xlsm

These files include sample goals for reference. You need to enter the goal data in the respective file. For example, you need to modify the WDT_FUNDRAISER_GOAL.xlsm file to include your institution’s Contact Report Goals.
Perform the following steps to set up goals:

1. Open the template .xlsm file that is stored in the edwmgr\base\tables folder. For example, open the WDT_FUNDRAISER_GOAL.xlsm file.

2. Enable Macros for the file.

3. Remove all rows from this file except the header row.

4. Add as many new rows as you need to define your institution’s goals (fundraiser, campaign annual, and campaign pyramid level goals). You can set up goals for a recipient for various goal types. You can set up as many goals as you need.

After all the necessary records have been created, ensure that the last column (the one after USER_GOAL5) is copied over to each of the newly added lines.

5. After you enter all records and copy the last column, save the file as a .csv file:

5.1. Select Macros from the View menu of the spreadsheet. A list of embedded macros displays (the delivered macro is called CSV file).

5.2. Click Run and the macro will prompt for a location and filename for the csv file.

5.3. Enter a filename that is exactly the same as the original file name (WDT_xxxxxx_GOAL). Once created, both files will have the same name, but different extensions, for example, abcd.xlsm and abcd.csv.

6. Move the .csv files to the DATALOAD_DIR directory (this directory was defined during the install/upgrade process).
Refer to the `ext_table_dir` variable in the `login.sql` file to determine the location where the `DATALOAD_DIR` is stored in the system. A database administrator or developer will need to perform this step since it requires access to the database file system.

7. Rerun the dimension load jobs so that the data from the `csv` files is loaded to the appropriate EDW or APM Dimension table. Use the following dimension load jobs to load the goal data to the warehouse:

- Load/Refresh Campaign Pyramid Goal
- Load/Refresh Fundraiser Goal
- Load/Refresh Fundraising Annual Goal

For more information on loading the data to the warehouse, refer to the “Schedule a Process (Banner ODS and Banner EDW)” section in the “Administrative User Interface (Banner ODS and Banner EDW)” chapter of *Banner Enterprise Data Warehouse Handbook*.

After the load process has completed successfully, the system displays a “SUCCESS - Goals were updated from the csv file” message as shown in the following figure.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start of Process</td>
<td>21-MAY-2012 12:49:01</td>
</tr>
<tr>
<td>Session</td>
<td>Resumable, timeout = 3 days (259200)</td>
</tr>
<tr>
<td>Running map</td>
<td>package: FUNDRAISER_GOAL_D3</td>
</tr>
<tr>
<td>Location</td>
<td>EDWSTG_LOCATION</td>
</tr>
<tr>
<td>SUCCESS</td>
<td>Goals were updated from the csv file.</td>
</tr>
<tr>
<td>60 records inserted.</td>
<td></td>
</tr>
<tr>
<td>OWB Audit</td>
<td>Execution ID: 957786</td>
</tr>
<tr>
<td>Mapping</td>
<td>completed successfully at: 21-MAY-2012 12:49:01</td>
</tr>
<tr>
<td>Elapsed time</td>
<td>0 seconds</td>
</tr>
<tr>
<td>Process completed</td>
<td>successfully at 21-MAY-2012 12:49:01</td>
</tr>
<tr>
<td>End of Report</td>
<td></td>
</tr>
</tbody>
</table>

If there are issues during the load, the Job Control Report will display the appropriate message. If there is a missing file or a file that has incompatible data, the table will not be reloaded and will retain the data it originally contained. The following figure depicts a sample error message displayed by the system when an unsuccessful data load occurs.
Set up additional custom goals

For each of the goal concepts being set up, you can add additional user defined goals in the structure of the sample goal files. Five additional columns such as USER_GOAL1, USER_GOAL2, USER_GOAL3, USER_GOAL4, and USER_GOAL5 are provided in the corresponding .xlsm file. These columns in the spreadsheet can be utilized to set up customized goals if necessary. These USER_GOAL columns in the spreadsheet correspond to USER_GOAL columns in the corresponding goal table for that spreadsheet. In the Cognos metadata, the goal query subjects include hidden USER_GOAL columns, which the institution can unhide and rename using Cognos Framework Manager.

For example, in addition to the contact and visit goals that are being set up in the Fundraiser Goal file, if there is an additional goal required for the fundraiser dollar amounts, you can use the column USER_GOAL1 to add dollar amounts to that column for each fundraiser. Once you update the file as per the steps defined, this amount could then be exposed and used in any of the packages that require the ability to analyze the performance of fundraisers and their actual fundraising amounts against the goals that were defined.
3 Architecture

The Banner Operational Data Store (Banner ODS) and the Banner Enterprise Data Warehouse (Banner EDW) are the data warehouse components of the Banner Performance Reporting and Analytics Business Intelligence platform. The following sections describe the architecture of this platform and the roles and integration of ODS and EDW with the other components.

BPRA product architecture

The complete suite of BPRA products provides comprehensive content across areas such as student, financial aid, finance, accounts receivables, human resources and advancement giving your institution the ability to take full advantage of the data stored in your source system by turning it into applied knowledge in the warehouse. You can use the BPRA products together to help you make informed decisions, to guide strategic institutional planning and forecasting based on analysis of historical trends, and to enhance institutional performance.

The BPRA solution set includes the following products:

- Banner Operational Data Store (Banner ODS)
- Banner Enterprise Data Warehouse (Banner EDW)
- Advancement Performance (AP)
- Banner Recruiting and Admissions Performance (Banner RAP)
- Banner Student Retention Performance (Banner SRP)

Note

Your institution may license some or all of the BPRA products. If you do license multiple BPRA products, it is important that you understand the relationship among all of the products as you use them.
The following figure illustrates the components of the BPRA suite of products.

**Figure 1: BPRA product architecture**

**Source system database**

The starting point for any performance or reporting analysis solution is your source system data. The information stored in the source transactional database is ultimately the information that you want to analyze.

The BPRA products are specifically designed to accept information from the Banner and Advance products. However, the BPRA products use an open design and can accept information from other sources as well. References to the “source” database refer to whichever source product you use, typically Banner or Advance.
Target database

The “target” database refers to the database where you load information from the source database. Depending on the way you license your BPRA products, this may be the Banner ODS or Banner EDW database or both.

Banner Operational Data Store

The Banner ODS enables you to extract information from your source administrative systems and reorganize the information into a simplified set of tables in the Banner ODS database. End users can then create and deploy operational and ad hoc reports.

Banner ODS provides an extensive and flexible data store and business-organized reporting views with fewer columns and improved performance. You can use these views alone, or in combination with other views. Banner ODS also uses the supported third party reporting metadata layers to deliver an enterprise business area with many prejoined conditions to enhance operational and ad hoc reporting.

In the Banner ODS information from complex and normalized source tables are grouped into more simplified, denormalized tables that are grouped by concept. The following picture illustrates how data from Banner tables of person-related information are combined into one Banner ODS table named AS_PERSON.

Banner tables of personal information

![Diagram of Banner tables and AS_PERSON table consolidation]

Banner view of personal information

Figure 2: Banner to Banner ODS table consolidation

In Banner, to properly access the data, you need to understand the rules used to store the data in each table and the rules used to properly join the tables. Using the Banner ODS, you can access replicated Banner data in the ODS without the need to understand the complexities of the data structure because you can retrieve the data from the view.
Banner Enterprise Data Warehouse

The Banner EDW is a multi-dimensional database that gives you a complete picture of your institution’s current and past business conditions. The Banner EDW offers comprehensive reporting and analysis capabilities by providing the following data objects:

- Operational/Aggregate stars that you can refresh with current data on a daily basis at both a summary and detail level
- Snapshot stars that offer a historical snapshots of the data at institution-specific points-in-time at a summary level

This combination of current and historical data allows you to do comparative reporting and analysis. Banner EDW includes prebuilt metadata integration with the IBM Cognos BI software to enable fast deployment of reports and analytics.

Performance Management applications

The Performance Management products are a subset of BPRA products that you can license and use in conjunction with the Banner ODS and/or Banner EDW to monitor and manage your institutions business objectives and analyze outcomes. The following picture illustrates the Performance Management products and high-level features.

![Performance Products and Features](image)

**Figure 3: Performance Management products and features**
Each Performance Management product includes the following types of objects built using the IBM Cognos Business Intelligence application:

- Business Concept Packages - reporting metadata layer
- Cubes - predefined reporting structures for quick analysis of summary measures by many attributes
- Reports - display trends of outcomes, summaries of current outcomes, and detailed information about students, applicants, recruits, or constituents (depending on the product)
- Dashboards - display several graphical performance charts for a specific business area on a single screen that you can review at a glance
- Scorecards - display institutional goals and objectives including Key Performance Indicators (KPIs) that monitor progress toward your goals and objectives and a set of strategic initiatives that are needed to produce desired outcomes

The data for these objects is stored in the Banner EDW. These objects are intended to illustrate the kind of analysis you can perform on the warehouse data. You can use the reports, dashboards, and scorecards as delivered or you can modify them to reflect the specific information you need to analyze and monitor your institution's progress.

**Advancement Performance**

The Advancement Performance solution provides Advancement organizations (Banner Advancement and Advance users) with innovative ways to manage prospects and campaigns, drive fundraising, engage alumni and other constituents, and more. The Advancement Performance solution is comprised of the following products:

- Advancement Analytics for Cognos
- Enterprise Data Warehouse (Advancement data)

The Advancement Analytics for Cognos product provides the performance application content and tools and uses the Banner EDW multi-dimensional database that gives you a complete picture of your institution’s current and past business conditions. This permits your institution to report both current and historical data for summary, trend and detail reporting and analysis.

**Banner Recruiting and Admissions Performance**

Banner Recruiting and Admissions Performance is the reporting analytics and performance portion of the Banner Relationship Management Suite that lets you easily access recruitment, admissions, and selected financial aid information and use it to create reports.

Banner Recruiting and Admissions Performance uses the Banner EDW multi-dimensional database that gives you a complete picture of your institution's current and past business
conditions. This permits your institution to report both current and historical data for summary, trend and detail reporting and analysis.

**Banner Student Retention Performance**

You can use Banner Student Retention Performance to monitor student retention, student success (performance and progress) and student engagement to satisfy institution goals and objectives; extend and modify performance monitoring capabilities; and create operational reports and ad hoc queries that meet the specific needs of your institution.

Banner Student Retention Performance uses the Banner EDW multi-dimensional database that gives you a complete picture of your institution’s current and past business conditions. This permits your institution to report both current and historical data for summary, trend and detail reporting and analysis.

**Data replication**

The replication of data between the source and target databases is key to the usefulness of the warehouse solution and in turn the reports built off the target database. Data replication is referred to as the “staging” process, which simply means to copy tables in the source database into the operational staging area of the target database as illustrated by the following picture.
Figure 4: Data replication - staging data

You have two options for staging data in the target database. You can use Oracle Streams or Oracle Materialized Views as the framework for staging data. During the initial installation or upgrade process, your institution chose which staging approach to implement.

Refer to one of the following sections to learn more about managing the staging environment in the framework used by your institution.

- “Oracle Streams framework” on page 3-11
- “Oracle Materialized Views framework” on page 3-13

You can also refer to the Oracle Streams Operations Supplement or the Materialized Views Operations Supplement for additional information about setting up, configuring, and administering one of the frameworks.

Schemas and users

Each schema in the source system needs to have an identical schema in the target database to successfully synchronize data between the two. The following sections list the components owned by the various schemas for each of the BPR products.
Banner ODS schemas

The following schemas exist in the Banner ODS.

<table>
<thead>
<tr>
<th>Schema</th>
<th>Owns</th>
</tr>
</thead>
<tbody>
<tr>
<td>ODSSRC</td>
<td>• All composite views</td>
</tr>
<tr>
<td></td>
<td>• Database packages that contain business logic used in the</td>
</tr>
<tr>
<td></td>
<td>composite views and trigger logic.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> These are all the ETL objects that used to live in the</td>
</tr>
<tr>
<td></td>
<td>ODSMGR schema of Banner prior to ODS 8.2.</td>
</tr>
<tr>
<td>ODSMGR</td>
<td>• All composite tables, and the reporting views that sit on top of</td>
</tr>
<tr>
<td></td>
<td>the composite tables</td>
</tr>
<tr>
<td></td>
<td>• Database packages that contain business logic used in the</td>
</tr>
<tr>
<td></td>
<td>reporting views</td>
</tr>
<tr>
<td></td>
<td>• OWB mapping packages</td>
</tr>
<tr>
<td>IA_ADMIN</td>
<td>• Metadata tables</td>
</tr>
<tr>
<td></td>
<td>• Any objects used or associated with the Administrative User</td>
</tr>
<tr>
<td></td>
<td>Interface like the parameter table, the data display rules table,</td>
</tr>
<tr>
<td></td>
<td>and the security tables.</td>
</tr>
<tr>
<td>ODSSTG</td>
<td>Depending on the architecture framework you use, the ODSSTG schema</td>
</tr>
<tr>
<td></td>
<td>owns one of the following:</td>
</tr>
<tr>
<td></td>
<td>• Oracle Streams objects</td>
</tr>
<tr>
<td></td>
<td><em>Or</em></td>
</tr>
<tr>
<td></td>
<td>• Materialized Views objects (packages)</td>
</tr>
<tr>
<td></td>
<td>This user is created in Banner and the ODS.</td>
</tr>
<tr>
<td>ODSEUL</td>
<td>• Discoverer End User Layer tables</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> ODSEUL is the default name of this schema; however,</td>
</tr>
<tr>
<td></td>
<td>you can rename the schema.</td>
</tr>
<tr>
<td>ODSLOV</td>
<td>• List Of Value views that are created from the MGT_VALIDATION table</td>
</tr>
<tr>
<td></td>
<td>These views are used as part of the Cognos, Discoverer and Self-</td>
</tr>
<tr>
<td></td>
<td>Service Reporting (SSR) tool metadata layers to build List of</td>
</tr>
<tr>
<td></td>
<td>Values that can be used for reporting.</td>
</tr>
<tr>
<td>SSRMGR</td>
<td>• All objects related to building the SSR application</td>
</tr>
</tbody>
</table>
If you source the target database from a Banner source database, the following additional schemas may exist depending on which Banner products you license and stage in your target database.

- ALUMNI
- FAISMGR
- FIMSMGR
- FTAEMGR
- GENERAL
- PAYROLL
- POSNCTL
- SATURN
- TAISMGR

These schemas would house the staging tables (materialized views), change tables, and triggers.

**ODSSTG password management**

You must pay special attention when changing the password to the ODSSTG database user account on either the source or target database because the ODSSTG account in the Banner ODS has an Oracle DB Link back to the source account. If you change any user account passwords for schemas on the source database, for example, in Banner ODSSTG, SATURN, GENERAL, you must also update the DB link in the Banner ODS database to match the password for the related Banner account schema.

Refer to FAQ 1-AXRVD8, which describes the process and steps to alter passwords for any of the Banner ODS related database accounts.

**Banner EDW schemas**

The following schemas exist in the Banner EDW.

<table>
<thead>
<tr>
<th>Schema</th>
<th>Owns</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDWMGR</td>
<td>• All fact, dimension, aggregate tables</td>
</tr>
<tr>
<td></td>
<td>• OWB mappings to load those tables</td>
</tr>
<tr>
<td>EDWSTG</td>
<td>• EDW stage/input &amp; clean tables</td>
</tr>
<tr>
<td></td>
<td>• OWB mappings to load those tables</td>
</tr>
<tr>
<td></td>
<td>• Table function packages to load input tables</td>
</tr>
</tbody>
</table>
Banner RAP schemas

The RAP product includes the schemas listed for Banner EDW as well as the following additional schema.

<table>
<thead>
<tr>
<th>Schema</th>
<th>Owns</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELATEMGR</td>
<td>• Staging tables that house the Relationship Management information</td>
</tr>
<tr>
<td></td>
<td>• Triggers and change tables associated with the staging tables</td>
</tr>
</tbody>
</table>

Banner SRP schemas

The SRP product includes the schemas listed for Banner EDW as well as the following additional schema.

<table>
<thead>
<tr>
<th>Schema</th>
<th>Owns</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELATEMGR</td>
<td>• Staging tables that house the Relationship Management information</td>
</tr>
<tr>
<td></td>
<td>• Triggers and change tables associated with the staging tables</td>
</tr>
</tbody>
</table>
**Oracle Streams framework**

**Note**

Refer to the *BPRA Oracle Streams Operations Supplement* for more information about maintaining the Oracle Streams framework.

The Oracle Streams framework uses Oracle Streams functionality to replicate data from the source to target database. Any insert, update, or delete actions performed on the source database tables are also performed on the tables in the staging area of the target database to synchronize the source and destination databases. The existing table triggers, change tables, and packages to create change records for the target database reside in that database.

The following picture shows the components used to replicate data between the source database and the target database.

![Figure 5: Oracle Streams data replication between source and target databases](image)

*Figure 5: Oracle Streams data replication between source and target databases*
The replication process uses the following Oracle Streams components.

<table>
<thead>
<tr>
<th>Oracle Streams Component</th>
<th>What it does...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture Process</td>
<td>The Streams capture process mines changes from the redo log on the Banner database whenever possible and from the archived logs if it falls behind the generated redo logs. Changes in the redo log that match specified rules are converted into messages called logical change records (LCRs), which are placed in a queue associated with the capture process.</td>
</tr>
<tr>
<td>Propagation Schedule</td>
<td>The Streams propagation schedule moves the messages from the source database queue to a queue on the Banner ODS. Each message remains in the source queue until the destination confirms that it has received it. This confirmation guarantees messages are never lost during the propagation stage.</td>
</tr>
<tr>
<td>Apply Process</td>
<td>The Streams apply process in the Banner ODS removes the messages from the queue and applies them directly to the destination tables in the Banner ODS. Any errors encountered while applying the messages are placed into an error queue. The messages in the error queue can be reprocessed once any issues have been resolved.</td>
</tr>
</tbody>
</table>

During the installation or upgrade process, the system creates all the components required to set up the Oracle Streams framework. This includes setting up the Streams queues, propagation schedule, capture and apply processes, and populating the staging tables in the warehouse with data from the source Banner tables.

Refer to the following Oracle documents for more information about maintaining and troubleshooting the Oracle Streams environment.

- “Oracle Streams Concepts and Administration Guide”
- “Oracle Streams Replication Administrator's Guide”
- “Streams Complete Reference FAQ” (MetaLink Document ID: 752871.1)
DDL Handler

A DDL handler is assigned to each Streams apply handler to replicate DDL statements from the source database to the staged tables in the target database. DDL statements run against a source table are replicated to warehouse unless a statement includes table dependencies. This means DDL statements executed on the source database that create, alter, or drop columns, non-foreign key constraints, and indexes are replicated to the target database; however, using the DDL handler allows the replication process to ignore the same types of statements for table triggers and foreign keys. These changes will not be replicated in the target database.

The user who executes a DDL statement on the source database must also exist in the target database for the change to be replicated successfully in the target.

When a DDL command is executed on the source database and the object schema is not specified, then the DDL command will only be applied successfully on the target database if the source user who executed the command also exists in the target database.

⚠️ Warning

Be aware that source objects with system-generated names will have different names in the target database. This means that DDL statements involving these objects will not be replicated successfully, and will result in DBA_APPLY_ERROR records being created. The majority of the system-generated names in the source system that may be affected are NOT NULL constraints on table columns.

Oracle Materialized Views framework

🔍 Note

Refer to the BPRA Materialized Views Operations Supplement for more information about maintaining the Oracle Materialized Views framework.

The Materialized Views architecture uses Oracle materialized views (mviews) to initially stage data in the Banner ODS database and keep that data synchronized with the source database. In the Materialized Views architecture the staging tables in Banner ODS are actually materialized views that have the same names as the tables in the source database and get their data from the source database tables over a DB link. These materialized views are implemented as physical database tables that include triggers.

The Banner ODS upgrade process creates materialized views for all of the tables in your source database that are associated with Banner ODS. The upgrade process also creates an mview log for each table in the source database that doesn't already have an mview log associated with it. These mview logs track changes that are made to the source tables. The processes that refresh the Banner ODS database read the changes recorded in the mviews logs and update the materialized views (staging tables) in the Banner ODS staging area accordingly. This keeps the staging area synchronized with the source database.
The Operational Staging Area refers to those schemas in the Banner ODS/EDW database where the staging tables (replicated copies of the source tables) reside. In the mviews framework, the staging tables are implemented as read-only materialized views. This reduces the chance of a conflict between the source tables and the stage tables (materialized views) because the materialized views cannot be updated. The only way that a materialized view in the Banner ODS would be out of sync with its master table in the source system is if the source table has had a change that hasn't yet been applied to the Banner ODS via the refresh process.

There is an ODSSTG schema in the Banner ODS that houses the staging infrastructure and an ODSSRC schema that houses the ODS ETL components, for example, composite views. Refer to the “Multi-Entity Processing” section later in this document for information about schema relationships and how they relate between the source and target databases.

The following picture illustrates where materialized views fit into the Banner ODS architecture. For every source table that is used to create a materialized view, there is an associated materialized view log where changes are tracked for refresh purposes.

![Materialized Views in Banner ODS architecture](image-url)

**Figure 6: Materialized Views in Banner ODS architecture**
Database links

The Materialized Views framework uses database links (db links) to connect to the source system and create or refresh the materialized views in the Banner ODS. To support the use of Oracle Fine Grained Access Control (FGAC) in the source system the Oracle user associated with the DB Links (the ODSSTG user in the source system) must be defined as FGA policy exempt.

There are two options for creating the required database links between the Banner ODS and the source system: a single public database link or multiple private database links. The choice between public and private db links has potential database security implications. Your institution should consider both options, and then decide which one is the best choice for your institution and internal policy requirements.

Public database link

You can create the db link as a public database link. You create this link as the ODSSTG user in the BPRA instance and connect to the source database as ODSSTG. This option simplifies the administration of the Materialized Views environment since it requires only a single link. However, a public db link may pose a security concern because it is “public”.

Private database link

You can create the db links as private database links. This requires creating a private db link for each of the source system schema owners. Each of these database links will be owned by the individual schema owners and will connect to the ODSSTG user in the source system. Using private db links provides somewhat tighter security because the links are private, but it also adds to the potential administrative overhead because of the number of links that you need to maintain. Additionally, if private db links are used there will also be a private db link owned by ODSSTG connecting to the ODSSTG user in the source system.
Each schema requires only one db link from Banner ODS to the source when you choose to use private database links. The following figure illustrates some of the schemas that would be in place for a Banner ODS environment with Banner as the source system.

Note
This illustration does not include all schemas.

**Figure 7: Source and Banner ODS schemas**

**Source to target data flow**

The following picture illustrates the detailed data flow of information from the source to target database using Materialized Views. This example identifies a Banner table and its components related to the materialized view framework. An Advance source system would share a similar data flow replacing the Banner-specific tables and codes with comparable Advance tables and codes.
Figure 8: Materialized Views with Banner and ODS data flow

This example uses the Banner table SARADAP, which resides in the SATURN schema in the Banner database. The log table created for this Banner table is called MLOG$_SARADAP and also resides in the SATURN schema in the Banner database. This log is used to track INSERT, UPDATE, and DELETE actions occurring in the SARADAP table to be used by the FAST refresh of the materialized view. In this case, the SARADAP table in Banner has a Primary Key on it which is used for the FAST refresh. The MLOG$_SARADAP table will log records in it which contain the Primary Key columns. These columns will be used during the FAST refresh to compare data in the log to the data in the materialized view.

Records will continue to accumulate in the log tables until a materialized refresh is performed for SARADAP. The materialized view refresh process uses the DBLINK back to the Banner database to pull the records from the log and refresh the materialized view SARADAP in the ODS.
From this point forward, the ETL architecture will perform as it has previously using triggers and change tables to refresh the Banner ODS. The difference being that all of this logic has been taken out of the Banner database and now lives in the ODS database. The materialized view SARADAP will have an ODS trigger on it (ST_SARADAP_INSERT_ODS_CHANGE) which then populates the change table SARACHG. This change table, in conjunction with the AS_ADMISSIONS_APPLICATION Composite View, is used as part of the ODS refresh of the Composite Table MST_ADMISSIONS_APPLICATION.

**Staging infrastructure**

As part of setting up and maintaining the staging area of the warehouse, you will create, load, and stage materialized views in the target database. In addition, you may need to remove and restage materialized views.

The initial installation of or upgrade to the Materialized Views framework performs the initial creation of materialized views and the database links that are needed to support the delivered Banner ODS features. These materialized views are the staging tables located in the staging area of the target database.

**Note**

Refer to the “Maintain Materialized Views framework” section in Chapter 5, “Administrative User Interface” for more information about staging and maintaining the Materialized Views architecture.
Materialized views staging objects

The system uses several objects (tables, packages, function, and procedures) to manage and let you monitor the Materialized Views framework. The following figure illustrates the staging objects used with the Materialized Views framework.

![Materialized views staging objects diagram](image)

**Figure 9: Staging packages for Materialized Views**

The `F_GET_STAGING_MODE` function returns a value showing whether tables have been staged in the Banner ODS. The `MGBSTGE` table contains a record for each Banner table that is needed to support the delivered Banner ODS processes. The `MGKMVEW` contains the procedures that are used to stage tables as materialized views. The packages `MGKSSTG` and `MGKSTGU` provide the functionality to maintain and monitor the materialized views from the BPRA Administrative User Interface (UI).

The Administrative UI tool offers you a user GUI interface to perform tasks that maintain and update the Materialized Views framework. Using the Administrative UI, you can create additional materialized views or refresh the materialized views. The procedures `P_STAGE_MVIEW` and `P_UNSTAGE_MVIEW` located in the `MGKMVEW` package are the actual components used to carry out the staging (data refresh) tasks.

**P_STAGE_MVIEW procedure**

The system uses the `P_STAGE_MVIEW` procedure located in the `MGKMVEW` package to create, reload, or restage the materialized views that replicate source tables in the Banner ODS. All indexes on the source system master table are created on the materialized view in the Banner ODS. This procedure also creates the necessary synonyms in the ODS to support the ETL processes.

```sql
PROCEDURE P_STAGE_MVIEW(
    SRC_ALIAS_IN VARCHAR2,
    OWNER VARCHAR2,
    {OWNER VARCHAR2,
```
TABLE_IN VARCHAR2
| TABLES_IN ODSSTG.STAGING_TABTYPE,
}
OVERWRITE_IN VARCHAR2 DEFAULT NULL,
MVLOG_TABLESPACE_IN VARCHAR2 DEFAULT NULL,
MVVIEW_TABLESPACE_IN VARCHAR2 DEFAULT NULL,
MVINDEX_TABLESPACE_IN VARCHAR2 DEFAULT NULL,
DIRECTORY_IN VARCHAR2 DEFAULT NULL);

**P_STAGE_MVIEW procedure arguments**

Following are descriptions of the arguments for the P_STAGE_MVIEW procedure.

**SRC_ALIAS_IN**

A logical name assigned to the database link owned by ODSSTG that points to the master site.

**OWNER_IN, TABLE_IN | TABLES_IN**

The owner and tables to be staged in the ODS as materialized views. OWNER_IN must be a single owner, while TABLE_IN supports wildcards in order to stage a single or multiple tables.

The procedure is overloaded to alternatively accept a TABLES_IN parameter. TABLES_IN is a collection of objects defined as fields of OWNER and TABLE_NAME, where both fields are of a VARCHAR2(30) data type.

**OVERWRITE_IN**

An optional string specifying what to do when a materialized view is already staged in the ODS. Valid values are:

- 'N' - No overwrite. Do nothing if the materialized view already exists. (Default value)
- 'S' - Synchronize (or reload) the materialized view. This option disables any table triggers on the materialized view, purges the materialized view from the materialized view log, performs a complete refresh of the staged data, and enables the table triggers.
- 'Y' - Overwrite (or restage) the materialized view. This option saves all table triggers for the materialized view, safely drops the materialized view log, drops the materialized view, recreates the materialized view log, recreates the materialized view, and restores all table triggers on the materialized view.
**MVLOG_TABLESPACE_IN**

An optional string specifying in which tablespace at the master site the materialized view log should be created. If no value is specified, the log will be created in the default tablespace for the owner of the master table.

**MVIEW_TABLESPACE_IN**

An optional string specifying in which tablespace at the materialized view site the materialized view should be created. If no value is specified, the materialized view will be created in the default tablespace for the owner of the materialized view.

**MVINDX_TABLESPACE_IN**

An optional string specifying in which tablespace at the materialized view site the materialized view indexes should be created. If no value is specified, the indexes will be created in the default tablespace for the owner of the materialized view.

**DIRECTORY_IN**

This procedure provides the ability to either create the materialized views for you, or generates scripts that can be run later. This is an optional parameter specifying where to generate the scripts. This must be a valid directory object name as can be viewed in the ALL_DIRECTORIES database view.

Each call to the P_STAGE_MVIEW procedure also generates the following driver scripts needed to create and drop the materialized views:

- mvlogs_create.sql - run at the master site to create the materialized view logs
- mviews_create.sql - run at the materialized view site to create the materialized views and synonyms
- mvlogs_drop.sql - run at the master site to drop the materialized view logs
- mviews_drop.sql - run at the materialized view site to drop the materialized views and synonyms

**Example: Stage ALUMNI table**

The following command stages the ALUMNI.AABDUES table in the ODS. The materialized view log will be created in the ALUMNI user's default tablespace at the master site. The materialized view and indexes will be created in the ALUMNI user's default tablespace at the materialized view site.

```
exec mgkmvew.p_stage_mview('BPRA_BANNER', 'ALUMNI', 'AABDUES');
```

**Example: Restage tables**

The following commands will restage both the SATURN.SPRADDR and GENERAL.GURMAIL tables. All materialized view logs will be created in the MVLOG
tablespace at the master site. All materialized views and indexes will be created in the MVVIEW and INDX tablespaces at the materialized view site, respectively.

Declare
   Tab   odsstg.staging_tabtype;
Begin
   Tab(1) := 'SATURN.SPRADDR';
   Tab(2) := 'GENERAL.GURMAIL';
   Mgmview.p_stage_mview(
      Src_alias_in => 'BPRA_BANNER',
      Tables_in => TAB,
      Overwrite_in => 'Y',
      Mvlog_tablespace_in => 'MVLOG',
      Mview_tablespace_in => 'MVVIEW',
      Mvindx_tablespace_in => 'INDX');
End;
/

Example: Generate materialized view scripts

The following commands will generate materialized view scripts for all Banner Finance materialized views. The scripts will be generated in the database server's directory associated with the DATA_PUMP_DIR directory object. The script will create all objects in their users' default tablespaces.

Begin
   mgkmview.p_stage_mview(
      src_alias_in => 'BPRA_BANNER',
      owner_in => 'FIMSMGR',
      table_in => '%',
      directory_in => 'DATA_PUMP_DIR');
End;
/

P_UNSTAGE_MVIEW procedure

The P_UNSTAGE_MVIEW procedure located in the MGKMVEW package safely drops the materialized view log from the master site (source), and drops the materialized view and synonyms from the Banner ODS.

PROCEDURE P_UNSTAGE_MVIEW(
   SRC_ALIAS_IN VARCHAR2,
   OWNER   VARCHAR2,
   TABLES_IN  ODSSTG.STAGING_TABTYPE,  
   TABLE_IN   VARCHAR2
      | TABLES_IN   VARCHAR2 DEFAULT 'N',
   PRESERVE_MV_TABS_IN VARCHAR2 DEFAULT 'N');
**P_UNSTAGE_MVIEW procedure arguments**

Following are descriptions of the arguments for the P_UNSTAGE_MVIEW procedure.

**SRC_ALIAS_IN**

A logical name assigned to the database link owned by ODSSTG that points to the master site.

**OWNER_IN, TABLE_IN | TABLES_IN**

The owner and tables to be removed from the ODS. OWNER_IN must be a single owner, while TABLE_IN supports wildcards in order to remove a single or multiple tables.

The P_UNSTAGE_MVIEW procedure is overloaded to alternatively accept a TABLES_IN parameter. TABLES_IN is a collection of objects defined as fields of OWNER and TABLE_NAME, where both fields are of a VARCHAR2(30) data type.

**PRESERVE_MV_TABS_IN**

An optional string when 'Y' specifies the materialized view should be dropped, but the underlying table structure and data should remain in the ODS. Once complete, this data can no longer be refreshed based on records in the materialized view log. When the value is 'N' then the underlying table and data will be dropped along with the materialized view. The default value is 'N'.

**Example: Remove materialized views from staging area**

The following example will remove all of the Accounts Receivable materialized views from the Banner ODS staging area.

```sql
exec mgkmvew.p_unstage_mview('BPRA_BANNER', 'TAISMGR', '%');
```

**Example: Remove table and materialized views from staging area, keep sources**

The following will remove the ALUMNI.AABDUES table and the POSNCTL.NHRDIST materialized views from the staging area, but the underlying tables and data will be retained.

```sql
Declare
   Tabodsstg.staging_tabtype;
Begin
   Tab(1) := 'ALUMNI.AABDUES';
   Tab(2) := 'POSNCTL.NHRDIST';
   Mgkmvew.p_unstage_mview(
      Src_alias_in => 'BPRA_BANNER',
      Tables_in => tab,
      Preserve_mv_tabs_in => 'Y');
End;
/
```
**makeMV$vs.sql script**

The makeMV$vs.sql script is available in the `ia_admin\dbscripts\utility_scripts` directory. This is a sample script that shows how to mass-generate Materialized Views scripts for two schemas.

**Refresh Materialized Views**

The Materialized Views architecture uses Oracle's Fast Refresh process, which tracks only the changes since the last refresh. This incremental refresh functionality speeds the process of refreshing the materialized views in Banner ODS. If there is a primary key on the source table, the Fast Refresh uses that key to perform the refresh. When a change happens in the source, the change is put in the log and the key is logged. If a source table doesn't have a primary key, the materialized view is refreshed using RowID.

Because the materialized view architecture uses the Fast Refresh, a materialized view log is created for each table in the source system during the upgrade to the Materialized View architecture. The log specifies how to track changes. As part of the log creation, Oracle creates a trigger on the table. In the warehouse, when materialized views are created (with names same as in source database) the system gets all data and table structure from the source over the DB Link and includes the statement “refresh fast on demand with primary key”.

Materialized view refresh processing has been added to the beginning of the ETL jobs available in the Administrative User Interface (UI).

**Note**

Refer to Chapter 5, “Administrative User Interface” for details about using the Administrative UI to refresh the materialized views and maintaining the materialized views framework.
The following picture illustrates the objects used and actions performed during refresh of the SPRIDEN materialized views.

Changes to the SPRIDEN table in Banner fire the internal Oracle trigger on SPRIDEN and insert changes into the mview log (MLOG$_SPRIDEN). Changes continue to accumulate in the mview log until a materialized view refresh is performed. After a materialized view refresh occurs, the records from the mview log are pushed over to the SPRIDEN materialized view in Banner ODS to synchronize it with the SPRIDEN table in Banner. As changes are pushed into the materialized view, the ODS trigger (ST_SPRIDEN_INSERT_ODS_CHANGE) on the SPRIDEN materialized view fires and inserts a record into the ODS Change Table (SPRPCHG). These records are used to refresh the normal ODS Composite Table.
Extract, Transform, and Load process (ETL)

The ETL process uses OWB, triggers, and change tables to load and refresh data from the staging tables to the composite tables in the target database. The following figure illustrates these components:

**Figure 10: Target database components**

The system uses the ETL processes to extract data from the staging tables and load it into the warehouse composite tables. All ETL activities are performed from within Oracle PL/SQL packages and deployed into a target 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.

All objects are created in the target database including all change tables, triggers, packages and composite views. All source tables needed to create the composite views are replicated in the target database with the same schema name as in the source. For example, the target database has a SATURN schema which contains replicated source (Banner) tables.

**Note**

If you use Materialized Views to replicate data, you can schedule the Materialized Views refresh jobs to keep the source database tables and the target staging tables synchronized.
You can submit and monitor the ETL jobs using the Administrative User Interface. Typically referred to as ‘mappings’, the packages, when executed, delete, update and load data from the staging to the composite tables based on the type of mappings executed.

During the initial load of the target database, data is extracted from the source database using Oracle views that include specific business logic (for example, Enrolled or In State Resident indicators). The extracted data is then migrated into denormalized composite tables within the target database. These composite tables represent a conceptual organizational structure (for example, 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 target database 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 target database composite tables.

You can manage all data loads and updates, fine grained access rules, meta data management, data display rules, and freeze data processing using the Administrative UI.

**ETL components**

The following section describe the various components used to accomplish the ETL process.

**Stage tables**

Information from the source database tables is replicated in the target database stage tables.

**Database triggers**

A single database trigger exists on each stage table, except for the validation tables. Triggers exist for all tables used in a view, including function tables. The triggers are created in the schema owner of the associated stage table.

Each trigger identifies Data Manipulation Language (DML) activity on the table. When a change is made to a source table, that change is replicated in the associated target database table. The change in the staging table causes the trigger on that table to fire. The trigger calls a stored PL/SQL procedure which inserts records into the appropriate change tables.
to reflect the change in the replicated table. The triggers flag changes on Banner replicated
tables and create records in the appropriate change tables.

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

**Trigger packages**

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

As data is entered into the source database, it is typically processed one row at a time. For
each field entered, the data is verified for field syntax, such as date or numeric format.
Fields requiring additional verification are verified against rule tables. After the values are
properly checked, the data is committed to the database table that will house the
information. During the commit action, any Oracle triggers on the database table being
updated are initiated and additional, but separate, logic is executed based on the
parameters of the trigger (such as Before Insert and After Insert).

Triggers are built and enabled on all source database replicated tables that house
information that is used in the target database. Therefore, when a target database trigger 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 target
database that the source 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 source 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 stage tables and the source database tables. There is not a one-to-one
relationship between change tables and stage tables or between changes tables and
composite tables. 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 target database stage tables, but are also used when multiple tables use the same key.

**Example:**

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

Change tables are owned by their respective product schemas in the target database, and are identified using standard source 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 target database uses when records change. All change tables are suffixed by ‘CHG’.

The columns that compose 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 target database 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 replicated tables

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Column Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPRPCHG_TABLE_NAME</td>
<td>VARCHAR2(30)</td>
<td>Used to identify which composite view (and/or target database table) is being populated by this specific row of data.</td>
</tr>
<tr>
<td>SPRPCHG_PIDM</td>
<td>NUMBER</td>
<td>The change table needs to hold as many keys as required to manage DELETE and UPDATE information in the target database. Keys do not need to identify a unique row, but must maintain some fields for comparison.</td>
</tr>
<tr>
<td>SPRPCHG_RECORD_ACTION</td>
<td>VARCHAR2(1)</td>
<td>Stores the last DML action for the key combination (I, U, or D).</td>
</tr>
</tbody>
</table>
Change table triggers

The target database maintains triggers on all source replicated tables used to incrementally refresh data into the target. Although the triggers are enabled on the actual source replicated tables, they are referred to as ‘change table triggers’ because they populate the target database 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 target database 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 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.

Change table Triggers comprise of the following procedures:

- Each Banner product has a procedure that manages all change table triggers for that product area. For example, GOKODST for General and SOKODST for SATURN.
- The triggers are owned by the ODSSRC schema.
- The names for each procedure follow Banner standard naming conventions.

Composite views and functions or packages

Composite views exist in the target database under the ODSSRC schema. During the ETL process, when you perform a refresh of target 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 source data and loaded into the target database. Packages are used to group related procedures, functions, and cursors together. There is one package for each target database module of information; for example, Student, Finance, and Advancement. These packages are installed into the ODSSRC schema.

Composite views represent a composite (mixture) of the tables selected from Banner and allow for a single piece of data to be extracted row-by-row, with all the business logic included in the view itself. The column names are generic so that they can be used by all Ellucian product lines. Therefore, names familiar to Banner clients can appear to be more generic than the familiar Banner terminology. For example, Term becomes Academic Period, PIDM becomes UID (unique ID). The views are used for reporting in Banner. But, they are designed to become the Incremental Refresh data extraction view.

Views are created and maintained in the ODSSRC schema within the target database. Since these views are accessing data directly in the various source replicated tables, explicit SELECT grants are assigned to the schema when tables are staged in the target. Refer to the section “Multi-Entity Processing” on page 3-55 to see a list of schemas and what they own.

**OWB mappings**

Oracle Warehouse Builder (OWB) mappings, which are PL/SQL scripts, define the relationship of data between the composite views and composite tables. The Extract, Transform, and Load processes (ETL) built using OWB are the mappings that populate Banner ODS.

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

- **LOAD mappings**: initially load Banner ODS composite tables by selecting all rows of data from the source system via the composite view.

- **DELETE mappings**: delete rows of data in Banner ODS when the change table reflects activity of any type for the key. This mapping 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**: insert records into Banner ODS based on keys in the composite view joined against rows in the corresponding change table.

⚠️ **Note**

It is mandatory that you run the DELETE mapping before the related UPDATE mapping, otherwise no records will process in the UPDATE mapping.
The 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 a variety of sources, transform the data, and configure the data for loading into Banner ODS. The OWB code generator lets you deploy and populate the Banner ODS without manual coding, and integrates with the Oracle database and query tools.

**Composite and slotted tables**

Composite tables are the tables within Banner ODS that are loaded with data from the source system. Slotted tables store data values for a specific code related to a base table.

**Composite tables**

The composite tables are populated during the initial install process, and are also updated during the incremental refresh process. The composite tables are used for the following purposes:

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

**Slotted tables**

The slotted tables have the following attributes:

- Used to denormalize Repeating Concepts (normalized tables.)
- Populated via rules from MGRSDAX.

Some GTVSDAX rules, but not values, are duplicated when MGRSDAX is initially populated. Use the Administrative UI to add or modify MGRSDAX rules’ values to meet your institution’s needs.

**Understanding composite tables and slotted tables**

Banner ODS includes composite tables and slotted tables. Composite tables include the main data that is extracted from your source system and stored in Banner ODS. Slotted tables store data values for a specific code related to a base table.

**Example**

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

Using slotted tables optimizes the speed queries since the system only has to check for specific code values as needed.

**Updating slotted tables**

It is important to keep data in the slotted tables synchronized with data in the composite tables. Whenever composite tables are updated, related slotted tables should also be updated.

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

**Reporting views**

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

**Run ETL load processes**

You run load processes using the Administrative User Interface (UI) from the Options> Schedule a Process> Select a Subprocess> Schedule Banner ODS Mappings menu option. When you run a process, one or more LOAD mappings extract all the data from a composite view in the source system and move it into the corresponding target database composite table.

You can run a Load process periodically for one or more composite tables, for example, as an alternative to the Refresh process. To facilitate the use of a load at any time, the Load processes also purge the appropriate change tables that correspond to the composite tables being loaded.

You can disable the purge feature on Load mappings. To disable the change table purge for a Load mapping, you need to create records in the MTVPARM table. Refer to the “ETL MAP PACKAGE LOAD PURGE Parameter” section of the “Administrative User Interface” chapter for information about using this parameter to disable a change table purge for a Load mapping.

**Run ETL Load or Refresh jobs in parallel**

You can schedule the ETL Load and Refresh jobs to run in parallel to reduce the time it takes to load or refresh the entire database.
Run ETL Refresh jobs in parallel in Materialized Views framework

If the ETL Refresh jobs run at the same time, it’s possible that materialized views shared by multiple areas of the warehouse may not get refreshed appropriately before the actual ETL Refresh job runs. To avoid this issue, you should refresh any related materialized views before you run the ETL Refresh jobs in parallel.

Example

Suppose that your institution runs the ETL refresh jobs Refresh General, Refresh Student, and Refresh Accounts Receivable at the same time each night. The source Banner SPRIDEN table is used for refreshing both the Student and General subject areas. This means it’s possible that the ETL Refresh jobs could load the warehouse before all of the related materialized views have been refreshed. To ensure that all related materialized views are refreshed in the staging area before the ETL Refresh jobs actually load the target database, in this case you should schedule the following mviews refresh jobs to run before the ETL Refresh jobs:

- AR Refresh Group and AR Validation Refresh Group
- General Refresh Group and General Validation Refresh Group
- Student Refresh Group and Student Validation Refresh Group

Incremental refresh process

The term incremental refresh identifies how data synchronization occurs between source and target tables to ensure that accurate information is stored in the target database. Data that has changed in the source is captured and, using the ETL tool, is applied to the target database. During the process, the change tables bring over only the data that has changed, and then, using an ETL mapping, the change tables are deleted. This is followed by an update ETL mapping that inserts the new data. The incremental refresh process uses records in change tables to identify the records which need to be refreshed, and uses different mappings for load vs. refresh processes.

Typically, you will run a complete load, then run the refresh processes on a nightly basis to keep the target data synchronized with the source data. You should also run a incremental refresh process if data in Banner ODS has changed since the last time you ran the refresh.

Banner ODS to Banner EDW data flow

Banner EDW stores data that is fed from the Banner 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 following picture illustrated the flow of data from Banner ODS to Banner EDW.
Figure 11: Banner ODS to Banner EDW data flow

Banner ODS is a relational data model that you can continuously and incrementally refreshed using the Banner Administrative UI. Banner EDW reorganizes, groups, and summarizes the information from the Banner ODS star schemas. This information can contain operational data or an event at a specific point-in-time. The Administrative UI schedules Banner EDW load mappings to take place at scheduled times. Banner EDW also includes operational star data models that you can refresh on a regular basis like the Banner ODS.

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

Banner 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. Banner ODS typically resides on a separate server 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 Banner
ODS model can support all products. Because the Banner ODS is a query-only system, the data in the Banner ODS flows only one way — from the source administrative system to the Banner ODS, never from Banner ODS to the administrative system.

Banner 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.

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

Banner EDW and its associated event-based processing is designed to capture point-in-time information for trend analysis and historical reporting. Banner EDW also includes operational and aggregate star data models that you can refresh on a daily basis in concert with the Banner ODS. These data models provide the ability to daily assess key institution measures and to drill down from these institution measures to the underlying details.

Banner EDW is designed to work with the Banner 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 Banner 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.

Banner EDW source and target database instances reside in the same database, but are in different schemas. As Banner EDW loads, data is extracted from the Banner ODS using pipelined table functions. 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) 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 Banner ODS, and transform and configure the data to load into Banner EDW. The OWB code generator lets you deploy and populate Banner EDW without manual coding, and integrates with the Oracle database and query tools.
**Administrative User Interface (UI)**

The Administrative User Interface is a Web-based interface that uses the Banner Web Tailor. This Administrative UI is used for the following administrative functions:

- **Preferences and Security** - Use to manage security, set global preferences, and set up user accounts.
- **Options** - Use to control the processes to extract, cleanse, and load data into the system, schedule a process (execute and monitor ETL processes).
- **View** - View control reports, view and remove scheduled processes, and maintain freeze data.
- **Meta Data** - Use to view and manage the meta data supporting the systems.
- **New Banner Web Tailor Administration** - Use to customize a Web menu, procedure, graphic element, set of information text, or set of menu items. You can also update user roles, customize a Web module, Web rules, or Banner Web Tailor parameters; customize a login return location; and customize Banner Web Tailor overrides or global user interface settings.
- **Cleansing** - Use to maintain descriptions to be stored in Banner EDW, and to translate codes from the Banner ODS to Banner EDW.

**EDW data loads and 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 Banner EDW. Information that has changed in the Banner ODS is captured and, through the use of ETL tool sets, is applied to the target system, Banner EDW. During the process, the change tables bring over only the data that has changed, and then the change tables are purged.

The Banner EDW incremental refresh is similar to the Banner ODS incremental refresh in that it uses records in change tables to identify the records which need to be refreshed. However, unlike the Banner ODS which uses different mappings for load vs. refresh processing, the Banner EDW refresh uses the same mappings/process as the Banner EDW load but uses the corresponding change table to identify and process only the records which should be refreshed.

Once the Incremental Refresh process in the Banner ODS is processed, and before the Banner ODS change table records are purged, change records are inserted into Banner EDW change tables using the `MAINTAIN_EDW_CHANGE_RECORDS` procedure. There is a one-to-one correspondence between each fact table and its associated change table.

In addition to processing the records in the change tables, the Banner EDW Incremental Refresh process incorporates records in a fact table's corresponding stage ERROR table, which would contain any records that previously had cleansing “errors”. During the
refresh, the ERROR table records' key values are entered into the corresponding change table and processed along with the change table records. Once combined with the change table records, the error table records are purged. However, any records with new cleansing errors are entered into the ERROR table during the refresh. They remain in this table till the next Incremental Refresh or Load process is run for that fact table or star.

This approach is easy to maintain and has negligible impact upon the production environment.

Typically, a complete load is run once, and then the Incremental Refresh processes for both the Banner ODS and the Banner EDW are run on a nightly basis to keep the data in sync. An incremental refresh should be run if data in the Banner ODS has changed since the last time a refresh was run.

The following image outlines the incremental refresh flow:

1. Submit the refresh job from the Administrative UI (Schedule a Process).
2. Select the Refresh process parameter.
3. During the ODSMGR refresh, before the Banner-side Banner ODS change tables are purged, insert records into EDWSTG change tables via the 
   `MAINTAIN_EDW_CHANGE_RECORDS` procedure.
4. Insert the corresponding fact table's ERROR records' key values into the change table.

5. Use the Refresh process parameter in conjunction with the change table records.

6. Select the records to be processed.

7. Run the PL/SQL UPDATE process to delete records from the fact table to be refreshed.

8. Cleanse the refresh records.

9. Enter any records with cleansing records into the Error table.

10. Update/insert dimension records.

11. Insert refreshed records into the fact table.

12. Repeat for all jobs submitted until complete.

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

**Load process vs. Incremental Refresh process**

Occasionally, a lot of data changes in the source system and, therefore, in the Banner ODS. For example, via a data import and grade rolls at the end of an academic period. These changes generate a lot 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 the Banner ODS composite views and the Banner EDW stars.

**Banner EDW Star schemas**

Star schemas are a standard dimensional data modeling technique used to design data warehouse reporting structures. Each star schema contains a centralized fact table and its associated dimension tables, which are typically referenced through foreign keys. The fact table stores measures while the dimension tables store attributes that users can use to sort, filter, and group the measures. These structures are referred to as “star schemas” because of their star-like appearance when viewing their entity relationship diagrams (ERDs). The following picture illustrates a simple fact and dimension table relationship including foreign key relationships.
The Banner Enterprise Data Warehouse (Banner EDW) product provides the following types of star schema data models:

- **Operational stars**
- **Aggregate stars**
- **Snapshot stars**

**Operational stars**

Operational Star schemas support analysis of a particular subject (for example, gifts, pledges, and so on) by multiple dimensions such as year of giving, designation, and so on. Many of these dimensions are used (or conformed) across multiple operational stars. The operational stars are intended to be refreshed on a daily basis. Currently these operational stars are provided for recruiting and admissions, financial aid for new enrollments, student, and advancement subject areas. The fact tables for operational stars use the WFT prefix.

The following figure illustrates two operational star examples for advancement, gift, and pledge. Some of the dimensions are shown for each fact, including multiple shared dimensions.
Several operational stars provide the option to create a snapshot star. The snapshot star provides the same data as the operational star, however, the data is saved for a specific point in time by adding the event dimension to the operational data.

**Aggregate stars**

Aggregate star schemas consolidate information from multiple operational stars to support faster performance analysis of a business concept such as Manage Prospect Pipeline or Analyze Fundraising Progress. The aggregate stars are intended to be refreshed on a daily basis. The Cognos packages for each business concept primarily use these aggregate stars as a data source to optimize performance. The fact tables for aggregate stars use the WAT prefix. Currently these aggregate stars are provided for recruiting and admissions, financial aid for new enrollments, student, and advancement subject areas.

The following figure illustrates an example of the Analyze Fundraising Progress aggregate star for Advancement. This aggregate star consolidates data from multiple operational stars (including gifts and pledges) into the WAT_ANALYZE_FUNDRAISING_PROGRESS fact table with foreign key relationships to several dimension tables.
Snapshot stars

Snapshot Star schemas capture data at institution-specified points in time for a business concept. Most of the aggregate business concepts provide the option to create a snapshot star. The snapshot star provides the same data as an aggregate star, however the data is saved for a specific point in time by adding the event dimension to the data. This event dimension time period could represent, for example, end of month processing for financial data, start or end of academic period for enrollment data, and so on. This allows your institution to historically build data that you can compare over time for longitudinal reporting flexibility. You can use the common event attribute to compare disparate time periods to one another.

There are two variations of snapshot star schemas in the Banner EDW. The first supports a single business need with a set of data combined into a single snapshot star schema sourced directly from the Banner Operational Data Store. For these, the snapshot includes a fact and dimension tables with all of the data to be used as dimension attributes with their associated specified measures. Cognos packages and cubes are delivered with the Banner EDW that use these snapshot stars as a data source.

For most of the business concepts supported by the operational and aggregate stars, a different snapshot process is used. For these, a set of operational and aggregate star schemas is saved at the same point in time with the same event dimension or attributes. Snapshot Cognos packages and cubes are delivered with the Banner EDW which contain the same attributes as the business concept packages and cubes along with an event dimension.

Warehouse tables

The warehouse includes the fact and dimension tables that are used to build the star schema data models.

Fact tables

The fact table is the primary table in a star schema that stores the numerical or event based performance measurements of the institution. Fact tables store dates, amounts or counts of information. Fact table names begin with WFT_. Total Credits, stored in the WFT_ENROLLMENT fact table, and Prospect Target Amount, stored in the WFT_PROSPECT fact table, are examples of measures.

Dimension tables

Dimension tables contain the descriptive attributes that define how you want to slice or look at the measures in a fact table. Dimension table names begin with WDT_. Gender and Citizenship_Ind are examples of dimension attributes on the WDT_DEMOGRAPHIC dimension table.
View fact and dimension tables

Meta Data is provided for the fact and dimension tables associated with each star. You can use either the published Meta Data reports or the Administrative User Interface (UI) related Meta Data pages to view meta data. To view fact and dimension table information displayed on Banner EDW Meta Data Reports, perform the following steps.

1. Log into the Administrative User Interface.
2. Select the Meta Data menu.
3. Select Banner Enterprise Data Warehouse.
4. Select the star you want to review. The Star Report for that star opens.
5. Select the target dimension or fact table you want to review. The selected report displays.

Note
Refer to the Administrative User Interface chapter of the Banner EDW Handbook to learn more about the meta data.

Banner EDW load process for snapshot stars

Use the following steps to move data from the Banner ODS to Banner EDW snapshot stars:

1. Extract data from the Banner 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, translate codes, and update them in the CLEAN table.

3. Use data from the CLEAN table 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 check box 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 check box is checked.

6. Load data from the WKEYS table into the fact table.

**Banner EDW load process for operational stars**

Use the following steps to move data from the Banner ODS to Banner EDW operational stars:

1. Extract data from the Banner 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, translate codes, and update them in the CLEAN table.

3. Use data from the CLEAN 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.

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. Load data from the WKEYS table into the fact table.

**Banner EDW Stars Reference Guide**

The Banner EDW Stars Reference guide includes summary information about each of the stars in the warehouse with hypertext links to each of the star diagrams. The guide is delivered as zip file that is a compilation of the following PDF files:

- *Banner Enterprise Data Warehouse Stars Reference* guide
- Star diagram PDF files

The Banner EDW Stars Reference guide is delivered in the documentation zip file with your product release. You can also download the zip file from the Customer Support Center using the following steps:

1. Log in to the Customer Support Center.

2. Select **Documentation & Download Center**.
3. Select Product Cross Product-Enterprise Data Warehouse and click **List Available Documentation**.

4. Under Release 8.x, choose 8.x Data Model Guides and click **List Files**.

5. Choose which version of the Banner EDW Stars Reference guide that you want to download and click **Prepare Files for Download**.

6. Select **Click Here to Download Zip File** to confirm the download.

**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 “Cubes” chapter of your Administration Guide for detailed star schema and cube information.

Using Cognos cubes as the user interface, you can browse data contained within the subset of the star schema in Banner EDW. This interface provides a predefined descriptive view of the information that enables you to understand data without requiring any detailed understanding of a database query language. 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 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.

**Cleansing**

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

You can use cleansing to accomplish the following activities:

- Translate a code value in the Banner ODS to a new value in the Banner EDW.
- Change a Banner ODS description value to a new value in the Banner EDW.
- Group a range of Banner ODS code values into one Banner EDW value.
- Translate multiple Banner ODS values into one Banner EDW value and description.
• Associate an effective date with code descriptions that can change over time.

User-defined fields

Banner EDW provides five additional user-defined fields on every dimension and fact table which allow you to extend the data in the warehouse. Including these user fields within the product tables and their related mappings means you need to make minimal changes to bring new data into the warehouse. The dimension user-defined fields are named USER_ATTRIBUTE_01-05, and the fact and aggregate user-defined fields are named USER_MEASURE_01-05. Follow the guidelines in this section to use the user-defined fields.

General guidelines

Considerations should be made when deciding what data to add to the user-defined fields. Use the following questions as guidelines when determining what data to add and where to add it.

What source data to add?

First, you must evaluate what the source of the new data is and whether this source is available within the source system and/or Banner ODS – these guidelines assume the data already exists in the staged source tables and/or Banner ODS and is available for you to use. If not, additional steps will be needed to stage the data from the source system and/or add it to the Banner ODS.

How will the new data be used?

Next, consider how the data will be used. Will it be used as an attribute or a measure? This will tell you whether it should be added to a dimension (attribute) or fact (measure) table.

If you are adding a new attribute to a dimension table shared by multiple organizations at the institution, consider whether or not those organizations will be interested in the same content. If so, you should gain input from all offices regarding the details of the new content so that you can create common attributes. If multiple organizations are not interested in the same content, consider adding the new data to a dimension table not shared by other organizations or to two different user attribute fields. This will enable user attribute columns to be optimally distributed among the storage structures while minimizing the need for customization.
**Where to add data?**

When trying to determine which dimension or fact table to add the user attribute to, look for dimensions or facts that contain similarly sourced data. Looking through the meta data using the Administrative UI can help you see where similar data already exists.

**Is the data at same granularity as other data in star?**

You must also consider whether the new data item is captured at the same level of granularity as the other data in the star. These guidelines assume the data is at the same level of granularity. If data is at a different level of granularity, additional changes will be needed within the ETL, table definitions, report structures, or the query retrieving the data.

**Modifying code to support user-defined fields**

Modifications to the delivered, baseline %EXTR packages will generally support all required modifications to Banner EDW source code associated with the warehouse Oracle environment. Those packages are *not* created as a part of deployed Banner EDW mappings but installed with other coded source.

Following are recommendations to keep in mind when modifying user-defined fields.

- Be sure to follow institution-defined processes for modifying, tracking, and documenting modifications to baseline code so that you can easily understand your changes and reapply them in future releases if necessary.
- Copy the table function package script (%EXTR) to an institution specific directory outside of the baseline EDW code tree.
- Rename the script to indicate that it is modified.
- Do not change the name of the object created by the script. Changing the name will require changes to the related OWB %INPUT mapping and redeployment of that mapping as well as recompiling dependent database objects.
- Construct your enhancements to the baseline source with consideration for other business areas as well as source management and testing processes during subsequent upgrades.
- Update the return row (ret_row) population section of the script to assign the desired attributes or measures to the appropriate dimension or fact table user column, or to modify the calculation of an existing column (such as age).

**Terms - table function structure**

The following components are used in the table function structure.

- Driving cursor – selects population that will drive extract
• Supporting cursors – select supporting data related to driving population

• Processing statements
  • Invoke the defined cursors to return the data as expected within the TABLE() function, including processing loops to support processing individual rows for, at a minimum, the related institutional entities and the rows/records returned by the driving population.
  • Return row definition – where selected values are assigned to staging input table columns for each row/record processed.
  • Initialization of interim storage components prior to ending each iteration of the processing loop.

Conformed dimensions

The Banner EDW uses conformed dimensions, which are dimensions shared among stars. When modifying a dimension that is shared by many stars, you need to consider the following

Will each star using a conformed dimension use the same user-defined attributes?

• If “Yes” - you must update each star’s table function and extract mapping to select the new user-defined field.

• If “No” - (meaning you want to add the user-defined field to one star but not another) there is no issue, the other stars do not need to be modified and would continue to populate the field with a null value.

Will each star using a conformed dimension need different user-defined attributes for different stars?

Since dimensions are shared between stars, each user-defined field must have one unique source and thus one unique cleansing rule across all stars that share that dimension. This means that if you wish to add two different user-defined attributes to the same dimension table but for different stars, you must use two different user attribute fields. For example, if you want to add hair color and legislative district to the WDT_DEMOGRAPHIC dimension for different stars, you must use USER_ATTRIBUTE_01 for one attribute and USER_ATTRIBUTE_02 for the other.
Steps to add user-defined attribute and measure values to the warehouse

Step 1  Update the extract logic that selects values from the source tables to populate the warehouse tables.

With the exception of Advancement operational stars and all aggregate stars which are populated via OWB mappings, table functions as found in %EXTR packages are used to extract the data from the Banner ODS to the Banner EDW for loads and refreshes.

The steps needed to add user-defined attributes and measure values to the warehouse depend on the type of star you want to update. Refer to the steps in the following sections to select the appropriate source value and populate the appropriate warehouse target table and column.

- “For snapshot stars” on page 3-49
- “For operational stars using the architecture which sources Banner EDW from the Banner ODS (non-Advancement operational stars)” on page 3-50
- “For Advancement operational stars using the architecture which sources Banner EDW directly from the staged source system tables” on page 3-51
- “For aggregate stars regardless of architecture” on page 3-51
- “For frozen stars regardless of architecture” on page 3-52

For snapshot stars

To add values to the user-defined attribute or measure fields, you only need to update the associated extract package for the star (or if appropriate an extract package, such as EDW_GENERAL_EXTR, used to populate columns in both the snapshot and operational stars). If the change relates to a dimensional attribute, you must also update the corresponding cleansing rule. No OWB changes are needed.

1. Update the snapshot star’s extract package table function with desired changes.

   There is one primary extract package per snapshot star. The naming convention is EDW_<snapshot star>_EXTR. For example, the Snapshot Employee Star’s extract package is EDW_EMPLOYEE_EXTR. However, other %EXTR packages such as EDW_GENERAL_EXTR may be used to support population of columns common to both Snapshot and Operational stars.

2. Within the package, locate the corresponding driving or supporting cursor which will select your attribute or measure and update it. Most (though not all) changes will be made within the %pop cursor.

3. Within the package, locate the return row definition for the staging table input column corresponding to your user-defined attribute or measure and update it to be populated with the modified cursor value. Note that some changes, such as changes to calculate
age based on values such as the first day of an academic period (rather than sysdate) will only require changes to the return row.

4. Recreate the package under the EDWSTG schema.

5. Grant execute on the package to IA_ADMIN.

This ensures that permissions were not lost. Remember that you run load and refresh jobs from the Administrative User Interface using records in the IA_ADMIN schema tables.

**Note**

Population processes for snapshot stars will only impact data populated in the related Star Schema after the change and related Cleansing setup is completed. You will *not* be able to reload data to existing snapshots except for those milestone events related to ‘Final State’ data storage in the source system (such as ‘final’ for academic period or fiscal period.) Reloading milestone events (not ‘final’) will invalidate the time perspective of the data.

**For operational stars using the architecture which sources Banner EDW from the Banner ODS (non-Advancement operational stars)**

To add values to the user-defined attribute or measure fields, you only need to update the extract package and if it is a dimension attribute, the corresponding cleansing rule. No OWB changes are needed.

1. Update the Operational Star’s extract package containing its table function with desired changes.

   For operational stars, there is one extract package per product area. The naming convention is EDW_<product>_EXTR. For example, all student operational stars table functions are contained within the extract package EDW_STUDENT_EXTR. The product extract packages are EDW_GENERAL_EXTR, EDW_STUDENT_EXTR, EDW_FINAID_EXTR and EDW_RAP_EXTR.

2. Within the package, locate the table function that populates the operational star to which you want to add the user field.

3. Within the table function, locate the corresponding driving or supporting cursor which will select your attribute or measure and update it to select your new field.

   Since the cursors in these packages can be shared across stars and packages, be sure this change will not negatively impact other stars. For example, the EDW_STUDENT_EXTR package makes repeated reference to cursors in other packages such as EDW_GENERAL_EXTR.
4. Within the identified table function for the star to be updated, locate the return row definition for the staging table input column corresponding to your user-defined attribute or measure and update it to be populated with the modified cursor value.

5. Recreate the package under the EDWSTG schema.

6. Grant execute on the package to IA_ADMIN.

This ensures that permissions were not lost. Remember that load and refresh jobs are run from the Administrative User Interface using records in the IA_ADMIN schema tables.

For Advancement operational stars using the architecture which sources Banner EDW directly from the staged source system tables

To add values to the user-defined attribute or measure fields, you need to update the extract OWB mappings and if it is a dimension attribute, the corresponding cleansing rule.

1. Locate your mapping within the appropriate OWB Project – either APM_GENERAL or APM_ADVANCEMENT. Source specific mappings end with the suffix ‘A’ for Advance or ‘B’ for Banner Advancement.

2. If you are adding an attribute, update the associated D1 mapping within the Project>Oracle>EDWSTG module, for example, <dimension>_D1A or <dimension>_D1B, to map the new value to the dimension’s user attribute.

3. If you are adding a measure, update the associated F1 mapping within the Project>Oracle>EDWMGR module, for example, <fact>_F1A or <fact>_F1B, to map the new value to the fact table’s user measure.

4. Save the changes.

5. Deploy the mapping.

For aggregate stars regardless of architecture

Use the following steps to add values to the user-defined attribute or measure fields of an aggregate star.

1. Locate the aggregate mapping within the appropriate OWB Project.
   - There are no source specific aggregate mappings.
   - If changing an Advancement aggregate, the aggregate mapping naming convention is <aggregate>_A1
   - If changing a non-Advancement aggregate, the aggregate mapping naming convention is EDW_<aggregate>_AGG_INSERT
2. Map the new value to the aggregate star’s user measure. It is likely that the user measure for an aggregate will be sourced from an updated operational star’s user measure.

3. Save the changes.

4. Deploy the mapping.

For frozen stars regardless of architecture

Follow these guidelines when updating frozen stars.

- The corresponding operational or aggregate star which sources the frozen one must be modified to include the user measure.
- Once the corresponding operational or aggregate star is updated, no changes are required to populate the frozen star, links between the frozen star’s user measure fields and the corresponding star’s user measure fields are already in place.

Step 2  Link cleansing rules to new user-defined dimension attribute.

Note
This step only applies if you’ve added a user-defined dimension attribute; it does not apply to user-defined measures.

Perform the following steps within the Administrative UI.

1. Select Options>Set Up and Maintain Cleansing Processes.
   - If the user-defined value you’ve added already can be linked to an existing Cleansing rule, skip to the next step.
   - Else, go to Set Up and Maintain Cleansing Rules and create a new cleansing rule with appropriate source query. See the Set Up Cleansing chapter for more details.

2. Select Options>Set Up and Maintain Cleansing Processes>Set Up and Maintain Cleansing Data Elements.

   2.1. Select the dimension table that will be updated with your user-defined attribute and select Search.

   2.2. Select the USER_ATTRIBUTE column 01-05 you modified in Step 1.

   2.3. Within the Update a Cleansing Data Element screen, update the Rule Name field with the appropriate cleansing rule.

   2.4. Click Save.

Your new user-defined attribute value will now be cleansed by the appropriate cleansing rule.
Step 3  Update meta data to reflect the change (Optional)

If you use the published meta data to document source to target relationships, refer to the “Meta Data” section of the Administrative User Interface chapter to add corresponding data for the new column.

1. Create a new target column for the updated dimension or fact table, naming the column as it is in the database, i.e., USER_ATTRIBUTE_01-05 or USER_MEASURE_01-05.

2. Give the column a new Business Name, Definition, and other information to match the new use for the column.

3. Save the changes.

4. From the same target column page, select Add Local Mapping at the bottom.

5. Select and save the appropriate source details.

6. Publish meta data.

The new column will be available.

Step 4  Reload data via the Administrative UI to populate the new field

1. Select the appropriate jobs to reload the data that will access the new field.

2. If the new field is in an operational star, you must also reload the related aggregate stars.

   **Note**

   Population processes for snapshot and frozen stars will only impact data populated in the related star schema after the change and related Cleansing setup is completed. You will not be able to reload data to existing snapshots or frozen concepts except for those milestone events related to ‘Final State’ data storage in the source system (such as ‘final’ for academic period or fiscal period.) Reloading milestone events (not ‘final’) will invalidate the time perspective of the data.

3. Confirm that the correct data is loaded into the modified dimension or fact.

Step 5  Update delivered Cognos models to expose and appropriately label the user-defined attribute or measure (Optional)

**Note**

You only need to perform this step if you are using the delivered Cognos content.

The delivered Cognos Framework Manager Models have the following three layers.
• Database View
  • Reference to database objects
  • Table names and select columns given business names
  • User attribute and measure columns already present in database layer but do not have business names
  • Fact tables obtain “Measure” suffix
  • Some concatenated unique keys added
  • Some formatting and aggregation defined

• Business View
  • Business-centric grouping of objects
  • Business-centric table aliases created
  • Business-centric relationships/joins created
  • Alternative aggregation query items defined, for example, averages, headcounts, percents, counts

• Presentation View
  • End user experience/layer that is published to the end-users
  • Commonly used items grouped together
  • Folders used to remove clutter
  • Commonly used filters, calculations created
  • Customizable parameter driven items created

Perform the following steps to update the Cognos packages.

1. Update the Database View layer for the table/column you modified.

2. Rename the USER_ATTRIBUTE/MEASURE_01-05 and their corresponding short description (SD) and long description (LD) columns in the table you modified to have business names.

3. Update the Business View layer to use these new names.

4. Update the Presentation View layer to include the new code and description fields in the appropriate Query Subject.

5. Update the appropriate Package Definitions to select the new fields to be published.

You will then be able to access the new fields via the newly published packages and use them through the various Cognos Studios such as Report Studio and Query Studio.
6. Update the Cube transformer model with the new columns and republish it.
   (Optional)

Multi-Entity Processing

The Multi-Entity Processing (MEP) framework is available for all target database 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 target database.

Example:

You can take existing data from one database for use in multiple institutions, move information into the target database, selectively restrict the user access to data by institution, and so on.

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

Note

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

Administrative User Interface

The Administrative User Interface (UI) is Web-based and uses Banner Web Tailor. The Administrative UI is used to set up and maintain the target database and warehouse, including initiating and monitoring ETL processes. Administrative functions include:

- Preferences and Security - Use to manage security, set global preferences, and set up user accounts.

- Options - Use to control the processes to extract and load data into Banner ODS and Banner EDW, schedule a process, view control reports, view and/or remove scheduled processes, and maintain information about saving (freezing) data.

- Meta Data - Use to view and manage the meta data supporting the systems.

- New Banner Web Tailor Administration - Use to customize a Web menu, procedure, graphic element, set of information text, or a set of menu items. You can also update user roles, customize a Web module, Web rules, or Banner Web Tailor parameters; customize a login return location; and customize Banner Web Tailor overrides or global user interface settings.
Banner ODS data model

Banner ODS delivers a data model that includes data from a number of higher education administrative system modules. The administrative system modules supported by the Banner ODS data model include Student, Financial Aid, Advancement, Human Resources and Finance — including Accounts Receivable. Each module, or area of information, includes 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 Banner ODS to support the reporting needs of the entire institution.

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

Multiple source databases

The Banner EDW architecture supports stage tables from different source databases. The only requirement to load information from multiple sources into the Banner EDW stage tables is that the schema and table names in the source databases must be unique.

Note

Because the schema and table names in the source databases must be unique, you cannot load information from two different Banner databases into the Banner EDW.

Source Alias

The Source Alias (source_alias) uniquely identifies each source database. You specify the source_alias during the installation or upgrade process. The source_alias is then used to create a parameter in Web Tailor, which associates each source_alias to a database link owned by ODSSTG. This approach allows the database link to the source to be changed while minimizing the disruption to the existing Banner EDW functionality.

Source Alias in Streams framework

In the Streams framework, the Source Alias is used as a prefix when naming the various Streams components. The prefix identifies the source database and the suffix identifies the Streams component. For example, the Streams component BANNERS$APP is associated with the source alias of BANNER, and is an apply process.
The following table lists the database location and suffix for each Streams component. The Source Alias is added to the beginning of each Name Suffix to uniquely identify the Streams component.

<table>
<thead>
<tr>
<th>Streams Component</th>
<th>Database location</th>
<th>Name Suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture</td>
<td>Source</td>
<td>$CAP</td>
</tr>
<tr>
<td>Capture queue</td>
<td>Source</td>
<td>$CAPQ</td>
</tr>
<tr>
<td>Capture queue table</td>
<td>Source</td>
<td>$CAPQT</td>
</tr>
<tr>
<td>Propagation</td>
<td>Source</td>
<td>$PROP</td>
</tr>
<tr>
<td>Apply queue</td>
<td>Banner ODS</td>
<td>$APPQ</td>
</tr>
<tr>
<td>Apply queue table</td>
<td>Banner ODS</td>
<td>$APPQT</td>
</tr>
<tr>
<td>Apply</td>
<td>Banner ODS</td>
<td>$APP</td>
</tr>
</tbody>
</table>

**Add a source database**

Use the following steps to add subsequent source databases after an initial source database has been configured.

1. Run the source install steps on the source database. Refer to the Banner ODS Installation or Upgrade Guide for the source install steps.
   
   This creates the ODSSTG administrative user with the necessary privileges, compiles the support package, and creates a database link from the ODSSTG user to the ODSSTG user on the Banner EDW.

2. Create a database link connecting the ODSSTG user on the Banner EDW instance to the ODSSTG user on the new source.

   *Streams users only perform step 3; Mviews users can skip to step 4.*

3. As the ODSSTG user on the Banner EDW, execute the following procedure from SQL*Plus.

   ```sql
   SQL> SET SERVEROUTPUT ON
   SQL> MGKSTRC.P_CREATE_LOCAL_ENV(database link, source alias);
   ```

   where you enter your institution’s values for the parameter in parentheses.

4. Create schemas in the Banner EDW.
For each schema in the source database that includes tables that will be staged in the Banner EDW, create a schema in the Banner EDW with the same name.

5. Add the new schemas to the Banner EDW using the Administrative User Interface.
   
   5.1. Follow the steps in the section “Add a schema” in Chapter 5, “Administrative User Interface”.
   
   5.2. Repeat step 5 for each new schema you want to add to the Banner EDW.

   
   6.1. Follow the steps in the section “Add a non-baseline staging table to the Banner ODS” in Chapter 5, “Administrative User Interface”.
   
   6.2. Repeat step 6 for each new schema you added.

Validation table data and incremental refresh

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

This is similar to the way in which Banner Course Catalog process works. If the title of the course changes, the institution creates a new catalog record with the new title for the new effective term.

Example

If a description such as “Bowling Basics” changes to “Bowling Fundamentals”, it is assigned a new code so that Banner ODS reflects the past data for “Bowling Basics” and the new values are reflected for “Bowling Fundamentals”.

To change a column description, the institution policy requires to either initiate a reload of all affected tables (time intensive) or create a script to update all columns in Banner ODS to alter the old value to the new value.

Note

To ensure data integrity, do not apply updates to existing values in the validation tables once Banner ODS is in production and the incremental refresh cycle is implemented. Else, there will be inconsistencies in the information displayed between the source system and Banner ODS.
To further explain the difficulty in incrementally refreshing tables based on coded description changes and not the result of data value changes, it is necessary to understand the efforts required to 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 is likely to have performance impact on the source system. This is because it requires the trigger to populate an entry into a change table for every row in each source data table that is populated with the altered validation table value. This requires a full table scan of every affected source table as the source system does not maintain keyed links between the validation tables and the data tables.

For example, the validation table STVDEPT is used enterprise wide in Banner Student, Banner Advancement, and Banner HR systems in eighty four (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 users to wait on the change of the validation table in Banner would freeze their Banner session until the change table population took place.

### Table indexes

Indexes are added based on the reporting needs of the Banner ODS and Banner EDW tables as well as performance for the incremental refresh process. The IA_ADMIN.MGBINDX table stores a list of the delivered indexes for tracking and documentation purposes. You populate his table using the following query for a release:

```sql
SELECT &sysid, x.table_name, x.index_name, column_name, uniqueness, descend, column_position, &relno, 'NO', SYSDATE, 1
FROM user_indexes x, user_ind_columns y
WHERE x.table_name = y.table_name AND
  x.index_name = y.index_name AND
  x.table_name LIKE 'M%' AND
  x.table_name NOT IN
  (SELECT DISTINCT table_name
   FROM all_tab_columns
   WHERE column_name LIKE '%FREEZE_EVENT%')
ORDER BY x.table_name, x.index_name, column_position;
```

The MGBINDX table is used in the Banner ODS Checks and Balances process to verify that baseline indexes are valid and present. If your institution has created additional indexes, the differences are reported in the control report as warnings. To include the additional indexes in the Banner ODS Checks and Balances process, insert the new index information into the IA_ADMIN.MGBINDX table using SQL. Refer to the
The Banner ODS metadata also uses the delivered indexes when documenting the Recommended Search Columns. The script `update_recsearchconds.sql` (located in the `dbscripts/utility_scripts` directory) is used to generate that information based on the actual indexes in the database. If you add local indexes, it is recommended that you run the script (from the `IA_ADMIN` account) so the list of Recommended Search Columns accurately reflects the database.

### Product-specific information

This section discusses the Banner ODS or Banner EDW information unique to individual Banner products.

#### Banner Common

The Banner ODS VALIDATION reporting view provides access to all of the Banner product validation table values to be used when creating a pull-down list of values (LOV) for parameters. This reporting view can be used by a variety of reporting tools. The `MGT_VALIDATION` table is the source for the reporting view and is used to build the LOV views that reside in the ODSLOV schema. The source for the `MGT_VALIDATION` ODS composite table is a series of composite views listed below. These views retrieve the values from specific product validation tables that are used within the Banner ODS.

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 will likely cause a performance impact on the system. The VALIDATION reporting view can instead be used as a pull-down list. It provides the appropriate Banner Validation Table name as a filter for `VALIDATION.TABLE_NAME`.

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. Following are the composite views:

- `AA_VALIDATION`
- `AF_VALIDATION`
- `AG_VALIDATION`
- `AN_VALIDATION`
- `AP_VALIDATION`
- `AR_VALIDATION`
Each of these Banner composite views extracts values from validation tables in their respective Banner product areas. Also included are the status indicators, effective dates, and sometimes the qualifiers.

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

- GRANT CATEGORY represents all grant categories stored within FTVSDAT.
- GRANT_SUBCATEGORY represents all grant sub categories stored within FTVSDAT.
- GRANT_TYPE represents all grant types stored within FTVSDAT.

Values have been added to table FTVFSPD to represent beginning and ending periods. The added values are ‘00’, ‘13’, and ‘14’. The FTVFSYR table has for its description, the Fiscal Year converted to a four-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 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_DELINQUENCY
• RECEIVABLE_EXEMPTION
• SECONDARY_SCHOOL
• SPORTS

**Banner Finance**

The following table explains the use for FIELD_CODE and LEDGER_IND within the TRANSACTION_HISTORY reporting view for Banner Finance. The LEDGER_IND and FIELD_CODE work together to drive what ledger amount field was updated.

<table>
<thead>
<tr>
<th>LEDGER_IND</th>
<th>Ledger</th>
<th>FIELD_CODE</th>
<th>Amount Field Updated</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>General</td>
<td>01</td>
<td>Sum_Periodic_Debits</td>
<td>Debits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02</td>
<td>Sum_Periodic_Credits</td>
<td>Credits</td>
</tr>
<tr>
<td>O</td>
<td>Operating</td>
<td>01</td>
<td>Curr_Adopted_Budget</td>
<td>Current Period Original Budget</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02</td>
<td>Curr_Budget_Adjustments</td>
<td>Current Period Budget Adjustment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>03</td>
<td>Curr_Year_To_Date_Activity</td>
<td>Current Period Activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>04</td>
<td>Curr_Encumbrances</td>
<td>Current Period Purchase Order and General Encumbrance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>05</td>
<td>Curr_BudgetReservation</td>
<td>Current Period Requisition Budget Reservation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>06</td>
<td>Curr_Accumulated_Budget</td>
<td>Current Period Accounted Budget</td>
</tr>
</tbody>
</table>
Banner Student

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

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

Banner Student data extraction for the MSTGENERAL_STUDENT composite table

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

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

- SGBSTDN - student base table
- SFBETRM - student registration table
- SHRTTRM - institutional course maintenance term header table
- SHRTRAM - attendance period by transfer institution table
- SHRDGMR - degree table
- SGRCHRT - student cohort table
- SGRSPRT - sport table
- SGRSATT - student attribute table
- SGRSACT - student activity table
- SGRCOOP - cooperative education table
- RPRATRM - applicant award by term table
- RORSTAT - applicant status table
- TBRACCD - account charge/payment detail table
- TBBCSTU - contract student authorization table

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

**Additional 'Zero' record in the Banner ODS tables**

In Banner, the values for student classification and academic standing are specific for a student, academic period, and their primary program level only. In the Banner ODS, many reports require student classification and academic standing data for all student curricula, regardless of the level value. 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 Banner Student views architecture**

Due to the complex architecture of some Banner Student views, the following flow charts illustrate how those Banner Student reporting views are built from Banner to the Banner ODS.

**Note**

These diagrams only refer to key views and key tables used within the reporting views.
Academic Outcome and Academic Outcome Slot reporting view flow
Admissions Application reporting view flow

Table View

Admissions Application

AS_ADMIS
MST_ADMIS

AS_ADVISOR
MST_ADVISOR

AS_CURRICULUM_FOS
MST_CURRICULUM_FOS
MST_CURR_ADMISSIONS_APPL

AS_ADVISOR
MST_ADVISOR

SARADAP
SORCUR
SORLFOS
SGRADVR

AS_CUMMULUM_FOS
MST_CUMMULUM_FOS
MST_CURR_ADMISSIONS_APPL
Combined Academic Outcome reporting view flow

- SORLCUR
  - AS_CURRICULUM_FOS
    - MST_CURRICULUM_FOS
      - MST_CURR_ACADEMIC_OUTCOME
  - SORLFOS
  - SHRDGMR
  - APRADEG
  - SORHSCH
  - SORPCOL
  - AS_PREVIOUS_EDUCATION_HSCH
  - AS_PREVIOUS_EDUCATION_PCOL
  - AS_ACADEMIC_OUTCOME
  - AA_DEGREE
  - MAT_DEGREE
  - MST_PREVIOUS_EDUCATION
  - COMBINED_ACADEMIC_OUTCOME
Field of Study reporting view flow
Government Academic Outcome reporting view flow

Table: AS_CURRICULUM_FOS

View: SHROGMR

AS_ACADEMIC_OUTCOME

MST_ACADEMIC_OUTCOME

ACADEMIC_OUTCOME

MST_CURRICULUM_FOS

MST_CURR_ADMISSIONS_APPL

MST_CURR_STUDENT

MST_GENERAL_STUDENT

MST_ACTIVE_TERMS

MST_GENERAL_STUDENT_STAGE

MST_CURRICULUM_FOS

MST_CURR_ADMISSIONS_APPL

MST_CURR_STUDENT

MST_GENERAL_STUDENT

MST_ACTIVE_TERMS

MST_GENERAL_STUDENT

MST_GENERAL_STUDENT_STAGE

MST_ACTIVE_TERMS_STAGE

MST_BASE_STUDENT

MST_GENERAL_STUDENT

GOVERNMENT_ACADEMIC_OUTCOME
Government Admissions reporting view flow
Government Financial Aid reporting view flow

Table View

1. AR_AWARD_BY_PERSON
2. MRT_AWARD_BY_PERSON
3. RPRATRM
4. AR_FINAID_FUND
5. MRT_FINAID_FUND
6. RFRBASE
7. RFRASPC
8. AS_ACTIVE_TERMS
9. MST_ACTIVE_TERMS_STAGE
10. MST_GENERAL_STUDENT
11. MST_BASE_STUDENT
12. MST_GENERAL_STUDENT_STAGE
13. AS_GENERAL_STUDENT
14. AS_LEARNER_CURRICULUM_FOS
15. MST_CURR_STUDENT
16. SORLCUR
17. SORLFOS
18. STVTERM
19. SGBSTDN
20. MST_GENERAL_STUDENT_STAGE
21. GOVERNMENT_FINANCIAL_AID
Recruitment Information reporting view flow
Student reporting view flow
Composite views and meta data

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

Note

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

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

1. Select Meta Data from the Administrative menu.

2. Select Banner Operational Data Store.

3. Select the Banner ODS Composite View Meta Data Reports link located at the top right-hand corner of the page.

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Business description of the composite view target, including the key and frequency of data returned by the view.</td>
</tr>
<tr>
<td>Target Column</td>
<td>Name of the column in the composite view target.</td>
</tr>
<tr>
<td>Business Definition</td>
<td>Definition of the target column in business terms.</td>
</tr>
<tr>
<td>Database Data Type</td>
<td>Used for formatting purposes when writing reports.</td>
</tr>
<tr>
<td>Business Data Type</td>
<td>Used to store client-specific data about a given column. This field is empty by default.</td>
</tr>
<tr>
<td>Domain Value</td>
<td>Used to store client-specific data about a given column. This field is empty by default.</td>
</tr>
</tbody>
</table>
This section describes the naming conventions and standards applied to scripts and database objects used to create and maintain the BPRA solutions.

**Banner ODS standards (ODSMGR schema)**

**Front-end views: reporting style**

**Object name**

Natural language naming conventions are acceptable. Maximum length is 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
- **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**: $M$
  - System Descriptor
- **2nd Character**
  - $A$ - Advancement
  - $G$ - General
  - $F$ - Finance
  - $P$ - Payroll
  - $R$ - Financial Aid
  - $S$ - Student
  - $T$ - Accounts Receivable or Billing Receivable
- **3rd Character**: $T$ - Table or $V$ - View
- **4th Character**: _ (underscore)
- **5th -30th Characters**: Unique Descriptor

**Examples:**

M_ANM, M_ANM_DLMN
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 is 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.

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

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.

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

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 and views

Object name

Maximum length is 30 characters. See the table below.

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

Examples:

WMT_SOURCE, WMV_TARGET_OBJECT

Additional detail

Script names are the same as the object name.
**Sequences**

**Object name**

See the table below.

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

**Examples:**

MGSHOST, MGSPARM, MGSPIDM, MGSSDAX

**Additional detail**

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

**Banner EDW standards (EDWMGR/EDWSTG schemas)**

**Warehouse tables**

**Star schema tables (EDWMGR schema)**

**Object name:**

Maximum length is 30 characters. See the table below.

<table>
<thead>
<tr>
<th>1st Character</th>
<th>W - Warehouse</th>
<th>System Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Character</td>
<td>D - Dimension</td>
<td>Star Schema Table Type</td>
</tr>
<tr>
<td></td>
<td>F - Fact</td>
<td></td>
</tr>
<tr>
<td>3rd Character</td>
<td>T - Table</td>
<td>Object Identifier</td>
</tr>
<tr>
<td></td>
<td>Z - Snapshot Table</td>
<td></td>
</tr>
<tr>
<td>4th Characters</td>
<td>_ (underscore)</td>
<td></td>
</tr>
<tr>
<td>5-5th-30th Characters</td>
<td>Unique Descriptor</td>
<td></td>
</tr>
</tbody>
</table>

**Examples:**

WDN_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.

<table>
<thead>
<tr>
<th>1st Character</th>
<th>W - Warehouse</th>
<th>System Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Character</td>
<td>T - Temporary</td>
<td>Warehouse Table Type</td>
</tr>
<tr>
<td>3rd Character</td>
<td>T - Table</td>
<td>Object Identifier</td>
</tr>
<tr>
<td>4th Characters</td>
<td>_ (underscore)</td>
<td></td>
</tr>
<tr>
<td>5-5th-30th Characters</td>
<td>Unique Descriptor, ending in any:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>_INPUT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>_CLEAN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>_ERROR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>_WKEYS</td>
<td></td>
</tr>
</tbody>
</table>

**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 following table:

<table>
<thead>
<tr>
<th>1st Character</th>
<th>W - Warehouse</th>
<th>System Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Character</td>
<td>D - Dimension</td>
<td>Product Identifier</td>
</tr>
<tr>
<td>3rd Character</td>
<td>S - Sequence</td>
<td>Object Identifier</td>
</tr>
<tr>
<td>4th Characters</td>
<td>_ (underscore)</td>
<td></td>
</tr>
<tr>
<td>5-5th-30th Characters</td>
<td>Unique Descriptor, ending with _SEQ</td>
<td></td>
</tr>
</tbody>
</table>
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 following table:

<table>
<thead>
<tr>
<th>1st Character</th>
<th>PK_ (underscore)</th>
<th>Primary Key Prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th-30th Characters</td>
<td></td>
<td>Table Name or Abbreviation (includes the first 4 characters, e.g., WFT_)</td>
</tr>
</tbody>
</table>

Examples:

PK_WFT_EMPLOYEE, PK_WFT_OPERATING_LEDGER

Foreign key constraints

Object name:

Maximum length is 30 characters. See the following table:

<table>
<thead>
<tr>
<th>1st - 2nd Character</th>
<th>FK</th>
<th>Foreign Key Prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd Character</td>
<td>n</td>
<td>Where n is a one-up number</td>
</tr>
<tr>
<td>4th Characters</td>
<td>_ (underscore)</td>
<td></td>
</tr>
<tr>
<td>5th-30th Characters</td>
<td></td>
<td>Child Table Name (omits the first 4 characters, e.g., WFT_)</td>
</tr>
</tbody>
</table>
4 Enhanced Warehouse Architecture

The Banner Enterprise Data Warehouse (Banner EDW) includes an enhanced warehouse architecture for the Advancement data structures delivered with the warehouse.

Note
The information in this chapter applies only to the Advancement-related data structures in the warehouse. If your warehouse includes other data structures, for example, student or financial aid, the “Architecture” chapter of the Banner Enterprise Data Warehouse Handbook details the architecture components related to those data structures.

Enhanced warehouse architecture components

The enhanced warehouse architecture includes several components illustrated in the following figure.

Figure 12: Enhanced Warehouse Architecture
At the highest level the components are grouped as follows:

- Source System database - Advance or Banner Advancement source databases
- Warehouse Staging Area - area of the Banner EDW that houses the source staged tables, dimension staged tables, and cleansing staged tables
- Warehouse Information Area - area of the Banner EDW that houses the actual fact and dimension tables from which the reports and scorecards draw information

**Source system database**

The starting point for any performance or reporting analysis solution is your source system data. The information stored in the source transactional database is ultimately the information that you want to analyze.

The Advancement Analytics for Cognos product is specifically designed to accept information from the Advance and Banner Advancement products. The product uses an open design and can accept information from other sources.

**Warehouse staging area**

One benefit of a data warehouse is that it gives you a multi-dimensional view of your data. The warehouse is designed to manage complex queries associated with institutional reporting without the overhead associated with a transactional system.

One challenge of working with a data warehouse is synchronizing data changes between the source system and the warehouse. Current data is key to accurate reporting. Populating the warehouse with information from the source system is a multi-layered process. The data from the source system needs to be flattened out and aligned into the appropriate dimensions in the warehouse. In addition, before some source data gets loaded into the warehouse it may need to be cleaned up to make the output suitable for consistent reports. For example, the source system may include null values that need to be changed to identify the empty fields.
The warehouse staging area exists to help meet data synchronization challenges and to enhance the process of moving data from the source system to the warehouse. The following figure illustrates the progression of information from the source system through the warehouse staging area.

**Figure 13: Warehouse staging area**

**Source stage tables**

Information from source database tables is replicated in the warehouse source stage tables using Oracle Streams Replication and Change Data Capture processing. The source stage tables are basically copies of tables from the source database. Replicating the tables in this way makes it easier to use Oracle Streams to maintain and update exact copies of source data tables in the warehouse staging area.

The source stage tables become the starting point of information for the final data warehouse tables. Information in the stage tables will be cleansed and associated with dimensions and facts before being loaded into the final dimension and fact tables of the warehouse.

**Dimension stage tables**

The dimension stage tables are warehouse tables used to reorganize source stage table information into business-related information areas or dimensions. These dimension tables are a part of the staging area and act as intermediary tables housing information on its way to the final dimension and fact tables.

Business logic mappings (D1) process information from the source stage tables to load the dimension stage tables. There is one business logic mapping for each dimension table.
Dimension clean tables

The EDW cleansing process provides data translation functions that can define data translation values and replace values for null data. During the EDW cleansing process these cleansing table functions define rules that run against individual columns in the dimension stage tables transforming the data and loading it into the dimension clean tables. The dimension clean tables are warehouse tables that house cleansed versions of the data in the dimension stage tables. You manage these cleansing rules through the EDW Administrative User Interface (UI). Refer to the “Administrative User Interface” chapter of the Banner EDW Handbook for more information about using the Administrative UI to maintain EDW cleansing.

Warehouse information area

The warehouse information area is the portion of the Banner EDW that houses the actual fact and dimension tables from which the reports and scorecards draw information. The following figure illustrates the components of the warehouse information area.

![Warehouse information area diagram]

Figure 14: Warehouse information area

Fact tables

Fact tables store the numerical performance measurements, such as amounts or counts, tracked by your institution. Hard Credit Amount is an example of a measure that is stored in the WFT_GIFT fact table. The warehouse includes a fact table for each numerical measure. The fact table names begin with WFT_.

Banner EDW Information Area

- Admin Tables
- Meta Data Tables
- Dimension A
- Dimension B
- Dimension C
- Fact Table
**Dimension tables**

Dimension tables store the descriptive attributes that define how you want to slice or look at the measures in a fact table. Campaign is an example of a dimension that is stored in the WDT_CAMPAIGN table. The dimension table names begin with WDT_.

**Admin Tables**

Admin tables store the information related to ETL load jobs, cleansing jobs, and warehouse security. The tables support the functions of the Administrative User Interface.

**Meta data tables**

The meta data tables store the information that defines the warehouse meta data.

**User-defined fields**

Banner EDW provides five additional user-defined fields on every dimension and fact table which allow you to extend the data in the warehouse. Including these user fields within the product tables and their related mappings means you need to make minimal changes to bring new data into the warehouse. The dimension user-defined fields are named USER_ATTRIBUTE_01-05, and the fact and aggregate user-defined fields are named USER_MEASURE_01-05. Follow the guidelines in this section to use the user-defined fields.

**General guidelines**

Considerations should be made when deciding what data to add to the user-defined fields. Use the following questions as guidelines when determining what data to add and where to add it.

**What source data to add?**

First, you must evaluate what the source of the new data is and whether this source is available within the source system and/or Banner ODS – these guidelines assume the data already exists in the staged source tables and/or Banner ODS and is available for you to use. If not, additional steps will be needed to stage the data from the source system and/or add it to the Banner ODS.

**How will the new data be used?**

Next, consider how the data will be used. Will it be used as an attribute or a measure? This will tell you whether it should be added to a dimension (attribute) or fact (measure) table.

If you are adding a new attribute to a dimension table shared by multiple organizations at the institution, consider whether or not those organizations will be interested in the
same content. If so, you should gain input from all offices regarding the details of the new content so that you can create common attributes. If multiple organizations are not interested in the same content, consider adding the new data to a dimension table not shared by other organizations or to two different user attribute fields. This will enable user attribute columns to be optimally distributed among the storage structures while minimizing the need for customization.

Where to add data?

When trying to determine which dimension or fact table to add the user attribute to, look for dimensions or facts that contain similarly sourced data. Looking through the meta data using the Administrative UI can help you see where similar data already exists.

Is the data at same granularity as other data in star?

You must also consider whether the new data item is captured at the same level of granularity as the other data in the star. These guidelines assume the data is at the same level of granularity. If data is at a different level of granularity, additional changes will be needed within the ETL, table definitions, report structures, or the query retrieving the data.

Conformed dimensions

The Banner EDW uses conformed dimensions, which are dimensions shared among stars. When modifying a dimension that is shared by many stars, you need to consider the following

Will each star using a conformed dimension use the same user-defined attributes?

- If “Yes” - you must update each star’s table function and extract mapping to select the new user-defined field.
- If “No - (meaning you want to add the user-defined field to one star but not another) there is no issue, the other stars do not need to be modified and would continue to populate the field with a null value.

Will each star using a conformed dimension need different user-defined attributes for different stars?

Since dimensions are shared between stars, each user-defined field must have one unique source and thus one unique cleansing rule across all stars that share that dimension. This means that if you wish to add two different user-defined attributes to the same dimension table but for different stars, you must use two different user attribute fields. For example, if you want to add hair color and legislative district to the WDT_DEMOGRAPHIC dimension for different stars, you must use USER_ATTRIBUTE_01 for one attribute and USER_ATTRIBUTE_02 for the other.
Steps to add user-defined attribute and measure values to the warehouse

Step 1  Update the extract logic that selects values from the source tables to populate the warehouse tables.

The steps needed to add user-defined attributes and measure values to the warehouse depend on the type of star you want to update. Refer to the steps in the following sections to select the appropriate source value and populate the appropriate warehouse target table and column.

- “For Advancement operational stars” on page 4-7
- “For aggregate stars” on page 4-7
- “For frozen stars” on page 4-8

For Advancement operational stars

To add values to the user-defined attribute or measure fields, you need to update the extract OWB mappings and if it is a dimension attribute, the corresponding cleansing rule.

1. Locate your mapping within the appropriate OWB Project – either APM_GENERAL or APM_ADVANCEMENT. Source specific mappings end with the suffix ‘A’ for Advance or ‘B’ for Banner Advancement.

2. If you are adding an attribute, update the associated D1 mapping within the Project>Oracle>EDWSTG module, for example, <dimension>_D1A or <dimension>_D1B, to map the new value to the dimension’s user attribute.

3. If you are adding a measure, update the associated F1 mapping within the Project>Oracle>EDWMGR module, for example, <fact>_F1A or <fact>_F1B, to map the new value to the fact table’s user measure.

4. Save the changes.

5. Deploy the mapping.

For aggregate stars

Use the following steps to add values to the user-defined attribute or measure fields of an aggregate star.

1. Locate the aggregate mapping within the appropriate OWB Project.
   - There are no source specific aggregate mappings.
   - If changing an Advancement aggregate, the aggregate mapping naming convention is <aggregate>_A1
2. Map the new value to the aggregate star’s user measure. It is likely that the user measure for an aggregate will be sourced from an updated operational star’s user measure.

3. Save the changes.

4. Deploy the mapping.

**For frozen stars**

Follow these guidelines when updating frozen stars.

- The corresponding operational or aggregate star which sources the frozen one must be modified to include the user measure.
- Once the corresponding operational or aggregate star is updated, no changes are required to populate the frozen star, links between the frozen star’s user measure fields and the corresponding star’s user measure fields are already in place.

**Step 2 Link cleansing rules to new user-defined dimension attribute.**

**Note**

This step only applies if you’ve added a user-defined dimension attribute; it does not apply to user-defined measures.

Perform the following steps within the Administrative UI.

1. Select Options>Set Up and Maintain Cleansing Processes.
   - If the user-defined value you’ve added already can be linked to an existing Cleansing rule, skip to the next step.
   - Else, go to Set Up and Maintain Cleansing Rules and create a new cleansing rule with appropriate source query. See the “Set Up Cleansing” chapter for more details.

2. Select Options>Set Up and Maintain Cleansing Processes>Set Up and Maintain Cleansing Data Elements.
   2.1. Select the dimension table that will be updated with your user-defined attribute and select **Search**.
   2.2. Select the USER_ATTRIBUTE column 01-05 you modified in Step 1.
   2.3. Within the Update a Cleansing Data Element screen, update the **Rule Name** field with the appropriate cleansing rule.
   2.4. Click **Save**.

Your new user-defined attribute value will now be cleansed by the appropriate cleansing rule.
Step 3  Update meta data to reflect the change (Optional)

If you use the published meta data to document source to target relationships, refer to the “Meta Data” section of the “Administrative User Interface” chapter to add corresponding data for the new column.

1. Create a new target column for the updated dimension or fact table, naming the column as it is in the database, i.e., USER_ATTRIBUTE_01-05 or USER_MEASURE_01-05.

2. Give the column a new Business Name, Definition, and other information to match the new use for the column.

3. Save the changes.

4. From the same target column page, select Add Local Mapping at the bottom.

5. Select and save the appropriate source details.

6. Publish meta data.

The new column will be available.

Step 4  Reload data via the Administrative UI to populate the new field

1. Select the appropriate jobs to reload the data that will access the new field.

2. If the new field is in an operational star, you must also reload the related aggregate stars.

Note
Population processes for snapshot and frozen stars will only impact data populated in the related star schema after the change and related Cleansing setup is completed. You will not be able to reload data to existing snapshots or frozen concepts except for those milestone events related to ‘Final State’ data storage in the source system (such as 'final' for academic period or fiscal period.) Reloading milestone events (not 'final') will invalidate the time perspective of the data.

3. Confirm that the correct data is loaded into the modified dimension or fact.

Step 5  Update delivered Cognos models to expose and appropriately label the user-defined attribute or measure (Optional)

Note
You only need to perform this step if you are using the delivered Cognos content.

The delivered Cognos Framework Manager Models have the following three layers.
• Database View
  • Reference to database objects
  • Table names and select columns given business names
  • User attribute and measure columns already present in database layer but do not have business names
  • Fact tables obtain “Measure” suffix
  • Some concatenated unique keys added
  • Some formatting and aggregation defined

• Business View
  • Business-centric grouping of objects
  • Business-centric table aliases created
  • Business-centric relationships/joins created
  • Alternative aggregation query items defined, for example, averages, headcounts, percents, counts

• Presentation View
  • End user experience/layer that is published to the end-users
  • Commonly used items grouped together
  • Folders used to remove clutter
  • Commonly used filters, calculations created
  • Customizable parameter driven items created

Perform the following steps to update the Cognos packages.

1. Update the Database View layer for the table/column you modified.

2. Rename the USER_ATTRIBUTE/MEASURE_01-05 and their corresponding short description (SD) and long description (LD) columns in the table you modified to have business names.

3. Update the Business View layer to use these new names.

4. Update the Presentation View layer to include the new code and description fields in the appropriate Query Subject.

5. Update the appropriate Package Definitions to select the new fields to be published.

You will then be able to access the new fields via the newly published packages and use them through the various Cognos Studios such as Report Studio and Query Studio.
6. Update the Cube transformer model with the new columns and republish it. (Optional)

Data replication and ETL process

Replication the data between your source database and the warehouse database is key to performing accurate data analysis and creating current reports. Data replication is accomplished using the Extract Transform and Load (ETL) process.

ETL process flow

The ETL process includes three major areas of processing that are illustrated in the following picture.

![ETL process flow diagram](image)

**Figure 15: ETL process flow**

Load/refresh stage source in warehouse

The warehouse staging area is populated with data from the source database using Oracle Streams Replication and Change Data Capture processing. Any insert, update, or delete actions performed on the source database tables are also performed on the warehouse stage tables to synchronize the two.

Load/refresh dimension information

Load/refresh fact tables
The following picture shows the components used to synchronize data between the source database and the staging area of the warehouse.

![Diagram of data replication between source database and warehouse database](image)

**Figure 16: Data replication between source database and warehouse database**

The replication process uses the following components of Oracle Streams.

<table>
<thead>
<tr>
<th>Oracle Streams Component</th>
<th>What it does...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture Process</td>
<td>The Streams capture process mines changes from the redo log on the source database whenever possible and from the archived logs if it falls behind the generated redo logs. Changes in the redo log that match specified rules are converted into messages called logical change records (LCRs), which are placed in a queue associated with the capture process.</td>
</tr>
</tbody>
</table>
During the installation process, the system creates all the components required to set up the Oracle Streams framework. This includes setting up the Streams queues, propagation schedule, capture and apply processes, and populating the staging tables in the warehouse with data from the source database tables.

Refer to the following Oracle documents for more information about maintaining and troubleshooting the Oracle Streams environment in the Banner EDW.

- “Oracle Streams Concepts and Administration Guide”
- “Oracle Streams Replication Administrator's Guide”
- “Streams Complete Reference FAQ” (MetaLink Document ID: 752871.1)

**DDL handler**

A DDL handler is assigned to each Streams apply handler to replicate DDL statements from the source database to the stage source tables in the warehouse. DDL statements run against a source table are replicated to the warehouse unless a statement includes table dependencies. This means DDL statements executed on the source database that create, alter, or drop columns, non-foreign key constraints, and indexes are replicated to the warehouse; however, using the DDL handler allows the replication process to ignore the same types of statements for table triggers and foreign keys. These changes will not be replicated in the warehouse.

The user who executes a DDL statement on the source database must also exist in the warehouse for the change to be replicated successfully in the warehouse. When a DDL command is executed on the source database and the object schema is not specified, then
the DDL command will only be applied successfully on the warehouse if the user who executed the command also exists in the warehouse.

**Warning**

Be aware that source objects with system-generated names will have different names in the warehouse. This means that DDL statements involving these objects will not be replicated successfully, and will result in DBA_APPLY_ERROR records being created. The majority of the system-generated names in the source system that may be affected are NOT NULL constraints on table columns.

### Load/refresh dimension information

Dimension information goes through multiple steps during the load process to move it from the staged source area of the warehouse to the final warehouse dimension tables. The following dimension loading components process the dimensional attributes used by all of the fact tables.

- **Business Logic Mappings** - process information from the staging source tables to load the dimension stage tables. There is one business logic mapping for each dimension table. These mappings are source-specific to reflect the unique tables and objects referenced from each system.

- **Cleansing Table Functions** - include a cleansing process that pushes data from the dimension stage tables to the dimension clean tables. The cleansing process is a template that you can define for the dimensions your institution needs to process. The cleansing process is where you define data translations and replacement values for null data.

- **EDW Staging Schema** - processes data from the dimension clean tables into the final warehouse dimension tables.

### OWB mappings

Oracle Warehouse Builder (OWB) mappings, which are PL/SQL scripts, define the relationship of data from the source stage tables to the final dimension and fact tables in the warehouse. The Extract, Transform, and Load processes (ETL) built using OWB are the mappings that populate the warehouse.

The OWB mappings are run to initially populate the warehouse and to incrementally refresh the warehouse tables. When run, dimensional information is refreshed and the fact tables are repopulated.

The 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 a variety of sources, transform the data, and configure the data for loading into the warehouse. The OWB code generator lets you deploy and populate the warehouse without manual coding, and integrates with the Oracle database and query tools.
Several related mappings take information through incremental steps within the staging area to populate the final warehouse tables. The following picture illustrates the mappings used to load demographic data from the source stage tables to the warehouse dimension table.

![Diagram of demographic dimension mappings]

**Figure 17: Demographic dimension mappings**

**D1 mappings**

D1 mappings load dimensionally structured data from the staged source into the dimension stage tables (STG version of dimension tables.) The number of records inserted into a dimension stage table depends on the cardinality of information in the dimension relative to the fact tables by which it will be referenced. Each record will contain a LKP column which uniquely identifies the associated information from the staged source.

The warehouse includes source-specific D1 mappings to load information from both the Advance and Banner Advancement staged sources into the dimension stage tables. For each dimension stage table there are two D1 mappings that could load that table. A D1_A mapping to load Advance source staged information and a D1_B mapping to load Banner Advancement source staged information.
D2 mappings

D2 mappings take the records loaded into the dimension stage tables in the D1 mapping and process them through a table function which replaces NULL values where necessary and applies optional cleansing transformations. The resulting records are loaded into the dimension clean tables (CLN version of dimension tables.)

D3 mappings

D3 mappings merge the unique combinations of key attributes from the dimension clean tables into the actual warehouse dimension tables. As new records are populated within the dimension, the accompanying trigger will generate the associated surrogate key.

D4 mappings

D4 mappings update each dimension clean table with its associated surrogate key from the dimension table. This enables the use of the LKP column, which is used as a lookup to retrieve a dimension’s surrogate key.

Load/refresh fact tables

The fact loading components include one fact mapping for each fact table in the Banner EDW. Each fact mapping uses a driving fact query from the source system and the dimension clean tables as look up tables to load data into the fact tables in the Banner EDW.

The fact and dimension tables are also the sources of data to populate the aggregate fact tables and group dimensions. These objects are integral components that enhance query performance and flexibility.

F1 mappings

F1 mappings truncate and load fact tables with metrics from source tables and their associated dimensional keys.

Warehouse schemas

The following schemas exist in the warehouse.
The Administrative User Interface (UI) is a Web-based tool that uses Ellucian’s Banner Web Tailor application. You can use the Administrative UI to set up and maintain the warehouse, including initiating and monitoring ETL processes. Administrative functions include:

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

Refer to the Administrative User Interface Online Help system for more information about using it.

---

<table>
<thead>
<tr>
<th>Schema</th>
<th>Owns</th>
</tr>
</thead>
</table>
| IA_ADMIN | • Meta data tables  
          | • Any objects used or associated with the Administrative User Interface like the parameter table, the data display rules table, and the security tables |
| ODSSTG   | Oracle Streams objects  
          | This user is created in the source and warehouse systems. |
| EDWSTG   | Staging dimension tables (STG) and clean dimension tables (CLN) |
| EDWMGR   | Final dimension and fact tables                                        |

---

**Administrative User Interface**

---

**Schema**

<table>
<thead>
<tr>
<th>Owns</th>
</tr>
</thead>
</table>
| • Meta data tables  
          | • Any objects used or associated with the Administrative User Interface like the parameter table, the data display rules table, and the security tables |
| Oracle Streams objects  
          | This user is created in the source and warehouse systems. |
| Staging dimension tables (STG) and clean dimension tables (CLN) |
| Final dimension and fact tables                                        |

---

**Refer to the Administrative User Interface Online Help system for more information about using it.**
Cleansing

Data cleansing is the process of ensuring that dimensional attributes are populated with appropriate data in the warehouse. Null values associated with required attributes are populated with data, and transformations of data are optionally performed based on user-defined rules. Using the Administrative UI, the data warehouse administrator can set up cleansing rules specific for your institution.

You can use cleansing to accomplish the following activities:

- Translate a code value in the source system to a new value in the warehouse
- Change a source system description value to a new value in the warehouse
- Group a range of source system code values into one warehouse value
- Translate multiple source system values into one warehouse value and description
- Associate an effective date with code descriptions that can change over time

Multiple source databases

The enhanced warehouse architecture supports stage tables from different source databases. The only requirement to load information from multiple sources into the warehouse stage tables is that the schema and table names in the source databases must be unique.

**Note**

Because the schema and table names in the source databases must be unique, you cannot load information from two different Banner databases into the warehouse.

Source Alias

The Source Alias (source_alias) uniquely identifies each source database. You specify the source_alias during the installation or upgrade process. The source_alias is then used to create a parameter in Web Tailor, which associates each source_alias to a database link owned by ODSSTG. This approach allows the database link to the source to be changed while minimizing the disruption to the existing warehouse functionality.

The Source Alias is used as a prefix when naming the various Streams components. The prefix identifies the source database and the suffix identifies the Streams component. For example, the Streams component BANNER$APP is associated with the source alias of BANNER, and is an apply process.
The following table lists the database location and suffix for each Streams component. The Source Alias is added to the beginning of each Name Suffix to uniquely identify the Streams component.

<table>
<thead>
<tr>
<th>Streams Component</th>
<th>Database location</th>
<th>Name Suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture</td>
<td>Source</td>
<td>$CAP</td>
</tr>
<tr>
<td>Capture queue</td>
<td>Source</td>
<td>$CAPQ</td>
</tr>
<tr>
<td>Capture queue table</td>
<td>Source</td>
<td>$CAPQT</td>
</tr>
<tr>
<td>Propagation</td>
<td>Source</td>
<td>$PROP</td>
</tr>
<tr>
<td>Apply queue</td>
<td>Banner EDW</td>
<td>$APPQ</td>
</tr>
<tr>
<td>Apply queue table</td>
<td>Banner EDW</td>
<td>$APPQT</td>
</tr>
<tr>
<td>Apply</td>
<td>Banner EDW</td>
<td>$APP</td>
</tr>
</tbody>
</table>

### Add a source database

Use the following steps to add subsequent source databases after an initial source database has been configured.

1. Run the source install or upgrade steps on the source database. Refer to the Banner EDW Installation or Upgrade Guide for the install or upgrade steps.

   This creates the ODSSTG Streams administrative user with the necessary privileges, compiles the Streams support package, and creates a database link from the ODSSTG user to the ODSSTG user on the Banner EDW.

2. Create a database link connecting the ODSSTG user on the Banner EDW instance to the ODSSTG user on the new source.

3. As the ODSSTG user on the Banner EDW, execute the following procedure from SQL*Plus.

   ```sql
   SQL> SET SERVEROUTPUT ON
   SQL> MGKSTRC.P_CREATE_LOCAL_ENV(database link, source alias);
   ```

   where you enter your institution’s values for the parameters in parentheses.
4. Create schemas in the Banner EDW.

For each schema in the source database that includes tables that will be staged in the Banner EDW, create a schema in the Banner EDW with the same name.

4.1. Click Staging from the Administrative UI menu.

4.2. Click Maintain Stage Tables.

4.3. Choose a Source Database. You will only need to select a source database if your institution uses multiple source databases.

4.4. Click Add Another Schema to this List.

4.5. Select a schema from the Schema to Add list.

4.6. Click Submit.

4.7. Repeat step 4 for each new schema you want to add to the Banner EDW.

5. Stage new tables in the Banner EDW using the Administrative User Interface.

5.1. Click Staging from the Administrative UI menu.

5.2. Click Maintain Stage Tables.

5.3. Choose a Source Database. You will only need to select a source database if your institution uses multiple source databases.

5.4. Click the table owner for the area of tables that you want to add.

5.5. Select tables from the Tables to Add list. Use Shift-click to select a contiguous range of tables or Ctrl-click to select non contiguous tables.

5.6. Enter a Run Date (format dd-mon-yyyy) and Runtime (format hh24:mi:ss) to schedule when to run the job that will add the stage tables to the Banner EDW. Enter NOW in each field to run the job immediately.

5.7. Click Submit to schedule the job to run.

The selected tables are added to the stage environment. A local record for each table is also created in the MGBSTRM table if a record doesn’t already exist in the table.

5.8. Repeat step 5 for each new schema you added.
**Warehouse UID**

The Warehouse UID is a unique identifier for an entity within the warehouse. The Warehouse UID allows you to include information from multiple sources, for example, Banner products and Advance, in the same warehouse and relate entities that you need to track as a single entity.

The `WDT_WAREHOUSE_ENTITY` dimension table in the warehouse lets you define multiple source IDs that will map to the unique `WAREHOUSE_ENTITY_UID` (the Warehouse UID). The `WDT_WAREHOUSE_ENTITY` table includes a field for the `ADVANCE_ID` and `BANNER_PIDM` because warehouse expects information from two possible sources - Advance and Banner Advancement. These are the two unique IDs for the Advance and Banner Advancement systems.

The `WDT_WAREHOUSE_ENTITY` table also includes placeholders for five additional systems. The table includes five more System Name and System ID fields that you can define to add unique ID information from five other source systems.

OWB lookup commands ensure that the ID loaded in the warehouse is the Warehouse UID and not an ID from the source system.

**Extensibility**

Banner EDW provides five additional user-defined fields on each of the dimension and fact tables. These fields or user attributes enable you to extend the data in the warehouse. You use the fields to specify user-defined measures on the fact tables and specify user-defined attributes on the dimension tables. These user-defined fields are included throughout the ETL process as placeholders for your desired fields.

Using these additional fields, you only need to update the following items to extend the Banner EDW data models with your values:

- Update the associated D1 mapping if you are adding information to a dimension
- Update the associated F1 mapping if you are adding information to a fact table
- Update the cleansing rule that will process the user-defined values; if it is a new cleansing data element, ensure that the appropriate `MGRCRUL` record has been created and referenced within `MGRCDIM`
- Update the Cognos Framework Manager presentation view by adding the additional client-specific content and publishing the associated packages
Naming conventions

This section describes the naming conventions and standards applied to scripts and database objects used to create and maintain the warehouse components.

Administrative standards (IA_ADMIN Schema)

Administrative tables

Object name

Maximum length is 30 characters. See the table below.

<table>
<thead>
<tr>
<th>1st Character</th>
<th>M - Mart</th>
<th>System Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Character</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G, T - General Purpose</td>
<td>Table Purpose</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3rd Character</th>
<th>Table Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>B - Base</td>
<td></td>
</tr>
<tr>
<td>R - Repeating</td>
<td></td>
</tr>
<tr>
<td>T - Temporary</td>
<td></td>
</tr>
<tr>
<td>V - Validation</td>
<td></td>
</tr>
</tbody>
</table>

| 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.

<table>
<thead>
<tr>
<th>1st Character</th>
<th>M - Mart</th>
<th>System Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Character</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G - General Purpose</td>
<td>Product Identifier</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3rd Character</th>
<th>Object Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>K - Package</td>
<td></td>
</tr>
</tbody>
</table>

| 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.

Metadata tables and views

Object name

Maximum length is 30 characters. See the table below.

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

Examples:

WMT_SOURCE, WMV_TARGET_OBJECT

Additional detail

Script names are the same as the object name.

Sequences

Object name

See the table below.

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

Examples:

MGSHOST, MGSPARM, MGSPIDM, MGSSDAX
**Additional detail**

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

**Banner EDW standards (EDWMGR/EDWSTG Schemas)**

**Warehouse tables**

**Star schema tables (EDWMGR Schema)**

**Object name:**

Maximum length is 30 characters. See the table below.

<table>
<thead>
<tr>
<th>1st Character</th>
<th>W - Warehouse</th>
<th>System Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Character</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A - Aggregate fact</td>
<td>Star Schema Table Type</td>
</tr>
<tr>
<td></td>
<td>D - Dimension</td>
<td></td>
</tr>
<tr>
<td></td>
<td>G - Group dimension</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F - Fact</td>
<td></td>
</tr>
<tr>
<td>3rd Character</td>
<td>T - Table</td>
<td>Object Identifier</td>
</tr>
<tr>
<td></td>
<td>Z - Snapshot Table</td>
<td></td>
</tr>
<tr>
<td>4th Characters</td>
<td>_ (underscore)</td>
<td></td>
</tr>
<tr>
<td>5-5th-30th Characters</td>
<td>Unique Descriptor</td>
<td></td>
</tr>
</tbody>
</table>

**Examples:**

WDT_DEMOGRAPHIC, WFT_ADDRESS

**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.

<table>
<thead>
<tr>
<th>1st-3rd Characters</th>
<th>CLN - clean version of the dimension table</th>
<th>Stage Table Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>STG - stage version of the dimension table</td>
<td></td>
</tr>
</tbody>
</table>

| 4th-5th Characters | | |
| 5th-30th Characters | | |
Examples:

STG_DEMOGRAPHIC, CLN_DEMOGRAPHIC

Additional detail:

Script names are the same as the object name.

Indexes and constraints

Primary Key indexes and constraints

Object name:

Maximum length is 30 characters. See the following table:

<table>
<thead>
<tr>
<th>1st Character</th>
<th>PK_ (underscore)</th>
<th>Primary Key Prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th-30th Characters</td>
<td>Table Name or Abbreviation (includes the first 4 characters, e.g., WFT_)</td>
<td></td>
</tr>
</tbody>
</table>

Examples:

PK_WFT_EMPLOYEE, PK_WFT_OPERATING_LEDGER

Foreign Key constraints

Object name:

Maximum length is 30 characters. See the following table:

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

Examples:

FK1_ENROLLMENT, FK2_ENROLLMENT
5 Administrative User Interface

The Administrative User Interface (UI) enables you to easily perform the tasks required to set up and maintain the Banner Operational Data Store (Banner ODS) at your institution. Your institution may licence either one or both products. This chapter includes information about using the Administrative UI to maintain both the Banner ODS and Banner EDW. You can reference the information that is appropriate for your institution’s environment. Review the map below to become familiar with the location of the options on the Administrative UI menus.

<table>
<thead>
<tr>
<th>Preferences and Security</th>
<th>Meta Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional Preferences</td>
<td>Banner Operational Data Store</td>
</tr>
<tr>
<td>Set Up Users &amp; PIN</td>
<td>Maintain Banner ODS Meta Data</td>
</tr>
<tr>
<td>Set Up Data Display Rules</td>
<td></td>
</tr>
<tr>
<td>Set Up Banner ODS Security Rules</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Options</th>
<th>New Web Tailor Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Up Parameters</td>
<td>Customize a Web Menu or Procedure</td>
</tr>
<tr>
<td>Schedule a Process</td>
<td>Customize a Graphic Element</td>
</tr>
<tr>
<td>View Control Reports</td>
<td>Customize a Set of Information Text</td>
</tr>
<tr>
<td>View and/or Remove Scheduled Processes</td>
<td>Customize a Set of Menu Items</td>
</tr>
<tr>
<td>Freeze Data Maintenance</td>
<td>Update User Roles</td>
</tr>
<tr>
<td></td>
<td>Customize a Web Module</td>
</tr>
<tr>
<td></td>
<td>Customize Web Rules</td>
</tr>
<tr>
<td></td>
<td>Customize Web Tailor Parameters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Staging</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain Stage Tables</td>
<td>Customize a Login Return Location</td>
</tr>
<tr>
<td>Report Staging Area Status</td>
<td>Customize Web Tailor Overrides</td>
</tr>
<tr>
<td>Refresh Staging Area Status</td>
<td>Customize Global User Interface Settings</td>
</tr>
<tr>
<td>Refresh Staging Tables</td>
<td></td>
</tr>
<tr>
<td>Reconcile Stage Tables</td>
<td></td>
</tr>
</tbody>
</table>
There are a number of tasks involved in setting up and maintaining Banner ODS. Some tasks are performed one time when you initially install and implement Banner ODS. Other tasks are performed during implementation and on an ongoing basis. Each task is listed below, and is described in detail in later sections of this guide.

- Set up institutional preferences
- “Set up Users and PINS” on page 5-3
- “Data Display Rules” on page 5-6
- “Set up Fine-Grained Access Security” on page 5-17
- “Set up and Synchronize Data” on page 5-53
- “Set up Parameters” on page 5-54
- “Schedule a Process” on page 5-60
- “Freeze Data Maintenance” on page 5-125
- Review and maintain “Meta Data” on page 5-137

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

⚠️ Warning

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

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

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

After a user account is created, that user can report against Banner ODS. Each user is listed in the Administrative UI on the View Banner ODS Business Profile and User Associations page. From that page, you can assign security rules for each user using a Business Profile. See “Set up Fine-Grained Access Security” on page 5-17 for more information.

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

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

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

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

Create Users and PINs

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

1. Click **Preferences & Security** from the Administrative menu.

2. Click **Set Up Users & PIN**.

3. Click **Create a New User Account** from the Set Up User and PIN page. The Create a New User Account page opens.

4. Enter a User ID.

A User ID can be one to nine characters, is limited to numbers and upper case letters, and may not contain spaces. (If you enter lower case letters, they will be converted to upper case letters.)
5. Enter First, Middle, and Last Names (only Last Name is required.)

6. Enter a PIN (It must be exactly six numbers; it cannot contain letters or special characters.)

7. Indicate whether the PIN is enabled or disabled.

8. Click Create.

**Update Existing Users**

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

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

1. Click Preferences & Security from the Administrative menu.

2. Click Set Up Users & PIN.

3. Click an entry from the Name column on the Set Up Users and PIN page.

4. Change the fields. Only the Last Name field is required.

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

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

**Update User Roles**

User roles define which tabs of the Administrative UI a user can access. In turn, the roles permit or restrict a user to perform various tasks within the Administrative UI. When you create an Administrative user, the user is assigned the following user roles in Web Tailor: BPRA Meta Data, BPRA Options, BPRA Security, and Web Tailor Administration. This gives the user access to all options within both Banner ODS, except for Banner ODS Staging, and New Web Tailor Administration menus. You may want to change a user’s access, for example, to disable a user’s ability to change security settings.

Perform the following steps within the Administrative UI to assign roles to a user by changing the user’s defined roles in Web Tailor.

1. Click New Web Tailor Administration from the Administrative UI menu.

2. Click Update User Roles.
3. Enter or select the User ID to which you want to assign roles.

4. Click Submit.

5. Check which roles to assign to the user. Refer to the “User Roles” descriptions to determine which roles to assign to each user.

6. Click Submit Changes.

**User Roles**

The following table defines each of the User Roles available within the Administrative User Interface.

<table>
<thead>
<tr>
<th>User Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPRA Meta Data</td>
<td>Allows a user to access the Meta Data tab within the Administrative User Interface where the user can:</td>
</tr>
<tr>
<td></td>
<td>• View the published Banner ODS meta data.</td>
</tr>
<tr>
<td></td>
<td>• Update, edit, and publish the Banner ODS meta data.</td>
</tr>
<tr>
<td></td>
<td>• View and recover baseline records marked for deletion.</td>
</tr>
<tr>
<td>BPRA Options (Jobs, Parameters, FreezeData)</td>
<td>Allows a user to access the Options tab within the Administrative User Interface where the user can:</td>
</tr>
<tr>
<td></td>
<td>• Define internal system parameters.</td>
</tr>
<tr>
<td></td>
<td>• Run jobs to load and update data in the Banner ODS.</td>
</tr>
<tr>
<td></td>
<td>• Manage aspects of freezing data in the Banner ODS.</td>
</tr>
<tr>
<td></td>
<td>• Define and maintain data cleansing translation rules.</td>
</tr>
<tr>
<td>BPRA Security</td>
<td>Allows a user to access the Preferences &amp; Security tab within the Administrative User Interface where the user can:</td>
</tr>
<tr>
<td></td>
<td>• Set institutional preferences.</td>
</tr>
<tr>
<td></td>
<td>• Create and delete users and reset user’s PINs.</td>
</tr>
<tr>
<td></td>
<td>• Create and maintain data display rules</td>
</tr>
<tr>
<td></td>
<td>• Create and maintain fine-grained access security rules defining which values a user can view in the Banner ODS.</td>
</tr>
</tbody>
</table>
Data Display Rules

Display rules enable you to control and customize how data stored in the Banner ODS composite tables is displayed in the reporting views. There are two types of display rules: positional rules and hierarchical rules.

There are also a number of display rules used to determine a value stored in either a Banner ODS composite table or displayed in a Banner ODS Reporting view. All display rules are stored in Banner ODS database table - MGRSDAX.

Positional display rules

Positional display rules define the specific location (by position) of data in a view. Slotted views or tables require a set of positional display rules to store information in a meaningful way.

Example - Positional Display Rules (for Slotted views)

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

Hierarchical display rules

Hierarchical display rules define a specific order in which to retrieve a set of related data. Hierarchical display rules are required for a subset of (non-slotted) Reporting views.
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 on the hierarchical display rules created to determine which address types should be retrieved for the mailing address. You can create a series of hierarchical display rules based on priority, so that if “address type 1” does not exist, get “address type 2” and so on.

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

When Banner ODS is first installed, MGRSDAX (Banner ODS table that stores display rules) is populated with specific rules from your source system, as well as rules delivered with the product. The records (or display rules) in MGRSDAX match external codes (institution specific values) with internal codes (system defined values). After Banner ODS system is installed, you must then use the Administrative UI Preferences and Security option and Set Up a Display Rule to review and update the display rules in MGRSDAX. This ensures that display rules match your criteria, and are set up to meet your reporting needs.

Multiple display rules can also be managed, or assigned, using business profiles. (See “Set up a Display Rule” on page 5-12 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.

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

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

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

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

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

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

Internal Group: ADDRESS

<table>
<thead>
<tr>
<th>Profile Code</th>
<th>Internal Code</th>
<th>Internal Code Sequence</th>
<th>External Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSTITUTION</td>
<td>ALUMMAIL</td>
<td>1</td>
<td>BUS</td>
</tr>
<tr>
<td>INSTITUTION</td>
<td>ALUMMAIL</td>
<td>2</td>
<td>ART</td>
</tr>
<tr>
<td>INSTITUTION</td>
<td>ALUMMAIL</td>
<td>3</td>
<td>RES</td>
</tr>
<tr>
<td>INSTITUTION</td>
<td>ALUMMAIL</td>
<td>4</td>
<td>CPS</td>
</tr>
<tr>
<td>INSTITUTION</td>
<td>RECRLETR</td>
<td>1</td>
<td>ACCEPT</td>
</tr>
<tr>
<td>INSTITUTION</td>
<td>RECRLETR</td>
<td>2</td>
<td>CHKL</td>
</tr>
<tr>
<td>INSTITUTION</td>
<td>RECRLETR</td>
<td>3</td>
<td>COLLEGE NIGHT</td>
</tr>
<tr>
<td>INSTITUTION</td>
<td>RECRLETR</td>
<td>4</td>
<td>DCSN</td>
</tr>
<tr>
<td>INSTITUTION</td>
<td>RECRLETR</td>
<td>5</td>
<td>INTERVIEW ONE</td>
</tr>
</tbody>
</table>

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

Display Rule Information in Published Meta Data

Meta Data includes a business definition for each reporting view. When the reporting view being defined uses display rule entries from Banner ODS MGRSDAX database table, the 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 XXXXXXXXX_RULE that are used as the INTERNAL_GROUP for that set of display values.

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

Display Rule Cross-Reference Chart

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

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

To open the Display Rule Cross-Reference Chart, access the displayRulesXREF.csv file delivered with the product documentation.

You can open the file in Microsoft Excel or a similar spreadsheet application. You can reorganize the columns as needed. A description of each column on the chart follows.
<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPORTING_VIEWS</td>
<td>The view that is directly affected by a change to an MGRSDAX value in Banner ODS.</td>
</tr>
<tr>
<td>INTERNAL_GROUP</td>
<td>Value Banner ODS is using to connect the set of display rules with the reporting view and/or column that are to use them. These values are coded within Banner ODS and must be used for the purpose specified.</td>
</tr>
<tr>
<td>INTERNAL_CODE</td>
<td>Institutions may define any values as required to represent the business rules of the institution. Some values are extracted from Banner GTVSDAX rules for institutions that use the O:A views.</td>
</tr>
<tr>
<td>EXTERNAL_CODE</td>
<td>X identifies valid institutions values must be provided.</td>
</tr>
<tr>
<td>REPORTING_DATE</td>
<td>X indicates that the Reporting Date is used for sequence of display values.</td>
</tr>
<tr>
<td>TABLES</td>
<td>Banner ODS Composite table used as the basis for the selection of values based on the display rules defined by the institution on the MGRSDAX database table.</td>
</tr>
</tbody>
</table>
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 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.

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

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

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

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

2. Open the Set Up a Display Rule web page in your Administrative UI.

3. Select the Profile Code (INSTITUTION), Internal Group (ADDRESS) and Internal Code (VENDADDR) from the drop-down lists.

4. Click Search. The Select an Existing Display Rule page opens. This page shows the display rule for the reporting view VENDOR.

5. To change the External Code, click BU under the External Code column.

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

6. Click Save.

Set up a Display Rule

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

Note

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

To create a new rule, follow the steps below:

1. From the Administrative menu, Click Preferences & Security.

2. Click Set Up Data Display Rules.

   Note

   If a PROFILE_CODE is to be used in the display rule, it must be set up first. See “Set up Fine-Grained Access Security” on page 5-17 for information on setting up business profiles.

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Profile Code</td>
<td>Business Profile for which you want to set up display rules. You can create additional Business Profiles from the Create a Banner ODS Business Profile web page. INSTITUTION is the default code for users for whom no other business profile is defined.</td>
</tr>
<tr>
<td>Internal Group</td>
<td>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 in the system. It should not be changed, but new internal groups can be added for client specific processing. (Click the appropriate value from the Internal Group list.)</td>
</tr>
<tr>
<td>Internal Code 1</td>
<td>Specific code relationships for source system concepts. This field is used internally within PL/SQL functions and procedures to determine which row(s) to retrieve from the MGRSDAX table. You can add new internal codes to be used for business purposes, and then click the appropriate code when writing a report. (Click the appropriate value from the Internal Code list.)</td>
</tr>
</tbody>
</table>
5. Click **Save**. The Update an Existing Display Rule page opens.

**Note**

After changing display rules the corresponding slotted tables must be reloaded for those changes to take effect. By default, this happens during the incremental refresh cycle, which typically occurs nightly. However, if you want to see more immediate results, reload the corresponding slotted table(s) manually via the Schedule a Process page. See “Schedule a Single Process” on page 5-63.
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.

1. From the Administrative menu, click Preferences & Security.

2. Click Set Up Data Display Rules. The Set Up a Display Rule page opens.

3. Choose a Business Profile, Internal Group, and Internal Code combination from the drop-down lists on the Set Up a Display Rule page. Or, you can show all groups and codes.

4. Click Search. The Select an Existing Display Rule page opens.

>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 Rule Cross-Reference Chart” section.

5. Review all information for the selected combination. Determine the data on which your users want to report (it may be different from what is delivered). Create a list of the data you want to use in place of the data that was delivered.


7. Make your change

8. Click Save to save the display rule. Click 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 Process” on page 5-63.
Duplicate Display Rules

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

1. From the Administrative menu, Click Preferences & Security.

2. Click Set Up Data Display Rules. The Set Up a Display Rule page opens.

3. Choose a Business Profile, Internal Group and Internal Code combination from the drop-down lists on the Set Up a Display Rule page. Or, choose to show all groups and codes.

4. Click Search. The Select an Existing Display Rule page opens.

5. Choose an external code link from the External Code column. The Update an Existing Display Rule page opens.

6. Enter the External Code information or select it from the drop-down list.

7. Click the Duplicate. The Create a New Display Rule page opens.

8. Replace the information for the existing display rule with the information for the new display rule.

9. Click Save to save your settings.

Note
After changing display rules, the corresponding slotted tables must be reloaded for those changes to take effect. By default, this happens during the incremental refresh cycle, which typically occurs nightly. However, if you want to see more immediate results, reload the corresponding slotted table(s) manually via the Schedule a Process page. See “Schedule a Single Process” on page 5-63.

Reload using a Single Extract Transform and Load (ETL) Slot Process

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

1. Click Options from the Administrative UI menu.

2. Click Schedule a Process. The Select a Process page opens.
3. Click **Schedule Banner ODS Mappings**. The Select a Subprocess page opens.


5. Choose the table from the Slotted Table to Reload drop-down list.

6. Enter the required Scheduling Parameters information.

   6.1. Enter a Run Date (format dd-mon-yyyy) and Runtime (format hh24:mi:ss).

   6.2. If you want to run the process on a recurring basis, enter an Interval.

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

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

---

**Set up Fine-Grained Access Security**

Banner ODS includes two types of users:

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

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

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

**Note**

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

Secured access to data is controlled by Oracle Policies, in conjunction with the security
rules set up in the Administrative UI. A policy is an Oracle construct that applies a
WHERE clause predicate to any queries made against a table. A security rule is simply data in Banner ODS security tables that determine what that WHERE predicate should look like for a given user.

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

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

**Note**

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

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

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

1. **Set up Organizational Areas.**
   - Set up one or many organizational areas by grouping similar areas together. See “Set up and Maintain Organizational Areas” on page 5-19 for additional information.

2. **Set up and Maintain User ID Translations, and Set up Business Profiles**
   - These menu options can be completed in any order.
     - **User ID Translations**
       - Bring Banner data into Banner ODS fine-grained access. See “Banner User ID Translations” on page 5-21 for additional information.
     - **Business Profiles**
       - Group similar users together. See “Set up Business Profiles” on page 5-24 for additional information.
3. Security Rules

Defines the data that each user can access. See “Set up and Maintain Security Rules” on page 5-27 for additional information.

4. (optional) Security Predicates

Review the code that generates the predicate in MGKSECR to determine if it is aligned correctly with your business rules. Also, verify the code that is generated for a security predicate. See “Security Predicates” on page 5-47 for additional information.

5. Assign Security Rules

Enables security rules to work. Policies are either turned on or turned off. See “Policy Management” on page 5-48 for additional information.


This process transfers data for Finance Fund, Fund Type, and Organizations, and for Human Resources Organizations, and Employee Class from Banner to Banner ODS. To transfer additional data you need to set up additional rules. See “Transfer Banner Fine-Grained Access” on page 5-99 for additional information.

Set up and Maintain Organizational Areas

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

Example

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

Organizational Areas can be set up in any manner you wish. In the example above, an Organizational Area was created which included all Employee tables. However, you could also set up Organizational Areas that cross Banner product groups or you could set up Organizational Areas that are subsets of a product group. The idea is that you can set up Organizational Areas in any way that makes sense for the way you divide security among your reporting users.
Banner ODS is delivered with sample Organizational Areas and sample Security Rules that are assigned to them. The sample data gives an idea of how to go about setting up your own Organizational Areas and the Security Rules that apply to them.

**Create a Banner ODS Organizational Area**

Use to create organizational areas.

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

**Update a Banner ODS Organizational Area**

Use to update organizational areas.

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

**Note**

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

6. Click **Save**.

**Delete a Banner ODS Organizational Area**

Use to delete organizational areas.

1. Click **Preferences and Security**.
2. Click **Set up Banner ODS Security Rules**.
3. Click **Set up and Maintain Organizational Areas**.

4. Click an organizational area code description.

5. Select another organizational code, or change the current description.

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

6. Click **Save**.

**Banner User ID Translations**

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

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

- Facilitate data transfer when user IDs are not the same
- Additional security. You may not want everyone with fine-grained access information in Banner to be able to access the data in Banner ODS. In that case, you would follow the instructions in “- Restrict the Information Transferred to a Limited Group of Users” on page 5-22. Only those users whose user IDs were added to MGBXWLK are able to access Banner ODS data after all the fine-grained access policies are enabled.

The MGBXWLK table is populated based on the scenarios below.

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

  - Enter only users with different Banner and Banner ODS user IDs into the MGBXWLK table (using the Set Up and Maintain Banner User ID Translations pages). Users with the same user ID in Banner and Banner ODS can be omitted from the table.

  - The delivered Administrative parameter record with internal group *BANNER TO ODS FGA TRANSFER* and internal code *ODS USER ID NOT FOUND* is used to tell the Transfer Banner Fine-Grained Access process what to do when a given Banner ODS user ID is not found in MGBXWLK. As delivered the value of external Code is *USE BANNER USER ID*.

  - If you populated the MTVPARM record with an external code of *USE BANNER USER ID*, but populated MGBXWLK with only the Banner User IDs and the Banner ODS User IDs have not yet been populated, the process “Transfer Banner Fine-Grained Access” on page 5-99, (MGKXFER.P_TransferFGA), does not read the MGBXWLK table and the Banner User ID is used.

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

  - Add all Banner user IDs (*Banner User ID* field) and Banner ODS user IDs (*Banner ODS User ID* field) to MGBXWLK. This includes users with the same Banner user ID as their Banner ODS user ID.

  - Enter the same MTVPARM record as “*Some User IDs are the Same in Banner and Banner ODS, and Some are Not*” and “*Some User IDs are the Same in Banner and Banner ODS, and Some are Not*”, but with an external code of *DENY ACCESS*.

- **Restrict the Information Transferred to a Limited Group of Users**

  - Add the limited set of Banner user IDs to MGBXWLK. If the Banner ODS user IDs are different, enter them in the *Banner ODS User ID* field. If the Banner User IDs are the same in Banner ODS, enter the Banner User IDs in the *Banner User ID* field and the *Banner ODS User ID* field.

  - Enter the same MTVPARM record as “*Some User IDs are the Same in Banner and Banner ODS, and Some are Not*” and “*All Users are to have a record in MGBXWLK, regardless of whether the Banner and Banner ODS User IDs are the Same*” but with an external code of *DENY ACCESS*.

**Create Banner User ID Translations**

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

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

1. Click **Preferences and Security**.

2. Click **Set up Banner ODS Security Rules**.

3. Click **Set up and Maintain Banner User ID Translations**.

4. Click **Create a New User ID Translation**.

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

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

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

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

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

7. Click **Save**.

**Update Banner User ID Translations**

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

1. Click **Preferences and Security**.

2. Click **Set up Banner ODS Security Rules**.

3. Click **Set up and Maintain Banner User ID Translations**.

4. Select the Banner user ID you want to change.

5. Enter the Banner ODS user ID, or click the link to select if from a list.

6. Click **Save**.
Delete Banner User ID Translations

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

1. Click Preferences and Security.

2. Click Set up Banner ODS Security Rules.

3. Click Set up and Maintain Banner User ID Translations.

4. Select the Banner user ID you want to change.

5. Enter the Banner ODS user ID, or click the link to select if from a list.

6. Click Delete.

Set up Business Profiles

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

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

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

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.

Note

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

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

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

Perform the following steps to create a business profile.

Prerequisite

Create an organizational area.

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

See “View, Update or Delete a Business Profile” on page 5-26 for steps on updating and viewing Business Profiles.

Associate Business Profiles with a User

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

1. Click Preferences and Security.
2. Click Set up Banner ODS Security Rules.
3. Click Associate Users and Business Profiles.
4. Choose the user to which you want to associate (or view existing) Business Profiles. If you selected the user from the user drop-down list, then click Refresh Profile List to redisplay the business profiles list for that user. Below the user drop-down list is an alphabetical list of all Business Profiles and the user name associated with them.
5. Check or uncheck the corresponding check boxes to associate or disassociate Business Profiles with the user.
7. Click Save to update the user associations.
Associate Users with a Business Profile

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

1. Click Preferences and Security.

2. Click Set up Banner ODS Security Rules.

3. Click Associate Users and Business Profiles.

4. Choose the Business Profile to which you want to associate (or view existing) users from the Business Profile column.

Note

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

5. Check the corresponding check boxes to associate or disassociate users with a Business Profile.

6. Click Save to submit your changes.

7. To set up security rules for a Business Profile, click Assign Security Rules.

See “Set up Fine-Grained Access Security” on page 5-17 for instructions on assigning security rules.

View, Update or Delete a Business Profile

Use this option to change or delete a Business Profile.

1. Click Preferences and Security.

2. Click Set up Banner ODS Security Rules.

3. Click Set Up Business Profiles.

4. Click the description of the Business Profile you want to change.

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

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

or

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

**Note**

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

---

**Set up and Maintain Security Rules**

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

<table>
<thead>
<tr>
<th>Table</th>
<th>Functional Name</th>
<th>Security Rules Stored</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGBFGAA</td>
<td>Fine Grained Access User Areas</td>
<td>Indicates if the user has access to all of the elements and values within an area code</td>
</tr>
<tr>
<td>MGBFGAE</td>
<td>Fine Grained Access User Elements</td>
<td>Indicates if the user has access to all of the values within an element code</td>
</tr>
<tr>
<td>MGBFGAV</td>
<td>Fine Grained Access User Values</td>
<td>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.</td>
</tr>
<tr>
<td>MGBSECR</td>
<td>User Security Table.</td>
<td>Various user security related data.</td>
</tr>
<tr>
<td>MGBFGAR</td>
<td>Fine Grained Access Element Rule Table</td>
<td>The security rules that consist of Banner ODS tables and columns that have security applied to them.</td>
</tr>
<tr>
<td>MTVFGAA</td>
<td>Fine Grained Access Area Validation Table</td>
<td>The security rules that consist of Banner ODS area that have security applied to them.</td>
</tr>
</tbody>
</table>

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

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

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

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

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

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

Set up a Security Rule

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

Setting up a rule involves entering and maintaining the data that comprises a rule in the MGBFGAR table. You can use the Administrative UI to create and maintain the list of security rules that can be applied to a given user account, and to assign particular values for a given rule to a given user account. (Another method available using the Administrative UI is to assign values for a given rule using “Set up Fine-Grained Access Security” on page 5-17. The Administrative UI uses the MGKFGAC package to apply the security rules you define.)
Use the “Set up and Maintain Security Rules” on page 5-27 option within the Administrative UI to create, update, delete, and search for rules. (These processes are described in the next few sections.) Creating or updating rules is reflected in the MGBFGAR table. Deleting rules changes the MGBFGAR table, but in addition, any values related to a rule that are deleted are cascaded through the other fine-grained access tables. There is a list at the bottom of the security rules web pages that indicates what rows in the table are deleted if the security rule is deleted.

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

**Prerequisites**

- Create organizational areas
- Create business profiles

1. Determine a Banner ODS table and column value on which you want to secure information.

2. Click Preferences & Security from the Administrative menu.

3. Click Set up Banner ODS Security Rules.


5. Click Create. The Create a New Security Rule page opens.

6. Enter the values for each field as described below.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Areas</td>
<td>This attribute enables you to group similar rules together for easier maintenance/assignment. You can grant access to entire sets of columns/tables at this level using a single check-box. Rules are delivered with four groupings. You can add more groupings using the “Set up and Maintain Organizational Areas” on page 5-19.</td>
</tr>
<tr>
<td>Table</td>
<td>Banner ODS table on which you want to secure data, for example, the MST_TEST table, the MPT_EML_EARN_FY table, etc.</td>
</tr>
</tbody>
</table>
Rule Type

The type of Security Rule. There are two possibilities:

**Range:**
This type of rule pertains to limits, such as Financial amounts. Results in a WHERE clause predicate like: WHERE COLUMN1 > [some value1] AND < [some value2].

**List:**
This type of rule pertains to lists of valid values. Results in a WHERE clause predicate that matches up the list of allowed values (from the MGBFGAV table) with the values in the source table itself.

**Note:** The Transfer Banner Fine-Grained Access process only uses security rules with rule type of “List”.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule Type</td>
<td>The type of Security Rule. There are two possibilities:</td>
</tr>
<tr>
<td>Column 1</td>
<td>Banner ODS table column to which the rule pertains.</td>
</tr>
<tr>
<td>Query for Column 1</td>
<td>The PL/SQL SELECT statement used to populate the list of values in the Administrative UI for the specified Column 1 when assigning values to users. Click Generate to automatically create the PL/SQL statement. The base rules are delivered with simple SELECT DISTINCT queries for each of the columns on the various Banner ODS tables. However, if performance becomes an issue (for the SELECT DISTINCTs to return), you can create temporary tables (manually) from the results of a SELECT DISTINCT query, then change this query to have the rule point to the temporary table instead. For two-column rules, select distinct values for both columns into a temporary table and then include select distinct statements for both query for Column 1 and query for Column 2. Example You have a two-column rule for MFT_GENERAL_LEDGER where Column 1 is FUND and Column 2 is CHART_OF_ACCOUNTS. First create a table: CREATE TABLE temp_table as SELECT DISTINCT CHART_OF_ACCOUNTS, FUND FROM MFT_GENERAL_LEDGER. Then, in Query for Column 1 enter SELECT DISTINCT FUND FROM temp_table and in Query for Column 2 enter SELECT DISTINCT CHART_OF_ACCOUNTS FROM temp_table.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Column 2   | An optional second column on the Banner ODS table to which the rule pertains. This column can be used to join AND values together from two columns. Note: If you are creating or modifying rules that deal with Finance such as Fund, Organization, Account, Location, or Program you must enter the table’s Chart of Accounts column name in the Column 2 field. This is required because Banner ODS Finance hierarchy tables check to see if there are additional permissions for a given user, and that lookup on the hierarchy table cannot occur without a value for Chart of Accounts. **Example**

You want to set up a security rule for the FUND column on MFT_GENERAL_LEDGER. You enter **FUND** into **Column 1** and **CHART_OF_ACCOUNTS** into **Column 2**. If you create that rule without **CHART_OF_ACCOUNTS** in **Column 2**, a user’s permissions for General Ledger Funds are incomplete because the Transfer Banner Fine-Grained Access process and the Fine-Grained Access Policy package, MGKSECR, are not able to read the Fund hierarchy table, MFT_FUND_HIERARCHY. If a user has access to Fund 0100 for Chart of Accounts A, the Transfer Banner Fine-Grained Access process and MGKSECR can look up the Fund hierarchy record and determine if there are additional Fund codes related to Fund 0100 that this user should also have access to. Those additional Fund codes would be stored on the hierarchy record in Fund Level 1, 2, 3, 4, and 5.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Query for Column 2</td>
<td>The PL/SQL SELECT statement used to populate the list of values in the Administrative UI for the optional Column 2. Click <strong>Generate</strong> to automatically create the PL/SQL statement.</td>
</tr>
</tbody>
</table>
FGA Transfer Type

Select a value for this field if you plan to use the Transfer Banner Fine-Grained Access process to transfer security information from Banner to Banner ODS.

- Finance Organization
- Finance Fund
- HR Organization
- HR Employee Class

A rule is excluded from the Transfer Banner Fine-Grained Access process if this column is blank.

**Note:** A rule must contain a value in this field for the Transfer Banner Fine-Grained Access process to use the rule during the transfer.

**Example**

When the Transfer Banner Fine-Grained Access process transfers Finance Fund permissions into Banner ODS, it selects the rules from MGBFGAR that apply to the Finance Fund transfer. To include a rule in the Finance Fund part of the transfer process select *Finance Fund.*
Column 2 Type

When you create or modify a security rule that is used to apply security to an element of Finance, that rule must have a value for the Chart of Accounts in the Column 2 field. In addition, Column 2 Type must contain the value Chart of Accounts which identifies the column 2 value as a Chart of Accounts value.

**Example**

If a rule is created to limit access to the Fund column on the General Ledger, you would select FUND as the Column 1 value, CHART_OF_ACCOUNTS as the column 2 value, and Chart of Accounts as the Column 2 Type.

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

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column 2 Type</td>
<td>When you create or modify a security rule that is used to apply security to an element of Finance, that rule must have a value for the Chart of Accounts in the Column 2 field. In addition, Column 2 Type must contain the value Chart of Accounts which identifies the column 2 value as a Chart of Accounts value.</td>
</tr>
</tbody>
</table>
7. Click Save.
Update or Delete a Security Rule

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

1. Click Preferences & Security from the Administrative menu.
2. Click Set up Banner ODS Security Rules.
3. Click Set Up and Maintain Banner ODS Security Rules.
4. From the drop-down list, choose the organizational area, table, and/or column for the rule you want to edit.
5. Click Search. The list of related Security Rules displays.
6. Click the link in the Column 1 column for the rule you want to edit. The Update an Existing Rule page opens.
7. Edit Query for Column 1, Query for Column 2, FGA Transfer Type, Column 2 Type, and/or Predicate Code, then click Save.

or

Click Delete to remove the displayed security rule.

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

Assign Security Rules

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

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

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

- user name
- organizational area
- business profile
- element

**Secure Access by User Name**

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

1. Click **Preferences & Security** from the Administrative menu.

2. Click **Set up Banner ODS Security Rules**.

3. Click **Assign Security Rules**.

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

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

   Each column is described below.

   Click the individual user’s name to restrict access to specific areas for that user. The link opens the Secure by Organizational Dimension page. See “**Secure Access by User ID**” on page 5-38 for steps on restricting a user’s access by Organizational Dimension.
5. Click **Save** to update the Administrative UI.
Secure Access by User ID

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

1. Click **Preferences & Security** from the Administrative menu.

2. Click **Set up Banner ODS Security Rules**.

3. Click **Assign Security Rules**.

4. Check the **Access to all Banner ODS Data** check box to grant the user unrestricted access to all information.

5. Click the user name to which you want to assign access.

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

Each column is described below:

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

Select the checkbox to grant the user security access to information within the corresponding organizational area.

The list of areas is stored in the `MTVFGAA` table. You may change this list as desired. Rules can be grouped differently, for example. The All Data indicator for an area is stored in the `MGBFGAA_ALL_IND` in the `MGBFGAA` table. If the indicator is `Y` for a given table you are accessing, no predicate is returned from `MGKSECR` and you have full access.

Table

Banner ODS table on which you want to secure data, for example, the `MST_TEST` table, the `MPT_EMPL_EARN_FY` table, etc.

Click the link to enable or disable the security policies for that organizational area.

Element

Click an element to open the Secure Access by Element page.

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

**Double Column Rules**

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

**Single Column Rules**

A single column rule is when an element column was set up with a single column and a single rule.
6. To copy security access settings from one user or Business Profile to another, click **Duplicate User**. The Duplicate User Security Rules window opens.

6.1. Choose the user(s) and Business Profiles(s) whose setting you want to merge, or duplicate. To choose more than one user or profile, hold down the Ctrl key while you continue to choose users or profiles.

6.2. Use the radio buttons to indicate whether to merge current settings together, or replace one set of settings with another.

6.3. Click **Duplicate** to save your settings, or **Cancel** to close the page.

7. Click **Save** at the bottom of the page to update the Administrative UI.

**Secure Access by Business Profile**

Use the following steps to assign security by Business Profiles.

1. Click **Preferences & Security** from the Administrative menu.

2. Click **Set up Banner ODS Security Rules**.
3. Click **Assign Security Rules**.

A description of each field on the page appears below:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Profile</td>
<td>Existing Business Profiles set up on the Create a Business Profile page.</td>
</tr>
<tr>
<td></td>
<td>Click a Business Profiles to open the Set Up Security Rules page.</td>
</tr>
<tr>
<td>Access Level</td>
<td>The level of security access assigned to the business profile.</td>
</tr>
<tr>
<td></td>
<td><em>All</em> Green. Full access.</td>
</tr>
<tr>
<td></td>
<td><em>Partial</em> Yellow. Access to specified areas only.</td>
</tr>
<tr>
<td></td>
<td><em>None</em> Red. No access.</td>
</tr>
<tr>
<td>Access to All Banner ODS Data</td>
<td>Check the check box to give the business profile unrestricted access to all information.</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profile</td>
<td>Click <strong>Select Another Profile</strong> to open the Secure Access by Profile page.</td>
</tr>
<tr>
<td>Users</td>
<td>The Users associated with this Business Profile.</td>
</tr>
<tr>
<td></td>
<td>Click <strong>Assign Users</strong> to open the View Banner ODS Business Profile and User Associations page.</td>
</tr>
<tr>
<td>Access to All Banner ODS Data</td>
<td>Check the checkbox to give the Business profile unrestricted access to all areas and information.</td>
</tr>
<tr>
<td></td>
<td>Click <strong>Duplicate User</strong> to open the Duplicate User Security Rules window.</td>
</tr>
<tr>
<td>Organizational Area</td>
<td>Area within the institution set up within the <strong>IA_ADMIN.MTVFGAA</strong> table.</td>
</tr>
</tbody>
</table>
Access All Data in this Area

Select the checkbox to grant the Business Profile security access to information within the corresponding organizational area.

The list of areas is stored in the MTVFGAA table. You may change this list as desired. Rules can be grouped differently, for example. The All Data indicator for an area is stored in the MGBFGAA_ALL_IND in the MGBFGAA table. If the indicator is Y for a given table you are accessing, no predicate is returned from MGKSECPR and you have full access.

Table

Banner ODS table on which you want to secure data, for example, the MST_TEST table, the MPT_EMPL_EARN_FY table, etc.

Click the link to enable or disable the security policies for that organizational area.

Element

Click an element to open the Secure Access by Element page. Elements can be set up as double or single column rule elements on the Create Security Rules page.

Double Column Rules

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

Single Column Rules

A single column rule is when an element column was set up with a single column and a single rule.
To copy security access settings from one user or Business Profile to another, click **Duplicate User**. The Duplicate User Security Rules window opens.

**5.1.** Choose the user(s) and Business Profiles(s) whose setting you want to merge, or duplicate. To choose more than one user or profile, hold down the Ctrl key while you continue to choose users or profiles.

**5.2.** Use the radio buttons to indicate whether to merge current settings together, or replace one set of settings with another.

**5.3.** Click **Duplicate** to save your settings, or **Cancel** to close the page.

**6.** Click **Save** at the bottom of the page to update the Administrative UI.

### Secure Access by Element

Use the following steps to assign security by element.

**1.** Click **Preferences & Security** from the Administrative menu.

**2.** Click **Set up Banner ODS Security Rules**.

**3.** Click **Assign Security Rules**.
4. If you wish to secure by element for a Business Profile, select **Secure By Profile**.

5. Depending on whether you are securing by User ID or by Business Profile, choose a name for Oracle User Name or Business Profile column. The Set Up Security Rules page opens.

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

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

   **Double Column Rules**

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

   **Single Column Rules**

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

7. Choose the element to which you want to assign security for the user.

   From this page you can:
   
   • choose another element
   • assign profiles to the user/business profile to access all values for the element
   • copy user access to another user

   A description of each field appears below:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle User Name</td>
<td>The user’s Oracle User ID. Grouping of similar rules for easier maintenance/assignment. Rules are delivered with four groupings, but more groupings can be added in the <strong>MTVFGAA</strong> validation table, and can be used for new or existing rules.</td>
</tr>
<tr>
<td>Organizational Area</td>
<td>Area within the institution set up within the <strong>IA_ADMIN.MTVFGAA</strong> table.</td>
</tr>
<tr>
<td>Table</td>
<td>Banner ODS table on which you want to secure data, for example, the <strong>MST_TEST</strong> table, the <strong>MPT_EMPL_EARN_FY</strong> table, etc.</td>
</tr>
</tbody>
</table>
Element

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

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

**Single Column Rules**
A single column rule is when an element column is set up with a single column and a single rule.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule Type</td>
<td>The type of Security Rule. There are two possibilities:</td>
</tr>
<tr>
<td></td>
<td><strong>Range:</strong></td>
</tr>
<tr>
<td></td>
<td>This type of rule pertains to limits, such as Financial amounts. Results in a WHERE clause predicate like:</td>
</tr>
<tr>
<td></td>
<td>WHERE COLUMN1 &gt; [some value1] AND &lt; [some value2]</td>
</tr>
<tr>
<td></td>
<td><strong>List:</strong></td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allow this user/profile Access to</th>
<th>Click the appropriate button:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>All values:</strong></td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td><strong>Only the values specified below:</strong></td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>You can click All Values, which is then stored in the MGBFGAE_ALL_IND column as a Y, then the user or business profile is granted access to all values for this element.</td>
</tr>
<tr>
<td></td>
<td>If you can choose Only the values specified below, then you can choose the specific values to which the user will have access (a la carte style). Those selected values are then stored in the MGBFGAV table.</td>
</tr>
</tbody>
</table>
8. Indicate whether you want to allow the user or business profile access to all values, or only the values that appear in the Values table below the **Allow this user (or profile) Access to** radio group.

8.1. 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.

<table>
<thead>
<tr>
<th>Oracle User Name</th>
<th>DESNMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Area</td>
<td>Academic Organization</td>
</tr>
<tr>
<td>Table</td>
<td>MST_ACADEMIC_OUTCOME</td>
</tr>
<tr>
<td>Element</td>
<td>CAMPUS</td>
</tr>
<tr>
<td>Rule Type</td>
<td>LIST</td>
</tr>
<tr>
<td>Access</td>
<td></td>
</tr>
<tr>
<td>All values</td>
<td></td>
</tr>
<tr>
<td>Only the values specified below</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>These values are set up in the validation tables in your source system. NULL indicates missing codes in your source system.</td>
</tr>
<tr>
<td>Access</td>
<td>Check the checkbox of the values to which you want to assign security for the selected user.</td>
</tr>
</tbody>
</table>
8.2. If you selected a double column rule element, then refer to the sample screen for a double column rule element below.

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

<table>
<thead>
<tr>
<th>Oracle User Name:</th>
<th>DESNMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Area:</td>
<td>Academic Organization</td>
</tr>
<tr>
<td>Table:</td>
<td>MFT_GENERAL_LEDGER</td>
</tr>
<tr>
<td>Element:</td>
<td>CHART_OF_ACCOUNTS</td>
</tr>
<tr>
<td>Rule Type:</td>
<td>LIST</td>
</tr>
<tr>
<td>Allow this user access to</td>
<td>All values</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Values</th>
<th>Access to Values of FUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>983</td>
<td></td>
</tr>
<tr>
<td>1057</td>
<td></td>
</tr>
</tbody>
</table>

A description of each column appears below

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>These values are set up in the validation tables in your source system. NULL indicates missing codes in your source system.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access to Values of (column name)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>

9. Click Save to keep your settings.

**Security Predicates**

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

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

```
select mgksecr.f_check_ODS_fga('ODSMGR','MST_TEST') from dual;
```
Returns:
exists (select 'x' from mgbfgav where mgbfgav_username = sys_context('userenv','session_user') and mgbfgav_fgaa_code='ACAORG' and mgbfgav_column_name = 'TEST' and NVL(mgbfgav_value,1) = NVL(TEST,1)) and exists(select 'x' from mgbfgav where mgbfgav_username = sys_context('userenv','session_user') and mgbfgav_fgaa_code = 'ACAORG' and mgbfgav_column_name = 'TEST_TYPE' and NVL(mgbfgav_value,1) = NVL(TEST_TYPE,1))

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

Policy Management

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

Prerequisites

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

Policies for all Tables

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

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

Note

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

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

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

Note

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

**Policies for a Single Table**

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

```sql
sqlplus IA_ADMIN/<password> @create_fga_policy
```

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

**Example:**

1. Create a new user to access Banner ODS - call the account BRUCE.

2. Use the **MST_TEST** table, and add nine rows using the following commands:

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

```sql
SQL> select count(*) from odsmgr.mst_test;
COUNT(*)
-------
9
```

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

```sql
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
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 user's name.

<table>
<thead>
<tr>
<th>Oracle User Name</th>
<th>Access to All Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANONYMOUS</td>
<td>□</td>
</tr>
<tr>
<td>BRUCE</td>
<td>✔</td>
</tr>
<tr>
<td>CTXSYS</td>
<td>□</td>
</tr>
</tbody>
</table>

```sql
SQL> select count(*) from odsmgr.mst_test;
COUNT(*)
---------
0
```
6. Clear the **All Values**.

7. Click the **Save**.

8. Choose the BRUCE account.

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

<table>
<thead>
<tr>
<th>MST_TEST</th>
<th>TEST_LEVEL</th>
<th>LIST</th>
<th>NICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MST_TEST</td>
<td>TEST</td>
<td>LIST</td>
<td>None</td>
</tr>
<tr>
<td>MST_TEST</td>
<td>TEST_TYPE</td>
<td>LIST</td>
<td>None</td>
</tr>
<tr>
<td>MST_COURSE_CATALOG</td>
<td>CATALOG</td>
<td>LIST</td>
<td>None</td>
</tr>
</tbody>
</table>

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

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:

```
<table>
<thead>
<tr>
<th>Oracle User Name:</th>
<th>BRUCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Dimension:</td>
<td>Academic Organization</td>
</tr>
<tr>
<td>Table:</td>
<td>MST_TEST</td>
</tr>
<tr>
<td>Element:</td>
<td>TEST_TEST</td>
</tr>
<tr>
<td>Rule Type:</td>
<td>LIST</td>
</tr>
</tbody>
</table>

Allow this user access to:

- All values
- Only the values specified below

The expected results are:

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

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

**Administrative User Interface Data Access**

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

In practice, this means you can create a context called IA_FGA and associate it with the Administrative UI (MGKFGAC) package. In that package, you can set a context variable prior to making queries to the tables. Then, when Oracle calls the MGKSECR package to enforce the policy, it checks that the context variable exists, and sensing it, returns no predicate. This allows full access to the data in that table. The context variable only exists for the life of the package (in the application server memory) and can be accessed only by that package. So, no other attempts to access the context are allowed. This allows the Administrative UI to maintain complete access to administer security while keeping security in place for all other access attempts. (For more information on using Application Context for security, see the Oracle Database Security Guide)

Set up and Synchronize Data

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

Banner ODS includes two main categories of mappings:

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

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

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

- Data currency in Banner ODS is dependent on the timing of a query against Banner ODS, and when Banner ODS was last refreshed. Changes that occur in the administrative system after the last refresh are not reflected until the next refresh
occurs. This causes a variance between the two systems until Banner ODS is refreshed again.

- Display rules may differ between the two systems. In Banner ODS, display rules defined on the MGRSDAX table drive Banner ODS views created to support existing Object:Access functionality. Differences may occur based on which rules are applied to each system.

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

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

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

## Set up Parameters

Parameters that are delivered with your solution are stored in a table called MTVPARM. You can use the Administrative UI to view and modify the entries in MTVPARM, and to customize Banner ODS and the Administrative UI. (Example customizations: Schedule a process, define mappings that move data from the source system, define data cleansing, freeze data, publishing meta data, etc. See “Set up Customized Scheduled Processes” on page 5-71 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 “Schedule a Process Parameters” on page 5-75.) The parameters discussed in this section are internal parameters that are used 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 choose a parameter to edit. Parameters are edited on the Set Up a Parameter page of the Administrative UI.
Cascade filter

The Cascade links on the Set Up a Parameter page let you filter the related field values when you select them. When you make a selection from any of the dropdown lists on the page then click the related Cascade link, the other lists will filter to display only related values.

For example, select a value in the Internal Groups dropdown list, then click the Cascade > link to filter the Internal Code and Internal Code 2 dropdown lists to display only the values related to the select Internal Group.

Create a parameter

Use the following steps to create a parameter entry.

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Group</td>
<td>Rows of data with varying Internal Codes that are categorized together to provide multiple entries for one parameter.</td>
</tr>
<tr>
<td>Internal Code 1</td>
<td>Parameter values. Related values have the same Internal Code 1.</td>
</tr>
<tr>
<td>Internal Code 2</td>
<td>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.</td>
</tr>
</tbody>
</table>
5. Click **Save** to create the new parameter.

**Example: Event parameter**

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

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

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

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

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

**Update or Delete a Parameter**

Use the following steps to change or delete an existing parameter.

1. Click **Options** from the Administrative UI menu. The Options menu opens.

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

💡 **Tip**

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

4. Click **Search**. The Select an Existing Parameter page opens.

5. Click the description link that corresponds to the parameter entry you want to update or delete. The Update an Existing Parameter page opens.

6. Change the information as needed.

📝 **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.

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

### System Parameters

Your solution is delivered with values that define aspects of your solution. Below are the delivered system parameters, and how they are used. Additional information can be found in the section “**Schedule a Process**” on page 5-60.

📝 **Note**

The parameters listed below are delivered with Banner ODS. For a list of parameters used only to schedule a process, see “**Schedule a Process Parameters**” on page 5-75.
## Parameters

<table>
<thead>
<tr>
<th>This Parameter</th>
<th>Used for this Task and Solution</th>
<th>Does This . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMIN_PREFERENCES</td>
<td>Administrative UI for Banner ODS</td>
<td>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.</td>
</tr>
<tr>
<td>BANNER TO ODS FGA TRANSFER</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Transfers security for Banner Finance Fund, Fund Type, and Organizations, and Banner Human Resources Organizations and Employee Class.</td>
</tr>
<tr>
<td>ETL CONTROL GROUP</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Groups together ETL MAP PACKAGE and/or ETL SLOT PACKAGE jobs as one job.</td>
</tr>
<tr>
<td>ETL MAP PACKAGE LOAD PURGE</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Groups related jobs (OWB mappings) as one job.</td>
</tr>
<tr>
<td>ETL MAP PACKAGE LOGIC</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Identifies the required crosswalk DELETE mappings for the Load Purge Process.</td>
</tr>
<tr>
<td>ETL MAP PACKAGE LOGIC</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Allows you to specify job termination logic for a mapping within a job stream. By default, all mappings in a job run in sequence regardless of whether they have errors or not. By defining an ETL Map Package record for a given mapping in a job, you can have the job stop if that mapping encounters errors. This parameter is used primarily with Banner EDW jobs as they have dependencies from one step (or mapping) to another, while Banner ODS mappings are independent of each other.</td>
</tr>
<tr>
<td>This Parameter . . .</td>
<td>Used for this Task and Solution . . .</td>
<td>Does This . . .</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>ETL MAP PACKAGE</td>
<td>“Reconcile a Single Table” on page 5-98 and “Reconcile Multiple Tables” on page 5-106</td>
<td>Provides a list of mappings that are exceptions in the reconcile Banner ODS tables process. In this list are the mappings that are ignored in the reconcile process because of the complexity of the mapping or other factors outside the scope of reconciling that Banner ODS table. This list also includes mappings that require either multiple source composite views or mappings in order to reconcile a Banner ODS table.</td>
</tr>
<tr>
<td>RECONCILE LOGIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETL SLOT PACKAGE</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Groups together related slot jobs (SQL packages) as one job.</td>
</tr>
<tr>
<td>EVENT</td>
<td>“Freeze Data Maintenance” on page 5-125</td>
<td>Defines EVENT codes used for freezing Banner ODS data.</td>
</tr>
<tr>
<td>EVENT-EDW</td>
<td>“Freeze Data Maintenance” on page 5-125</td>
<td>Defines the Event parameter for freezing EDW business concepts.</td>
</tr>
<tr>
<td>INSTALLED PROCESS</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Populates a list of processes displayed on the Select a Process page.</td>
</tr>
<tr>
<td>JOB</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Defines the actual name of the job (program) to run when you schedule a process.</td>
</tr>
<tr>
<td>JOB INTERVAL</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Defines the list of sample Job Interval settings displayed in the Select an Interval window on the Schedule a Process page.</td>
</tr>
<tr>
<td>JOB_KILLER</td>
<td>“Kill a Running Job/Process” on page 5-68</td>
<td>Defines which administrative accounts have the ability to stop a process that is running.</td>
</tr>
<tr>
<td>JOB_NOTIFICATION</td>
<td>“Set up E-mail Notification” on page 5-124</td>
<td>Defines a list of process parameters you need to set up e-mail notification.</td>
</tr>
<tr>
<td>This Parameter</td>
<td>Used for this Task and Solution</td>
<td>Does This . . .</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>METADATA</td>
<td>Meta Data publishing. “Meta Data” on page 5-137</td>
<td>Defines meta data related settings. Currently there is one for where to publish Meta Data pages, and another for where to view them.</td>
</tr>
<tr>
<td>ODS FINANCE TEXT</td>
<td>Finance Reporting Text Views</td>
<td>Defines different types of text for Finance Reporting Text Views. For example, Encumbrance Text, Grant Text, Fund Text, Fixed Asset Text, etc.</td>
</tr>
<tr>
<td>OWB_SYSTEM_PARAMETER</td>
<td>“Schedule a Process” on page 5-60</td>
<td>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.</td>
</tr>
<tr>
<td>PARAMETER</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Defines a list of a job’s input parameters you need to supply when you schedule a process.</td>
</tr>
<tr>
<td>PUBL_CATE_CODE</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Used during meta data publishing to differentiate the source from the target types.</td>
</tr>
<tr>
<td>SSR CONFIGURATION</td>
<td>“Self-Service Reporting” on page 6-1</td>
<td>Defines the location of the SSR help files and Banner ODS metadata used by SSR, if SSR is installed.</td>
</tr>
<tr>
<td>SUBPROCESS</td>
<td>“Schedule a Process” on page 5-60</td>
<td>Populates a list of processes displayed on the Select a Subprocess page.</td>
</tr>
</tbody>
</table>

**Schedule a Process**

You can schedule a job to run at a specific time. To run load and refresh (update) jobs, select the **Schedule a Process** option on the Options menu of the Administrative UI.

Before you schedule any jobs to run, you *must* review and set up parameters associated with scheduling a process. See “**Set up Parameters**” on page 5-54 for more details.
Process descriptions and details

Click the [Show Process Info] or [Show Subprocess Info] links to view a description of each job on the Select a Process or Select a Subprocess pages. Similarly, click the [Hide Process Info] or [Hide Subprocess Info] links to view only the job names.

Refer to the “PROCESS INFO Parameter” on page 5-78 and “SUBPROCESS INFO Parameter” on page 5-80 sections for details on how to define the descriptions that display for a process or subprocess.

If you choose to Show Process Info on the Select a Subprocess page, [Details] and [Edit] links display for each process in the list as illustrated in the following picture.

Select a Subprocess

Select a subprocess to schedule. [Select a Different Process] [Hide Subprocess Info]

Schedule Banner ODS Mappings

ODS 8.3 Reload Data [Details]
[Edit] Special job to be run once at time of upgrade. Use this process to reload the necessary ODS composite tables based on changes made in the ODS 8.3 release.

Load All Banner ODS Products [Details]
[Edit] Use this process to load all ODS composite tables with extracted data from all Banner products.

Refresh All Banner ODS Products [Details]
[Edit] Use this process to refresh all ODS composite tables with extracted data from all Banner products.

Load Accounts Receivable [Details]
[Edit] Use this process to load data in all Accounts Receivable ODS composite tables with extracted Banner data.

Details

Click the [Details] link next to a process name to view the job details including the title, code, description, list of all processes included in that job, and the Banner ODS tables or Banner EDW Fact tables that get loaded by the job.

The ADMIN_PREFERENCES parameter lets you define whether the details of a process, when you select to view them on the Schedule a Subprocess page, display in:

- One popup window which refreshes each time you display the details of a process
- Multiple popup windows, one for each process whose details you want to display

The Parameter record with the following combination of values:

- Internal Group = ADMIN_PREFERENCES
controls whether to use one or multiple popup windows when displaying process details. Set the External Code = 0 for this Parameter record to allow multiple popup windows or set the External Code = 1 to use a single popup window.

**Edit**

Click the [Edit] link next to a process description to go to the Update a Parameter page and edit the process description.

The ADMIN_PREFERENCES parameter lets you define whether to display the [Edit] link next to each process or subprocess description.

The Parameter record with the following combination of values:

- Internal Group = ADMIN_PREFERENCES
- Internal Code 1 = SCHEDULE_UI
- Internal Code 2 = DISPLAY_EDIT_LINK

controls whether to display the [Edit] link. Set the External Code = 1 for this Parameter record to display the [Edit] link next to each description or set the External Code = 0 to not display the link.

**Banner ODS Processes**

The following sections detail the Banner ODS processes that you can run.

**Schedule Banner ODS Mappings**

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

**Banner ODS Utilities**

Use the options on this menu to report source change table counts, reconcile tables, add comments to reporting views, and run checks and balances.
Schedule a Single Process

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

1. Click **Options** from the Administrative UI menu.

2. Click **Schedule a Process**. The Select a Process page opens.

3. Choose the type of process you want to schedule to run from the Select a Process page.
   - If you chose Schedule Banner ODS Mappings or Freeze Multiple Banner ODS Tables/Views, then the Select a Subprocess page opens. Continue to the next step.
   - All other selections open the Schedule a Process page. Skip to step #4.

4. Choose the subprocess you want to run. The Schedule a Process page opens.

5. If you selected the subprocess **Run a Single Banner ODS Mapping**, choose the mapping from the **Mapping to Run** drop-down list.

6. Enter values for other Process Parameters for the selected process, if any exist.

7. Enter the required Scheduling Parameters information.
   - 7.1. Enter a **Run Date** (format dd-mon-yyyy) and **Runtime** (format hh24:mi:ss).
   - 7.2. If you want to run the process on a recurring basis, enter an **Interval**.
     - Click the link next to the **Interval** field. A sample Interval window opens.
     - Click the link under the **Interval Expression** column for the interval in which you want to schedule a process. For example, to run a process every day at the same time select `SYSDATE+1`.

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

Schedule Multiple Processes

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

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

1. From the Administrative UI menu, click **Options**.

2. Click **Schedule a Process**. The Select a Process page opens.

3. From the Select a Process page, choose the type of process you want to schedule.

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

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


5. If you selected the subprocess **Run a Single** Banner ODS **Mapping**, choose the mapping from the **Mapping to Run** drop-down list.

6. To open the .csv file, click **Export**.

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

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

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOBDEF</td>
<td>A constant for parsing the input data.</td>
</tr>
<tr>
<td>DATE</td>
<td>Date the job should run. Use MON-DD-YYYY format.</td>
</tr>
<tr>
<td>TIME</td>
<td>Time the job should run. Use H:MM:SS format.</td>
</tr>
<tr>
<td>PROCESS, SUBPROCESS</td>
<td>Internal identifiers for the job.</td>
</tr>
<tr>
<td>(Additional job specific parameters)</td>
<td>Any job-specific parameters such as Event, Source Institution, etc.</td>
</tr>
</tbody>
</table>
|                       | 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.

7. Duplicate the JOB line once for each run desired.

8. Enter the date and time you want the process to run.

9. Enter the desired parameter values for each line.

10. Remove extra values in the additional lines. An example resulting .csv file is displayed below:
11. Click **Import** on the Schedule a Process page to re-import the .csv file into the Administrative UI.

12. Enter the name of the exported job into the subwindow, or search for it using **Browse**.

13. Click **Import Jobs**.

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

**View and Remove a Scheduled Process**

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

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

1. Click **Options** from the Administrative menu.

2. Click **View and/or Remove Scheduled Processes**. The Select and View Scheduled Processes page opens.

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

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

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

   To sort the columns in ascending or descending order, click the corresponding column header.
To edit a process/job

4.1. Click Edit next to the job number. The Schedule a Process page opens.

4.2. Make your changes.

4.3. Check the Overwrite Existing Job in Queue checkbox at the bottom of the page to overwrite the existing process.

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

4.4. Click Submit.

Or to delete a process/job

4.1. To delete processes, check the checkbox in the Delete column for the process you want to delete.

4.2. Click Delete Jobs.

Configure an Account and Stop a Running Job/Process

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

Configure a User Account to Kill a Job/Process

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

Prerequisite

Set up the Administrative user name accounts (See “Set up Users and PINS” on page 5-3.)

1. Click Options from the Administrative UI menu.

2. Click Set up Parameters.

3. Click Create.

4. In the Internal Group Code field type JOB KILLER, or select it from the drop-down list.

5. In the Internal Code 1 field type ACCOUNT NAME, or select it from the drop-down list.

6. In the External Code field, type the administrative user name (account log in name).
If the user name was entered as an External Code when the parameter was created, you can select the name from the drop-down list.

7. Enter a description into the description field. The description is usually the same as what appears in the External Code field.

8. Click Save.

**Kill a Running Job/Process**

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

**Prerequisite**

The administrative account user name must be set up with this ability. See “Configure a User Account to Kill a Job/Process” on page 5-67

1. Click **Options** from the Administrative UI menu.

2. Click **View Control Reports**.

3. Click the link in the **Process** column for the job/process you want to stop.

   The Control Report for that process opens.

4. Click **Kill Job** located in the **Status** column.

   **Note**

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

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

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

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

   **Note**

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

All Banner ODS and Banner EDW processes can be run from outside the Administrative UI. The processes are defined in the database as PL/SQL packaged procedures, therefore they can be run from outside the Administrative UI using any application that executes Oracle commands (typically Oracle's sqlplus utility). The name of the (packaged) procedure to run for a given process is defined using the JOB parameter (See “JOB Parameter” on page 5-82 in the Banner ODS and Banner EDW Handbook for additional information.). However, an easy way to determine the name of the procedure used to execute a process is to submit that process to run at a future date, then view the process definition in the Job Queue using the steps below.

1. Schedule the Load Student process to run from the Schedule Banner ODS Mappings menu.

2. Select a date or time in the future.

3. Click Submit.

4. Return to the Options menu.

5. Select View and/or Remove Scheduled Processes.

6. Enter the date you scheduled the process to run.

7. Click Display Jobs.

Below is an example page that might display:

![Select and View Scheduled Processes](image)

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

```sql
PROCEDURE P_RunETLMapSlots(userID IN VARCHAR2 DEFAULT NULL,
jobNumber IN BINARY_INTEGER DEFAULT NULL,
process IN VARCHAR2 DEFAULT NULL,
subProcess IN VARCHAR2 DEFAULT NULL,
parms IN VARCHAR2 DEFAULT NULL);
```
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>userID</td>
<td>Name/ID of the user associated with the job. The 8 in the example is the Administrative UI user account for “BILL” (for example, select mgbuser_id from mgbuser where mgbuser_pidm=&amp;userID;).</td>
</tr>
<tr>
<td>jobNumber</td>
<td>Number of the job, and of the corresponding Control Report created when the job runs. When these jobs are run using the Administrative UI, using the DBMS_JOBS queue to run them, Oracle takes the JOB keyword and substitutes in the actual job number in the queue for this value. (811 in the example above). When the job is run outside the Administrative UI, you can give the job any number you want to. <em>Tip:</em> Do not use a number that is currently used by the Control Report or you’ll have duplicate numbers. Begin numbering with high numbers so that the jobs are easy to find.</td>
</tr>
<tr>
<td>process</td>
<td>Name of the PROCESS to schedule (see Administrative UI PROCESS parameter description). In the example it is LOAD_STUDENT.</td>
</tr>
<tr>
<td>subprocess</td>
<td>Name of the SUBPROCESS to schedule (see Administrative UI PROCESS parameter description). In the example it is NULL (or empty)</td>
</tr>
<tr>
<td>parms</td>
<td>Any process-specific parameters needed. In the example there are none. Typical jobs in the Banner ODS do not take parameters. When scheduling the job through the Administrative UI, you specify these parameters on the Submit page. See “PARAMETER Parameter” on page 5-92 in the Banner ODS and Banner EDW Handbook for additional information.)</td>
</tr>
</tbody>
</table>

8. Issue the following command to run LOAD_STUDENT job:

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

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

**Note**

This executes the job synchronously, outside of the DBMS_JOBS queue, meaning the job actually runs to completion and the above call does not return until the job completes. This is usually desired when calling jobs outside the Administrative UI.
It is also possible to submit jobs to the DBMS_JOBS queue externally as well to run jobs asynchronously. See the DBMS_JOBS package documentation for more details.

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

You can also externally execute all other Administrative UI processes, for example, Metadata Publishing and the Utilities, following similar steps.

Set up Customized Scheduled Processes

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

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

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

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

- create a parameter record with an internal group code using the ETL MAP PACKAGE parameter set up for each new OWB mapping to be scheduled

- use the SUBPROCESS parameter to create a new group containing one or more customized mappings (MAPGROUP) to appear on the Select a Subprocess web page, and on the Schedule Banner ODS Mappings menu. It is also possible to add the new OWB mapping to an already existing group, by selecting one of the entries in the pull-down list.

- link the JOB parameter record to the process. This tells Banner ODS which item in the Schedule Banner ODS Mappings list (MAPGROUP) to run.

Follow the steps below. Examples appear after the steps.

1. Click Set Up Parameters from the Options menu. The Set Up a Parameter page opens.

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

4. To run the newly created process, click Schedule a Process from the Options menu. The Select a Process page opens.

5. Click Schedule Banner ODS Mappings. The Select a Subprocess page opens.

6. Choose your new process.

**Banner ODS Example:**

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

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

1. Click Set Up Parameters from the Options menu. The Set up a Parameter page opens.

2. Open the Create a New Parameter page.

3. Enter the information below into the fields.

<table>
<thead>
<tr>
<th>In This Field ...</th>
<th>Enter This ...</th>
<th>Here's Why ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Group</td>
<td>ETL MAP PACKAGE</td>
<td>Must be ETL MAP PACKAGE.</td>
</tr>
<tr>
<td>Internal Code 1</td>
<td>TEST_LOAD_STUDENT_COURSE</td>
<td>Mapping group name. Create your own name, or specify an existing group if you want to add this mapping to an existing group.</td>
</tr>
<tr>
<td>Internal Code 2</td>
<td>TEST_LOAD_STUDENT_COURSE_1</td>
<td>Mapping name in OWB and the package name in Banner ODS.</td>
</tr>
<tr>
<td>Internal Code Sequence Number</td>
<td>1</td>
<td>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.</td>
</tr>
</tbody>
</table>
Second, set up the SUBPROCESS parameter so that you can create and name a new group of one or more customized mappings. This tells Banner ODS that you want this new process(es) to appear on the Select a Subprocess page, and on the Schedule Banner ODS Mappings menu (MAPGROUP) on that page.

1. Click **Create a New Parameter** at the bottom of the page. The fields on the page reset.

2. Enter the following information.

<table>
<thead>
<tr>
<th>In This Field ...</th>
<th>Enter This ...</th>
<th>Here’s Why ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Code</td>
<td>ODS_TARGET_STUDENT</td>
<td>Location/project in the OWB repository. These locations pertain to the schema containing the target table(s).</td>
</tr>
<tr>
<td>Description</td>
<td>TEST_LOAD_STUDENT_COURSE_E_1</td>
<td>Actual name of the mapping. <em>Must</em> be the exact same entry as entered into the <strong>Internal Code 2</strong> field.</td>
</tr>
<tr>
<td>System Required</td>
<td>No</td>
<td>Parameter records entered through the Administrative UI are marked as <em>No</em> to differentiate those delivered with the product. Display only.</td>
</tr>
</tbody>
</table>

4. Click **Save**.

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

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

1. Click **Create a New Parameter** at the bottom of the page. The fields on the page reset.

2. Enter the following information.

<table>
<thead>
<tr>
<th>In This Field ...</th>
<th>Enter This ...</th>
<th>Here's Why ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Group</td>
<td><strong>JOB</strong></td>
<td><strong>JOB</strong> must be entered.</td>
</tr>
<tr>
<td>Internal Code 1</td>
<td><strong>MAPGROUP</strong></td>
<td>Must match the <strong>Internal Code 1</strong> field of the <strong>SUBPROCESS</strong> record.</td>
</tr>
<tr>
<td>Internal Code 2</td>
<td><strong>TEST_LOAD_STUDENT</strong></td>
<td>Must match the <strong>Internal Code 1</strong> field when you set up the <strong>ETL MAP PACKAGE</strong>.</td>
</tr>
<tr>
<td>Internal Code Sequence Number</td>
<td>1</td>
<td>Leave as is.</td>
</tr>
<tr>
<td>External Code</td>
<td>0</td>
<td>Leave as 0.</td>
</tr>
</tbody>
</table>
3. Click Save.

Schedule a Process Parameters

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

Note

These runtime parameters are different from the set up parameters stored in MTVPARM (See “Set up Parameters” on page 5-54.)

Parameters are maintained on the Set Up a Parameter page of the Administrative UI. See “Update or Delete a Parameter” on page 5-56 for additional information on updating parameters. Each parameter and its purpose appear below:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>“INSTALLED PROCESS Parameter” on page 5-77</td>
<td>Populates a list of processes displayed on the Select a Process page.</td>
</tr>
<tr>
<td>“PROCESS INFO Parameter” on page 5-78</td>
<td>Defines process descriptions that optionally display on the Select a Process page.</td>
</tr>
<tr>
<td>“SUBPROCESS Parameter” on page 5-78</td>
<td>Populates a list of processes displayed on the Select a Subprocess page.</td>
</tr>
<tr>
<td>“SUBPROCESS INFO Parameter” on page 5-80</td>
<td>Defines subprocess descriptions that optionally display on the Select a Subprocess page and defines information specific to a subprocess that displays on the Schedule a Process page.</td>
</tr>
<tr>
<td>“JOB Parameter” on page 5-82</td>
<td>Defines the actual name of job (program) to run when you schedule a process.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td>“ETL MAP PACKAGE Parameter” on page 5-84</td>
<td>Groups related jobs (OWB mappings) as one job.</td>
</tr>
<tr>
<td>“ETL MAP PACKAGE LOAD PURGE Parameter” on page 5-86</td>
<td>Identifies DELETE mappings for the Load Purge Process.</td>
</tr>
<tr>
<td>“ETL MAP PACKAGE LOGIC Parameter” on page 5-88</td>
<td>Allows you to specify job termination logic for a mapping within a job stream. By default, all mappings in a job run in sequence regardless of whether they have errors or not. By defining an ETL Map Package record for a given mapping in a job, you can have the job stop if that mapping encounters errors. This parameter is used primarily with Banner EDW jobs as they have dependencies from one step (or mapping) to another, while Banner ODS mappings are independent of each other.</td>
</tr>
<tr>
<td>“ETL MAP PACKAGE RECONCILE LOGIC Parameter” on page 5-88</td>
<td>Provides a list of mappings that are exceptions in the reconcile Banner ODS tables process. In this list are the mappings that are ignored in the reconcile process because of the complexity of the mapping or other factors outside the scope of reconciling that Banner ODS table. This list also includes mappings that require either multiple source composite views or mappings in order to reconcile a Banner ODS table.</td>
</tr>
<tr>
<td>“ETL SLOT PACKAGE Parameter” on page 5-89</td>
<td>Groups together related slot jobs (SQL packages) as one job.</td>
</tr>
<tr>
<td>“ETL CONTROL GROUP Parameter” on page 5-90</td>
<td>Groups together ETL MAP PACKAGE and/or ETL SLOT PACKAGE jobs as one job.</td>
</tr>
<tr>
<td>“EVENT parameter” on page 5-92</td>
<td>Defines Events for data being loaded in Banner ODS. These Events let you freeze or take a snapshot of data at a point in time.</td>
</tr>
<tr>
<td>“PARAMETER Parameter” on page 5-92</td>
<td>Defines a list of a job’s input parameters you need to supply when you schedule a process.</td>
</tr>
</tbody>
</table>
**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

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHOC_FREEZE</td>
<td>N/A</td>
<td>6</td>
<td>ADHOC_FREEZE</td>
<td>Freeze A Single Banner ODS Table/View</td>
</tr>
<tr>
<td>FREEZE_TABLE</td>
<td>N/A</td>
<td>5</td>
<td>FREEZE_TABLE</td>
<td>Freeze Multiple Banner ODS Tables/Views</td>
</tr>
<tr>
<td>MAPGROUP</td>
<td>N/A</td>
<td>1</td>
<td>MAPGROUP</td>
<td>Schedule Banner ODS Mappings</td>
</tr>
</tbody>
</table>

**Setting up the INSTALLED PROCESS parameter**

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

**Create a new Installed Process parameter value**

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

The Process Info Parameter records define process descriptions that optionally display on the Select a Process page. Process Info parameter records match to the related Installed Process parameter records based on sharing the same **Internal Code 1** and **External Code** values.

Parameter records with an **Internal Code Group** = **PROCESS INFO** and **Internal Code 2** = **PROCESS_LIST** use the **Description** field to define the process descriptions that a user can optionally display when they select the [Show Process Info] link on the Select a Process page as illustrated in the following picture.

![Select a Process](image)

Descriptions are included for each process that is delivered with the warehouse. To define a process's description for a new job, create a Parameter record with values defined as follows:

**SUBPROCESS Parameter**

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

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

Subprocesses are related to **JOB** parameter values and both are “children” of one of the processes defined by the **INSTALLED PROCESS** parameter. To designate the parent/child relationship, match the **External Code** of the **INSTALLED PROCESS** to the **Internal Code 1** of the **SUBPROCESS** and the **Internal Code 1** of the **JOB**.
The following table illustrates a sample of the values as delivered. This is just a sample. The second row gives a definition of each field.

**Internal Group: SUBPROCESS**

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

**Set up the SUBPROCESS Parameter**

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

**Create a SUBPROCESS Parameter**

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

1. **Create the job.**

2. **Add the job to the list of subprocesses you can schedule by creating a new Subprocess parameter with the following values:**

   2.1. **Internal Group:** Subprocess

   2.2. **Internal Code 1:** The External Code value of the [INSTALLED PROCESS](#) you want the subprocess to be listed under. Existing values include:
• MAPGROUP to list under the Schedule OWB Mappings process.
• FREEZE_TABLE to list under the Freeze Multiple Banner ODS Tables process.
• ADHOC_FREEZE to list under the Freeze A Single Banner ODS Table process.

2.3. Internal Code 2: blank

2.4. Internal Code Sequence Number: Number indicating the order in which to run this subprocess.

2.5. External Code: The External Code value of the INSTALLED PROCESS you want the subprocess to be listed under. See existing values listed above with the Internal Code 1 field.

2.6. Description: The name of the subprocess that will display on the Select a Subprocess page in the Administrative UI.

SUBPROCESS INFO Parameter

The Subprocess Info Parameter records define one of the following pieces of information:

• “PROCESS_LIST records” - Define subprocess descriptions that optionally display on the Select a Subprocess page
• “SCHEDULING PAGE records” - Define special instructions or information that will display for a process on the Schedule a Process page

Subprocess Info parameter records match to the related Subprocess parameter records based on sharing the same Internal Code 1 and External Code values.
**PROCESS_LIST records**

Parameter records with an **Internal Code Group = SUBPROCESS INFO** and **Internal Code 2 = PROCESS_LIST** use the **Description** field to define the subprocess descriptions that a user can optionally display when they select the [Show Subprocess Info] link on the Select a Subprocess page illustrated in the following picture.

---

**Select a Subprocess**

```
Select a subprocess to schedule.  [ Select a Different Process ]  [ Hide Subprocess Info ]
```

**Schedule Banner ODS Mappings**

- **ODS 8.3 Reload Data** [Details]
  - [Edit] Special job to be run once at time of upgrade. Use this process to reload the necessary ODS composite tables based on changes made in the ODS 8.3 release.

- **Load All Banner ODS Products** [Details]
  - [Edit] Use this process to load all ODS composite tables with extracted data from all Banner products.

- **Refresh All Banner ODS Products** [Details]
  - [Edit] Use this process to refresh all ODS composite tables with extracted data from all Banner products.

- **Load Accounts Receivable** [Details]
  - [Edit] Use this process to load data in all Accounts Receivable ODS composite tables with extracted Banner data.

---

**Create Subprocess Info/PROCESS_LIST records**

Descriptions are included for each subprocess that is delivered with the warehouse. To define a Subprocesses description for a new job, create a Parameter record with values defined as follows:

---

**SCHEDULING_PAGE records**

Parameter records with an **Internal Code Group = SUBPROCESS INFO** and **Internal Code 2 = SCHEDULING_PAGE** use the **Description** field to define information specific to the subprocess that will display in the Process Info section of the Schedule a Process page illustrated in the following picture.
Create Subprocess Info/SCHEDULING_PAGE records

To define information that will display for Subprocesses in the Process Info section of the Schedule a Process page, create a Parameter record with values defined as follows:

**JOB Parameter**

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

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

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

**Internal Group:** JOB
Set up the JOB Parameter

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

Create a Job Parameter Value

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

OWB Mappings and Slot Packages

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

The primary APIs used in the MGKMAP package are:

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

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

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

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

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

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

**ETL MAP PACKAGE Parameter**

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

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

**Example**

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

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

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOAD_AR</td>
<td>LOAD_MTT_ACCOUNT</td>
<td>1</td>
<td>ODS_TARGET_AR</td>
<td>LOAD_MTT_ACCOUNT</td>
</tr>
<tr>
<td>LOAD_AR</td>
<td>LOAD_MTT_ACCOUNT_DETAIL</td>
<td>2</td>
<td>ODS_TARGET_AR</td>
<td>LOAD_MTT_ACCOUNT_DETAIL</td>
</tr>
<tr>
<td>LOAD_AR</td>
<td>LOAD_MTT_APPLICATION_OF_PAYM</td>
<td>3</td>
<td>ODS_TARGET_AR</td>
<td>LOAD_MTT_APPLICATION_OF_PAYM</td>
</tr>
<tr>
<td>LOAD_AR</td>
<td>LOAD_MTT_AR_DEPOSITS</td>
<td>4</td>
<td>ODS_TARGET_AR</td>
<td>LOAD_MTT_AR_DEPOSITS</td>
</tr>
<tr>
<td>LOAD_AR</td>
<td>LOAD_MTT_CONTRACT</td>
<td>5</td>
<td>ODS_TARGET_AR</td>
<td>LOAD_MTT_CONTRACT</td>
</tr>
<tr>
<td>LOAD_AR</td>
<td>LOAD_MTT_EXEMPTION</td>
<td>6</td>
<td>ODS_TARGET_AR</td>
<td>LOAD_MTT_EXEMPTION</td>
</tr>
<tr>
<td>LOAD_AR</td>
<td>LOAD_MTT_INSTALLMENT_PLAN</td>
<td>7</td>
<td>ODS_TARGET_AR</td>
<td>LOAD_MTT_INSTALLMENT_PLAN</td>
</tr>
<tr>
<td>LOAD_AR</td>
<td>LOAD_MTT_LEDGER_ACCOUNTING</td>
<td>8</td>
<td>ODS_TARGET_AR</td>
<td>LOAD_MTT_LEDGER_ACCOUNTING</td>
</tr>
</tbody>
</table>

### Set up the ETL MAP PACKAGE Parameter

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

### Create an ETL Map Package

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

1. Create new entries with a new ETL Group name in the Internal Code 1 field.

2. Specify in the Internal Code 2 and Description fields for the mappings you want to include in the group.

3. Specify the location of each mapping in the External Code field.
4. Specify the order in which to run the mappings in the Internal Code Sequence Number field.

5. Add the new ETL group to the list of subprocesses you can schedule by creating a new Subprocess parameter with the following values:

   5.1. Internal Group: Subprocess
   5.2. Internal Code 1: MAPGROUP
   5.3. Internal Code 2: blank
   5.4. Internal Code Sequence Number: Number indicating the order in which to run this subprocess.
   5.5. External Code: the new ETL Group name you created. This is the value in Internal Code 1 in the ETL Map Package entries created above.
   5.6. Description: Name of the subprocess (ETL Group job) as it appears on the Select a Subprocess administrative page.

ETL MAP PACKAGE LOAD PURGE Parameter

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

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

- Sometimes the mapping names do not match exactly (for example, LOAD_MAT_ORGANIZATION_CONTACT and DELETE_MAT_ORGANIZATION_CONT).
- LOAD mappings that require multiple DELETE mappings.
- LOAD mappings where change tables do not exist (such as the VALIDATION mappings) and subsequently no purge process is required.
- LOAD mappings are broken up across several sequential mappings (such as LOAD_MFT_TRANS_HISTORY_1, LOAD_MFT_TRANS_HISTORY_2,
LOAD_MFT_TRANS_HISTORY_3, and so on) 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 first row gives a definition of each field.

**Internal Group:** ETL_MAP_PACKAGE_LOAD_PURGE

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOAD_MAT_ORGANIZATION_CONTACT</td>
<td>Ignored</td>
<td>1</td>
<td>DELETE_MAT_ORGANIZATION_CONT</td>
<td>Load Purge Record</td>
</tr>
<tr>
<td>LOAD_MGT_VALIDATION_GENERAL</td>
<td>1</td>
<td>NA</td>
<td></td>
<td>Load Purge Record</td>
</tr>
<tr>
<td>LOAD_MFT_TRANS_HISTORY_1</td>
<td>1</td>
<td>DELETE_MFT_TRANS_HISTORY</td>
<td>Load Purge Record</td>
<td></td>
</tr>
<tr>
<td>LOAD_MFT_TRANS_HISTORY_2</td>
<td>1</td>
<td>NA</td>
<td></td>
<td>Load Purge Record</td>
</tr>
<tr>
<td>LOAD_MFT_TRANS_HISTORY_3</td>
<td>1</td>
<td>NA</td>
<td></td>
<td>Load Purge Record</td>
</tr>
</tbody>
</table>
ETL MAP PACKAGE LOGIC Parameter

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

ETL MAP PACKAGE RECONCILE LOGIC Parameter

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

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

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of LOAD mapping</td>
<td>Ignored</td>
<td>1</td>
<td>Action to take</td>
<td>Either simple description or name of related LOAD mappings</td>
</tr>
<tr>
<td>LOAD_MAT_CONSTIT_STAFF_ASSIGN</td>
<td>Ignored</td>
<td>1</td>
<td>IGNORE</td>
<td>Do not reconcile this mapping</td>
</tr>
<tr>
<td>LOAD_MST_STDNT_CRSE_ATT_STEP_1</td>
<td>Ignored</td>
<td>1</td>
<td>UNION</td>
<td>LOAD_MST_STDNT_CRSE_ATT_STEP_2</td>
</tr>
<tr>
<td>LOAD_MTT_ACCOUNT_DETAIL</td>
<td>OPERATING_DATE</td>
<td>1</td>
<td>IGNORE COLUMN</td>
<td>Do not reconcile this column</td>
</tr>
</tbody>
</table>
ETL SLOT PACKAGE Parameter

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

This parameter is delivered with one entry for each package that loads or updates data in a slotted table in Banner ODS. The actual program name for the slot package occupies the Description field and is associated with an ETL group name in the Internal Code 1 field. For example, when you run the LOAD_FINANCIAL_AID job from the Schedule a Process option in the Administrative UI, the slot packages associated with each ETL SLOT PACKAGE entry that has an Internal Code 1 of LOAD_FINANCIAL_AID is run.

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

**Internal Group:** ETL SLOT PACKAGE

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOAD_FINANCIAL_AID</td>
<td></td>
<td></td>
<td>MRKBCMP.P_POPULATE('L')</td>
<td>MRT_FINAID_BUDGET_COMP_SLOT</td>
</tr>
<tr>
<td>LOAD_FINANCIAL_AID</td>
<td></td>
<td>2</td>
<td>MRKTREQ.P_POPULATE('L')</td>
<td>MRT_TRACKING_REQUIREMENT_SLOT</td>
</tr>
</tbody>
</table>

**Set up the ETL SLOT PACKAGE Parameter**

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

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

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

This parameter is delivered with one entry for each ETL group defined by the ETL Map Package parameter. The actual ETL group name (e.g., LOAD_AR, LOAD_FINANCE, LOAD_GENERAL, etc.) occupies the Internal Code 2 field. Each entry is associated with either the LOAD_ALL or REFRESH_ALL control group job in the Internal Code 1 field. The External Code field for each record has the value Y, which means that all jobs (mappings) defined by the group are run when you run the LOAD_ALL job.

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

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOAD_ALL</td>
<td>LOAD_ADVANCEMENT</td>
<td>1</td>
<td>Y</td>
<td>Advancement Load ETL Control Record</td>
</tr>
<tr>
<td>LOAD_ALL</td>
<td>LOAD_AR</td>
<td>2</td>
<td>Y</td>
<td>AR Load ETL Control Record</td>
</tr>
<tr>
<td>LOAD_ALL</td>
<td>LOAD_FINANCIAL_AID</td>
<td>3</td>
<td>Y</td>
<td>FinAid Load ETL Control Record</td>
</tr>
<tr>
<td>LOAD_ALL</td>
<td>LOAD_FINANCE</td>
<td>4</td>
<td>Y</td>
<td>Finance Load ETL Control Record</td>
</tr>
<tr>
<td>LOAD_ALL</td>
<td>LOAD_GENERAL</td>
<td>5</td>
<td>Y</td>
<td>General Load ETL Control Record</td>
</tr>
</tbody>
</table>
**Set up the ETL CONTROL GROUP Parameter**

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

**Create an ETL Control Group**

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

1. Create new entries with a new Control Group name in the **Internal Code 1** field.

2. Specify in the **Internal Code 2** field the ETL Groups that you want to include in the Control Group.

3. Specify that you want to run each ETL Group by entering a *Y* in the **External Code** field.

4. Specify the order in which to run the ETL Groups in the **Internal Code Sequence Number** field.

5. Enter a **description** for the new Control Group entry.

6. Add the new ETL Control Group to the list of subprocesses you can schedule by creating a new Subprocess parameter with the following values:

   6.1. **Internal Group**: Subprocess

   6.2. **Internal Code 1**: MAPGROUP

   6.3. **Internal Code 2**: blank

   6.4. **Internal Code Sequence Number**: Number indicating the order in which to run this subprocess.

<table>
<thead>
<tr>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Seq.</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOAD_ALL</td>
<td>LOAD_HUMAN_RESOURCES</td>
<td>6</td>
<td>Y</td>
<td>HR Load ETL Control Record</td>
</tr>
<tr>
<td>LOAD_ALL</td>
<td>LOAD_STUDENT</td>
<td>7</td>
<td>Y</td>
<td>Student Load ETL Control Record</td>
</tr>
</tbody>
</table>
6.5. **External Code**: the new ETL Control Group name you created. This is the value in **Internal Code 1** in the ETL Control Group entries created above.

6.6. **Description**: Name of the subprocess (ETL Control Group job) as it will appear on the Select a Subprocess administrative page.

**EVENT parameter**

An Event is a logical point in time when you extract information from the source system and load it into the Banner ODS, essentially freezing the data and giving you a snapshot of the data at that point in time. You can then use these data snapshots for reporting purposes. 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 each month or for student registration data on the census date for the academic period.

Before you run the processes that load data into Banner ODS, you need to define events that are relevant for your institution’s business needs. This parameter will create the Event parameter list when you Freeze Multiple Banner ODS Tables/Views.

**PARAMETER Parameter**

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

For example, when you freeze data in a Banner ODS table, you need to specify which table to freeze and the name you want to give the frozen table. Those two parameters are defined by the first two rows in the table below. This parameter is delivered with one entry for every process parameter. The following table illustrates a sample of the values as delivered. This is just a sample. The second row gives a definition of each field.

<table>
<thead>
<tr>
<th>Internal Group:</th>
<th>PARAMETER</th>
</tr>
</thead>
</table>


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 Banner ODS Tables/Views is selected. The Internal Code 1 field of FREEZE_TABLE on
the Parameter record here matches to the External Code of FREEZE_TABLE on the INSTALLED PROCESS parameter.

**Example**

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

1. Enter **Internal Group** = *PARAMETER*.

2. Enter **Internal Code 1** = *FREEZE_TABLE*. The parent process for the TEST1 freeze data list.

3. Enter **Internal Code 2** = *TEST1*. The actual name of the freeze data list to associate the parameter.

4. Enter **Internal Code Sequence Number** = 2. The order that parameters are listed at runtime. You can add up to two parameters to a freeze data list.

5. Enter **External Code** = *ACADEMIC_PERIOD*. The actual field value that you want the user to supply at runtime.

6. Enter **Description** = *Enter Term Code*. The prompt that a user needs to supply at runtime.

7. Choose **PARAMETER Type** = *SELECT*. Identifies how the user enters the runtime parameter. The field accepts four values:
   - **SELECT** = User must supply a valid PL/SQL statement.
   - **DATE** = User must supply a valid date.
   - **EDIT** = User can supply a text string.
   - **CHECKBOX** = User must check or uncheck an option.

8. Enter **PARAMETER SQL**. This field is only required when the **PARAMETER Type** is **SELECT**. Enter a valid PL/SQL statement, which is used to populate the valid field values to display in the drop-down list of the runtime prompt.

9. Enter **PARAMETER SQL Delimiter**. This field is only required when the **PARAMETER Type** is **SELECT** and you use a delimiter in the **PARAMETER SQL** field. Specify the delimiter used in the **PARAMETER SQL** field.

**Banner ODS Utilities**

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

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

See “Schedule a Process” on page 5-60 for instructions on how to schedule processes.

Report Banner ODS Source Change Table Counts

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

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

Change Tables and Control Reports

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

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

**Example**

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

code:

```sql
= 'SELECT COUNT(*) FROM ' || parm1Value || '@' || linkName || ' WHERE ' ||
parm1Value || '_TABLE_NAME=''' || parm2Value || '''
```

where parm1Value is the CHG_TABLE value and parm2Value is the P_TABLE value.

See “Schedule a Process” on page 5-60 for instructions on how to schedule processes.

**Synchronize Comments for Multiple Reporting Views**

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

This process is scheduled from Banner ODS Utilities menu. (See “Schedule a Process” on page 5-60 for instructions on how to schedule a process.) The same functionality is available by selecting the **Sync Comments** link on the View Target Report page. (See “Synchronize Meta Data Comments with Reporting Views” on page 5-147 for instructions.)

**Synchronize Comments for a Single Reporting View**

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

This process is scheduled from Banner ODS Utilities menu. (See “Schedule a Process” on page 5-60 for instructions on how to schedule a process.) The same functionality is also available by selecting the **Sync Comments** link on the View Target Report page. (See “Synchronize Meta Data Comments with Reporting Views” on page 5-147 for
Banner ODS Checks and Balances

Banner ODS Checks and Balances utility processes can be run after an upgrade or intermittently to perform the following information checks.

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

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

- **Miscellaneous Checks**
  Verifies that the database link to the source system exists and is working.

- **Check Indexes**
  Identifies the following:
  - Baseline Banner ODS indexes that are missing from the staged tables replicated from the source database.
  - Baseline Banner ODS indexes that are missing from change tables used to incrementally update the ODS composite tables.
  - Baseline Banner ODS indexes that are missing from the target database composite tables.

  If there are local indexes you would like verified by this process, insert the appropriate data into the MGBINDX table.

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

  This process compares the table structure of any existing freeze table data against the current Reporting view, and any column discrepancies are reported. In addition, the appropriate Oracle 'ALTER TABLE' statement is also provided in the control report so you can resynchronize your freeze tables with the Reporting views.
- **Check Triggers**
  Identifies any baseline table triggers that are missing from the staged tables replicated from the source database. The purpose of these triggers is to track changes that are needed to incrementally refresh the target database composite tables.

  See “Schedule a Process” on page 5-60 for instructions on how to schedule processes.

### Reconcile a Single Table

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

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

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

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

#### Rowcounts

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

**Data**

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

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

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

8. Enter the remaining required fields.

9. Click **Submit** to schedule the process to run.

See “**Schedule a Process**” on page 5-60 for instructions on how to schedule processes.

**Transfer Banner Fine-Grained Access**

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

**Prerequisites**

- “**Set up and Maintain Organizational Areas**” on page 5-19
- “**Banner User ID Translations**” on page 5-21
- “**Set up Business Profiles**” on page 5-24
- “**Set up and Maintain Security Rules**” on page 5-27
- “**Policy Management**” on page 5-48
- “**Transfer Banner Fine-Grained Access**” on page 5-99

1. Click **Options**.

2. Click **Schedule a Process**.

3. Click **Banner ODS Utilities**.

4. Click **Transfer Banner Fine-Grained Access**.
5. Check the boxes that correspond to the fine-grained access security permissions you want to transfer.

6. Choose the **Transfer Mode** to use for the transfer.
   You can choose from the following modes:
   - **REPLACE** - Replaces all FGA rules of Banner in Banner ODS with new Banner FGA rules. Existing FGA rules in Banner ODS, created using Administrative UI, are not affected.
   - **REPLACE_ALL** - Replaces FGA rules of both Banner and Banner ODS data with new Banner FGA rules. Existing FGA rules in Banner ODS that were not part of the current Banner data load are not affected.
   - **TRUNCATE** - Replaces all FGA rules, both Banner data and Banner ODS data, and refreshes Banner ODS with new Banner FGA rules.

7. Click **Submit** to schedule the process to run.

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

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

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

- Finance: FOBSYSC_FUND_ORG_SECURITY_IND
- Human Resources Organization: PTRINST_ORGN_SECURITY_IND
- Human Resources Employee Class: PTRINST_ECLS_SECURITY_IND

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

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

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

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

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

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

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

See “Schedule a Process” on page 5-60 for instructions on how to schedule processes.

**Cleanup Reconcile Tables**

You can clean up the reconcile tables that exist in your database by running the **Cleanup Reconcile Tables** job. This job allows you to identify and remove any extraneous
reconcile temporary tables that are no longer needed. Perform the following steps to clean up reconcile tables.

1. Click **Options** from the Administrative UI menu.

2. Click **Schedule a Process**.

3. Click **Banner ODS Utilities**.

4. Click **Cleanup Reconcile Tables**.

5. Select the **Reconcile Tables to Clean Up** from the list of tables. Use Shift-click to select a contiguous list of table or Ctrl-click to select noncontiguous tables.

   For your reference, the table listing displays the number of records in each temp table and the date the table was created.

6. Enter a **Run Date** (format dd-mon-yyyy) and **Run Time** (format hh24:mi:ss). Enter NOW in each field to run the job immediately.

7. Click **Submit** to run the job.

### Reconcile a Group of Tables

You can create a Reconcile Group, which defines a group of tables that you can reconcile by running one job via the **Reconcile a Group of Tables** option. This gives you the flexibility to reconcile a specific set of tables that you choose rather than all of the tables in a particular module, which is available by running the **Reconcile Multiple Tables** job. For example, you might create a Reconcile Group to reconcile only the Student Admissions related tables.

### Create a Reconcile Group

You can create as many Reconcile Groups as you want. You create a Reconcile Group by defining a Parameter record for each table that you want to include in the group. Once you create a group, it will display for selection on the Schedule a Process page when you select **Options> Schedule a Process> Banner ODS Utilities>Reconcile a Group of Tables**.

Define a Reconcile Group by creating Parameter records as follows:

1. Click **Options** from the Administrative UI menu.

2. Click **Set Up Parameters**.

3. Click **Create**.

4. Enter the information for a Group Reconcile parameter as follows:
5. Click **Duplicate** to add another record for the Reconcile Group.

6. Change the **External Code** value to another table that you want to include in the Reconcile Group you are defining.

7. Click **Save**.

8. Repeat steps 5 - 7 to add as many tables to the Reconcile Group as you need.
Example

The following picture illustrates the values for a Reconcile Group named REC_STU_GRP1.

Select a Parameter

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

<table>
<thead>
<tr>
<th>Internal Group</th>
<th>Internal Code 1</th>
<th>Internal Code 2</th>
<th>Internal Code Sequence</th>
<th>External Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECONCILE_GROUP</td>
<td>REC_STU_GRP1</td>
<td></td>
<td></td>
<td>MSTSPORT</td>
<td>Student Reconcile Group 1</td>
</tr>
<tr>
<td>RECONCILE_GROUP</td>
<td>REC_STU_GRP1</td>
<td></td>
<td></td>
<td>MSTTAX</td>
<td>Student Reconcile Group 1</td>
</tr>
<tr>
<td>RECONCILE_GROUP</td>
<td>REC_STU_GRP1</td>
<td></td>
<td></td>
<td>MSTTEST</td>
<td>Student Reconcile Group 1</td>
</tr>
</tbody>
</table>

[ Create a New Parameter | Set Up a Parameter ]
Run a Reconcile Group job

After you define a Reconcile Group by creating the necessary Parameter records, the job will display in the Reconcile Group dropdown list on the Schedule a Process page when you select.

Schedule a Process

To submit this subprocess to the job queue, fill in the information below, then click Submit.

* indicates a required field.

**Process to Schedule**

Banner ODS Utilities
Reconcile a Group of Tables

**Process Parameters**

Reconciliation Type* | ROWCOUNTS - Compare Row Counts
Reconcile Group* | REC_STU_GRP_1-Student Reconcile Group 1

**Scheduling Parameters**

To schedule this job to run immediately, click here or type "NOW" into the Run Date and Run Time fields.

Run Date (dd-mon-yyyy):* | Select a Date
Run Time (hh24:mi:ss):* | Select A Time
Interval: | Select An Interval

Perform the following steps to run the Reconcile Group job.

1. Click **Options** from the Administrative UI menu.
2. Click **Schedule a Process**.
3. Click **Banner ODS Utilities**.
4. Click **Reconcile a Group of Tables**.
5. Choose the **Reconcile Group** that you want to run.
6. Choose the **Reconciliation Type**.

You can reconcile a group in either ROWCOUNT or DATA mode. The DATA mode reconcile process does a complete row-by-row, column-by-column compare of data.
Depending on the amount of data involved, the reconcile process can take a long time to complete in this mode.

7. Enter a **Run Date** (format dd-mon-yyyy) and **Run Time** (format hh24:mi:ss). Enter NOW in each field to run the job immediately.

8. Click **Submit** to run the job.

### Reconcile temporary table names

When you reconcile tables in DATA mode, the Reconcile process uses one unique temporary (temp) table for each composite table that it is reconciling. The reconcile process creates temp table names by combining the composite table name with a leading “CP_<module code character>” prefix. For example, the temp table created when reconciling the MST_PERSON table would be named CP_S_PERSON. As a result, when running Group reconciles, if you select the job option to “Retain Temp Table”, one “CP_” table will exist in the database (under the ODSMGR schema) for every table reconciled in that group process. If there are no discrepancies found during the reconcile process (i.e., the temp table is empty) then the empty temp table is deleted when the reconcile process completes.

In the past, the temp table was specific to the job instance (i.e., the table name included the job number). This meant that when doing a Group Reconcile the same temp tablenname was reused, which limited the ability to track each reconcile item within the job.

### Reconcile Multiple Tables

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

You can run this process at any time to verify that the source system and Banner ODS are synchronized. However, it is recommended that it you 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 Banner ODS objects dynamically. The process pulls SQL from the load mappings that are created and deployed from Oracle Warehouse Builder. Occasionally, Banner ODS tables are omitted from the reconciliation process because of the complexity of multiple sources of the mappings. These exceptions can be found in the Administrative UI, Set Up Parameters, under the Internal Group parameter “ETL MAP PACKAGE RECONCILE LOGIC Parameter” on page 5-88. The
search displays a list of mappings that have been identified to ignore, or mappings that have multiple sources composite views.

1. From the main menu, click Options.

2. Click Schedule a Process.

3. Click Banner ODS Utilities.

4. Click Reconcile Multiple Tables.

5. To display the .sql statement used in the process, check the Show SQL check box.

6. Select the Reconciliation Type drop-down list to choose whether to run the reconcile process by row counts or data.

**Rowcounts**

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

**Data**

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

7. Enter the remaining required fields.

8. Click Submit to schedule the process to run.

See “Schedule a Process” on page 5-60 for instructions on how to schedule processes.
Materialized Views

A materialized view (MVIEW) is the actual physical implementation of the logic within a reporting view. Within the Administrative User Interface, you can create a materialized view based on its underlying reporting view. The system performs all the calculations and business logic of the reporting view and stores the resulting data in a Banner ODS database table.

A materialized view is a snapshot of the data from the source database at the time the view was materialized or later refreshed. The nightly refresh process will update the data in a materialized view to make it current as of that last build.

The benefit of creating materialized views is that queries run against a materialized view can perform significantly faster than queries run against the underlying reporting view because the calculations required by the base reporting view have already been performed and stored in the database.

By contrast, some reporting views are very complex. They access multiple tables joining data from other views and using business logic like database functions that require many computations. Each time you execute a query against a complex reporting view the system needs to perform the joins and the business logic of that view, which can result in longer run and response times for the query.

Each table associated with a materialized view is a simple table like one you would create from performing a “CREATE TABLE AS SELECT * FROM <view>” operation. However, the MVIEW table has various internal database attributes, such as indexes, that are hidden. The MVIEW also allows you to index the columns most likely used for reporting and to use query rewrite in the database.

Materialize a View

Materializing a reporting view simply means creating a materialized version of the view and replacing the existing reporting view with the materialized view. The materialized view keeps the same name as the reporting view so that all existing reporting accesses, such as reporting tool meta data and reports, continue to function correctly regardless of whether or not the view is materialized.

The reporting view and its associated materialized view cannot exist in the database at the same time. For this reason, when you create a materialized view, the source code for the associated reporting view is stored in the IA_ADMIN.MGBMVEW table. This table also stores specific information, such as elapsed time and row count, about the materialized view. This information is used to create and refresh the materialized version of a view. When you delete a materialized view, the system uses the information about that view stored in the MGBMVEW table to recreate the reporting view. Then the row related to that view is deleted from the MGBMVEW table.
You perform the tasks of creating, refreshing, and deleting materialized views using the Administrative User Interface (UI). It is possible to use the API calls defined in the MGKODSU package to manipulate the materialized views outside of the Administrative UI. However, any changes you make directly to the package or the APIs are not supported.

**Materialized View Considerations**

Though you can create a materialized version of any existing reporting view, there are a number of factors to consider when deciding whether to convert a view from a reporting view to its materialized version. Converting a large or complex reporting view that performs slowly to a materialized view can improve reporting performance. However, the improved performance will introduce additional processing time to create and refresh the materialized view and it will require extra disk space to store the materialized data.

You’ll want to consider these factors when determining which reporting views to materialize. In addition, you need to weigh these considerations against other standard performance tuning techniques (like creating additional indexes on underlying tables, specifying Oracle database parameter settings, and performing hardware upgrades) when deciding which reporting views to materialize.

**Materialized Views and Patch Releases**

There will be times when you need to apply a patch release which includes changes that affect the reporting views. If a reporting view has been materialized in the system and you apply a patch release, application of the patch may fail since Oracle won’t overwrite an existing materialized view with a reporting view of the same name. In these cases, you will need to delete the materialized view before you apply the patch release then recreate the materialized view.

Refer to the documentation delivered with a particular patch release for information about dependent objects. That documentation will direct you on how to determine which materialized views you need to delete and then recreate before and after applying the patch.

**Create an Index of Materialized View**

The ODS Materialized View Create process can create indices on the materialized view. The value set for the Recommended Search Columns in the ODS Meta Data determines whether to create a materialized view index. Generally, the Recommended Search Column value(s) are set in the meta data for that reporting view before it gets materialized, so that when it get materialized (during the CREATE process), indexes are added appropriately.

If you want to create an index of a materialized view, where no Recommended Search Columns are defined, you can add them prior to creating the materialized view.
To create an index of the materialized view, perform the following steps:

1. Log on to the Administrative User Interface.

2. Click the Meta Data tab.

3. Click Maintain Banner ODS Meta Data link. The View Target Report List page opens.

4. Choose the reporting view for which you want to create an Index.
   
   4.1. Click the Select link next to the Subject Area.
   
   4.2. Choose a Report Type and Subject Area.
   
   4.3. Select the view for which you want to add an index.
   
   For example, to choose the ACADEMIC_STUDY reporting view, click the Select link next to the Subject Area, choose Student, and select the ACADEMIC_STUDY reporting view.

5. Click the Properties link.

6. In the Recommended Search Columns field, enter the columns you want to be in the index. The columns list must be separated by a comma and then a space. If you want more than one index, you can do that too, by entering <BR> and then the next column list.

7. Click Save Changes. This will save a local version of the metadata and not affect any baseline data. The Admin UI will show you have local changes by displaying the headers in a different color. (You can refer to other definitions to see examples.)

8. Create the Materialized View. It will generate an index for the columns that you specified. For more information on creating materialized view, see “Create a Materialized View”.

Create a Materialized View

A materialized view (MVIEW) is the actual physical implementation of the logic within a reporting view. Within the Administrative User Interface, you can create a materialized view based on its underlying reporting view. The system performs all the calculations and business logic of the reporting view and stores the resulting data in a Banner ODS database table. You may want to create a materialized view because queries typically run faster against a materialized view. Perform the following steps to create one or more materialized views using the Administrative User Interface (UI).
1. Click **Options** from the Administrative UI menu.

2. Click **Schedule a Process**.

3. Click **Banner ODS Utilities**.

4. Click **Create Materialized Views**.

5. Select the **Reporting Views** that you want to materialize. Use Shift-click to select a contiguous range of views or Ctrl-click to select noncontiguous views.

   There is a 3800 character limit on the values you can select. As you select values, you can see the total “Selected size” in the status bar at the bottom of the window. If you want to choose values that total more than 3800 characters, break the selections into multiple groups and run the jobs separately.

6. Enter a **Run Date** (format dd-mon-yyyy) and **Run Time** (format hh24:mi:ss). Enter NOW in each field to run the job immediately.

7. Click **Submit**.

When the job completes running, you can review its activity by clicking **View Control Reports** at the bottom of the Select a Process page.

### Maintain a Materialized View

Typically, your institution implements a process each night that updates the Banner ODS data to synchronize it with the current source Banner data. This process runs the refresh jobs that update any existing materialized views that have been created, changed or deleted since the last refresh. You may want to refresh a materialized view on a more timely basis. Refreshing the view repopulates the associated database table with current data. Perform the following steps to refresh a materialized view on an as needed basis using the Administrative User Interface (UI).

1. Click **Options** from the Administrative UI menu.

2. Click **Schedule a Process**.

3. Click **Banner ODS Utilities**.

4. Click **Maintain Materialized Views**.

5. Select the **Materialized Views** that you want to refresh. Use Shift-click to select a contiguous range of views or Ctrl-click to select noncontiguous views.

   There is a 3800 character limit on the values you can select. As you select values, you can see the total “Selected size” in the status bar at the bottom of the window. If you
want to choose values that total more than 3800 characters, break the selections into multiple groups and run the jobs separately.

6. Select Refresh from the **Materialized Views Action** drop-down list.

7. Enter a **Run Date** (format dd-mon-yyyy) and **Run Time** (format hh24:mi:ss). Enter NOW in each field to run the job immediately.

8. Click **Submit**.

When the job completes running, you can review its activity by clicking **View Control Reports** at the bottom of the Select a Process page.

**Delete a Materialized View**

Deleting a materialized view removes it from the database and replaces it with the original reporting view. Perform the following steps to delete a materialized view using the Administrative User Interface (UI).

1. Click **Options** from the Administrative UI menu.

2. Click **Schedule a Process**.

3. Click **Banner ODS Utilities**.

4. Click **Maintain Materialized Views**.

5. Select the **Materialized Views** that you want to delete. Use Shift-click to select a contiguous range of views or Ctrl-click to select noncontiguous views.

   There is a 3800 character limit on the values you can select. As you select values, you can see the total “Selected size” in the status bar at the bottom of the window. If you want to choose values that total more than 3800 characters, break the selections into multiple groups and run the jobs separately.

6. Select Drop from the **Materialized Views Action** drop-down list.

7. Enter a **Run Date** (format dd-mon-yyyy) and **Run Time** (format hh24:mi:ss). Enter NOW in each field to run the job immediately.

8. Click **Submit**.

When the job completes running, you can review its activity by clicking **View Control Reports** at the bottom of the Select a Process page.
Materialized View Status Report

The Materialized View Status report (REPORT_MVIEW_STATUS) is a process that you can run to view basic information about each materialized view currently defined in the system. The status report includes the following information about each materialized view: creation date and time, elapsed creation time, and the number of rows created. If the view was refreshed, the report also includes the latest refresh date time, elapsed refresh time, and the number of rows refreshed.

Report Materialized View Status

The Materialized View Status report includes information about each materialized view currently defined in the system. Run the report if you want to know when a materialized view was created or refreshed, how long it took to create or refresh a view, or how many rows were created or refreshed in a view. Perform the following steps to run the Materialized View Status report.

1. Click Options from the Administrative UI menu.
2. Click Schedule a Process.
3. Click Banner ODS Utilities.
5. Enter NOW in the Run Date and Run Time fields.
6. Click Submit.

When the job completes running, you can review its activity by clicking View Control Reports at the bottom of the Select a Process page.

Materialized View Control Reports

Each time you create, refresh, or delete a materialized view, the CREATE_MVIEWS or MAINTAIN_MVIEWS process creates a control report. The report includes information about creating, refreshing or dropping the materialized view and creating or dropping the related reporting view as appropriate. The report also includes the date and time that each action within the job completed.

You can save the control report as a .csv (comma separated values) file. You can open and review the .csv file in a spreadsheet application like Microsoft Excel. This option is especially useful for viewing large control reports. Click the CSV Summary button on the Display a Control Report page to view or save the report in .csv format.
For most reporting views, the following ORACLE command is used to create the associated materialized view:

```sql
create materialized view <view> BUILD IMMEDIATE REFRESH COMPLETE ON DEMAND;
```

Some reporting views use different Oracle syntax to create the associated materialized view. The control report notes these view exceptions when the materialized view is created. Although a view may be created using alternate syntax, the resulting materialized view is functionally the same as the reporting view.

---

**View Control Reports**

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

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

1. From the Administrative menu, click **Options**.

2. Click **View Control Reports**. The Select a Control Report page opens.

3. On the Select a Control Report page, find the process you want to review in the list. Check the Status column to see if the process ran successfully. If the status is ERROR, there was a problem with the process.

   - To sort the list of control reports click one of the column headings - Run Date, Job Number, Process, User ID, or Status.
   - To filter the list of control reports, select the filter button next to one of the column headings (Run Date, Process, User ID, or Status), select the filter values and click **Select**. You can only apply one filter at a time.

4. Click **Refresh Job Status Codes** to see the most current job status. Often a job status will change from Running to Completed.

   The **Refresh Job Status Codes** button is helpful with jobs that have been terminated in the database (due to a shutdown, or other error, etc.). If a job is terminated in the database, it locks the status as Running on the View Control Reports page. Therefore, if you click this button you not only refresh all status codes, but also ensure that any Terminated status codes display correctly.
To delete a control report, select the corresponding checkbox in the Delete column. To select or clear all the control reports, click Select All or Deselect All.

5. To review additional information on how a process ran, click the link for that process from the Process column. The Display a Control Report page opens.

5.1. Click View error message(s) to view the first error message.

5.2. Click Next error to browse all errors for the job.

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

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

**Error Messages**

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

**Warning: Obsolete sequence numbers in MGBPSQL**

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

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

**Error: <mapname> is INVALID in the database**

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

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

**Warning: <mapname> parameter does not have corresponding MAPPING**

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

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

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

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

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

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

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

Action: Check with technical staff to create the missing entries.
**Warning: --- > <view name> is documented but does not exist**

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

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

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

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

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

**Note**

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

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

Reason: Baseline reporting views are delivered with corresponding metadata for each view column. The column exists 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 Administrative UI.

**Note**

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

**Baseline index <index_name> is missing from table**

Reason: Delivered index names are stored in the IA_ADMIN.MGBINDX table. Any missing indexes may impact Banner ODS performance and are reported.

Action: Create the missing index to ensure optimum system performance.

**Additional index (index_name) found for table**

Reason: Local indexes that do not exist in the IA_ADMIN.MGBINDX table are reported.
Action: To eliminate the warning message from the control report, insert the index information into MGBINDX with local = YES.

**Warning: More than one database link found as source location for OWB**

Reason: Verify that only one source database is identified for the OWB.

Action: Remove or rename incorrect database links from Banner ODS database. (Search DBA_DB_LINKS where LINK_NAME like '%SOURCE_DB%' to identify these).

**WARNING: Use the Freeze Data Maintenance page to remove these columns from the freeze table <freeze_table>**

Reason: It is possible to select columns to include in the freeze data. If a column that has been used in a freeze table is no longer valid in the source, a warning message is provided

Action: Use the Freeze Data Maintenance page in the Administrative UI to locate the freeze table and review the selected columns. Remove the obsolete columns from the selected columns list.

**Freeze Table <freeze_table> does not exist. Used in Freeze Data List <freeze_data_list>**

Reason: Freeze data lists are created to freeze multiple tables

Action: Review tables in the Freeze Data Lists reported to determine why the freeze data has not been generated.

**ERROR: AR dblink test failed**

Reason: A query from AT_AR_DEPOSIT view in Banner database failed.

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

**ERROR: ADVANCEMENT dblink test failed**

Reason: A query from a single Advancement view in Banner database (AA_CONSTITUENT) is done as a check that the system configuration is correct for Advancement ETL mapping packages to execute. The error message would indicate that the database link is incorrect or the view is not valid.

Action: Verify that Advancement views have been created in Banner database

**ERROR: FINANCE dblink test failed**

Reason: A query from a single Finance view in Banner database (AF_PURCHASE_ORDER_ACCOUNTING) is done as a check that the system configuration is correct for Finance ETL mappings to execute. The error message would indicate that the database link is incorrect or the view is not valid.
Action: Verify that Finance views have been created in Banner database.

**FINANCIAL AID dblink test failed**

Reason: A query from a single Financial Aid view in Banner database (AR_AWARD_BY_PERSON) is done as a check that the system configuration is correct for Financial Aid ETL mappings to execute. The error message would indicate that the database link is incorrect or the view is not valid.

Action: Verify that Financial Aid views have been created in Banner database.

**ERROR: COMMON dblink test failed**

Reason: A query from a single view in Banner database (AS_PERSON) is done as a check that the system configuration is correct for Common ETL mappings to execute. The error message would indicate that the database link is incorrect or the view is not valid.

Action: Verify that this view and other General views have been created in Banner database.

**ERROR: HR dblink test failed**

Reason: A query from a single Human Resources view in Banner database (AP_REVIEW) is done as a check that the system configuration is correct for Human Resources ETL mappings to execute. The error message would indicate that the database link is incorrect or the view is not valid.

Action: Verify that Human Resources views have been created in Banner database.

**ERROR: STUDENT dblink test failed**

Reason: A query from a single Student view in Banner database (AS_COURSE_CATALOG) is done as a check that the system configuration is correct for Student ETL mappings to execute. The error message would indicate that the database link is incorrect or the view is not valid.

Action: Verify that Student views have been created in Banner database.

**Materialized View Control Report Messages**

Following are explanations of messages that you might see in a control report related to creating or maintaining a materialized view.

**Warning: Creating materialized view: <viewName> with REFRESH WITH ROWID option due to lack of primary key constraint.**

Oracle is unable to determine a primary key when joining the data used in the view. The system must use the ROWID construct to uniquely identify rows of data.
**Note: Reporting View: <viewName> contains sub-query so temporary view used**

Oracle doesn’t support creating a materialized view from a view that contains a nested sub-query. The system is creating a temporary view on top of the reporting view. It will then materialize the temporary view.

**Note: Reporting View: <viewName> contains too many key columns - USING NO INDEX mode enabled.**

Oracle uses the columns from the view that it determines to be the “primary key” columns when building its internal index for data access. The number of natural key columns in some reporting views exceed the Oracle limit. When this happens, the system uses the NO INDEX syntax.

**Freeze Process**

**Process failed, no mgbfrez records for this list**

The selected freeze table list does not have entries in MGBFREZ table. Click the Freeze Data Maintenance menu to review the tables included in the freeze list.

**Multiple owners for inputted table/view to freeze. Please precede table name with owner.**

The original table or view name exists in more than one schema. Verify which table the data should be selected from, and precede the table name with the owner name.

**Source table not found**

The original table was not found in the database.

**Warning, no data found to Freeze**

There are no rows in the original table, or the where condition caused no rows to be selected.

***Warning--Replace parameter is N and EVENT exists!!- did not replace data***

Data has been previously frozen to the new table with the same event code. If the data should truly be replaced, submit the process with the Replace parameter checkbox checked. If the existing data should remain intact, use a different event name to freeze additional data into the new table.
Publish Meta Data (PUBLISH_META_DATA)

Configuration error: No script found for COPY_SCRIPT parameter

The location of the ftp script used to transfer the html files was not found in the MTVPARM table. Click the menu options of Options and Set Up Parameters, with the internal group = METADATA and the internal code = PUBLISH, to store the copy script.

P_MakeAllTarget - E_NoTablesFound

There were entries found in metadata tables

P_MakeAllTarget - E_NoMetafileLoc

The parameter record in MTVPARM does not exist. To create this records, click the menu options of Options and Set Up Parameters with the internal group = METADATA and the internal code2 = PUBLISH_LOCATION.

P_MakeAllTarget - E_NoUTLfileLoc

The file location supplied in the parameter is not valid. Click the menu options Options and Set Up Parameters with the internal group = METADATA and the internal code2 = PUBLISH_LOCATION to verify the correct location for the creation of the meta data files.

Reconcile (RECONCILE_JOB, RECONCILE_SINGLE_JOB)

If there are zero discrepancies, the number of rows in the source view match the number of rows extracted to Banner ODS table. Run a refresh (or load) for the mapping that has the discrepancies, then rerun the reconcile job.

mapName has 'n' discrepancies

There are 'n' differences between Banner and Banner ODS. (The message below provides additional details.)

Banner ODS has 'n' rows while the source has 'n' rows. Key values are:

'n' rows while Banner has 'n' rows. Key values are:

This indicates the key values for the rows in either Banner ODS or Banner that do not match to the other system. Use these key values to further diagnose the discrepancy.

>Note

If you run this reconcile process after the refresh process is run, records that have been updated (with changes noted in the change tables) may have caused the discrepancies - you can use the key values to confirm this.
Mapping processes (DELETE_mapping, UPDATE_mapping, LOAD_mapping, REFRESH_mapping)

OWB Runtime not running - waited for ‘n’ minutes...

ETL Mapping Package record not found for mapping: <map name>

Run Banner ODS Utilities - ‘Checks and Balances’ job to ensure that all parameter records exist and mapping packages are valid.

Mapping not found - Please check the mapping name and location.

Run Banner ODS Utilities - ‘Checks and Balances’ job to ensure that all parameter records exist and mapping packages are valid.

No ETL CONTROL GROUP or ETL MAP PACKAGES found for this job.

Check that records exist in MTVPARM table

where mtvparm_internal_code_group = 'ETL MAP PACKAGE'.

No ETL SLOT PACKAGE entry found for this table: <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 Administrative UI can be configured to automatically link to the RAB for mappings that have been run. All you’ll need to do is click a hyperlink from the control report to view RAB mapping information. A new browser window opens displaying the RAB information for that mapping. Follow the steps below to set up a parameter RAB_URL:

1. Click Options from the Administrative UI menu. The Options page opens.

2. Click Set Up Parameters. The Set Up a Parameter page opens.
3. Select Internal Group *METADATA* and Internal Code *RAB_URL* from the drop-down lists on the Set Up a Parameter page.

**Note**

(If Internal Code *RAB_URL* does not appear in the drop-down list, then click **Create** to create the parameter. See “**Set up Parameters**” on page 5-54 for instruction on how to create this optional parameter.)

4. Click **Search**. The Select an Existing Parameter page opens.

The External Code on the Select an Existing Parameter page can be any value. (It is required, but ignored. You can enter a hyphen, for example.) The key is the **Description** column. It must be the URL for the RAB that you have installed and set up. It will be similar to the URL below:

```
http://<machine_name>/owbb/
RABMapExecution.uix?event=navigate&p_type=PLSQLMap&repos=RUNREP
```

To access your URL, continue to the next step.

5. Open the RAB in another browser window. Copy your URL from the address bar in that window, and paste it into the **Description** column on the Select an Existing Parameter page.

**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. Click the link after the OWB Audit Execution ID on the control report. The Runtime Repository page opens.
Set up E-mail Notification

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

These parameters are not delivered. (You must create them. See the “Set up Parameters” on page 5-54.) E-mails are only sent if all parameters (except the Administration URL) are set up. No e-mail notification takes place until you set these parameters.

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMAIL_ADMIN_URL</td>
<td>The complete URL to connect to the Administration system. If this parameter is defined, the URL is included in the e-mail message which makes it easier for the recipient to log into the system. The message contents are:</td>
</tr>
<tr>
<td></td>
<td>Subject: &lt;Job Name&gt; Job Completion &lt;with Errors&gt; (where the Job Name is the job that ran, and “with Errors” is appended only for jobs that had errors.)</td>
</tr>
<tr>
<td></td>
<td>Message: This job has completed. Check the Administrative UI for more details.</td>
</tr>
<tr>
<td></td>
<td>Job Name: &lt;Job Name&gt;</td>
</tr>
<tr>
<td></td>
<td>Job User: &lt;Admin Username of account that ran the job&gt;</td>
</tr>
<tr>
<td></td>
<td>Job Number: &lt;job number&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;For jobs that run mappings:&gt;</td>
</tr>
<tr>
<td></td>
<td>Job Execution Time:</td>
</tr>
<tr>
<td></td>
<td>Start of Mapping at (start time)</td>
</tr>
<tr>
<td></td>
<td>Process completed at (end time)</td>
</tr>
<tr>
<td></td>
<td>&lt;If any errors occurred during the job, they are listed next as follows:&gt;</td>
</tr>
<tr>
<td></td>
<td>Error Details:</td>
</tr>
<tr>
<td></td>
<td>Error ...</td>
</tr>
<tr>
<td>EMAIL_FROM_ADDRESS</td>
<td>E-mail address in the From section of the e-mail. This is typically a server address. Required.</td>
</tr>
</tbody>
</table>
Freeze Data Maintenance

Freezing data enables you to take snapshots of related data at any point in time and keep a static copy of that data. You may want to run data comparison reports at the same point-in-time (example: each month, semester, or year) To do this you will need to “freeze” the data at each point-in-time. As you save these data slices over time, you will create a history (freeze) of the data on which to report. You can also associate that point-in-time with an event name, for example, YearEnd, MonthEnd, or SummerSession.

Banner ODS freezes data from a single table/view or from multiple tables/views. When the freeze data has been defined, the freeze process must be scheduled to run (refer to “Freeze a Single Banner ODS Table/View” on page 5-130 and “Freeze Multiple Banner ODS Tables/Views at the Same Time” on page 5-131).

Use the Freeze Data Maintenance Option to:

- Set up Freeze Data list for Banner ODS tables/views
- Add additional Banner ODS tables to existing freeze lists
- Review events in existing Banner ODS freeze tables

Set up Banner ODS Freeze Data Lists

A Freeze List is what Banner ODS calls for one or more tables/views that have related data to be frozen at the same time. The freeze process selects data from the source table/view, creates a table with the ‘history’ name supplied, and copies (freeze) the selected source data into the history table. By default, all the columns from the source table are copied to the freeze table. Click Select Columns to specify if only specific columns are required for the freeze.

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMAIL_LIST</td>
<td>E-mail address to receive a job notification message for all Administration jobs that complete. Create one parameter for each recipient address. By default, you only receive e-mail notification for jobs submitted by that account. If the Administrative UI user name that ran the job matches (not case sensitive) the name in the Description field for this parameter. Or, you can set up an email address to receive notifications for all jobs that are run by setting the INTERNAL_CODE_2 field to GET_ALL_JOBS. Required</td>
</tr>
<tr>
<td>EMAIL_SERVER</td>
<td>The machine name of your SMTP server machine. Required</td>
</tr>
</tbody>
</table>
**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.

1. Click **Options**.

2. Click **Freeze Data Maintenance**. The Set Up Freeze Data Lists page opens.
3. Click **Create** from the Set Up Freeze Data Lists page. The Create a Freeze Data Table page opens.

The links on this page are described below:

<table>
<thead>
<tr>
<th>Link</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>View Current Lists</td>
<td>Opens a window of the current freeze lists.</td>
</tr>
</tbody>
</table>
| Copy Table Name       | Copies the source name to the **Freeze Table Name** field.  
**Note:** The freeze table name must be different than the source name. The data is frozen with this table. |
| Select Columns        | Opens a window of existing freeze columns. Choose the column(s) to freeze or not freeze, then click the corresponding arrows to move them to the appropriate box.  
- Click a single arrow to move one column.  
- Click a multi-arrow to move all columns.  
- Hold down the Ctrl key while selecting to move a few columns.  
The number of columns selected out of the total number of columns appears on the page and in the window. For example, (178/181) indicates that 178 columns out of 181 will be frozen. |

4. Enter the new list name, source name and freeze table name.

5. **(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'

6. Click **Save**.
Add a Table/View to a Banner ODS Freeze Data List

Maintaining freeze lists may require that additional tables be included in specific freeze lists, that a freeze list be deleted, that a freeze list be renamed or duplicated. It is also useful to review which events exist in which freeze tables.

In the example above, it is decided to capture data from STUDENT_COHORT_SLOT and so an additional table should be added to the STUDENT_COURSE_REGDATA freeze list.

- Click the freeze list called STUDENT_COURSE_REGDATA from the drop down list.
- Click Add another Table.
- Click STUDENT_COHORT SLOT as the source table.
- For this example, the freeze table will be STUDENT_COHORT SLOT STATIC

There is an optional WHERE condition that will allow you to qualify the data to be frozen from each source table (ACADEMIC_PERIOD = ‘200510’). NOTE: Do not include the actual word WHERE in the condition. It is assumed.

1. Click Options.

2. Click Freeze Data Maintenance. The Set Up Freeze Data Lists page opens.

3. Choose the freeze list you want to modify from the drop-down list on the Set Up Freeze Data Lists page.

4. Click Search. The Select a Freeze Data Table page opens displaying the freeze tables associated with the displayed freeze list.

5. Click the link in the Source Name column for the tables/views you want to add. The Update an Existing Freeze Data Table page opens.

6. Click Add Another Table. The Create a Freeze Data Table page opens.

The links on this page are described below:

<table>
<thead>
<tr>
<th>Link</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Another Lists</td>
<td>Returns to the Select a Freeze Data Table page.</td>
</tr>
</tbody>
</table>
7. Enter the new list name, source name and freeze table name.

8. (Optional) Enter a valid PL/SQL Where Condition. Use fields from the table or view being frozen and exclude the word “where”, which is added by the system.

   For example: \textit{academic\_period} = ’200510’.

9. Click \textbf{Save}.

10. Click \textbf{Add Another Table} to add another table to your list.

### Delete, Rename or Duplicate Banner ODS Freeze Data

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

1. Click \textbf{Options} from the Administrative menu.

2. Click \textbf{Freeze Data Maintenance}. The Set Up Freeze Data Lists page opens.

3. Choose the Freeze List you want to modify from the drop-down list on the Set Up Freeze Data Lists page.

4. Click \textbf{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:
5. (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 choose how these events are handled when scheduling a job by choosing to either to insert, delete or replace the events from the **Event Handling** field on the Schedule a Process page.

### Freeze a Single Banner ODS Table/View

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

1. From the Administrative menu, click **Options**.

2. Click **Schedule a Process**. The Select a Process page opens.

3. Click **Freeze A Single Banner ODS Table/View** from the Select a Process page.

4. Enter the required process parameters.

   4.1. Type the name of a table/view into the **Enter Table to Freeze** field.

   4.2. Type the new (history) table name into the **Enter Table Name to Freeze to** field. (Follow your history table naming conventions.)

<table>
<thead>
<tr>
<th>Link</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delete Freeze List</td>
<td>Confirms that you want to delete the displayed freeze list. Tables of frozen data will not be deleted.</td>
</tr>
<tr>
<td>Rename Freeze List</td>
<td>Displays the Rename a Freeze List window. Enter the new freeze list name, then click <strong>Rename</strong>. Tables of frozen data will not be renamed.</td>
</tr>
<tr>
<td>Duplicate Freeze List</td>
<td>Displays the Duplicate a Freeze List window. Enter the new name, then click <strong>Duplicate</strong>. None of the history tables are duplicated.</td>
</tr>
<tr>
<td>Delete Freeze List</td>
<td>Confirms that you want to delete the displayed freeze list. Tables of frozen data will not be deleted.</td>
</tr>
<tr>
<td>Rename Freeze List</td>
<td>Displays the Rename a Freeze List window. Enter the new freeze list name, then click <strong>Rename</strong>. Tables of frozen data will not be renamed.</td>
</tr>
<tr>
<td>Duplicate Freeze List</td>
<td>Displays the Duplicate a Freeze List window. Enter the new name, then click <strong>Duplicate</strong>. None of the history tables are duplicated.</td>
</tr>
</tbody>
</table>
5. Enter the required scheduling parameters.

5.1. Enter a Run Date (format dd-mon-yyyy) and Runtime (format hh24:mi:ss).

5.2. If you want to run the process on a recurring basis, enter an Interval. For example, to run a process every day at the same time enter SYSDATE+1 in the Interval scheduling parameter.

See “Update or Freeze Recurring Banner ODS Data” on page 5-135 for more details on setting the Interval.

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

Freeze Multiple Banner ODS Tables/Views at the Same Time

If the freeze is going to occur repeatedly, it may be useful to create a Freeze List. The Freeze List is a name/label/title for one or more tables/views with data to be frozen at the same time. See “Freeze Data Maintenance” on page 5-125 for instructions on how to define a list of freeze tables.

Follow the steps below to freeze multiple tables/views:

1. From the Administrative menu, click Options.

2. Click Schedule a Process. The Select a Subprocess page opens.

3. Click Freeze Multiple Banner ODS Tables/Views from the Select a Process page.

   All freeze data lists defined within Freeze Data Maintenance display.

4. Click the freeze data list. The Schedule a Process page opens.

5. From the Event Handling drop-down list, indicate whether you want to replace, insert (add), or delete existing events from the tables in the freeze data list.

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

   Note

   You have to choose an event name when you submit the freeze job to run (refer to the “System Parameters” section). Once that freeze job is run, the data exists in the freeze tables with an 'event' name attached. There could be multiple event names in a single freeze table.

7. Enter the Run Date (format dd-mon-yyyy) and Runtime (format hh24:mi:ss).
If you want to run the process on a recurring basis, enter an Interval. For example, to run a process every day at the same time enter \textit{SYSDATE+1} in the Interval scheduling parameter. See "\textit{Update or Freeze Recurring Banner ODS Data}" on page \textit{5-135} for more details on setting the Interval.

8. Click \textbf{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.

\textbf{Create a dynamic Freeze List parameter}

You can create dynamic parameters and dropdown lists of valid values for selection parameters associated with a Freeze List. When you run a Freeze List, you can then use the parameter to reduce the amount of data that is frozen. The value selected and the associated column name are then appended to the “where” clause for each table in the freeze list.

Setting up this functionality requires the following conditions:

- Only tables or views owned by the ODSMGR schema can be used as source for a Freeze List
- A column that will be used as the “target” for a parameter value must be present in all source objects in the Freeze List

You can create a new view to meet this condition (For example, you could create a new view joining \textit{STUDENT} to \textit{PERSON_DETAIL}, adding \textit{ACADEMIC_PERIOD} to the new view (\textit{STUDENT_PERSON}) so only the relevant “person” rows are frozen.)

Use the following steps to set up a parameter for a Freeze List.

1. Create a Freeze List.

2. Select \textbf{Options}\textgreater\textbf{Set Up Parameters}.

3. From the \textbf{Internal Groups} dropdown list, select \textit{PARAMETER}.

4. Click \textbf{Create} to create a new entry for the Freeze List.

5. Enter values to create a new Parameter record. Use the descriptions in the following table as a guide to define the new Parameter record.

\begin{table}
\centering
\begin{tabular}{|l|l|}
\hline
\textbf{Field} & \textbf{Value} \\
\hline
Internal Group & \textit{PARAMETER} \\
\hline
Internal Code 1 & \textit{FREEZE_TABLE} \\
\hline
\end{tabular}
\end{table}
The following image shows the page for the “Parameter” parameter after it was created, and then updated to choose Parameter Type and input the Parameter Value.

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Code 2</td>
<td>&lt;Freeze List Name&gt;</td>
</tr>
<tr>
<td></td>
<td>Enter the name of the Freeze List you created in the step 1 of this procedure.</td>
</tr>
<tr>
<td>Internal Code Sequence Number</td>
<td>Null or the sequence in which you want the parameter to display on the Schedule a Process page</td>
</tr>
<tr>
<td>External Code</td>
<td>&lt;Source COLUMN_NAME to be tested&gt;</td>
</tr>
<tr>
<td>Description</td>
<td>&lt;Description of Process&gt;</td>
</tr>
<tr>
<td></td>
<td>Enter the description of the process that will display on the Schedule a Process page.</td>
</tr>
<tr>
<td>System Required</td>
<td>No</td>
</tr>
</tbody>
</table>

For SELECT parameter types the Parameter Value is the SELECT statement used to populate the dropdown list. In this example the statement was:
You can test the correctness of the SELECT statement by clicking the Test SQL link in the lower right corner of the page, resulting (when the arrow is clicked) in the image to the right.

The value stored as the External Code is added to the “Where” clause for each source in the Freeze list and tested for equality to the parameter value chosen from the list as the job is submitted.

**Example - Freeze List parameter**

The easiest way to understand how to create a new runtime parameter is to review the existing ones. In the previous table, there are two records whose Internal Code 1 = FREEZE_TABLE and the Internal Code 2 field is blank. Each of these records defines a runtime parameter that appears on the Schedule a Process page when Freeze Multiple Banner ODS Tables/Views is selected. The Internal Code 1 field of FREEZE_TABLE on the Parameter record here matches to the External Code of FREEZE_TABLE on the INSTALLED PROCESS parameter.

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.

### Update or Freeze Recurring Banner ODS Data

You’ll need to refresh the data in your Banner ODS on a regular basis to keep it synchronized with data in your administrative system. You may also want to freeze portions of Banner ODS data on a regular basis so that your users can create data comparison reports.

To automate the refresh or freeze processes, use the **Schedule a Process** option to define processes that run on a recurring basis. Specify that a job run on a recurring basis by entering a valid PL/SQL value in the **Interval** field. This field accepts a data expression value, which defines the length of time between processing runs. The key to setting the interval correctly is determining whether you need to run a job so that:

- Each execution of the job follows the previous run by a specific time interval.
  
  or

- The job executes on specific dates and times.

The first thing you need to do is determine when and/or how often your institution needs to update Banner ODS data.

### Update Banner ODS Daily

It is recommended that Banner ODS is updated daily. Use the **Schedule a Process** option to define processes that run on a recurring basis. Specify that a job run on a recurring basis by entering a valid PL/SQL value in the **Interval** field. This field accepts a data expression value, which defines the length of time between processing runs. The key to setting the interval correctly is determining whether you need to run a job so that:

- Each execution of the job follows the previous run by a specific time interval.
  
  or

- The job executes on specific dates and times.

The first thing you need to do is determine when and/or how often your institution needs to update Banner ODS data.
In this case, the interval value is a date arithmetic expression like $SYSDATE+N$, where $N$ represents the time interval expressed in days. So, an interval of $SYSDATE+1$ runs the job on a daily basis.

Job intervals set using date expressions do not guarantee that the next execution happens at a specific day or time, only that the spacing between executions is at least what was specified.

**Example**

If a job is first executed at 12:00 p.m. with an interval of $SYSDATE + 1$, it will be scheduled to execute the next day at 12:00 p.m. However, the job is executed manually at 4:00 p.m. using DBMS_JOB.RUN, then it is rescheduled for execution at 4:00 p.m. the next day. Another example is when the database is down or the job queue is so busy that the job cannot be executed exactly at the time scheduled. In this case, the job runs as soon as it can, but the execution time then moves away from the original submission time due to the later execution.

**Update Banner ODS on Specific Dates and Times**

You can set the Interval to execute jobs on a specific date and time. This type of interval involves more complex interval date expressions. Specifying intervals like these can get tricky, so be sure that your date arithmetic expression is correct. The following table provides samples of both simple and more complex types of job intervals.

![Note]

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

<table>
<thead>
<tr>
<th>Run job</th>
<th>Interval Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>$SYSDATE+1$</td>
</tr>
<tr>
<td>Hourly</td>
<td>$SYSDATE + 1/24$</td>
</tr>
<tr>
<td>Weekly (every 7 days)</td>
<td>$SYSDATE + 7$</td>
</tr>
<tr>
<td>Every day at 12:00</td>
<td>$\text{TRUNC}(SYSDATE + 1)$</td>
</tr>
<tr>
<td>midnight</td>
<td></td>
</tr>
<tr>
<td>Every day at 8:00 a.m.</td>
<td>$\text{TRUNC}(SYSDATE + 1) + 8/24$</td>
</tr>
<tr>
<td>Every Tuesday at 12:00</td>
<td>$\text{NEXT_DAY(\text{TRUNC}(SYSDATE), TUESDAY)}$</td>
</tr>
<tr>
<td>noon</td>
<td>$+ 12/24$</td>
</tr>
<tr>
<td>First day of the month</td>
<td>$\text{TRUNC}(\text{LAST_DAY(SYSDATE)} + 1)$</td>
</tr>
<tr>
<td>at midnight</td>
<td></td>
</tr>
</tbody>
</table>
Meta data is “data about data” or information, or characteristics, about data entities such as a column name, description, format, length, origin and destination.

Meta data in Banner ODS tells what data columns are in Banner ODS, a definition of their business use, the type of data (number, character, date, etc.), how long they are, where they come from (in the source system) and their destination (in the target system.)

The Administrative UI meta data pages include reports that show the relationship between the data stored in Banner ODS and the source from which it is extracted.

**Note**

The meta data includes Banner ODS reporting views and source composite views, both with the original source tables and source column names. Banner ODS recreated Object:Access views are not delivered in the meta data. They are additional reporting views to be used for clients migrating from Datamart 1.0, or clients who used the source Object:Access views for custom reporting. Newly developed Banner ODS reporting should not use the Object:Access views.

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

<table>
<thead>
<tr>
<th>Run job</th>
<th>Interval Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last day of the quarter at 11:00 P.M.</td>
<td>TRUNC(ADD_MONTHS(SYSDATE + 2/24, 3 ), 'Q') - 1/24</td>
</tr>
<tr>
<td>Every Monday, Wednesday, and Friday at 9:00 a.m.</td>
<td>TRUNC(LEAST(NEXT_DAY(SYSDATE, MONDAY), NEXT_DAY(SYSDATE, WEDNESDAY), NEXT_DAY(SYSDATE, FRIDAY))) + 9/24</td>
</tr>
</tbody>
</table>

Meta Data
<table>
<thead>
<tr>
<th>This Link/Button ...</th>
<th>Does this ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;-</td>
<td>Moves through the subject areas in alphabetical order.</td>
</tr>
<tr>
<td>-&gt;</td>
<td>Moves alphabetically through the views within a subject area. Moves through the columns within a view in column ID order.</td>
</tr>
</tbody>
</table>

**Select**

*From the Subject Area:*

Opens the Select A Subject Area window.

Click the **Target** or **Source** radio group, and click **Reporting View** or **Composite View** radio group to indicate the report type with which you want to work.

Choose the new subject area with which you want to work. The window closes automatically.

*From the Reporting or Composite View:*

Opens the Select A Target window.

Choose the reporting or composite view with which you wish to work. The window closes automatically.

*From the EDW star Target report List*

Opens the Select a Report Type and a Star window. Choose the target or source view and select the star. The window closes automatically.

*From the Reporting or Composite View Column:*

Opens the Select a Target Column or Select a Source Column window.

To have the columns listed alphabetically, click the **Sort By: Column Name** radio group. To have the columns listed in column order, click the **Sort By: Column Order** radio group. Click the column with which you wish to work. The window closes automatically.

**Add Target**

Adds a target view or table. The Target window opens.

**Add Source**

Adds a source view. The Source window opens.
<table>
<thead>
<tr>
<th><strong>This Link/Button ...</strong></th>
<th><strong>Does this ...</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Target Column</td>
<td>Add a target column. The Add a New Column window opens</td>
</tr>
<tr>
<td>Add Source Column</td>
<td>Add a source column. The Add a New Column window opens</td>
</tr>
<tr>
<td>List Composite Views</td>
<td>Displays the composite views for the selected subject area.</td>
</tr>
<tr>
<td>List Banner ODS</td>
<td>Displays the reporting views for the selected subject area.</td>
</tr>
<tr>
<td>Reporting Views</td>
<td></td>
</tr>
<tr>
<td>Preview</td>
<td>Save, then click <strong>Preview</strong> to review your changes. Do not click this link then click the back button. Or, click <strong>Preview</strong> to review the list of: <strong>• all reporting or composite views within a subject area</strong> <strong>• a list of all source, or target columns within a view</strong> <strong>• a list of fact/dimension tables within a star</strong></td>
</tr>
<tr>
<td>Properties</td>
<td>Works in conjunction with the <strong>Columns</strong> link to toggle between the Edit Target Columns and the Edit Target Properties pages.</td>
</tr>
<tr>
<td>Columns</td>
<td>Works in conjunction with the <strong>Properties</strong> link to toggle between the Edit Target Properties and the Edit Target Columns pages.</td>
</tr>
<tr>
<td>Preferences</td>
<td>Opens the Institutional Preferences window.</td>
</tr>
<tr>
<td>Publish</td>
<td>Publishes the meta data.</td>
</tr>
<tr>
<td>CSV Export</td>
<td>Exports meta data into a .csv file that you can open in Microsoft Excel.</td>
</tr>
<tr>
<td>Import</td>
<td>Enables you to choose a view to import into the meta data. The view must exist in the ODSMGR schema. All the columns in the view are created as LOCAL meta data. Click the button to display a list of views that do not exist in the meta data for that subject area.</td>
</tr>
<tr>
<td>Show Baseline/Hide</td>
<td>Toggles between displaying baseline information versus local information.</td>
</tr>
</tbody>
</table>
Baseline and Local Meta Data

Baseline meta data is the meta data delivered with your solution. When you change the baseline meta data, a local copy is created and the edited version becomes your local meta data. Local meta data appears on the Administrative UI page in the color specified in your Institutional Preferences. The Local Record field on the Edit Target (or Source) Columns pages indicates whether the displayed meta data is the baseline or local version.

If both local and baseline meta data exist for the column meta data, only the local meta data displays and can be edited. Only local meta data can be changed or deleted.

Create Meta Data

When Banner ODS is installed, the baseline meta data is installed as well. The sections “Set Up Meta Data Publish Preferences” and “Meta Data Parameter Set Up for Publishing Reports,” describe procedures that were completed during installation. They are included here for completeness, but you do not have to perform them to create meta data. The maintaining target or source meta data sections describe how to update the meta data repository with your own meta data.

Set up Institutional Meta Data Publish Preferences

The Meta Data Publish Preferences option controls which pieces of meta data can be previewed on the screen and saved (published) in a report. Meta data is considered ‘published’ after you save the selected source or target information as an HTML file using the Administrative UI. Before you publish meta data, follow the steps below to set the preferences.

1. Click Preferences & Security from the Administrative menu. The Preferences & Security menu opens.

2. Click Institutional Preferences. The Set Up Banner ODS Publishing Options menu opens.

4. In the Banner ODS Meta Data Target Report Preferences area on the Set Up Meta Data Publish Preference page, check the checkbox to indicate the meta data you want to display in your meta data target or source reports. Your solution is delivered with the default check boxes selected.

5. Choose the color in which you want your report rows and local meta data information to appear.

**Note**

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

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

7. Click **Save** to keep your changes.

**Meta Data Parameter Set up for Publishing Reports**

The meta data reports are created as static HTML pages from the Administrative UI or from the command line. This process is called ‘publishing’. (See “Publish Meta Data from the Administrative UI” on page 5-157 for additional information on publishing meta data reports from the command line.)

There are system parameters that must be configured when Banner ODS is installed. The PUBLISH_LOCATION parameter provides the directory location on the database server where the HTML pages are written when using the Publish buttons from the Administrative UI, or by running the PUBLISH.BAT script in batch mode.

There are two supported techniques for specifying the location on the file system where the HTML pages are created:

- **Use an Oracle DIRECTORY object**
  
  This is the preferred method as it does not require you to restart the database for changes to take effect, and also offers greater control over security. DIRECTORY objects are like any other objects in the Oracle database and offer the same levels of security control (grants by schema/user) while the UTL_FILE_DIR parameter setting is a global resource that does not offer tighter security control.

- **Use the Oracle initialization UTL_FILE_DIR parameter**
  
  This technique has been replaced by the DIRECTORY usage but will be supported for backward compatibility.

When using an Oracle DIRECTORY, use the following syntax to create the directory object in the IA_ADMIN schema:

```
CREATE DIRECTORY <DIRNAME> FOR ' <PATH> ;
```
where <DIRNAME> is a string, like METADATA_DIR and <PATH> is the actual path to the folder/directory location where the files are created.

The DIRECTORY object should be created and owned by the IA_ADMIN schema. The value of the PUBLISH_LOCATION parameter would then be set to the DIRECTORY name (in the above example, the value: METADATA_DIR).

You need to specify the initialization parameter UTL_FILE_DIR within the init.ora file for Banner ODS instance. This UTL_FILE_DIR parameter must contain the name of the directory where the Admin pl/sql package (MGKPUBL) generates the meta data files on the database server.

Once this directory is known and the UTL_FILE_DIR parameter is set, then configure the PUBLISH_LOCATION parameter through the Administrative UI. (Follow the directions in the section “Configure Publishing Parameters and Create Meta Data Web Directory”.)

The VIEW_URL parameter provides the Web server location where the published files are hosted. It is recommended that you use the delivered /meta data folder to store the generated reports for viewing. This is a subdirectory beneath the “document root” for the Web server instance.

- Specify the VIEW_URL parameter as a relative path to the document root.
- If the Oracle http server (Web server) is on a different computer from Banner ODS database server, then newly published reports must be copied from the PUBLISH_LOCATION to the /metadata subdirectory before they can be viewed from the Operational Data Store Meta Data Reports page.

The COPY_SCRIPT parameter allows you to specify a script to accomplish the moving HTML files from the application server to the web server.

The sample script delivered (ia_admin\dbscripts\utility_scripts\copyMetaData.sh) demonstrates how to do this using FTP, but the script can be replaced with any technique (such as SFTP, copying files directly using a mapped drive, even just copying them from one directory to another if the application server and web server are on the same machine, etc.). It is recommended that you examine and customize this script as needed to comply with your institutional security requirements and policies.

**Configure Publishing Parameters and Create Meta Data Web Directory**

1. Login to the Administrative UI.

   **Example**
   ```
   http://machine.sct.com:port/pls/ods/
twbkwbis.P_GenMenu?name=bmenu.P_MainMnu
   ```

2. Click Options from the Administrative UI menu.
3. Click **Set Up Parameters**.

4. From the **Show All Internal Groups** drop-down list, select *METADATA*.

5. Click **Search**.

6. Look for the PUBLISH_LOCATION, VIEW_URL, or COPY_SCRIPT parameter in the **Internal Code 2** column.

7. Click the corresponding link in the **Description** column.

8. Each link for the selected parameter appears in the **Description** field of the Update a Parameter page.
### Tip

On the Update a Parameter page, you can only change the **External Code** and **Description** fields. But, if you click **Duplicate** you can change...

---

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Directory or Server Location</th>
</tr>
</thead>
</table>
| PUBLISH_LOCATION   | UTL_FILE_DIR location or DIRECTORY name. Select this parameter to set up the location to which the meta data is published. If the Web server is running on a Banner ODS machine, set up the UTL_FILE_DIR location (for output of generated pages) to be the same as the meta data subdirectory path under the Web server document root. PUBLISH_LOCATION would be set to the same thing. **Example:**

```
D:\ORACLE\UTL_FILE
```

PUBLISH_LOCATION may be case sensitive. The directory name on the Banner ODS database server should be in the same case as the UTL_FILE_DIR entry. If the case does not match, you may receive the error “Unknown Status: ERR_UTL_FILE” when attempting to Publish. The description should correspond to the UTL_FILE_DIRECTORY setting. **Example**

The `initSID.ora` file may contain this line:

```
utl_file_dir = D:\ORACLE\UTL_FILE
```

The database init parameter file (`initSID.ora`) typically resides in the Oracle Home\database directory (Windows) or the Oracle Home/dbs directory (Unix).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| VIEW_URL           | The VIEW_URL parameter is set to the meta data subdirectory of the document root. This saves you from copying files each time they are published. **Example:**

```
\metadata
```

If the Oracle http server (Web server) is on a different computer from the ODS database server, then newly published reports must be copied from the PUBLISH_LOCATION to the /metadata subdirectory before they can be viewed from the Banner Operational Data Store Meta Data Reports page.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPY_SCRIPT</td>
<td>Script used to move HTML pages from the database server to the application Web server.</td>
</tr>
</tbody>
</table>
any of the fields. For example, to update the Internal Code you could duplicate the current one and change the Internal Code. Then, go back and delete the original parameter (to clean up). Click the back button (twice), then click Delete.

9. Click Save from the Update a Parameter page to save the new settings.

10. Return to the Select a Parameter page to set up a different parameter.

**Edit Target Meta Data Properties**

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

1. Click Meta Data from the Administrative UI menu.

2. Click Maintain Banner ODS Meta Data The View Target Report List page opens.

3. Select on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the Reporting View(s) or Composite View(s) radio group. Then, click the Target(s) radio group.

5. Click the subject area you want to view. The window closes automatically.

6. Click the reporting or composite view whose properties you want to change. The View Target Report page opens.

7. Click Properties located to the right of the reporting/composite view name. The Edit Target Properties page opens.

8. Make your changes.

9. Click Save Changes at the bottom of the page to keep your new information. The page refreshes automatically.
After the page refreshes, the **Local Record** field changes from *No* to *Yes* to indicate that this is now local meta data. The field names also display in the color that was set up in your Institutional Preferences page to indicate local meta data.

The **Show Baseline** and **Delete Local** links appear to the right of the **Local Record** field after you save.

**Add Target Views and Target Columns**

Follow the steps below to add target reporting or composite views and target columns to a subject area.

1. Click **Meta Data** from the Administrative UI menu.
2. Click **Maintain Banner ODS Meta Data**. The View Target Report List page opens.

   **Note**
   
   All subject areas on the View Target Report List page display in alphabetical order by default.
   
   To move through the subject areas in alphabetical order, click `<-` or `->`.

3. Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the **Reporting View(s)** or **Composite View(s)** radio group. Then, click the **Target(s)** radio group.

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

5. Click **Add Target**. The Add Target window opens.
6. Enter the new target name.
7. Click **Add Target** to save the new view. The View Target Report page opens displaying the new target reporting or composite name.
8. Click **Add Target Column** to add columns to the view. The Add a New Column window opens.
9. Enter the new information, then click **Add Column** to save. The View Target Report page refreshes and displays the new target column information.
Edit Target Views and Target Columns

Follow the steps below to change the information for target and reporting or composite views.

1. Click **Meta Data** from the Administrative UI menu.

2. Click **Maintain Banner ODS Meta Data**. The View Target Report List page opens.

   **Note**
   
   All subject areas on the View Target Report List page display in alphabetical order by default.

   To move through the subject areas in alphabetical order, click `<` or `>`.  

3. Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the **Reporting View(s)** or **Composite View(s)** radio group. Then, click the **Target(s)** radio group.

5. Click the subject area you want to view. The window closes automatically.

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

6. Click the reporting or composite view you want to change. The View Target Report page opens.

7. Click the Target Column you want to change.

   The Edit Target Columns page opens.

8. Enter your changes. Click **Save Changes** to keep your changes.

Synchronize Meta Data Comments with Reporting Views

Use this option to generate multiple comments on a reporting view. The meta data business definitions for the reporting view and the meta data business definitions for each of the columns is copied from the meta data into the database **Comments** field. Any existing comment will be overwritten.
This process (for a single or for multiple business definitions) can also be scheduled from Banner ODS Utilities menu. (See “Schedule a Process” on page 5-60 for instructions on how to schedule a process.)

1. Click Meta Data from the Administrative UI menu.

2. Click Maintain Banner ODS Meta Data. The View Target Report List page opens.

3. Click Select to choose the subject area, or click <- or -> to move through the subject areas in alphabetical order.

   **Note**
   If you click Select, which opens the Select a Subject Area window, keep the default Reporting View and Target radio groups. The window closes automatically after you select a subject area.

4. Click the reporting view to which you want to add comments.

5. Click the Sync Comments link.

   The business definitions are copied to the database comments.

---

### Delete Local Target Properties

Follow the steps below to delete local target properties:

1. Click Meta Data from the Administrative UI menu.

2. Click Maintain Banner ODS Meta Data. The View Target Report List page opens.

   **Note**
   All subject areas on the View Target Report List page display in alphabetical order by default.
   
   To move through the subject areas in alphabetical order, click <- or ->.

3. Click Select on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the Reporting View(s) or Composite View(s) radio group. Then, click the Target(s) radio group.

5. Click the subject area you want to view. The window closes automatically.

   **Note**
   Check the Show locally modified targets only checkbox to display local target views only.
6. Click the reporting or composite view whose target properties you want to delete. The View Target Report page opens.

7. Click **Delete**. A message window appears.

8. Click **OK** to delete the target, or **Cancel** to keep the target. If you delete the target, the View Target Report List page opens. If you keep the target, you remain on the View Target Report page.

### Delete Local Target Columns

Follow the steps below to delete local target columns.

1. Click **Meta Data** from the Administrative UI menu.

2. Click **Maintain Banner ODS Meta Data** a. The View Target Report List page opens.

   **Note**
   
   All subject areas on the View Target Report List page display in alphabetical order by default.

   To move through the subject areas in alphabetical order, click `<-` or `->`.

3. Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the **Reporting View(s)** or **Composite View(s)** radio group. Then, click the **Target(s)** radio group.

5. Click the subject area you want to view. The window closes automatically.

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

6. Click the reporting or composite view whose columns you want to delete. The View Target Report page opens.

7. Click the target column you want to delete. The Edit Target Column page opens.

8. Click **Delete Local**. A message window appears.

9. Click **OK** to delete the target, or **Cancel** to keep the target. If you delete the target, you return to the View Target Report page. If you keep the target, you remain on the Edit Definitions page.
Edit Source Meta Data Properties

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

1. Click Meta Data from the Administrative UI menu.

2. Click Maintain Banner ODS Meta Data. The View Target Report List page opens.

   **Note**
   All subject areas on the View Target Report List page display in alphabetical order by default.

   To move through the subject areas in alphabetical order, click `<` or `->`.

3. Click Select on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the Reporting View(s) or Composite View(s) radio group. Then, click the Target(s) radio group.

5. Click the subject area you want to view. The window closes automatically.

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

6. Click the Source Name whose properties you want to change. The View Source Report page opens.

7. Click Properties located to the right of the source name. The Edit Source Properties page opens.

8. Make your changes.

9. Click Save Changes at the bottom of the page to keep your new information. The page refreshes automatically.

   After the page refreshes, the Local Record field changes from NO to YES to indicate that this is now local meta data. The field names also display in the color that was set up in your Institutional Preferences page to indicate local meta data.

   The Show Baseline and Delete Local links appear to the right of the Local Record field after you save.
Add Source Names and Source Columns

Follow the steps below to add source names and source columns to a subject area for reporting and composite views

1. Click Meta Data from the Administrative UI menu.

2. Click Maintain Banner ODS Meta Data. The View Target Report List page opens.

   ![Note]
   
   All subject areas on the View Target Report List page display in alphabetical order by default.
   
   To move through the subject areas in alphabetical order, click <- or ->.

3. Click Select on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the Reporting View(s) or Composite View(s) radio group. Then, click the Target(s) radio group.

5. Click the subject area you want to view. The window closes automatically.

   ![Note]
   
   Check the Show locally modified targets only checkbox to display local target views only.

6. Click Add Source. The Add Source window opens.

7. Enter the new source name. Click Add Source to save the new name. The View Source Report page opens displaying the new source name.

8. Click Add Source Column to add columns to the source. The Add a New Column window opens.

9. Enter the new column information, then click Add Column to save. The Edit Source Columns page opens and displays the new source column information.
Edit Source Names and Source Columns

Follow the steps below to change the properties of your source meta data for reporting and composite views.

1. Click **Meta Data** from the Administrative UI menu.

2. Click **Maintain Banner ODS Meta Data** The View Target Report List page opens.

   **Note**
   
   All subject areas on the View Target Report List page display in alphabetical order by default.
   
   To move through the subject areas in alphabetical order, click `<` or `->`.

3. Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the **Reporting View(s)** or **Composite View(s)** radio group . Then, click the **Target(s)** radio group.

5. Click the subject area you want to view. The window closes automatically.

   **Note**
   
   Check the **Show locally modified Sources only** checkbox to display local source views only.

6. Click the source name you want to change. The View Source Report page opens.

7. Choose the source column you want to change. The Edit Source Columns page opens.

8. Enter your changes. Click **Save Changes** to keep your changes.

Delete Local Source Properties

Follow the steps below to delete local source properties:

1. Click **Meta Data** from the Administrative UI menu.

2. Click **Maintain Banner ODS Meta Data** . The View Target Report List page opens.

   **Note**
   
   All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click `<` or `->`.

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

5. Click the subject area you want to view. The window closes automatically.

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

6. Click the source name whose source properties you want to delete. The View Source Report page opens.

7. Click the Delete. A message window appears.

8. Click OK to delete the source, or Cancel to keep the source. If you delete the source, the View Source Report List page opens. If you keep the source, you remain on the View Source Report page.

**Delete Local Source Columns**

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

1. Click Meta Data from the Administrative UI menu.

2. Click Maintain Banner ODS Meta Data. The View Target Report List page opens.

**Note**
All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click <- or ->.

3. Click Select on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the Reporting View(s) or Composite View(s) radio group. Then, click the Target(s) radio group.

5. Click the subject area you want to view. The window closes automatically.

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

6. Click the source name whose columns you want to delete. The View Source Report page opens.

7. Click the source column you want to delete. The Edit Source Column page opens.
8. Click the **Delete Local**. A message window appears.

9. Click **OK** to delete the source, or **Cancel** to keep the source. If you delete the source, you return to the Edit Source Column page. If you keep the source, you remain on the Edit Source Column page.

---

### Add and Delete Source to Target Meta Data Local Mappings

Meta data contains information about which source column in the source system contained the information that is in the target column. You can create your own local source to target meta data mappings.

Follow the steps below to add or delete local source to target mappings to the meta data:

1. Click **Meta Data** from the Administrative UI menu.

2. Click **Maintain Banner ODS Meta Data**. The View Target Report List page opens.

   **Note**
   
   All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click `<` or `>`.  

3. Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the **Reporting View(s)** or **Composite View(s)** radio group. Then, click the **Target(s)** radio group.

5. Click the subject area you want to view. The window closes automatically.

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

6. Click the reporting view to map. The View Target Report page opens.

7. Click the target column you want to map. The Edit Target Columns page opens.

8. **To Add:**
   
   Click **Add Local Mapping** at the bottom of the web page. The Add a Source Mapping window opens. (Continue to the next step below.)

   **To Delete:**
   
   Click the **Delete Local Mapping** link at the bottom of the web page.

   Click **OK** to delete the local mapping.
9. Enter the source subject area, table and column (required fields). Or, search for them using the corresponding links. Choose the table or column from the drop-down list associated with that link.

10. Click **Add Mapping** to save the newly mapped meta data.

**Import Target and Source Meta Data**

The Import option enables you to import an entire view into the meta data. The view must exist in the ODSMGR schema. All the columns in the view are created as local meta data.

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

1. Click **Meta Data** from the Administrative UI menu.

2. Click **Maintain Banner ODS Meta Data**. The View Target Report List page opens.

**Note**

All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click `<-` or `->`.

3. Click **Select** on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the **Reporting View(s)** or **Composite View(s)** radio group. Then, click the **Target(s)** radio group.

5. Click the subject area you want to view. The window closes automatically.

**Note**

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

6. Click **Import** located at the top right side of the web page. The Select a View window opens.

7. Click one or more views to import.

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

8. Click **Import**.
CSV Export

The Export option enables you to export target and source meta data into a .csv file that you can open in Microsoft Excel, or similar application.

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

1. Click Meta Data from the Administrative UI menu.

2. Click Maintain Banner ODS Meta Data. The View Target Report List page opens.

   **Note**

   All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click <- or >.

3. Click Select on the View Target Report List page to choose the target subject area you want to edit. The Select A Subject Area window opens.

4. Click either the Reporting View(s) or Composite View(s) radio group. Then, click the Target(s) radio group.

5. Choose the subject area you want to view. The window closes automatically.

   **Note**

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

6. To export all reporting or composite views in a subject area, click CSV Export located at the top right side of the View Target (or Source) Report List page.

7. A window opens either to warn you that the operation will take a long time, or to indicate whether you want to save or open the file. Click Cancel to stop.
Publish Meta Data from the Administrative UI

Meta data is considered ‘published’ after the selected source or target information is saved as an HTML file and a meta data report is created. And, it can be published for some or all sources and targets. Meta data enables users to easily view the relationships between Banner ODS columns and their sources. Meta data can be published from the Administrative UI, or from the command line outside the Administrative UI. Once a meta data report is published, it can be stored on a server that is accessible to reporting users.

Note
If the Web server is not on the Banner ODS machine, the files need to be copied to the Web server after publishing.

Publish Meta Data for an Entire Subject Area

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

1. Click Meta Data from the Administrative UI menu.

2. Click Maintain Banner ODS Meta Data. The View Target Report List page opens.

Note
All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click <- or ->.

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

3. Click Select on the View Target Report List page. The Select A Subject Area window opens.

4. Click the Target(s) radio group.

5. Click the subject you want to view. The window closes automatically.

6. Click Publish located at the top right side of the web page.

7. Click Ok to confirm that you want to publish all reports for the subject area.
Publish Meta Data for One Source or Target

Follow the steps below to preview and publish the meta data for one source or target.

1. Click Meta Data from the Administrative UI menu.

2. Click Maintain Banner ODS Meta Data. The View Target Report List page opens.

Note
All subject areas on the View Target Report List page display in alphabetical order by default. To move through the subject areas in alphabetical order, click <- or ->.

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

3. Click Select on the View Target Report List page. The Select A Subject Area window opens.

4. Click the Target(s) radio group.

5. Click the subject you want to view. The window closes automatically.

6. Click the reporting view whose meta data you want to preview or publish.

7. Click Preview to open the View Target Report List page, and preview the report. The meta data is not permanently published until you complete the following step.

8. Click Publish at the top of the web page. An HTML file is published (saved as a report). The file is saved to the location specified by the parameters with an internal group _METADATA_ and internal_code_2= PUBLISH_LOCATION.

Publish Meta Data Reports

Meta data can be published using three methods.

- Publish all meta data by scheduling a process. See “Publish Meta Data by Scheduling a Process” on page 5-159

- Publish for an entire subject area. See “Publish Meta Data for an Entire Subject Area” on page 5-157
• Publish for one source or target. See “Publish Meta Data for One Source or Target” on page 5-158

Note
Baseline meta data reports are provided when your solution is installed. Therefore, you should not need to perform the publishing step initially.

Publish Meta Data by Scheduling a Process

You can schedule meta data to publish at a predetermined day and time. Follow the steps in the “Schedule a Process” on page 5-60 section. You should click the Publish Meta Data process.

Publish Meta Data from the Command Line

You can publish all meta data reports using the MGKPUBL.P_MakeAllReports procedure. A sample script, PUBLISH.SQL, is provided in the dbscripts/utility_scripts for publish.sql. To generate all the meta data reports, use the following command:

```
SQLPLUS IA_ADMIN/<password> @PUBLISH.SQL
```

The following PUBLISH.BAT script (in the web_files/metadata directory) can be customized to perform the entire process (generating the files, and then using FTP to put them on a remote server):

```
if "%1" == "move" goto movem
echo Publishing...
echo SET SERVEROUTPUT ON SIZE 500000 > doit.sql
echo EXEC MGKPUBL.P_MakeAllReports >> doit.sql
echo QUIT >> doit.sql
type doit.sql
sqlplus ia_admin/<password>@<Oracle database> @doit.sql
:movem
echo Moving...
if exist *.html del *.html
ftp -n -s:getfiles.dat <ODS machine>
ftp -n -s:putfiles.dat <web server machine>
```
View Published Meta Data

Meta data is considered ‘published’ after the selected source or target information is saved as an HTML file and, as a result, a meta data report is created. There are two kinds of reports for reporting view and composite view meta data. They are target reports and source reports.

**Target Reports:**
Show the relationship between the columns in Banner ODS reporting views (or composite views) and the columns to which they are mapped in the source system tables.

**Source Reports:**
Show the relationship between columns in the source system tables and the columns to which they are mapped in Banner ODS reporting view (or composite view).

Reporting View Meta Data

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

1. Click **Meta Data** from the Administrative menu.
2. Click **Banner Operational Data Store**. Banner Operational Data Store Reporting View Meta Data Reports page opens.
3. Choose a subject area from Banner Operational Data Store Reporting View Meta Data Reports page. The Reporting View Meta Data Reports page opens.
4. Choose a reporting view. The selected report displays.

>Note
Sometimes the number of targets in the source report can exceed a 30,000 character limit. If this happens the output for the source is cut off, and a message “(More Targets…)” displays.

Composite View Meta Data

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

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

4. Choose the subject area. The Composite View Meta Data Reports page opens listing the view name and description.

5. To view the column details associated with the selected composite view, choose one of the composite views. A report opens listing the Local Target, Target Column, Business Definition, Database Data Type, Source Name and Source Column.

**Metamodel**

The delivered metamodel is the physical relational data model that stores the meta data. This should not be confused with the meta data repository, which refers to the physical database tables that contain the meta data.

Meta data tables are stored in a repository that is owned by the user - IA_ADMIN. Each table in the meta data repository begins with a “WMT_” prefix to identify it as a Banner ODS “Warehouse Meta Data Table.” In addition, there is a public synonym for each table that simply removes the “WMT_” prefix.

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

<table>
<thead>
<tr>
<th>Meta Data Table Name</th>
<th>Synonym</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMT_IA_SYSTEM</td>
<td>IA_SYSTEM</td>
</tr>
<tr>
<td>WMT_SOURCE</td>
<td>SOURCE</td>
</tr>
<tr>
<td>WMT_SOURCE_COLUMN</td>
<td>SOURCE_COLUMN</td>
</tr>
<tr>
<td>WMT_SOURCE_TO_TARGET_MAP</td>
<td>SOURCE_TO_TARGET_MAP</td>
</tr>
<tr>
<td>WMT_SUBJECT_AREA</td>
<td>SUBJECT_AREA</td>
</tr>
<tr>
<td>WMT_SYSTEM_MAP</td>
<td>SYSTEM_MAP</td>
</tr>
<tr>
<td>WMT_TARGET</td>
<td>TARGET</td>
</tr>
<tr>
<td>WMT_TARGET_COLUMN</td>
<td>TARGET_COLUMN</td>
</tr>
</tbody>
</table>
A diagram of the metamodel follows:

These meta data tables that store information about the meta data are further described in the “Banner ODS Meta Data Object Types” section.
Banner ODS Meta Data Object Types

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

<table>
<thead>
<tr>
<th>Object</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target View</td>
<td>Banner ODS reporting views that join related information from Banner ODS tables. Use these views to build reports.</td>
</tr>
<tr>
<td>Example</td>
<td>CONSTITUENT reporting view is the Advancement constituent data.</td>
</tr>
<tr>
<td>Source Table</td>
<td>Database tables in your source system used as the source for the data in Banner ODS.</td>
</tr>
<tr>
<td>Example</td>
<td>APBCONS is the Constituent Base Table.</td>
</tr>
<tr>
<td>Source Function</td>
<td>Functions that use data from the source system’s source tables to create new data to be stored in Banner ODS.</td>
</tr>
</tbody>
</table>

Source Meta Data Tables

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

Source Table (WMT_SOURCE)

<table>
<thead>
<tr>
<th>Columns</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>System ID</td>
<td>Unique ID for the source system.</td>
</tr>
<tr>
<td>Subject Area ID</td>
<td>Unique ID for the subject area.</td>
</tr>
<tr>
<td>Source Type</td>
<td>Identifies whether the source is a table, view, or function. Sample source types are TABLE, REPORTING VIEW and FUNCTION.</td>
</tr>
<tr>
<td>Source Name</td>
<td>Source table, view, or function name.</td>
</tr>
<tr>
<td>Source Business Name</td>
<td>Source table, view, or function descriptive name.</td>
</tr>
<tr>
<td>Source Business Definition</td>
<td>Table or view business purpose.</td>
</tr>
<tr>
<td>Local Ind</td>
<td>Indicates whether the row is a local or baseline version.</td>
</tr>
<tr>
<td><strong>Source Column Table (WMT_SOURCE_COLUMN)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Columns</strong></td>
<td><strong>Descriptions</strong></td>
</tr>
<tr>
<td>Activity Date</td>
<td>Date the meta data was changed.</td>
</tr>
<tr>
<td>Activity User</td>
<td>User who changed the meta data.</td>
</tr>
<tr>
<td>System ID</td>
<td>Unique ID for the source system.</td>
</tr>
<tr>
<td>Subject Area ID</td>
<td>Unique ID for the subject area.</td>
</tr>
<tr>
<td>Source Type</td>
<td>Identifies whether the source is a table, view or function. Sample source types are TABLE, REPORTING VIEW, and FUNCTION.</td>
</tr>
<tr>
<td>Source Name</td>
<td>Source table, view or function name.</td>
</tr>
<tr>
<td>Source Column Name</td>
<td>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.</td>
</tr>
<tr>
<td>Source Column Number</td>
<td>Distinguishes between source columns that have the same names.</td>
</tr>
<tr>
<td>Local Ind</td>
<td>Indicates whether the row is a local or baseline version.</td>
</tr>
<tr>
<td>Business Name</td>
<td>Descriptive name for the column in the source.</td>
</tr>
<tr>
<td>Business Definition</td>
<td>Source column defined in business terms.</td>
</tr>
<tr>
<td>Business Acronym</td>
<td>Acronym for the source column, if it has one.</td>
</tr>
<tr>
<td>Source Form</td>
<td>Source system form name from which the data was captured.</td>
</tr>
<tr>
<td>Calculation Formula</td>
<td>Any calculations that are applied to create the data in the target column.</td>
</tr>
<tr>
<td>Sort Order</td>
<td>Column order in the table or view. It is determined by numbering the columns in alphabetical order.</td>
</tr>
<tr>
<td>Activity Date</td>
<td>Date the meta data was changed.</td>
</tr>
<tr>
<td>Activity User</td>
<td>User who changed the meta data.</td>
</tr>
</tbody>
</table>
Target Meta Data Tables

The following meta data tables store information about the target of Banner ODS data, Banner ODS reporting views.

**Target Table (WMT_TARGET)**

<table>
<thead>
<tr>
<th>Columns</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>System ID</td>
<td>Unique ID for Banner ODS.</td>
</tr>
<tr>
<td>Subject Area ID</td>
<td>Unique ID for the subject area.</td>
</tr>
</tbody>
</table>
| Parent Object Type | This column is used in Banner EDW only.  
                        | In the case of Banner EDW, the parent object type is STAR. Not used in Banner ODS. |
| Parent Object Name | This column is used in Banner EDW only.  
                        | In Banner EDW, this identifies the star to which the target belongs. |
| Target Type      | Stores whether this is a Banner ODS table or view. Currently, reporting and composite view information is available.  
                        | Sample values for Banner ODS are REPORTING VIEW and COMPOSITE VIEW.  
                        | Sample values for the EDW are DIMENSION TABLE, FACT TABLE, and STAR. |
| Target Name      | Table or view name.                                                         |
| Target Business 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)

<table>
<thead>
<tr>
<th>Columns</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>System ID</td>
<td>Unique ID for Banner ODS.</td>
</tr>
<tr>
<td>Subject Area ID</td>
<td>Unique ID for the subject area.</td>
</tr>
<tr>
<td>Parent Object Type</td>
<td>This column is used in Banner EDW only.</td>
</tr>
<tr>
<td></td>
<td>In Banner EDW, the parent object type is STAR.</td>
</tr>
<tr>
<td>Parent Object Name</td>
<td>This column is used in Banner EDW only.</td>
</tr>
<tr>
<td></td>
<td>In Banner EDW, this identifies the star to which the target belongs.</td>
</tr>
<tr>
<td>Target Type</td>
<td>Stores whether this is a Banner ODS table or view. Currently, reporting view information is available. Sample values for Banner ODS are REPORTING VIEW and COMPOSITE VIEW.</td>
</tr>
<tr>
<td>Target Name</td>
<td>Table or view name.</td>
</tr>
<tr>
<td>Target Column Name</td>
<td>Target column name.</td>
</tr>
<tr>
<td>Local Ind</td>
<td>Indicates whether the row is a local or baseline version.</td>
</tr>
<tr>
<td>Business Name</td>
<td>Descriptive name for the column in the target.</td>
</tr>
<tr>
<td>Business Definition</td>
<td>Defines the target column in business terms. This is the comment on column in the relational database data dictionary in your target system.</td>
</tr>
<tr>
<td>Database Data Type Length</td>
<td>Comes from the relational database data dictionary in Banner ODS. This is stored in the meta data tables, not just the relational database data dictionary, so that it is easily available in one place with the rest of the meta data.</td>
</tr>
</tbody>
</table>
The following meta data tables store information about the source and target of the data. This includes meta data about the source systems and Banner ODS.

**System Table (WMT_IA_SYSTEM)**

<table>
<thead>
<tr>
<th>Columns</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Id</td>
<td>Unique ID for a system.</td>
</tr>
<tr>
<td>System Name</td>
<td>Administrative source or Banner ODS solution system name.</td>
</tr>
<tr>
<td>System Desc</td>
<td>Administrative source or Banner ODS solution system description.</td>
</tr>
<tr>
<td>System DBMS</td>
<td>Database management system software, Oracle for example, used to implement the source or target system.</td>
</tr>
<tr>
<td>Columns</td>
<td>Descriptions</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Activity Date</td>
<td>Date the meta data was changed.</td>
</tr>
<tr>
<td>Activity User</td>
<td>User who changed the meta data.</td>
</tr>
</tbody>
</table>

**Subject Area Table (WMT_SUBJECT_AREA)**

<table>
<thead>
<tr>
<th>Columns</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>System ID</td>
<td>Unique ID for the system.</td>
</tr>
<tr>
<td>Subject Area ID</td>
<td>Unique ID for the subject area.</td>
</tr>
<tr>
<td>Subject Area Desc</td>
<td>Advancement, Student or Human Resources, for example.</td>
</tr>
</tbody>
</table>

**System Map Table (WMT_SYSTEM_MAP)**

<table>
<thead>
<tr>
<th>Columns</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source System ID</td>
<td>Source system unique ID.</td>
</tr>
<tr>
<td>Source Type</td>
<td>Identifies whether the source is a table, view, or function. Sample source types are TABLE, REPORTING VIEW, and FUNCTION.</td>
</tr>
<tr>
<td>Target System Id</td>
<td>Banner ODS.</td>
</tr>
<tr>
<td>Target Type</td>
<td>Stores whether this is a Banner ODS table or view. Currently, reporting and composite view information is available. Sample values for Banner ODS are REPORTING VIEW and COMPOSITE VIEW.</td>
</tr>
<tr>
<td>Activity Date</td>
<td>Date the meta data was changed.</td>
</tr>
<tr>
<td>Activity User</td>
<td>User who changed the meta data.</td>
</tr>
</tbody>
</table>

**Source to Target Map Table (WMT_SOURCE_TO_TARGET_MAP)**

<table>
<thead>
<tr>
<th>Columns</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source System ID</td>
<td>Source system unique ID.</td>
</tr>
<tr>
<td>Source Subject Area ID</td>
<td>Subject area unique ID.</td>
</tr>
<tr>
<td>Columns</td>
<td>Descriptions</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Source Type</td>
<td>Identifies whether the source is a table, view or function. Sample source types are TABLE, REPORTING VIEW and FUNCTION.</td>
</tr>
<tr>
<td>Source Name</td>
<td>Source table, view or PL/SQL function name.</td>
</tr>
<tr>
<td>Source Column Name</td>
<td>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.</td>
</tr>
<tr>
<td>Source Column Number</td>
<td>Distinguishes between source columns that have the same names.</td>
</tr>
<tr>
<td>Source Local Ind</td>
<td>Indicates whether the row is a local or baseline version.</td>
</tr>
<tr>
<td>Target System Id</td>
<td>Banner ODS unique ID.</td>
</tr>
<tr>
<td>Target Subject Area Id</td>
<td>Subject area unique ID.</td>
</tr>
<tr>
<td>Parent Object Type</td>
<td>This column is used in Banner EDW only.</td>
</tr>
<tr>
<td></td>
<td>In Banner EDW, the parent object type is STAR.</td>
</tr>
<tr>
<td>Parent Object Name</td>
<td>This column is used in Banner EDW only.</td>
</tr>
<tr>
<td></td>
<td>In Banner EDW, this identifies the star to which the target belongs.</td>
</tr>
<tr>
<td>Target Type</td>
<td>Stores whether this is a Banner ODS table or view. Currently, reporting and composite view information is available.</td>
</tr>
<tr>
<td></td>
<td>Sample values for Banner ODS are REPORTING VIEW and COMPOSITE VIEW.</td>
</tr>
<tr>
<td></td>
<td>Sample values for Banner EDW are DIMENSION TABLE, FACT TABLE, and STAR.</td>
</tr>
<tr>
<td>Target Name</td>
<td>Table or view name.</td>
</tr>
<tr>
<td>Target Column Name</td>
<td>Column name in the target reporting view.</td>
</tr>
<tr>
<td>Target Local Ind</td>
<td>Indicates whether the row is a local or baseline version.</td>
</tr>
<tr>
<td>Target Source Count</td>
<td>Count indicates how many sources there are for a target.</td>
</tr>
</tbody>
</table>
The following views exist in the meta data repository, and are owned by the user IA_ADMIN.

### Views

<table>
<thead>
<tr>
<th>Views</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMV Source</td>
<td>Lists all information associated with sources and source columns.</td>
</tr>
<tr>
<td>WMV Source To Target Map</td>
<td>Lists all information associated with sources, targets, and source and target columns.</td>
</tr>
<tr>
<td>WMV Target</td>
<td>Lists all information associated with targets and target columns.</td>
</tr>
</tbody>
</table>

Each view joins a specific combination of the data stored within the meta data tables. You can use these views to query and report the meta data information. They provide easier access to the meta data in the same way that Banner ODS reporting views provide access to the data in Banner ODS tables.

### Source Meta Data View (WMV_SOURCE)

<table>
<thead>
<tr>
<th>Views</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Name</td>
<td>Administrative source or Banner ODS solution system name.</td>
</tr>
<tr>
<td>System Desc</td>
<td>Administrative source or Banner ODS solution system description.</td>
</tr>
<tr>
<td>Subject Area Desc</td>
<td>Advancement, Student or Human Resources, for example.</td>
</tr>
<tr>
<td>Source Type</td>
<td>Identifies whether the source is a table, view or function. Sample source types are TABLE, REPORTING VIEW and FUNCTION.</td>
</tr>
<tr>
<td>Source Name</td>
<td>Source table, view or PL/SQL function name.</td>
</tr>
<tr>
<td>Source Business Name</td>
<td>Source descriptive name.</td>
</tr>
</tbody>
</table>
### Views to Target Map Meta Data View (WMV_SOURCE_TO_TARGET_MAP)

<table>
<thead>
<tr>
<th>Views</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target System Name</td>
<td>Solution system name.</td>
</tr>
<tr>
<td>Target System Desc</td>
<td>Solution system description.</td>
</tr>
<tr>
<td>Target Subject Area Desc</td>
<td>Advancement, Student or Human Resources, for example.</td>
</tr>
<tr>
<td>Parent Object Type</td>
<td>This column is used in Banner EDW only.</td>
</tr>
<tr>
<td></td>
<td>In the case of Banner EDW, the parent object type is STAR.</td>
</tr>
<tr>
<td>Parent Object Name</td>
<td>This column is used in Banner EDW only.</td>
</tr>
<tr>
<td></td>
<td>In the case of Banner EDW this identifies the star to which the target belongs.</td>
</tr>
<tr>
<td>Views</td>
<td>Descriptions</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Target Type</td>
<td>Stores whether this is a Banner ODS table or view. Currently Reporting Views information is available.</td>
</tr>
<tr>
<td></td>
<td>A sample value for Banner ODS is REPORTING VIEW.</td>
</tr>
<tr>
<td></td>
<td>Sample values for Banner EDW are DIMENSION TABLE, FACT TABLE and STAR.</td>
</tr>
<tr>
<td>Target Name</td>
<td>Table or view name.</td>
</tr>
<tr>
<td>Target Business Name</td>
<td>Target descriptive name.</td>
</tr>
<tr>
<td>Target Business Definition</td>
<td>Target business purpose.</td>
</tr>
<tr>
<td>Business Data Steward</td>
<td>Person or department responsible for the data in the target.</td>
</tr>
<tr>
<td>Target Column Name</td>
<td>Target column name.</td>
</tr>
<tr>
<td>Target Column Business Name</td>
<td>Target column descriptive name.</td>
</tr>
<tr>
<td>Target Column Business Def</td>
<td>Target column description in business terms. This is the comment on column in the relational database data dictionary in your target system.</td>
</tr>
<tr>
<td>Database Data Type Length</td>
<td>Comes from the relational database data dictionary in Banner ODS. This is stored in the meta data tables, not just the relational database data dictionary, so that it is easily available, in one place with the rest of the meta data, for meta data users.</td>
</tr>
<tr>
<td>Business Data Type Length</td>
<td>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.</td>
</tr>
<tr>
<td>Domain Values Desc</td>
<td>Description of the valid values that a column can contain. It could be a list of codes and code descriptions.</td>
</tr>
<tr>
<td>Views</td>
<td>Descriptions</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Publish Ind</td>
<td>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.</td>
</tr>
<tr>
<td>Target Sort Order</td>
<td>Columns physical order in the table or view from the relational database data dictionary.</td>
</tr>
<tr>
<td>Target Local Ind</td>
<td>Indicates whether the row is a local or baseline version.</td>
</tr>
<tr>
<td>Source System Name</td>
<td>Solution system name.</td>
</tr>
<tr>
<td>Source System Desc</td>
<td>Solution system description.</td>
</tr>
<tr>
<td>Source Subject Area Desc</td>
<td>Advancement, Student or Human Resources, for example.</td>
</tr>
<tr>
<td>Source Type</td>
<td>Identifies whether the source is a table, view or function. Sample source types are TABLE, REPORTING VIEW and FUNCTION.</td>
</tr>
<tr>
<td>Source Name</td>
<td>Source table, view or function name.</td>
</tr>
<tr>
<td>Source Business Name</td>
<td>Source descriptive name.</td>
</tr>
<tr>
<td>Source Business Definition</td>
<td>Business purpose of the source.</td>
</tr>
<tr>
<td>Source Column Name</td>
<td>Source column name from the source, if the source is a table or view. Function name if the source is a function.</td>
</tr>
<tr>
<td>Source Column Name</td>
<td>Column in the source descriptive name.</td>
</tr>
<tr>
<td>Source Column Name</td>
<td>Source column described in business terms.</td>
</tr>
<tr>
<td>Business Acronym</td>
<td>Source column acronym, if it has one.</td>
</tr>
<tr>
<td>Calculation Formula</td>
<td>Any calculations that are applied to create the data in the target column.</td>
</tr>
</tbody>
</table>
### Target Meta Data View (WMV_TARGET)

<table>
<thead>
<tr>
<th>Views</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Sort Order</td>
<td>Column order in the table or view. It is determined by numbering the columns in alphabetic order.</td>
</tr>
<tr>
<td>Source Form</td>
<td>Source system form name from which the data was captured.</td>
</tr>
<tr>
<td>Source Local Ind</td>
<td>Indicates whether the row is a local or baseline version.</td>
</tr>
<tr>
<td>System Name</td>
<td>Administrative source or Banner ODS solution system name.</td>
</tr>
<tr>
<td>System Desc</td>
<td>Administrative source or Banner ODS solution system description.</td>
</tr>
<tr>
<td>Subject Area Desc</td>
<td>Advancement, Student or Human Resources, for example.</td>
</tr>
<tr>
<td>Parent Object Type</td>
<td>This column is used in Banner EDW only.</td>
</tr>
<tr>
<td></td>
<td>In the case of Banner EDW, the parent object type is STAR.</td>
</tr>
<tr>
<td>Parent Object Name</td>
<td>This column is used in Banner EDW only.</td>
</tr>
<tr>
<td></td>
<td>In the case of Banner EDW this identifies the star to which the target belongs.</td>
</tr>
<tr>
<td>Target Type</td>
<td>Stores whether this is a Banner ODS table or view. Currently, Reporting and Composite View information is available.</td>
</tr>
<tr>
<td></td>
<td>Sample values for Banner ODS are REPORTING VIEW and COMPOSITE VIEW.</td>
</tr>
<tr>
<td></td>
<td>Sample values for Banner EDW are DIMENSION TABLE, FACT TABLE, and STAR.</td>
</tr>
<tr>
<td>Target Name</td>
<td>Table or view name.</td>
</tr>
<tr>
<td>Target Business Name</td>
<td>Target descriptive name.</td>
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<tr>
<td>Target Business Definition</td>
<td>Target business purpose.</td>
</tr>
<tr>
<td>Business Data Steward</td>
<td>Person or department responsible for the data in the target.</td>
</tr>
<tr>
<td>Views</td>
<td>Descriptions</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Target Column Name</td>
<td>Column name in the target.</td>
</tr>
<tr>
<td>Business Name</td>
<td>Descriptive name for the column in the target.</td>
</tr>
<tr>
<td>Business Definition</td>
<td>Target column in business terms. This is the comment on column in the relational database data dictionary in your target system.</td>
</tr>
<tr>
<td>Database Data Type</td>
<td>Comes from the relational database data dictionary in Banner ODS. This is stored in the meta data tables, not just the relational database data dictionary, so that it is easily available in one place with the rest of the meta data, for meta data users.</td>
</tr>
<tr>
<td>Database Length</td>
<td>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.</td>
</tr>
<tr>
<td>Example:</td>
<td>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.</td>
</tr>
<tr>
<td>Domain Values Desc</td>
<td>Description of the valid values that a column can contain. It could be a list of codes and code descriptions.</td>
</tr>
<tr>
<td>Publish Ind</td>
<td>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.</td>
</tr>
<tr>
<td>Sort Order</td>
<td>Columns physical order in the table or view from the relational database data dictionary.</td>
</tr>
<tr>
<td>Local Ind</td>
<td>Indicates whether the row is a local or baseline version.</td>
</tr>
</tbody>
</table>
Staging and data replication

You have the option to use either the Oracle Streams or Materialized Views architecture framework for staging data in Banner ODS. You chose which option to implement when you installed or upgraded Banner ODS. Regardless of which framework you use, you can maintain the staging environment using the options on the Staging menu of the Administrative UI.

Staging

The following options on the Staging menu let you manage the staging environment. These options are available no matter which framework (Streams or MViews) you implement. The jobs allow you to do the following tasks.

- Maintain Stage Tables - add or delete non-baseline staging tables and schemas to or from the Banner ODS staging area. (Refer to the “Maintain stage tables” section for more information.)
- Report Staging Area Status - view a list of staged tables and perform checks on the status of various staging area items that may require user action, for example, it can list unknown mviews or missing baseline staged mviews. (Refer to the “Staging...
Materialized Views staging options

The following options on the Staging menu let you manage how and when to refresh and reconcile data in the target database when you implement the Materialized Views framework as your approach to replicate data in the Banner ODS. These options only display when you implement the MViews framework. The jobs allow you to do the following:

- Refresh Staging Collections - refresh a collection of materialized views
- Refresh Staging Tables - refresh selected materialized views

The actual jobs associated with these menu options are defined in the SUBPROCESS parameter and named as follows:

- RECONCILE_STAGE_SCHEMA
- RECONCILE_STAGE_TABLE

Maintain stage tables

If you want to include additional data from the source database that isn’t included in your baseline target database, you need to create stage tables for the new data in the target database. Depending on your data, you may also need to create new schemas associated with the new tables.

You have the ability to add or remove non-baseline stage tables and add a schema using the Maintain Stage Tables page available from the Staging menu in the Administrative UI.

Add a non-baseline staging table to the Banner ODS

You may want to replicate data from source Banner tables that are not part of the baseline Banner ODS. Perform the following steps to add non-baseline stage tables to the Banner ODS.

1. Click Staging from the Administrative UI menu.
2. Click Maintain Stage Tables.
3. Choose a **Source Database**. You will only need to select a source database if your institution uses multiple source databases.

4. Click the table owner for the area of tables that you want to add.

5. Select tables from the **Tables to Add** list. Use Shift-click to select a contiguous range of tables or Ctrl-click to select noncontiguous tables.

6. Enter a **Run Date** (format dd-mon-yyyy) and **Runtime** (format hh24:mi:ss) to schedule when to run the job that will add the stage tables to the Banner ODS. Enter *NOW* in each field to run the job immediately.

7. Click **Submit** to schedule the job to run.

The selected tables are added to the Banner ODS stage environment. A local record for each table is also created in the MGBSTGE table if a record doesn’t already exist in the table.

**Remove a non-baseline staging table from the Banner ODS**

Perform the following steps to remove local stage tables from the Banner ODS. You can only remove stage tables that are not part of baseline Banner ODS. These are the stage tables that your institution added locally.

1. Click **Staging** from the Administrative UI menu.

2. Click **Maintain Stage Tables**.

3. Choose a **Source Database**. You will only need to select a source database if your institution uses multiple source databases.

4. Click **Remove Stage Tables**.

5. Select tables from the **Tables to remove** list. Use Shift-click to select a contiguous range of tables or Ctrl-click to select noncontiguous tables.

6. Enter a **Run Date** (format dd-mon-yyyy) and **Runtime** (format hh24:mi:ss) to schedule when to run the job that will remove the stage tables from the Banner ODS. Enter *NOW* in each field to run the job immediately.

7. Click **Submit** to schedule the job to run.

The selected tables are removed from the Banner ODS stage environment. The local record for each table is also removed from the MGBSTGE table.
**Add a schema**

Depending on which data you want to add to the Banner ODS stage tables, you may need to add a user schema within the Administrative UI to obtain access to the additional table data. Use the following steps to add a schema to the Maintain Stage Tables Administrative UI page.

The following considerations apply when adding a schema.

- A schema must exist in both the Banner and Banner ODS databases before you can add it to this menu.
- The Default Tablespace name for the schema in Banner ODS must match the Default Tablespace name for the schema in Banner.
- The Default Tablespace name cannot be either SYSTEM or SYSAUX.

1. Click **Staging** from the Administrative UI menu.
2. Click **Maintain Stage Tables**.
3. Choose a **Source Database**. You will only need to select a source database if your institution uses multiple source databases.
4. Click **Add Another Schema to this List**.
5. Select a schema from the **Schema to Add** list.
6. Click **Submit**.

The selected schema is added to the list of tables on the Maintain Stage Tables page.

**Remove a schema**

Run the following command as IA_ADMIN on the Banner ODS to remove a schema from the list of available staging schemas.

```
SET SERVEROUTPUT ON
EXEC mgksstg.P_DelOwnerRecs(source alias, schema to remove);
```

**Staging Area Status**

You can get information about the state of the Banner ODS staging tables by running the Staging Area Status (STAGE_AREA_STATUS) process from the Administrative UI. When you run this job, the information included in the report differs depending on which staging framework your Banner ODS uses. Refer to the following section for the framework you implement.
Streams framework

When you run the Staging Area Status job against the Oracle Streams framework, you can get the following information.

- The source archive log files.
- The status of various Oracle Streams processes.
- Errors encountered by the apply process while making changes to the stage area.
- List of source tables currently in the staging area.
- The status of various staging area items.

Materialized Views framework

When you run the Staging Area Status job against the Materialized Views framework, you can get the following information.

- List all the staged tables in Banner ODS (including any non-baseline tables added to the staging area)
  
or

- List staged tables that have at least a specified number of changes in them

Run Staging Area Status report

Perform the following steps from the Banner ODS Administrative UI to run the Staging Area Status process.

1. Click Staging from the Administrative UI menu.

2. Click Report Staging Area Status.

3. Select the Source Database to identify which source database to run the report against. If your institution includes information from multiple sources in the Banner ODS, there will be one entry for each database in the Source Database drop-down list.

4. Check the items that you want to include in the report.

- Check Display Process Status to include in the report status the relevant information about various Oracle Streams components. (Available only in Oracle Streams framework.)

- Check Display Apply Errors to include in the report any errors the apply process encountered while making changes to the staging area. (Available only in Oracle Streams framework.)
• Check **Display Staged Tables** to include in the report a list of all source tables that are currently in the stage area.

If you select the value *Yes, with Change Counts* for the **Display Staged Tables** field, you need to enter a **Change Count Limit** value as well. This value defines the minimum number of changes required on a stage table for it to get listed in the Staged Tables list.

• Check **Perform Staging Checks** to include in the report the status of various staging area items that may require user action.

**Note**

You don’t need to perform the staging checks every time you run the Staging Area Status job. However, you will want to periodically run the report with the option to perform staging checks turned on so that you can ensure that the staging environment isn’t encountering any of the issues flagged by the checks.

• Check the **Check Staging Triggers** option to include in the report any baseline table triggers that are missing from the staged tables replicated from the source database.

5. Enter a **Run Date** and **Run Time** to schedule when to run the job. Enter NOW in each field to run the job immediately.

6. Click **Submit**.

7. Click **View Control Reports**.

8. Select the **STAGE_AREA_STATUS** process associated with your User ID to view the status report.
<table>
<thead>
<tr>
<th>Report Status Information</th>
<th>Report Includes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Source Archived Logs (Oracle Streams framework only)</td>
<td>Any source archived log files that are required by the Oracle Streams capture processes. The report includes the directory path where archived log files are saved. Refer to the “Required Source Archived Logs” later in this chapter for more information.</td>
</tr>
</tbody>
</table>
| Process Status (Oracle Streams framework only) | Status and relevant information about the following Oracle Streams components:  
- Capture process - Status, State, First SCN, Last captured SCN, and Last applied SCN  
- Capture queue - Enqueue, Dequeue, Number of messages, and Spill messages  
- Propagation schedule - Status  
- Apply queue - Enqueue, Dequeue, Number of messages, and Spill messages  
- Apply process name - Status, Reader state, Coordinator state, Server state, and Apply tag |
<p>| Apply Errors (Oracle Streams framework only) | Any errors the apply process encountered while making changes to the stage area are entered into the error queue. |
| Staged Tables List | All source tables that are currently in the stage area. |</p>
<table>
<thead>
<tr>
<th>Report Status Information</th>
<th>Report Includes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staging Checks</td>
<td>When the <strong>Perform Staging Checks</strong> option is selected in the Oracle Streams framework, the report includes information on the following items.</td>
</tr>
<tr>
<td>(Oracle Streams framework)</td>
<td>• Source table columns that are missing from the stage tables.</td>
</tr>
<tr>
<td></td>
<td>• Banner ODS stage table triggers that are set to fire once.</td>
</tr>
<tr>
<td></td>
<td>• Captured source tables that are not instantiated in the destination.</td>
</tr>
<tr>
<td></td>
<td>• Instantiated destination tables that are not captured at the source.</td>
</tr>
<tr>
<td>Staging Checks</td>
<td>When the <strong>Perform Staging Checks</strong> option is selected in the Materialized Views framework, the report includes information on the following items.</td>
</tr>
<tr>
<td>(Materialized Views framework)</td>
<td>• Unknown (Non-Baseline) staging materialized views - lists any materialized views in one of the staging schemas that have not been created using the baseline process and are not recorded in the MGBSTGE table.</td>
</tr>
<tr>
<td></td>
<td>• Missing baseline staging materialized views - lists any missing materialized views that should be in the baseline target database.</td>
</tr>
<tr>
<td></td>
<td>• Staging materialized views that are not in a Refresh Group or Staging Collection - lists any Staging materialized views that are not in a Refresh Group or Refresh Staging Collection and are not getting refreshed by one of the Banner ODS processes. (This will only be an issue if you made a mistake while adding a new Refresh Group or changing a delivered Refresh Group.)</td>
</tr>
<tr>
<td></td>
<td>• Refresh Groups not associated with an ODS Refresh process. (This will only be an issue if you reorganized Refresh Groups and didn't create the necessary Staging Collection record ETL PACKAGE parameter.)</td>
</tr>
<tr>
<td></td>
<td>• Missing baseline warehouse staging indexes - lists any missing indexes that are specific to the baseline target database and are used to improve performance of the ETL mappings.</td>
</tr>
</tbody>
</table>

**Reconcile and restage stage tables**

It is possible that after upgrading the source database, the structure of the tables in the staging area of the target database may no longer match the source tables. This could happen when new columns or indexes are added to the source database during an upgrade.
and are then missing in the target database. When this happens, the affected stage tables must be restaged to make sure the table structure matches the source system. If structural changes are found in the restaged tables, a Recently Restaged Tables job gets created that you can use to reload the affected composite tables.

You have the option to reconcile stage tables by choosing an entire schema of tables to reconcile at once or by selecting specific tables to reconcile. The reconcile job allows you to tailor the actions performed depending on your need. You have the following options when you run the job.

- Compare the structure of stage tables with the associated source table.
- Compare and restage only those stage tables with a structure that does not match the source system.
- Restage the stage tables regardless of whether the structure matches the source table or not.

**Compare**

When running a compare as part of the reconcile process, the following items are compared between the stage tables and the associated source tables:

- Table columns
- Table column data types
- Indexes
- Indexed columns
- Primary keys
- Primary key columns

If you want to verify the row counts or that the data within the staged tables match the source, refer to the steps in the section “Run stage table reconcile”.

**Restage**

When running a restage as part of the reconcile process, the following actions are performed.

- A new job is created in the Administrative UI that will load just the composite tables that are based on restaged tables. A link to run the job named “Load for Recently Restaged Tables” is created under Options>Schedule a Process>Schedule Banner ODS Mappings. Running this job will bring the data in the Banner ODS up-to-date with the restaged data.
- Run a refresh for all mview refresh groups. This option is available only in the Materialized Views framework. It is an important step that will guarantee staged data is current with the restaged materialized views. This ensures a consistent data set that you can use for ad hoc reporting or as a starting point for the ETL refresh.
Run stage table reconcile

Use the following steps to run the Reconcile Stage Tables job.

1. Click Staging from the Administrative UI menu.

2. Click Reconcile Stage Tables.

3. Click either Reconcile by Schema or Reconcile by Table Name.

4. Select the Source Database to identify which source database to run the report against. If your institution includes information from multiple sources in the Banner ODS, there will be one entry for each database in the Source Database dropdown list.

5. Choose Which Schema(s) or Which Table(s) to reconcile. This field will vary depending on whether you originally chose to reconcile by schema or table name.

   Use Shift-click to select a contiguous range of schemas or tables or Ctrl-click to select noncontiguous schemas or tables.

6. Select the Action to perform.
   - Compare structure of all selected schemas (or tables)
     Note: Running a compare by itself will not restage any tables.
   - Restage only selected schemas (or tables) that differ
   - Restage all selected schemas (or tables)

7. Choose whether to Refresh All MViews. (Available only in Materialized Views framework.)

   If any table is restaged and this checkbox is selected, then all mview refresh groups will be refreshed as part of this job.

8. Enter a Run Date and Run Time to schedule when to run the job. Enter NOW in each field to run the job immediately.

9. Click Submit.

10. Click View Control Reports at bottom of the page to check the control report, which lists the tables reconciled and the mappings that are affected by the changes to the stage tables. If structural changes are found in the restaged tables, a Recently Restaged Tables job gets created that you should also run to reload the affected composite tables.
11. Run the Load for Recently Restaged Tables job as follows:

11.1. Select Options.

11.2. Select Schedule a Process.

11.3. Select Schedule Banner ODS Mappings.

11.4. Select Load for Recently Restaged Tables.

11.5. Enter a Run Date and Run Time to schedule when to run the job that will remove the stage tables from the Banner ODS. Enter NOW in each field to run the job immediately.

11.6. Click Submit to schedule the job to run.

Maintain Oracle Streams framework

There are a number of tasks you may want to perform to maintain the Oracle Streams framework after it is implemented at your institution. For example, you can remove the Streams framework, remove baseline stage tables not used at your institution, or stop and start various Streams components. You perform these tasks outside the Administrative User Interface.

Refer to the following topics for more information about maintaining the Streams architecture.

- “Create Streams Framework”
- “Remove Streams Framework”
- “Configure Streams Replication for Baseline Tables”
- “Remove a Baseline Staging Table from the Banner ODS”
- “Start or Stop the Streams Capture Process”
- “Start or Stop the Streams Propagation Schedule”
- “Start or Stop the Streams Apply Process”

Note

The “source alias” specified in the following sections is the parameter that identifies the source database if you load data from multiple sources into the Banner ODS. Refer to the Source Alias section of the Architecture chapter for more information.
Create Streams Framework

The Streams framework includes the queues, propagation schedule, and capture and apply processes. The Streams framework is created during the install or upgrade process. If you need to recreate the Streams framework, perform the following steps:

1. Log in to the Banner ODS.

2. Issue the following commands:

   ```sql
   SET SERVEROUTPUT ON
   EXEC MGKSTRC.P_CREATE_LOCAL_ENV (database link, source alias);
   ```

   where you enter your institution’s values for the parameters in parentheses.

Remove Streams Framework

The Streams framework includes the queues, propagation schedule, and capture and apply processes. Perform the following steps to remove the Streams framework.

⚠️ **Warning**

Before you remove the Streams framework, you need to remove all staging tables from the Streams replication environment.

1. Log in to the Banner ODS.

2. Issue the following commands:

   ```sql
   SET SERVEROUTPUT ON
   EXEC MGKSTRC.P_DROP_LOCAL_ENV (source alias);
   ```

   where you enter your institution’s values for the parameter in parentheses.

Configure Streams Replication for Baseline Tables

The MGBSTGE table stores the schemas and tables from Banner that will be included in the baseline Banner ODS Streams staging environment. Replication of these tables is performed during the install or upgrade process. If you need to configure the replication of Streams baseline Banner ODS tables at some point after installation, perform the following steps:
1. Log in to the Banner ODS.

2. Issue the following commands:

   ```sql
   SET SERVEROUTPUT ON
   EXEC MGKSTRM.P_ADD_TO_LOCAL_ENV(source alias, schema, table name);
   ```

   where you enter your institution’s values for the parameters in parentheses.

   **Note**
   You can add all of the tables in the MGBSTGE table at once by using the '%’ value for the ‘table name’ parameter.

Remove a Baseline Staging Table from the Banner ODS

The MGBSTGE table stores the schemas and tables from Banner that will be included in the baseline Banner ODS Streams environment. If you need to remove a baseline Banner ODS staging table from the Streams replication process, perform the following steps:

1. Log in to the Banner ODS.

2. Issue the following commands:

   ```sql
   SET SERVEROUTPUT ON
   EXEC MGKSTRM.P_REMOVE_FROM_LOCAL_ENV(source alias, schema, table name);
   ```

   where you enter your institution’s values for the parameters in parentheses.

   **Note**
   You can remove all of the tables in the MGBSTGE table at once by using the ‘%’ value for the ‘schema’ and ‘table name’ parameters.

Start or Stop the Streams Capture Process

The Streams capture process identifies relevant changes in the Banner database redo log, converts them into logical change records, and puts them in a queue to be applied in the Banner ODS.

*Perform the following steps to start the Streams capture process.*

1. Log in to the Banner ODS.

2. Issue the following commands:

   ```sql
   SET SERVEROUTPUT ON
   ```
EXEC MGKSTRM.P_START_CAPTURE(source alias);

where you enter your institution’s values for the parameter in parentheses.

Perform the following steps to **stop** the Streams capture process.

1. Log in to the Banner ODS.
2. Issue the following commands:
   
   SET SERVEROUTPUT ON
   EXEC MGKSTRM.P_STOP_CAPTURE(source alias);

   where you enter your institution’s values for the parameter in parentheses.

**Start or Stop the Streams Propagation Schedule**

The Streams propagation schedule moves the change messages identified by the capture process from the source Banner database queue to a queue on the Banner ODS.

Perform the following steps to **start** the Streams propagation schedule.

1. Log in to the Banner ODS.
2. Issue the following commands:

   SET SERVEROUTPUT ON
   EXEC MGKSTRM.P_START_PROPAGATION(source alias);

   where you enter your institution’s values for the parameter in parentheses.

Perform the following steps to **stop** the Streams propagation schedule.

1. Log in to the Banner ODS.
2. Issue the following commands:

   SET SERVEROUTPUT ON
   EXEC MGKSTRM.P_STOP_PROPAGATION(source alias);

   where you enter your institution’s values for the parameter in parentheses.

**Start or Stop the Streams Apply Process**

The Streams apply process in the Banner ODS removes change messages from the queue and applies them directly to the destination tables in the Banner ODS.
Perform the following steps to **start** the Streams apply process.

1. Log in to the Banner ODS.
2. Issue the following commands:

   ```sql
   SET SERVEROUTPUT ON
   EXEC MGKSTRM.P_START_APPLY(source alias);
   
   where you enter your institution’s values for the parameter in parentheses.
   ``

Perform the following steps to **stop** the Streams apply process.

1. Log in to the Banner ODS.
2. Issue the following commands:

   ```sql
   SET SERVEROUTPUT ON
   EXEC MGKSTRM.P_STOP_APPLY(source alias);
   
   where you enter your institution’s values for the parameter in parentheses.
   ``

**Required Source Archived Logs**

Archived log files on the source Banner system may be required by the Oracle Streams capture processes. These log files track any changes to the source Banner system. The capture process uses information in the archived log files to synchronize the Banner ODS staging tables with the source Banner tables.

Be sure to keep the archived log files in the archive directory on the source Banner database server. If the capture process is unable to locate a required archived log file, then the capture will abort. When this happens, restore the archived log file to its expected location so the capture process can continue replicating changes to the Banner ODS staging area.

The Staging Area Status process control report includes the directory path where archived log files are saved. The following query displays the archive redo log files required by the Streams capture process:

```sql
SELECT R.CONSUMER_NAME "Capture Process Name",
       R.SOURCE_DATABASE "Source Database",
       R.SEQUENCE# "Sequence Number",
       R.NAME "Required Archived Log Name"
FROM DBA_REGISTERED_ARCHIVED_LOG R, DBA_CAPTURE C
WHERE R.CONSUMER_NAME = C.CAPTURE_NAME AND
      R.NEXT_SCN >= C.REQUIRED_CHECKPOINT_SCN;
```
Monitor Streams for Apply Errors

The Streams environment includes an error queue. Any errors encountered when applying logical change record (LCR) messages to the Banner ODS database are placed in this queue. Use the following steps to monitor the errors in the queue.

1. Query the DBA_APPLY_ERROR data dictionary view to see any errors in the error error queue.

   Alternately, you can run the Staging Area Status process from the Banner ODS Administrative UI, select to display apply errors, and then view the process control report.

1.1. Click Staging from the Administrative UI menu.

1.2. Click Report Staging Area Status.

1.3. Check the Display Apply Errors? process parameter and any other parameters that you want to display in the status report.

1.4. Enter NOW in the a Run Date and Runtime fields.

1.5. Click Submit.

1.6. Click View Control Reports.

2. Issue the following commands to see detailed information about error messages in the destination:

   SQL> SET SERVEROUTPUT ON
   SQL> EXEC MGKSTRE.P_PRINT_ERRORS;

3. Fix the errors.

4. Reapply or delete the messages in the error queue.
   - Issue the following command to reapply all error messages for the “apply1” process in the error queue:

   BEGIN
   DBMS_APPLY_ADM.EXECUTE_ALL_ERRORS(
   apply_name => 'apply1',
   execute_as_user => false);
   END;
   /
• Issue the following command to delete all error messages for the “apply1” process in the error queue:

BEGIN
    DBMS_APPLY_ADM.DELETE_ALL_ERRORS(
        apply_name => 'apply1');
END;
/

Monitor Source Capture Queue for Growth

If captured messages don’t get propagated to the destination database, the number of messages will grow in the capture queue. You need to periodically monitor the capture queue to determine how full it is.

Use the following query to display the number of messages in memory and spilled to disk for each queue.

```
SELECT QUEUE_SCHEMA "Schema",
    QUEUE_NAME "Queue Name",
    (NUM_MSGS - SPILL_MSGS) "Messages in Memory",
    SPILL_MSGS "Messages Spilled",
    NUM_MSGS "Total Messages"
FROM V$BUFFERED_QUEUES;
```

Monitor the Status of Source Propagation Jobs

If the Streams propagation schedule becomes disabled, the capture queue on the source Banner database may fill up. Perform the following steps to monitor the propagation jobs.

1. Issue the following query to display the status of each propagation job.

```
SELECT DISTINCT P.PROPAGATION_NAME "Propagation",
    P.SOURCE_QUEUE_NAME "Source Queue",
    P.DESTINATION_QUEUE_NAME "Destination Queue",
    S.LATENCY "Latency",
    DECODE(S.SCHEDULE_DISABLED,
        'Y', 'DISABLED',
        'N', 'ENABLED') "Propagation Status",
    S.PROCESS_NAME "Process Name",
    S.FAILURES "Failures"
FROM DBA_QUEUE_SCHEDULES S, DBA_PROPAGATION P
WHERE P.DESTINATION_DBLINK = S.DESTINATION
```
AND S.SCHEMA = P.SOURCE_QUEUE_OWNER
AND S.QNAME = P.SOURCE_QUEUE_NAME;

2. Determine whether any propagation jobs are disabled.

3. Stop and restart any disabled propagation jobs using the steps provided in the "Start or Stop the Streams Propagation Schedule" section.

Set the Checkpoint Frequency and Retention Time (optional)

The Oracle Streams capture process takes a checkpoint periodically and stores it in the Banner SYSAUX tablespace. Checkpoints record information on scanned system change numbers (SCN) and allow for a quicker restart of the capture process. By default, a checkpoint is taken every 10MB of scanned redo.

The required checkpoint SCN is associated with the lowest SCN at which the capture process requires redo data. The checkpoint retention time defines how long to keep checkpoints prior to the required checkpoint SCN. The default retention time is 60 days. The first SCN for a capture process defines the lowest SCN at which the capture process can begin capturing changes. Once a checkpoint is purged, the first SCN is updated to match the next stored checkpoint. You may need to modify these values based on the amount of redo generated and size of the SYSAUX tablespace in your Banner database.

Run the following in the Banner database to modify the checkpoint frequency and retention time:

```sql
BEGIN
    DBMS_CAPTURE_ADMIN.SET_PARAMETER(
        capture_name => capture process name,
        parameter => '_checkpoint_frequency',
        value => size of scanned redo in MB);
END;
/

BEGIN
    DBMS_CAPTURE_ADMIN.ALTER_CAPTURE(
        capture_name => capture process name,
        checkpoint_retention_time => number of days);
END;
/
```

Refer to Oracle Streams Concepts and Administration Guide for more information about capture process checkpoints.
Avoid NOLOGGING and UNRECOVERABLE Keywords in Source

Avoid using the keywords NOLOGGING and UNRECOVERABLE in the Banner source code. If you use these keywords in the source code, related source changes are not written to the redo logs. Because the Streams capture process mines the redo logs for change information, any changes using these keywords will be lost. Streams will not be able to replicate these changes in the Banner ODS stage tables. As a result, the source Banner and destination Banner ODS tables will not be synchronized leading to future Streams errors.

Use Streams Tags with Batch Processes

All changes made to the Banner database are written to the redo log in the Banner system. By default, the Banner ODS Streams environment is set up to capture only changes in the redo log that do not include a tag. You can set a Streams tag on specified log entries, which basically includes an additional column with each entry in the redo log. A Streams capture process can then examine the extra column for each tagged entry in the redo log.

You can set a Streams tag with a non-NULL value before running a large batch file in a Banner session. Any inserts, updates, or deletes made during that tagged session will not be caught by the capture process and the changes will not be replicated to the Banner ODS.

Be aware that after the batch process has completed some destination tables in the Banner ODS may no longer be synchronized with the source Banner tables. When this happens, the affected destination tables need to be dropped from Streams and re-added after running the batch process.

Issue the following command to set the Streams tag to a value of “00” for a specific Banner session:

```
BEGIN
    DBMS_STREAMS.SET_TAG(TAG => HEXTORAW('00'));
END;
/
```

Use Data Dictionary Views to Display Streams Information

Refer to the “Monitoring a Streams Environment” chapter of Oracle's Streams Concepts and Administration Guide for a complete list of the static data dictionary views and dynamic performance views related to Streams.
Maintain Materialized Views framework

Keeping the target database materialized views synchronized with the source database tables is the key to maintaining the Materialized Views framework. You will need to refresh data in the materialized views on a regular basis (timing to be determined by your institution) so that, in turn, the staging tables are up to date with data before running the ETL processes to load or reload the warehouse. In addition, upgrades to source products may modify table definitions in the source database. When this happens, it will be necessary to restage the affected materialized views in the target database so they match the source tables.

To ensure that the materialized views are refreshed before data is loaded into the warehouse, materialized views refresh processing has been added to run at the beginning of the “Refresh” ETL jobs that refresh the warehouse data. For example, the REFRESH_STUDENT job in the Banner ODS, which refreshes all of the MST composite tables, now includes a job at the beginning to refresh the associated SATURN (student-related) materialized views prior to refreshing the composite tables. This addition to the Refresh jobs ensures that all materialized views related to the data being updated in the warehouse will get refreshed before the ETL loads new data into the warehouse.

There are staging refresh jobs that refresh only the stage tables and materialized views. You can use these jobs to synchronize data on a more frequent basis. This will reduce the amount of work that the integrated materialized views refresh has to do as part of the nightly Banner ODS refresh process.

Refresh groups

To help you manage the process of refreshing materialized views, Oracle includes a component called a Refresh Group, which lets you group together materialized views. Once materialized views are grouped in a Refresh Group, you gain the ability to refresh all of the materialized views within a Refresh Group at the same point in time.

Banner ODS uses Refresh Groups to make it easier to manage related groups of materialized views. When delivered, baseline Banner ODS includes defined Refresh Groups that group together sets of materialized views by schema and table type, for example, grouping validation versus non-validation tables. For each schema staged in Banner ODS, two refresh groups are associated with that schema:

```
ODS_REFGROUP_<schema> ODS_REFGROUP_<schema>_VAL
```

For example, there is a Student Refresh Group that includes all Student related materialized views, and a Student Validation Refresh Group that includes just the Validation tables (STV*) from the Student product.

By default, any table staged using the APIs, mgkmview.P_stage_mview(), will add that materialized view to one of the two refresh groups based on the Banner table naming standard. If a table has a "V" character in the 3rd position of the table name, that table is included in the validation refresh group.
This mechanism is used to group all source tables together by Subject Area when delivered. You can reorganize these groupings using command-line API calls as delivered in baseline scripts. Also, the Oracle DBMS_REFRESH package provides APIs to create or delete Refresh Groups, and to associate materialized views with them that can be used to reorganize refresh processing.

**Staging Refresh Collections**

A materialized view can only exist in a single Refresh Group at a time. However, you can include a materialized view in more than one functional area at a time. The STAGING REFRESH COLLECTION parameter stored in the MTVPARM table lets you create a “group of refresh groups”, which is called a “collection” in BPRA. You define a collection by creating multiple MTVPARM records that link multiple Refresh Groups to one ODS Refresh Job.

STAGING REFRESH COLLECTION entries are delivered for all baseline schemas. The delivered records associate all the Refresh Groups with both the subject area specific Refresh jobs (for example, STUDENT, GENERAL, ALUMNI) as well as the REFRESH_ALL job and the REFRESH_VALIDATION jobs, so that by default the materialized views will get refreshed as part of the nightly Banner ODS Refresh jobs.

**Associate Staging Collections with Refresh Jobs**

You associate a staging collection with the actual Banner ODS Refresh jobs using the ETL PACKAGE parameter as a “PRE” step, which means it runs before any mappings or slotted packages. The ETL PACKAGE parameter records link a collection of Refresh Groups to the Banner ODS Refresh job.

**Refresh materialized views**

When delivered, the system is set up to refresh the materialized views whenever you run any of the ETL Refresh jobs. It is recommended that you run the ETL Refresh jobs at least once a day typically during the nightly build. You will probably want to refresh the materialized views more often than once a day.

You have two options for refreshing the materialized views outside of the ETL Refresh jobs:

- Refresh a collection of materialized views (staging collection)
- Refresh selected materialized views (staging tables)

These two refresh options are jobs that you run from the Staging menu in the Administrative UI. They are the option that are only present on the Staging menu if you implement the Materialized Views framework.
Staging

Refresh a Staging Collection

A “collection” of materialized views is a group of Refresh Groups that have been associated together in the STAGING REFRESH COLLECTION parameter.

The “Refresh Staging Collections” job allows you to select one or more Collections to refresh. Use the following steps to refresh a collection of tables.

1. Click **Staging** from the Administrative UI menu.

2. Click **Refresh Staging Collections**.

3. Choose the **Staging Groups to Refresh**. Use Shift-click to select a contiguous range of tables or Ctrl-click to select noncontiguous tables.

4. Choose the **Logging Mode** which defines the level of detail to include in the control report.

   - Display summary stats by Refresh Group - displays summary of information for each Refresh Group selected for staging (default selection)
   - Display detail about each MView Refresh - displays information about each materialized view in all Refresh groups selected for staging

5. Enter a **Run Date** and **Run Time** to schedule when to run the job that will remove the stage tables from the Banner ODS. Enter NOW in each field to run the job immediately.

6. Click **Submit** to schedule the job to run.
Refresh selected materialized views

The “Refresh Staging Tables” job allows you to select one or more materialized views to refresh. Use the following steps to refresh a collection of tables.

1. Click Staging from the Administrative UI menu.

2. Click Refresh Staging Tables.

3. Choose the Staging Tables to Refresh. Use Shift-click to select a contiguous range of tables or Ctrl-click to select noncontiguous tables.

   The list of materialized views includes the Refresh Group name in parentheses to help organize the listing and allow easier selection of a group of materialized views related by Refresh Group.

4. Enter a Run Date and Run Time to schedule when to run the job that will remove the stage tables from the Banner ODS. Enter NOW in each field to run the job immediately.

5. Click Submit to schedule the job to run.

Refresh Staging Collection job control reports

When you submit a job to Refresh a Staging Collection or Refresh Staging Tables, each job generates a standard control report listing details about the Refresh Groups or materialized views processed by the job. In addition, because the standard ETL Refresh jobs also refresh Staging Collections at the beginning of each job, similar output is displayed in the ETL Refresh job control report.

The following figure illustrates the control report for the Refresh Staging Collections job.
The control report includes the following information identified by the callout numbers in the sample control report above.

1. The report identifies the Logging Mode that was defined when the report ran.

2. Each Refresh Group associated with a selected Refresh Collection is refreshed with the start time noted.

3. Each MView Refreshed in a Refresh Group is identified including the number of Changes, how many Seconds it took to refresh that Materialized view, and the Rate of the refresh for that.

4. The report identifies the overall status of the Stage Group Refreshed including the number of Tables, Changes, and Seconds to complete. For example, in the sample report above the General Refresh Group (ODS_REFGROUP_GENERAL) refreshed 22 tables with 141688 changes in 99 seconds.

If an exception occurs when refreshing a single materialized view within a refresh group, the entire refresh for that group will not be processed. This is illustrated in the following sample error message for the Financial Aid group ODS_REFGROUP_FAIMSMGR, which could display in a control report.
ORA-12048: error encountered while refreshing materialized view "FAISMGR.RPATRM" ORA-04098: trigger 'FAISMGR.RT_RPRATRM_INSERT_ODS_CHANGE' is invalid and failed re-validation

When this kind of error occurs, you can do one of the following to address it:

- Fix the underlying problem (in the above case, an invalid trigger on one of the materialized views)
- Use the Refresh Staging Tables option to manually select and refresh all of the materialized views except the one that caused the error. When you use the Refresh Staging Tables job, the materialized views are all listed, grouped by Refresh Group, so that you can easily identify which materialized views belong in which Refresh Group.

**Web Tailor Administration**

The Enterprise Administrative application uses the Web Tailor application to build its look and feel. Web Tailor delivers customizable global Web rule definitions and procedures, customizable menus, menu items, graphics and text definitions.

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

**Functions**

Web Tailor lets you build the look, feel, and unique personality of all your institution’s web applications, so you can personalize your institution’s interface to the world. Web Tailor delivers customizable global web rule definitions and procedures, customizable menus, menu items, graphics and text definitions.

The following Web Tailor functions are available from the Web Tailor Administration Menu.

- “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 Web Tailor Parameters”
• “Customize a Login Return Location”
• “Customize Web Tailor Overrides”
• “Customize Global User Interface Settings”

**Customize a Web Menu or Procedure**

The **Customize a Web Menu or Procedure** option allows you to define the menus that will appear on your institution’s web pages for the different self-service applications, and to specify the procedures behind them.

Refer to the Web Tailor Online Help for more information about creating or customizing a web menu or procedure.

**Customize a Graphic Element**

The **Customize a Graphic Element** option allows you to specify the images that will be available for use on your web pages. For each image, you can specify its name, the directory where it is located, its height, its width, and various other aspects.

Refer to the Web Tailor Online Help for more information about creating or customizing a graphic element.

**Customize a Set of Information Text**

The **Customize a Set of Information Text** option 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

Refer to the Web Tailor Online Help for more information about customizing Information Text.

**Customize a Set of Menu Items**

The **Customize a Set of Menu Items** option allows you to define the items that will appear on the menus on your institution’s web pages.
Refer to the Web Tailor Online Help for more information about customizing a set of menu items.

**Update User Roles**

The *Update User Roles* option allows you to change the roles to which a person has been assigned. The User Roles define a high level of security and allow you to give users access to selected components of the Administrative User Interface. A user's assigned roles determine which areas of the Administrative User Interface the user can access and make changes within the Banner ODS.

Refer to the “[Update User Roles](#)” section for more information about updating user roles.

**Customize a Web Module**

This function allows you to modify a specific application or module that uses Web Tailor, such as Accounts Receivable, Student Self-Service, or Banner Performance Reporting and Analytics.

Refer to the Web Tailor Online Help for more information about customizing a web module.

**Customize 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.

Refer to the Web Tailor Online Help for more information about customizing a web rules.

**Customize Web Tailor Parameters**

This function allows you to customize parameters used in Web Tailor processing, such as the maximum length of PINs. You must exercise great care when modifying these parameters.

Refer to the Web Tailor Online Help for more information about customizing a Web Tailor parameters.
Customize a 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.

Refer to the Web Tailor Online Help for more information about customizing a login return location.

Customize Web Tailor Overrides

This page allows you to replace certain procedures and functions with your own under certain circumstances. This is necessary because you may have a stand-alone product you would like to use with the self-service products, and you need to use some of the procedures and functions in the other system. If an override is defined, that code will be run instead of the Web Tailor code.

Refer to the Web Tailor Online Help for more information about customizing Web Tailor overrides.

Customize 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

It is recommended that you use Info Text as your Help text.

- Images that represent errors and warnings
- An image that indicates that a field is required

Refer to the Web Tailor Online Help for more information about customizing global user interface settings.
6  Banner ODS Business Concepts

Business concepts are used to organize the data available for different reporting requirements. A business concept shows the relationships between the data supporting a set of business processes. Because different business processes often require different perspectives on data, the relationships among the supporting database objects need to change based on the analysis being performed.

The Banner ODS is designed to take advantage of Cognos Framework Manager’s ability to use database objects in multiple models. Each model is referred to as a namespace. In a Framework Manager namespace, database objects are defined as Cognos metadata query subjects. In that namespace the relationships between the different query subjects focus around a central or primary fact table query subject. All other query subjects are related to each other through the central or primary fact table. All data analysis and reporting completed using the business concept uses the central fact table to filter and determine what data to retrieve.
Banner ODS Business Concepts

The following table lists the business concept and primary reporting view or database table for each business concept within the Banner ODS. These concepts are listed by subject areas. A subject area loosely corresponds to a Banner product. When you write a report, use filters on the primary reporting view rather than the other reporting views whenever possible.

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Business Concept</th>
<th>Primary Fact Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts Receivable</td>
<td>“Receivable Customer”</td>
<td>RECEIVABLE_ACCOUNT</td>
</tr>
<tr>
<td></td>
<td>“Receivable Revenue”</td>
<td>RECEIVABLE_ACCOUNT_DETAIL</td>
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<td>Advancement</td>
<td>“Advancement Prospect”</td>
<td>PROSPECT_INFO</td>
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<td>“Advancement Rating”</td>
<td>ADVANCEMENT_RATING</td>
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<td>ANNUAL_GIVING</td>
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<td>“Annual Giving Comparison”</td>
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<td>“Campaign Management”</td>
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<td>DESIGNATION_GIVING_HISTORY</td>
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<td>“Gift”</td>
<td>GIFT_TRANSACTION</td>
</tr>
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<td>“Organizational Constituent”</td>
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<td>BUDGET_AVAILABILITY_LEDGER</td>
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<td>Primary Fact Table</td>
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<td>“Invoice Payable”</td>
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<td>“Financial Aid Application”</td>
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<td>“Employee and Position”</td>
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<td>“Active Registration”</td>
<td>ENROLLMENT</td>
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<td>“Admissions Application”</td>
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<td>“Advisor Student List”</td>
<td>STUDENT</td>
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<td></td>
<td>“Course Catalog”</td>
<td>COURSE_CATALOG</td>
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</table>
The relationships in the reporting tool meta data for Cognos 8 Business Intelligence and Oracle Business Intelligence Discoverer are the same. Following are the diagrams that show the relationships for the business concepts defined in the Banner ODS. There is one diagram for each business concept. The diagrams are grouped by subject areas such as Accounts Receivable and Advancement.

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Business Concept</th>
<th>Primary Fact Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Enrollment Management”</td>
<td>ENROLLMENT</td>
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<td>“Enrollment Management Subset”</td>
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<td>“Faculty Assignment”</td>
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<tr>
<td>“Faculty Subset”</td>
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<tr>
<td>“Government Reporting”</td>
<td>GOVERNMENT_STUDENT,</td>
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<td>GOVERNMENT_FINANCIAL_AID,</td>
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<td>GOVERNMENT_ADMISSIONS</td>
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<td>“Residential Life”</td>
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<tr>
<td>“Student Detail”</td>
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<td>“Student Detail Subset”</td>
<td>STUDENT</td>
<td></td>
</tr>
<tr>
<td>Travel and Expense</td>
<td></td>
<td></td>
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<tr>
<td>“Authorization”</td>
<td>AUTHORIZATION</td>
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<tr>
<td>“Reimbursement”</td>
<td>REIMBURSEMENT</td>
<td></td>
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</tbody>
</table>
Campaign Giving History
Designation Giving History

- CONSTITUENT_ENTITY
  - Entity_UID

- ORGANIZATIONAL_CONSTITUENT
  - Entity_UID

- PERSON_ADDRESS
  - Person_UID

- PERSON_DETAIL
  - Person_UID

- ORGANIZATION_ENTITY_ADDRESS
  - Entity_UID

- ORGANIZATION_ENTITY
  - Entity_UID

- DESIGNATION_GIVING_HISTORY
  - Entity_UID

- ANNUAL_GIVING
  - Entity_UID
Green represents new query
subject added or join changed
Green represents new query subject added or join changed.
Finance

Account Index Audit

- MISCELLANEOUS_CHARGE_TRANSACTION (MISCELLANEOUS_TRANSACTION)
  - Charge_Chart_Of_Accounts
  - Charge_Account_Index
  - Transaction_Date

- PAYROLL_LABOR_DIST_OVERRIDE
  - Chart_Of_Accounts
  - Account_Index
  - Position_Begin_Date

- TRANSACTION_HISTORY
  - Chart_Of_Accounts
  - Account_Index
  - Transaction_Date

- GIFT
  - Desg_Chart_Of_Accounts
  - Desg_Account_Index
  - Entry_Date

- PLEDGE
  - Desg_Chart_Of_Accounts
  - Desg_Account_Index
  - Pledge_Date

- LABOR_COST_DISTRIBUTION
  - Distribution_Chart_Of_Accounts
  - Distribution_Account_Index
  - Distribution_Effective_Date

- MISCELLANEOUS_PAYMENT_TRANSACTION (MISCELLANEOUS_TRANSACTION)
  - Payment_Chart_Of_Accounts
  - Payment_Account_Index
  - Transaction_Date

- PURCHASE_ORDER_ACCOUNTING
  - Chart_Of_Accounts
  - Account_Index
  - Transaction_Date

- GRANT_BILLING_DETAIL
  - Bill_Chart_Of_Accounts
  - Bill_Account_Index
  - Bill_Transaction_Date
### Budget Availability Comparison

<table>
<thead>
<tr>
<th>BUDGET_AVAILABILITY_LEDGER</th>
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<tbody>
<tr>
<td>Chart Of Accounts</td>
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<tr>
<td>Fiscal Year</td>
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<td>Fiscal Period</td>
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<tr>
<td>Fund</td>
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<tr>
<td>Organization Code</td>
</tr>
<tr>
<td>Account</td>
</tr>
<tr>
<td>Program</td>
</tr>
<tr>
<td>Commitment Type</td>
</tr>
</tbody>
</table>
Budget Availability Ledger
Budget Detail

ACCOUNT_ATTRIBUTES
- Chart_Of_Accounts
- Account

ACCOUNT_TYPE_ATTRIBUTES
- Chart_Of_Accounts
- Account_Type

FUND_ATTRIBUTES
- Chart_Of_Accounts
- Account
- Activity
- Location

FUND_TYPE_ATTRIBUTES
- Chart_Of_Accounts
- Fund_Type

LOCATION_ATTRIBUTES
- Chart_Of_Accounts
- Location

PROGRAM_ATTRIBUTES
- Chart_Of_Accounts
- Program

ORGANIZATION_ATTRIBUTES
- Chart_Of_Accounts
- Organization_Code

BUDGET_DETAIL
- Budget_Identifier
- Budget_Phase
- Fund
- Organization_Code
- Activity
- Location
Cashier Session Analysis

RECEIVABLE_ACCOUNT_DETAIL

Account Uid
Grant Ledger

TRANSACTION_HISTORY
- Chart_Of_Accounts
- Fiscal_Year
- Posting_Period
- Fund
- Organization
- Account
- Program
- Activity
- Location

PROGRAM_ATTRIBUTES
- Chart_Of_Accounts
- Program

ORGANIZATION_ATTRIBUTES
- Chart_Of_Accounts
- Organization_Code

LOCATION_ATTRIBUTES
- Chart_Of_Accounts
- Location

ACCOUNT_TYPE_ATTRIBUTES
- Chart_Of_Accounts
- Account_Type

FUND_TYPE_ATTRIBUTES
- Chart_Of_Accounts
- Fund_Type

FUND_ATTRIBUTES
- Chart_Of_Accounts

ACCOUNT_ATTRIBUTES
- Chart_Of_Accounts

GRANT_VIEW
- Grant_ID

GRANT_LEDGER
- Chart_Of_Accounts
- Grant_ID
- Grant_Year
- Grant_Period
- Account
- Program
- Activity
- Location
- Organization_Code

ACCOUNT_ATTRIBUTES
- Chart_Of_Accounts
- Account

ACCOUNT_TYPE_ATTRIBUTES
- Chart_Of_Accounts
- Account_Type
Grant-Contract and Proposal

PROPOSAL

Proposal Code
# Operating Ledger Comparison

<table>
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<th>OPERATING LEDGER</th>
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<tbody>
<tr>
<td>Chart Of Accounts</td>
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<td>Fiscal Year</td>
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<tr>
<td>Fiscal Period</td>
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<tr>
<td>Fund</td>
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<tr>
<td>Organization Code</td>
</tr>
<tr>
<td>Account</td>
</tr>
<tr>
<td>Program</td>
</tr>
<tr>
<td>Activity</td>
</tr>
<tr>
<td>Location</td>
</tr>
<tr>
<td>Commitment Type</td>
</tr>
</tbody>
</table>
Purchasing Payable

Green represents new query subject added or join changed.
NOTE: In order to ensure all vendor types display for the vendor and associated to each purchase order, the cardinality was left between Purchase_Order and Vendor_Type but changed to 1..1 0..N.
Financial Aid Award and Disbursement

- PERSON_DETAIL
  - Person_UID

- PERSON_ADDRESS
  - Person_UID

- TELEPHONE_CURRENT
  - Person_UID

- GOVERNMENT_FINANCIAL_AID
  - Academic_Period
  - Person_UID
  - Aid_Year
  - Fund

- AWARD_BY_PERSON
  - Person_UID
  - Aid_Year
  - Fund
  - Aid_Enrollment_Period

- TRANSACTION_HISTORY
  - Document
  - Account_UID
  - Transaction_Number

- RECEIVABLE_ACCOUNT_DETAIL
  - Account_UID
  - Transaction_Number

- GENERAL_LEDGER
  - Fiscal_Year
  - Fiscal_Period
  - Chart_of_Accounts
  - Fund
  - Account

- FINAID_APPLICANT_STATUS
  - Person_UID
  - Aid_Year

- AWARD_DISBURSEMENT
  - Person_UID
  - Aid_Year
  - Fund
  - Aid_Enrollment_Period

- AWARD_BY_FUND
  - Aid_Year
  - Fund

- FINAID_FUND
  - Aid_Year
  - Fund

- AWARD_BY_AID_YEAR
  - Aid_Year
  - Fund

- AWARD_BY_AID_YEAR_EXTENDED
  - Person_UID
  - Aid_Year
  - Fund

- AWARD_BY_AID_YEAR_EXTENDED
  - Person_UID
  - Aid_Year
  - Fund
  - Aid_Enrollment_Period

- ACADEMIC_STUDY_EXTENDED
  - Person_UID
  - Aid_Enrollment_Period

-人际

- STUDENT_EXTENDED
  - Person_UID
  - Aid_Enrollment_Period

- STUDENT
  - Person_UID
  - Aid_Enrollment_Period

- GPA_BY_TERM
  - Person_UID
  - Aid_Enrollment_Period

Green represents new query subject added or join changed.
Financial Aid Fund

FINAID_FUND
Aid_Year Fund

AWARD_BY_FUND
Aid_Year Fund

AWARD_BY_AID_YEAR
Aid_Year Fund

GOVERNMENT_FA_FUND
Aid_Year Fund
Human Resources

Employee

Green represents new query subject added or join changed
Employee and Position

- **EMPLOYEE_EARNING_CY**
  - Person Uid
  - Calendar Year
  - Position
  - Job Suffix

- **PERSON_DETAIL**
  - Person Uid

- **EMPLOYEE**
  - Person Uid

- **SKILL**
  - Person Uid

- **EMPLOYEE_POSITION**
  - Person Uid
  - Position
  - Job Suffix
  - Effective Date

- **POSITION_BUDGET**
  - Position
  - Fiscal Year
  - Budget
  - Budget Phase

- **POSITION_DEFINITION**
  - Position
Green represents new query subject added or join changed
Faculty Assignment
Faculty Subset

**FACULTY_DEPARTMENT_COLLEGE**
- Person Uid
- Academic Period

**FACULTY**
- Person Uid
- Academic Period

**EMPLOYEE_POSITION**
- Person Uid
- Position
- Job Suffix

**NON_INSTRUCTIONAL_ASSIGNMENT**
- Person Uid
- Academic Period

**INSTRUCTIONAL_ASSIGNMENT**
- Person Uid
- Academic Period

**MEETING_TIME**
- Academic Period
- Course Reference Number

**SCHEDULE_OFFERING**
- Academic Period
- Course Reference Number
Student Detail

Green represents new query subject added or join changed
Travel and Expense

Authorization

- Authorization
- Portfolio
- Profile Default Accounting
- Travel and Expense Profile
- Encumbrance
- Reimbursement Item
- Reimbursement Accounting
- Invoice
- Reimbursement Item Status History
- Reimbursement Approval History
- Authorization Itinerary
- Authorization Accounting
- Authorization Item
- Authorization Status History
- Authorization Approval History
- Portfolio Summary
- Reimbursement Itinerary
- Reimbursement Accounting
Reimbursement

- Invoice
  - Invoice
- Reimbursement_Status_History
  - Reimbursement_Key
- Reimbursement
  - Reimbursement_Key
- Reimbursement_Item
  - Reimbursement_Key
  - Expense_Item_Key
- Portfolio
  - Portfolio_Key
- Portfolio_Summary
  - Portfolio_Key
- Reimbursement_Approval_History
  - Reimbursement_Key
- Travel_and_Expense_Profile
  - Profile_Key
- Profile_Default_Accounting
  - Profile_Key
7 Banner EDW Business Concepts

Business Concepts are used to organize data available for different reporting requirements. A business concept can be viewed as the relationships between the data supporting a set of business processes. Different business processes often require different perspectives on data. This signifies that the relationships among the supporting database objects would need to change based upon the analysis being performed.

The Banner EDW business concepts have been designed to generate report from the following types of business concepts:

- The base business concept permits reporting from a group of operational star schema. The reports draw from Banner EDW information that is updated regularly to stay synchronized with the Banner ODS data source.

- The snapshot business concept permits reporting from a star schema that presents data at a point in time or data captured for a business event. The reports draw data from Banner EDW information that is captured at a particular point in time, which can be associated with a specific business event.

<table>
<thead>
<tr>
<th>Business Concept</th>
<th>Business Definition</th>
<th>Driving Fact Table</th>
<th>Package Name</th>
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<tbody>
<tr>
<td><strong>Student-related Business Concepts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analyze Student Progress</td>
<td>Lets you measure student retention from one academic period (like or sequential) to another, academic performance and progress, student course details, and academic outcome (tied to their priority curriculum record) sought or awarded at the institution.</td>
<td>WAT_STUDENT_PROGREES</td>
<td>“PM Analyze Student Progress business concept” on page 7-4</td>
</tr>
<tr>
<td>Analyze Student Progress Snapshot</td>
<td>Reports the same information as the base version. Also includes an event dimension.</td>
<td>WZT_STUDENT_PROGREES</td>
<td>“Snapshot - PM Analyze Student Progress business concept” on page 7-19</td>
</tr>
<tr>
<td>Business Concept</td>
<td>Business Definition</td>
<td>Driving Fact Table</td>
<td>Package Name</td>
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<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------</td>
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<tr>
<td>Impact of Aid on New Enrollment</td>
<td>Reports all the information you need to monitor the financial aid need and awards offered to prospective students in the enrollment pool for an academic period.</td>
<td>WAT_ADMISSIONS_FINAID_RECORD</td>
<td>“PM Impact Of Aid On New Enrollment” on page 7-21</td>
</tr>
<tr>
<td>Impact of Aid on New Enrollment Snapshot</td>
<td>Reports the same information as the base version. Also includes an event dimension.</td>
<td>WAZ_ADMISSIONS_FINAID_RECORD</td>
<td>“Snapshot – PM Impact Of Aid On New Enrollment” on page 7-33</td>
</tr>
<tr>
<td>Manage Applicants</td>
<td>Reports all the information you need to monitor the application process and interact with applicants.</td>
<td>ADMISSIONS_APPLICATION</td>
<td>“PM Manage Applicants” on page 7-34</td>
</tr>
<tr>
<td>Manage Applicants Snapshot</td>
<td>Reports the same information as the base version. Also includes an event dimension.</td>
<td>ADMISSIONS_APPLICATION</td>
<td>“Snapshot – PM Manage Applicants” on page 7-43</td>
</tr>
</tbody>
</table>

**Advancement-related Business Concepts**

<p>| Analyze Constituent Giving    | Reports on information for an institution’s entire constituent population, including biographical, demographic, academic, interaction, engagement information, and summarized giving history. It also provides transaction level giving details and metrics for those constituents who have also donated to the institution. | WAT_ANALYZE_CONSTITUTENT_GIVING         | “PM Analyze Constituent Giving data elements” on page 7-44                                                                         |
| Analyze Fundraising Progress  | Reports on information related to major donor activities and gifts and pledges to support fundraising goals for your institution.                                                                                     | WAT_ANALYZE_FUNDRAISING                 | “PM Analyze Fundraising Progress business concept data elements” on page 7-124                                                       |</p>
<table>
<thead>
<tr>
<th>Business Concept</th>
<th>Business Definition</th>
<th>Driving Fact Table</th>
<th>Package Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyze Fundraising</td>
<td>Reports the same information as the base version. Also includes an event dimension.</td>
<td>WZT_ANALYZE_FUNDRAISING</td>
<td>“Snapshot - PM Analyze Fundraising Progress business concept” on page 7-195</td>
</tr>
<tr>
<td>Prospect Progress</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Snapshot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manage Prospect</td>
<td>Reports on information related to the prospect pool, the current status of prospects, and proposals for your institution.</td>
<td>WAT_MANAGE_PROSPECT_PIPELINE</td>
<td>“PM Manage Prospect Pipeline business concept data elements” on page 7-196</td>
</tr>
<tr>
<td>Prospect Pipeline</td>
<td>Reports the same information as the base version. Also includes an event dimension.</td>
<td>WZT_MANAGE_PROSPECT_PIPELINE</td>
<td>“Snapshot - PM Manage Prospect Pipeline business concept” on page 7-283</td>
</tr>
<tr>
<td>Manage Prospect</td>
<td>Reports the same information as the base version. Also includes an event dimension.</td>
<td>WZT_MANAGE_PROSPECT_PIPELINE</td>
<td></td>
</tr>
<tr>
<td>Prospect Pipeline</td>
<td>Reports on information for an institution’s entire constituent population, including biographical, demographic, academic, interaction, engagement information, and summarized giving history. It also includes pre-aggregated yearly donor participation metrics for the institution overall and optionally at the designation college and designation department levels.</td>
<td>WAT_RESEARCH_QUALIFY_POTENTIAL_PROSPECTS</td>
<td>“Research and Qualify Potential Prospects business concept data elements” on page 7-284</td>
</tr>
</tbody>
</table>
PM Analyze Student Progress business concept

The business concept enables you to measure student retention from one academic period (like or sequential) to another, academic performance and progress, student course details, and academic outcome (tied to their priority curriculum record) sought or awarded at the institution.

You can use this business concept to measure student retention, performance, and progress at the institution by examining the records for the students who are retained and those not retained. A student record exists for each academic period in which the student is eligible and expected to register. This is determined based on an active student record with a student status that permits the student to enroll.

All “active” students will have a record in this business concept for each academic period in which they are registered, are a new admit (academic period admit), or who have registered in or later than the re-admit academic period specified by the institution on the Term Control Form. When the institution has not defined a re-admit required value on the term control page, the data warehouse will use the academic period being loaded in the same way it would use that readmit required. The academic period records are created based on the ACADEMIC_PERIOD_PATTERN EDW Extract Parameter. This EDW Extract parameter identifies a student characteristic like student level and the pattern of academic periods in which persons with that student level are permitted to register.

Note
Refer to the “Set Up Data” chapter for more information about defining the EDW Extract Parameters.

This business concept contains multiple measures, logically divided into different query subjects that can be used in analysis. The main measures can be found in one of the following query subjects:

- Student Academic Period Measures query subject, which contains academic period specific measures that work with an academic time query item or retention period query items within the Retention Like and Retention Sequential folders
- Student Multi-Year Measures query subject, which contains multi-year graduation and retention specific measures based on the student's academic period first attended

Data in the business concept allows you to answer the following business questions:

- How do college retention and completion rates vary among groups of students based on criteria, such as financial assistance, geography, and ethnic/minority group?
- How effective are my retention programs and strategies?
• What is the relationship between students’ academic qualifications and subsequent first year college performance and retention to second year?

• How effective are my academic support programs and services in helping meet retention goals?

• What group or cohort of students should my retention strategies focus on?

• Are any of these observations made for the current year a consistent trend in the last three years or more?

• Are students academically prepared to enter college and complete their program or degree as per schedule?

• What are the student’s goals and is the student achieving these goals?

• What do enrollment and course taking data indicate about the likely retention and degree completion rates of students?

• What are the characteristics of students who drop out during their second year in the program?

• How is the retention rate of certain classes of students affected by their domestic or overseas status?

• Within this population, what similarities exist between departments and/or across programs?

• Which programs are performing the best in graduating students as per schedule?

• How do older students compare to younger students in course completion in the institution, across departments, programs, by gender, or by socio-economic class?

PM Analyze Student Progress query subjects

The business concept enables you to measure how students are progressing in their study at the institution.

Academic Time

The query subject includes attributes used to group student data in relevant time frames, such as academic year and academic period. You can use these attributes to select a population of students or identify attributes assigned. Academic Time query items permit trend and comparison reporting in different time frames.

Student Filters

The filters in the folder allow you to select a subset of the data in the report based on the person’s with the student level filter used. When delivered, these filters are defined to
select the set of students whose primary curriculum has a student level value of undergraduate, graduate, or professional.

You should define which of your institution’s Student Level Codes correspond to the Undergraduate, Graduate, and Professional levels within your Cognos FM Model and associated packages in the STUDENT LEVEL Parameter Map.

**Note**

Refer to the “Set Up Data” chapter for more information about defining the Parameter Maps.

**Student Status Indicators**

The query subject includes a set of indicators that enable you to select a subset of students to analyze common attributes. For example, by selecting the appropriate student status indicator and filtering the group by the positive or by the negative value, the generated report may contain information on students with housing assignments, who apply for a degree, or new students for the academic period. The set of indicators can be used individually or in combination to isolate a set of students who meet that criterion for an academic period. Each indicator is based on a specific piece of data defined within the Banner Student system.

**Note**

Refer to the published Meta Data reports for more detail information regarding a specific student status indicator.

**Student Retention Status**

The query subject includes a set of attributes with the values Retained, Not Retained, or Excluded that identify the retention status from one registered academic period to the next for each student. These attributes identify whether a student counts in the overall, student level, program, and college retention headcounts for the Retention Period (like or sequential).

The retention status can only be determined for students who are registered from one academic period to the next. If a person does not register or is excluded in one academic period, his retention status for the next academic period is set to No Data for that retention period. Once a person is registered for an academic period, he or she will be evaluated for the next retention periods (like and sequential).

**Student Academic Period Measures**

The query subject provides three sets of values. The first are specific to the academic period, the second and third use two academic periods to report retention like or sequential respectively. The following are used to determine who is included in these measures:

- Student headcount - Academic period headcount of potential students determined by the following Banner data:
• Student status (STVSTST) where the student is permitted to register (STVSTST_REG_IND = Yes)

• Those who are new students (SGBSTDNTERM_ADMIT)

• Those who have registered in the readmit academic period (SOBTERM_READM_REQ) or in an academic period later than the readmit academic period

• Where the student status does not permit registration (STVSTST_REG_IND = No) but the student has an awarded academic outcome record.

Student headcount is limited by the number of students permitted to register, those who met the latest registered academic period, and when the academic period follows the academic period pattern defined in the ACADEMIC_PERIOD_PATTERN EDW Extract Parameter.

Note
Refer to the “Set Up Data” chapter for more information about defining the EDW Extract Parameters.

• Enrolled headcount - Academic period headcount of students with an enrollment status (STVESTS) where the status affects the headcount (STVESTS_EFF_HEADCOUNT is set to Yes).

• Registered headcount - Academic period headcounts of students registered for at least one course section (SFRSTCR) record with a registration status (STVRSTS) where the student is in the seat count (STVRSTS_INCL_SECT_ENRL is set to Yes).

• Student not registered headcount - Academic period headcounts of students not registered or those with no enrollment activity for the academic period (no SFBETRM or SHRTTRM).

• Withdrawn headcount - Academic period headcounts of students who were registered but have changed their enrollment status (STVESTS) to one with a Yes in the withdrawn indicator (STVESTS_WD_IND or STVESTS_THIRD_PARTY_WD_IND).

Note
Student headcount is the sum of the registered headcount, withdrawn headcount, and the student not registered headcount for the academic period (Registered Headcount + Withdrawn Headcount + Not Registered Headcount = Student Headcount).
Specific Retention Measures

Retention measures provide information on whether a student who registered in the reporting academic period (the first one named in the Retention Period) are also registered in the next academic period (the second one named in the Retention Period). Retention measures are available for the following academic periods:

- Like academic periods - Academic periods that are identical, but a year apart as defined in the ACADEMIC_PERIOD_LIKE EDW Extract Parameter
- Sequential academic period - Academic periods defined in an institution rule as one following the other as defined in the ACADEMIC_PERIOD_SEQUENTIAL EDW Extract Parameter

The measures include information on retention headcount, retention rate, excluded headcount, and non-persister headcount and non persister rate for overall institution retention, program, college, or within student level for a retention period.

- Retention Headcount and Retention Rate - includes a distinct count of students who register in the next like or sequential academic period and are, therefore, retained. The rate is the Retention Headcount divided by the Initial Registered Headcount minus the Excluded Headcount.
- Non-Persister Headcount and Non-Persister Rate - includes a distinct count of students who do not register in the next like or sequential academic period and, therefore, are not retained. The rate is the Non-Persister Headcount divided by the Initial Registered Headcount minus the Excluded Headcount.
- Excluded Headcount - includes those students excluded from Retention Headcounts and Rates because they are either deceased, graduated, or have an institution defined enrollment status (STVESTS) or student status (STVSTST), which identify they are excluded from the population as an allowable exclusion, for example, active military service or peace corps. You define these codes in the EXCLUSION_STATUS_CODE EDW Extract Parameter.

Retention, Non Persister and Excluded Headcount are always determined starting with the Initial Registered Headcount of the retention period from academic periods looking to the next academic period (like or sequential) registration status. Excluded persons are considered only in the next like or sequential academic period that follows one in which they are included in the initial registered headcount.

Academic Period First Attended Attributes

The filter enables you to filter all attributes selected for the report to extract data recorded for the first academic period attended by each student. The academic period first attended is set for the student by the academic period for which they have registration activity.

Note

The Academic Period First Attended is used to calculate multi year measures.
Student Multi-Year Measures

The query subject provides the following information for the overall institution as well as within student level, program, and college. The information is tracked from the student's first academic period attended (which identifies the student in the initial registered headcount) then evaluates and tracks the retention status for each subsequent academic year through eight years.

Student Multi-Year Retention Measures

- **X Year Retention Headcount and Rate** - includes a distinct count of students who register in the next like academic period and are, therefore, retained.

- **X Year Non-Persister Headcount and Rate** - includes a distinct count of students who do not register in the next like academic period. As of the like academic period year, when the student is not retained, they are set to Non-Persister and their retention status is not checked.

- **X Year Retention Excluded Headcount**

Student Multi-Year Graduation Measures

- **X Year Graduation Headcount and Rate** includes a distinct count of students who have an outcome awarded indicator in one of the academic periods within the next academic year. The rate for graduation is the cumulative headcount (all years to the current) divided by the Initial Registered Headcount minus the Graduated Excluded Headcount.

- **X Year Graduation Excluded Headcount** includes those students excluded from Graduation Headcounts and Rates because they are either deceased or they have an EXCLUSION_STATUS_CODE EDW Extract Parameter defined.

Student

The Student query subject provides academic period specific characteristics or attributes that include the following information:

- Student population, such as new, transfer, and continuing

- Admission population, such as regular admit, mature admit, and early admit

- Educational goal, such as earn a bachelor degree or upgrade job skills and educational level (secondary school graduate, associate degree, previous bachelor degree)

- Student classification, such as first year, second year, freshman, and sophomore.

- Residency, such as in district, out of district, European Union, and Other

- Student cohort data

- Student attribute data
Academic Study

The query subject provides details about the student’s primary program of study or curriculum for the academic period (concurrent curriculum are not included). The Banner data (SORLCUR/SORLFOS) identified with the highest priority sequence active/current curriculum for the academic period is considered as the primary program. It includes the following information:

- Student level (undergraduate, graduate, or professional)
- Degree, college, major, and department

For reporting comparisons, there are three distinct sets of academic study data that are labeled to identify each set. These three sets of information are included so that you have the option to report the number of students who graduate in the program to which they were admitted and those who have changed programs since admissions. Following is a description of the information included with each sets of academic study data:

- The first set of data, located in the base level of the query subject folder, reflects the current priority program curriculum (SORLCUR/SORLFOS) associated with the student for the academic period. As this data changes those changes are reflected in the overall attributes by academic period.

- The second set of data, located in the Admit Academic Study sub folder of the query subject is defined with the values set for the student in their academic period admit record (SGBSTDN/SORLCUR_ LMOD_CODE = LEARNER). This set of data will always display the same set of data values for each reporting academic period within a student level.

- The third set of data, located in the Outcome Academic Outcome sub folder of the Academic Outcome query subject is associated with the outcome or degree record (SHRDGMR/SORLCUR_ LMOD_CODE = OUTCOME) when the Degree and Other Formal Award record is created in Banner Student. As attributes on this record change they are updated to reflect current outcome values. The outcome academic study values are not expected to change when the outcome is awarded and an academic period graduation is associated with the outcome. The academic study outcome values will display in all of the subsequent academic periods.

Additional data identifies if the student changed academic study attributes in the academic period and the number of academic periods to declare a major.

Student Enrollment

The query subject provides overall enrollment data for each academic period attended by the student that presents the following data for the periods:
• Academic period first and last attended

Note
These will be reported as the same values for each report academic period within a student level.

• Initial enrollment date and current enrollment status and date for each academic period with enrollment data

• Enrolled by census date (1 and 2) indicators

Note
When the required data is available to determine if at least one student course for the academic period is registered by the census date, the enrolled by census is equal to yes. If registered after census date, enrolled by census is equal to no. When the registered by census data is not available for a student and academic period, the enrolled by census will display 'Data Not Avail' or the institution default description for no data.

Academic Performance

The query subject provides attributes and measures that identify a student’s progress toward their educational goal. This data includes the following information:

• Credits attempted, earned, passed, used for GPA and quality points as defined by the final grade assigned. There are two sets of credits available:
  • Total, which is the sum for the academic period reported only for student courses with a course source = 'Registration' or 'History'
  • Cumulative, which is the total of all cumulated credits through the academic period reported for all student courses regardless of course source. You can use the Student Course query subject to access more detail breakdown by course source.

• GPA as assigned by the student course final grades, cumulative, academic year, academic period, and previous academic period

• Academic standing (beginning and end of each academic period)

Note
Begin Academic Standing will be either the override academic standing from the student record (SGBSTDN_ASTD_CODE) or the academic standing end from the previous history term header record (SHRTTRM_ASTD_CODE_END_OF_TERM). The academic standing override indicator identifies which record was used for the begin academic standing. The end of academic period standing is always from the history record.

• Combined academic standing, Progress evaluation and Dean’s List data
**Student Course Filters**

The student course data includes all courses recorded in Banner Student whether they are transfer (with Course Source value ‘Transfer’) or institution (in progress or graded, with Course Source values ‘Registration’ and ‘History’ respectively). The filters in the folder allow you to select only the student course and associated details based on the course source type history, registration, and transfer details when required in a specific report.

**Student Course**

The query subject provides data on all student courses (registration, history, and transfer) with student-specific details, such as the initial registration date, registration status and date, final grade and credits. The student course data includes the following details:

- Basic course information, such as course source (transfer, registration, history), course identification, subject, course number, course reference number, initial registration date, and registration status and date

- Course indicators identify dropped, withdrawn, and passed or failed courses based on either the registration status or the final grade

- Course Section Detail includes information specific to the course section and how it was defined in the Schedule (SSBSECT or defaulted from the SCACRSE) such as course titles, census dates, schedule types, instructional method, cross list, primary instructor, and course administration (college, division, department) responsible for the instruction and meeting detail information

- Course counts and rates include data for student courses with a course source of registration. This includes the initial registered, registered, dropped and withdrawn counts that may be used for the person and academic period or for the course sections

- Course grades, graded counts, rates and credits include data for student courses that have a final grade so they are a course source of either history or transfer. The grade definition is used to determine if the course is counted in attempted, passed, failed and how the course credits are used in the calculation of each credit.

Courses and credits are included for the following student courses by course source:
With Course Source = 'Registration' - numbers include registered, withdrawn, and dropped courses and course credits. With Course Source = 'History' or 'Transfer' - the grade symbol rules are used and includes numbers for attempted, passed and failed courses and credits.

⚠️ **Note**

Student courses with a failed indicator have a grade that counts in Attempted and in the GPA calculation with the passed indicator that is set as 'No'.

The measures include course passed and failed counts and the associated rates, credits, and GPA information.
**Person**

The Person query subject provides the basic person identification data, such as full name, ID, birth date, confidentiality indicator, current age, e-mail address, and phone number.

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**Note**

- When a person has multiple sets of information, such as e-mail address, phone number, and postal address, only a single record is loaded.
- When data is loaded for non-Banner entities, such as organization constituents, vendors, and third parties, they will not appear in this business concept.

**Demographic**

The query subject provides diversity information such as gender, minority, ethnicity, race, and race category codes, traditional and current age, marital status, disabilities, residency and citizenship data, visa, and veteran information. Most of this data remains constant once recorded for the person and will be the same for each academic period. When this data changes, only the current values are stored and available in the data warehouse with the exception of any data captured in a snapshot that stores the key to the valid row of data at the time the data was captured.

**Student Address**

The query subject provides the preferred address recorded for the student and identified by a rule defined by your institution. This rule is stored as a GTVSDAX rule for the PREFADDR parameter used to load the data warehouse table within the Banner ODS with the preferred address indicator set to ‘Yes’. It also provides additional address attributes identifying a geographic division and region, when available based on the STUDENT GEOGRAPHIC REGION EDW Extract Parameter.

When Banner Advancement is used, the preferred address rule is overridden by the student specified preferred address recorded using an advancement form.

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**Note**

Refer to the Banner General GTVSDAX handbook for more information on defining PREFADDR parameter.

**Academic Outcome**

The query subject provides attributes and measures that identify the student’s completion of an educational goal or outcome, for example, award, certificate, or degree. This query subject includes the following information:

- Outcome Academic Study sub folder of the Academic Study query subject is only available when the outcome or degree record (SHRDGMR/SORLCUR_ LMOD_CODE
= OUTCOME) is created in Banner Student. As attributes on this record change, they are updated to reflect current outcome values. The outcome academic study values are not expected to change when the outcome is awarded and an academic period graduation is associated with the outcome. The academic study outcome values will display in all of the subsequent academic periods.

Note

The outcome academic study data is available if the value set for Outcome Awarded Ind is ‘Yes’. Use either the outcome status or the outcome awarded indicator to identify the group of students required for the report requirements.

- Degree credits attempted, earned, passed, and applied to calculation of this outcome degree GPA

Note

These are determined using the apply to outcome number entries in SHRTCKD.

- Academic period and Academic Year Graduation - the Academic Period Graduation must be recorded to have the student with an outcome awarded indicator equal ‘Yes’ count in the Graduated Headcount in the Student Academic Period Measures

- Outcome status, outcome honors, and outcome related attributes

Activity

The query subject includes all student activities tracked by the institution. Although a student may have many non-academic pursuits, the institution determines the activities to track, and records those by academic period in Banner (SGRSACT). When your institution defines the activities to be recorded, you may optionally group the activities for reporting using an activity type and an activity category on the activity definition form.

Note

Although all Banner activities recorded in Banner will be in the data warehouse, only the activities for an academic period will display for a person when using an academic period in a report.

data includes the following:

- Activity, type, and category

- First year, last year, and total years, first academic period and last academic period and total academic period each activity is recorded

The measures include the count of activities in which the student has participated.
Advisor Assignment

The query subject provides details of all advisors assigned to a student with information on their advisor type and if they are the primary advisor for the student.

The measures include the number of students for an advisor and the number of advisors for a student.

Athletic

The query subject provides data identifying participation in athletic teams, official or auxiliary. The attributes in this query subject include:

- Sport, sport status, whether the participant is active in the sport
- Eligibility, athletic aid received, the first and last academic period of participation
- Eligibility begin and end academic periods, first and last year

The measures include the number of seasons of competition available, used, and remaining.

Banner Communication

The query subject provides data for all communications and materials recorded in Banner. Banner communications are specific to a person; they are associated with either an academic period, aid year, or the person. Data include the following attributes:

- Communication or material and whether it was a part of a communication plan, Academic period, or Aid Year associated with the Banner communication or material

When a Banner communication record has a communication but not a material code, the opposite value points to the other. In other words, if there is a Communication code but no Material code, the Material will say Communication Only or the reverse if there is a Material code but no Communication code.

Note

These words may be changed by the institution using the COMMUNICATION Parameter Map values. Refer to the Data Set Up chapter of the Banner Enterprise Data Warehouse Handbook for more information about defining Parameter Maps.

- Whether the communication or material was the first and/or last sent to the person
- Communication dates including initiated and sent dates
• Whether the communication or material has been initiated but not sent so is still pending

Note
Any Banner Relationship Management data for communications and interactions are not included in this business concept; they are only included in the PM Analyze Student Engagement business concept in the Communication and Interaction query subjects.

Contact
The query subject provides all the contacts stored in the Banner system. There are three sets of data that view the contacts. They include All Contacts, First Contact, and Last Contact. Within these three folders, you will find the data that used to identify the contact type and date details, and first and latest contacts.

The measures include the count of contacts and latest contact days.

Note
The Banner contacts are specific to a person; they are not associated with an academic period. Be aware that most of the Banner contact data is repeated in Interactions.

Financial Aid Information
The query subject includes indicators that identify whether the student is a financial aid applicant. This query subject also provides information on the following financial aid statuses:

• Indicators for need eligible and if need is fully met
• Indicators for aid offered, accepted and paid
• Needs analysis ranges for gross need, total family contribution and remaining unmet need
• Percent of aid by financial aid type (grant, loan, scholarship, or work) and financial aid source (federal, state or province, institution, other), percent gift, self-help aid, and the percent of need met by the gift

Hold
The query subject includes details on holds, originating office, active indicator, hold dates, and the specific Banner processing stopped by the hold type. Measures include the
The number of holds the person had that may be reported by type, active indicator, and over a period of time.

**Note**

Holds are specific to a person; they are not associated with an academic period. The active indicator identifies the holds in place based on the system date. The hold indicators are tied to the hold type and not specific to whether the hold active indicator is equal to ‘Yes’.

The measures include a count of holds. When used with the Active Hold Indicator, hold count will be divided into the numbers that are still in effect.

**Post Secondary School**

The query subject includes details of all post secondary schools (including the home institution) attended by the student. Attributes for the institution include name, accreditation type, select institution indicators defined in EDW Extract Parameters for private, public, two or four year institutions defined as **INSTITUTION CHARACTERISTIC** EDW Extract Parameter and address details defined as the **INST GEOGRAPHIC REGION** EDW Extract Parameter. Student specific data includes degrees and majors, transfer GPA range, transfer credit range attributes.

**NOTE:** The query subject will include your institution as an institution to include academic outcome data for sought and awarded outcomes which may be required for admissions, graduate studies, employment, and so on.

The measures include post secondary school GPA, transfer credits granted, and class rank and size.

**NOTE:** Refer to the Data Set Up chapter of the Banner Enterprise Data Warehouse Handbook for more information about defining the EDW Extract Parameters.

**Secondary School**

The query subject includes information on the last secondary school attended by the student. Attributes for the institution include name, select institution indicators defined in **INSTITUTION CHARACTERISTIC** EDW Extract Parameter for private, public, home schooled, geographic, and address details that are defined as the **INST GEOGRAPHIC REGION** EDW Extract Parameter.

The measures include the secondary school GPA and secondary school percentile.

**Note**

Refer to the “Set Up Data” chapter for more information about defining the EDW Extract Parameters.
Test Filters

The filters in the folder allow you to select for a report information for the highest or the latest test scores (based on the test date associated with the test) recorded for a person.

**Note**

As only numeric test scores are loaded to the data warehouse, the highest numeric score for a test is marked ‘Yes’.

Test

The query subject includes all test details with scores and test dates for all recorded qualification and placement tests recorded on Test Information (SORTEST). When there is more than one score for the same test, the data contains indicators that identify the highest score and the latest score. Either the indicators or the filters may be used with the test folder to select the highest or latest score only.

**Note**

The Banner tests are specific to a person; they are not associated with an academic period. Test scores not recorded as numeric will not be loaded into the data warehouse.

There are special pre-filtered folders with highest scores for either an institution selected set of placement or qualification tests defined in the TEST_CODE EDW Extract Parameter. These TEST_CODE definitions make specific test scores used in student retention analysis more available for reporting.

There is also a Cube Identifiers folder that contains database values that are used to populate the Multi Year Retention & Graduation Cube.

Report Default Selections

The query subject includes values that can be used in a report to simplify the query or to display an initial value. You should define these selections in the REPORT_DEFAULT_SELECTIONS Parameter Map and add them to this query subject if desirable.

**Note**

Refer to the “Set Up Data” chapter for more information about defining the Parameter Maps.
Note

Refer to the “Set Up Data” chapter for more information about defining the Parameter Maps.

Snapshot - PM Analyze Student Progress business concept

The business concept enables you to measure student retention at a point in time from one academic period (like or sequential) to another. This snapshot business concept is a copy of the business concept. It includes the same attributes and measures that allow you to analyze academic performance and progress, student course details, and academic outcome (tied to their priority curriculum record) sought or awarded at the institution. This version of the business concept lets you compare the data by an event or point in time.

You can use this snapshot business concept to measure student retention, performance, and progress at the institution by examining the records for the students who are retained and those not retained as of the institution specified events.

The warehouse data is continually changing based on your institution’s policies and procedures for gathering and inputting data and the schedule used to refresh the warehouse data. To capture these changes and allow for comparison across time, you need to determine your institution’s significant time events and create those events in the Event parameter in the Administrative User Interface. Once events are created, each time you load the data warehouse you can select the appropriate Event to associate with that snapshot of the data.

For example, it may be important to compare potential retention headcount by viewing the data during the registration period (one week before classes, two weeks before classes, and so on). You may also want to view actual retention headcounts after registration ends and during the academic period (First Day of Classes, End of Drop/Add, Census Date 1, Mid Academic Period, End of Academic Period). You would create an Event parameter record for each of these institution milestones.

Note

Depending on your institution’s needs, you might use some or all of the same Events for this snapshot business concept that you use for the related business concept. You can create the overlapping Events once in the Administration UI and use them for both business concepts. You can also create Events unique for each business concept.

The only difference between the main business concept and its snapshot is the addition of an EVENT_KEY stored with each row of data that is specific to the person and academic period. The published package contains an additional query subject named “Event”. The
Event query subject includes the institution defined Event along with the associated event date, event category, event type, and event. This lets you group by any of these values within reports based on the snapshot business concept.
**PM Impact Of Aid On New Enrollment**

The PM Impact of Aid on New Enrollment business concept allows you to monitor the financial aid need and awards offered to prospective students in the enrollment pool for an academic period. You can review financial need, award amounts, aid types and sources to assess the impact they have on the yield of admitted persons who enroll at the institution. You can analyze whether the gross need and percent of need met influenced a person's enrollment decision.

This business concept includes the Admissions Financial Aid (combined) Fact along with Financial Aid Application and Financial Aid Year and Academic Period Award information. The business concept includes data for those in the enrollment pool who apply for aid as well as those who do not apply for aid. This allows you to compare attributes and see whether a prospect is more or less likely to register for classes when they apply for or are offered financial assistance.

This business concept includes person demographic diversity attributes; person educational background attributes to assess quality; and recruit or application program attributes to compare diversity and or quality by requested program of study for those in the enrollment pool. Financial Aid specific data includes financial aid applicant groups (budget and packaging), needs analysis data (using both the federal and institutional methodology to calculate) and specifics of the award offered, accepted, declined or canceled within the aid year and academic period for each person.

You can use the Cognos package associated with the PM Impact of Aid on New Enrollment business concept to create reports that offer the following information or can answer the following questions:

- Review the number of financial aid applicants that fail to enroll and compare numbers by different demographic breakdowns to analyze the decrease or increase in numbers from year to year.

- How do financial aid package levels compare by the applicants’ chosen colleges, programs or majors? And what are the offer counts and amounts of awards offered by the various funds that make up those packages?

- What are the amounts and percentages of need met and need not met by quality attributes like secondary school GPA or ACT Composite score?

- How is the amount of gift versus self help aid affecting enrollment outcomes? For self help aid as component of total offers, is there an amount or percentage where non-enrollments increase?

- Review the communication channels used to offer admissions or financial aids.
Populations included in PM Impact of Aid on New Enrollment Business Concept

It is important to know what populations of people will be included in the reports that you create using the PM Impact of Aid on New Enrollment business concept. The following picture illustrates the various headcounts available in this business concept and the relationships between the populations included in each headcount.

The headcount query items included in the business concept are pre-defined measures that you can use together on a report to do headcount comparisons. For example, you can compare the number of students who have applied for aid with those who have been offered aid.

Single Admissions Record Filters (Academic Period and Aid Year)

Your institution may allow multiple admissions records for a person. If this is the case, use either the “Single Admissions Record - Aid Year” or “Single Admissions Record - Academic Period” filter (depending on the time period of your report) to isolate only one admission application or recruitment record for any prospective student who has multiple records.

Using one of these filters is necessary to eliminate the multiplication of Financial Aid Application amounts in the report. Any aid year related amounts specific to the financial aid application but captured for each prospective student record may be multiplied by the number of multiple recruitment or admissions application records for a prospective student in Banner for a given academic period or aid year. This affects the values stored in the WAT_ADMISSIONS_FINAID_RECORD (or WAZ_ADMISSIONS_FINAID_RECORD)
aggregate tables including but not limited to Total Offer Amount, Cost of Attendance, Other Resources and need analysis amounts such as FM or IM Gross Need. When you apply either of the Single Admissions Record filters, the report will display distinct amounts in both the detail and the summary report amounts for individuals with multiple records.

If you only allow one recruitment record and one admissions application for prospective students for a given academic period or aid year, you do not need to use these filters.

The Admissions Record - Aid Year and Admissions Record - Academic Period query items are provided to isolate single admissions records in cube based reporting.

**PM Impact of Aid on New Enrollment Data Elements**

The data elements included in the query subjects and folders enable you to generate reports on new enrollment data. The following table provides a brief description of the type of information captured by the data elements in each query subject and folder in this business concept.

<table>
<thead>
<tr>
<th>Query Subject/ Folder</th>
<th>Description</th>
<th>Data Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Filters</td>
<td>Filters and reports financial aid and student data based on the current academic year for any query item. The filter criteria is defined by your institution in the Cognos metadata layer and is updated as needed.</td>
<td><img src="image" alt="Time Filters" /></td>
</tr>
<tr>
<td>Financial Aid Time</td>
<td>Reports data on financial aid based on the aid year or the academic period defined by the institution.</td>
<td><img src="image" alt="Financial Aid Time" /></td>
</tr>
<tr>
<td>Query Subject/Folder</td>
<td>Description</td>
<td>Data Elements</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------</td>
</tr>
</tbody>
</table>
| Prospective Student Filters | Filters the data gathered for all prospective students to a single admissions application or recruitment record.  
**Note:** It is possible for a person to have multiple application or recruitment records for the academic period or the aid year. | ![Prospective Student Filters](#)  
- Single Admissions Record - Aid Year  
- Single Admissions Record - Academic Period  
- Student Level Undergraduate  
- Student Level Graduate  
- Student Level Professional |
| Prospective Student Headcounts | Reports based on the broadest population in the business concept. Includes all prospective students, persons with an admissions application record, or recruitment application record, for a given academic period. | ![Prospective Student Headcounts](#)  
- ![Prospective Student Headcount](#) |
| Pre Student Status          | Reports to reflect the population for the standard statuses in the enrollment funnel for the academic period. The statuses include population that inquired, applied, admitted, accepted, tuition deposited, and enrolled. | ![Pre Student Status](#)  
- ![Pre Student Status Indicators](#)  
- ![Pre Student Status Headcounts](#) |
| Yield Measures              | Calculates a value based on the following prospective student data for an academic period:  
- Count of persons enrolled  
- Count of persons admitted | ![Yield Measures](#)  
- ![Enrolled Yield](#) |
<table>
<thead>
<tr>
<th>Query Subject/Folder</th>
<th>Description</th>
<th>Data Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Aid Filters</td>
<td>Filters the generated report based on the following criteria defined by your institution for all prospective students:</td>
<td><img src="image" alt="Financial Aid Filters" /></td>
</tr>
<tr>
<td></td>
<td>• Person holding a financial aid status record</td>
<td><img src="image" alt="Financial Aid Filters" /></td>
</tr>
<tr>
<td></td>
<td>• Person submitted a financial aid application</td>
<td><img src="image" alt="Financial Aid Filters" /></td>
</tr>
<tr>
<td></td>
<td>• Person was offered financial aid</td>
<td><img src="image" alt="Financial Aid Filters" /></td>
</tr>
<tr>
<td></td>
<td>You can use one or more of these pre-defined filters to narrow down the population.</td>
<td><img src="image" alt="Financial Aid Filters" /></td>
</tr>
<tr>
<td>Financial Aid Headcounts and Indicators</td>
<td>Applies the following indicators to a generated report to narrow down the population:</td>
<td><img src="image" alt="Financial Aid Headcounts And Indicators" /></td>
</tr>
<tr>
<td></td>
<td>• If prospective student has either an FM or IM aid application</td>
<td><img src="image" alt="Financial Aid Headcounts And Indicators" /></td>
</tr>
<tr>
<td></td>
<td>• If prospective student has been offered partial or full financial aid</td>
<td><img src="image" alt="Financial Aid Headcounts And Indicators" /></td>
</tr>
<tr>
<td></td>
<td>• If prospective student has accepted any part of the offered financial aid</td>
<td><img src="image" alt="Financial Aid Headcounts And Indicators" /></td>
</tr>
<tr>
<td></td>
<td>• If any part of the financial aid has been paid or canceled</td>
<td><img src="image" alt="Financial Aid Headcounts And Indicators" /></td>
</tr>
<tr>
<td></td>
<td>• If the prospective student has been offered any gift or self help aid</td>
<td><img src="image" alt="Financial Aid Headcounts And Indicators" /></td>
</tr>
<tr>
<td>Query Subject/Folder</td>
<td>Description</td>
<td>Data Elements</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
</tbody>
</table>
| Financial Aid       | Reports the detailed information for financial aid applicant for a aid year. Includes data calculated using federal methodology or as defined by your institution and total or summary data on financial aid offered. Enables to generate report on needs met. | Financial Aid Application  
- Aid Period  
- Aid Period Description  
- Budget Group  
- Budget Group Description  
- Dependent Ind  
- Dependent Ind Description  
- Cost Of Attendance Range  
- Cost Of Attendance Range Order  
- Packaging Group  
- Packaging Group Description  
- Packaging Complete Ind  
- Packaging Complete Ind Description  
- Packaging Complete Data  
- Total Resource Amount Range  
- Total Resource Amount Range Order  
- Cost Of Attendance  
- Total Resource Amount  
- Total Offer  
- Average Cost Of Attendance  
- Average Total Resource Amount  
- Average Total Offer  
- Total Offer Composition Measures  
- FM Need Measures  
- FM Average Need Measures  
- FM Need Ranges  
- FM Need Indicators  
- IM Need Measures  
- IM Average Need Measures  
- IM Need Ranges  
- IM Need Indicators |
| Percent of Need Ranges | Calculates a percentage value based on the amount of financial aid offered and the aid need determined for a person using federal methodology or as defined by your institution. This value is assigned to a range to be used as a dimensional attribute to compare percent of need met and percent of need not met. | Financial Aid Percent Of Need Ranges  
- FM Percent Of Need Met Range  
- FM Percent Of Need Met Range Order  
- FM Percent Of Need Not Met Range  
- FM Percent Of Need Not Met Range Order  
- IM Percent Of Need Met Range  
- IM Percent Of Need Met Range Order  
- IM Percent Of Need Not Met Range  
- IM Percent Of Need Not Met Range Order |
<table>
<thead>
<tr>
<th>Query Subject/Folder</th>
<th>Description</th>
<th>Data Elements</th>
</tr>
</thead>
</table>
| Financial Aid Award Filters | Filters and reports the financial aid amounts displayed by one of the following authorities:  
- Financial aid sources  
- State, institution, or other financial aid type  
- Grant, loan, scholarship, or work  
Can also filter the financial aid amounts to be gift aid (grant or scholarship) or self-help aid (loan or work). | Financial Aid Award Filters  
- Source Federal  
- Source Institutional  
- Source Other  
- Source State  
- Type Grant  
- Type Loan  
- Type Scholarship  
- Type Work  
- Gift Aid  
- Self Help Aid |
| Financial Aid Awards | Reports data that includes students who have been offered aid for an aid year (or academic period, if applicable). | Financial Aid Awards  
- Aid Fund  
- Aid Fund Description  
- Aid Fund Type  
- Aid Fund Type Description  
- Aid Type  
- Aid Type Description  
- Aid Fund Source  
- Aid Fund Source Description  
- Aid Source  
- Aid Source Description  
- Gift Or Self Help Aid  
- Packaging Rule Indicators  
- Aid Year Award Amounts  
- Aid Year Average Award Amounts  
- Aid Year Award Dates  
- Aid Year Award Indicators  
- Aid Year Award Counts  
- Award Academic Period  
- Award Academic Period Description  
- Academic Period Award Amounts  
- Academic Period Average Award Amounts  
- Academic Period Award Indicators  
- Academic Period Award Counts |
<table>
<thead>
<tr>
<th>Query Subject/Folder</th>
<th>Description</th>
<th>Data Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected Tuition</td>
<td>Reports based on the tuition and aid budget defined by the institution.</td>
<td>![](Projected Tuition Discounting)</td>
</tr>
<tr>
<td>Discounting</td>
<td></td>
<td>- Projected Tuition Discounting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Tuition &amp; Fee Budget</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Total Institution Gift Aid Offer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Discounted Tuition &amp; Fee Budget</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Projected Discount Rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Average Tuition &amp; Fee Budget</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Average Total Institution Gift Aid Offer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Average Discounted Tuition &amp; Fee Budget</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Percent Of Total Offer Institution Gift Aid</td>
</tr>
<tr>
<td>Relevant Admissions</td>
<td>Reports admissions application data for a prospective student if the record exists. Reports admissions recruitment data if no application exists.</td>
<td>![](Relevant Admissions Record)</td>
</tr>
<tr>
<td>Record</td>
<td></td>
<td>- Record Type</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Record Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Record Status</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Record Status Description</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Primary Source</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Primary Source Description</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Application Complete Ind</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Application Complete Ind Description</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Record Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Admit Demographics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Application Decision - Latest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Attributes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cohorts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Withdrawal Reason and Institution Attending</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Admissions Application Count</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Record Count</td>
</tr>
<tr>
<td>Query Subject/ Folder</td>
<td>Description</td>
<td>Data Elements</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Academic Study</td>
<td>Reports curriculum data such as student level, program, campus, degrees, and major opted by a student at your university.</td>
<td><img src="#" alt="Academic Study" /></td>
</tr>
<tr>
<td>Banner Communication</td>
<td>Reports information for the mail and material sent, pending, or scheduled using the mail functionality in the Banner ERP system.</td>
<td><img src="#" alt="Banner Communication" /></td>
</tr>
<tr>
<td>Query Subject/Folder</td>
<td>Description</td>
<td>Data Elements</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Demographic</td>
<td>Reports information on ethnicity, multiple race codes, marital status, disabilities, citizenship data, and veteran information for a student.</td>
<td></td>
</tr>
<tr>
<td>Person</td>
<td>Reports the complete ID, name, e-mail, and other personal data for students at your university.</td>
<td></td>
</tr>
<tr>
<td>Query Subject/Folder</td>
<td>Description</td>
<td>Data Elements</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Post Secondary School - Highest Degree | Reports GPA and transfer credit ranges related to any degree or certification obtained from any college, university, or technical school attended by the person. | Post Secondary School - Highest Degree  
  - Post Secondary School  
  - Post Secondary School Name  
  - Post Secondary Highest Degree  
  - Post Secondary Highest Degree Description  
  - Post Secondary Award Category  
  - Post Secondary Award Category Description  
  - Post Secondary Major  
  - Post Secondary Major Description  
  - Post Secondary GPA Range  
  - Post Secondary GPA Range Description  
  - Post Secondary Degree Awarded Ind  
  - Post Secondary Degree Awarded Ind Description  
  - Post Secondary GPA                                                                 |
| Secondary School    | Reports information such as subject with years taken, GPA, diploma obtained by a student in the secondary school. Also reports the class rank, size, and academic percentile. | Secondary School  
  - Secondary School  
  - Secondary School Name  
  - Secondary School College Prep Ind  
  - Secondary Diploma  
  - Secondary Diploma Description  
  - Secondary GPA Range  
  - Secondary GPA Range Description  
  - Secondary Percentile Range  
  - Secondary Percentile Range Description  
  - Secondary School Address  
  - Secondary School Indicators  
  - Secondary School GPA  
  - Secondary School Percentile  
  - Secondary School Rank  
  - Secondary School Size |
<table>
<thead>
<tr>
<th>Query Subject/Folder</th>
<th>Description</th>
<th>Data Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Reports data such as education level and goal, location or site of study, admissions or student population, and residency for prospects, current students, and alumni at your university.</td>
<td><img src="#" alt="Student" /></td>
</tr>
</tbody>
</table>
| Test                 | Reports information related to the following standards:  
  - Standardized test such as ACT or SAT  
  - Departmental or placement tests given by an institution  
  - Other special scores  
You can use these scores in selecting institution scholarship recipients, admission decision, or course placements at your university. | ![Test](#) |
| Internal Keys        | Contains information on student and recruiter UID to be used for complex queries required for complex reporting. | ![Internal Keys](#) |
The snapshot version of the PM Impact of Aid On New Enrollment business concept includes the same information as the base version. The snapshot version also includes an event dimension. Using the event dimension, you can load the Banner EDW with a complete version of the PM Impact of Aid On New Enrollment data pulled from the Banner ODS at a point in time (the event.) This gives you a static version of the data for a specific event. For example, you might load the Snapshot - PM Impact of Aid On New Enrollment on a weekly basis. You can then compare the data at like periods of time based on the event dimension.

<table>
<thead>
<tr>
<th>Query Subject/ Folder</th>
<th>Description</th>
<th>Data Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Default Selections</td>
<td>Variable data defined by the institution to make reporting easier.</td>
<td>Report Default Selections</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Academic Year Prompt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Current Academic Year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Academic Period Prompt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Current Academic Period</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Academic Period Type Prompt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Current Academic Period Type</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Student Level Prompt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default Student Level</td>
</tr>
<tr>
<td>Report Help Text</td>
<td>Defines a default set of information to be used by your institution as basic information to display on all reports. Also displays contact information for assistance with reporting.</td>
<td>Report Help Text</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cognos User Name</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General Help Text</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Release Information</td>
</tr>
</tbody>
</table>
PM Manage Applicants

The PM Manage Applicants business concept includes all of the information you need to monitor the application process and interact with applicants.

This business concept allows you to monitor the number of applicants and the number of admission applications submitted to your institution for an academic period. The data includes all the details stored for the applications. You can review the applications based on the following criteria:

- Group of applicants
- Demographic diversity attributes such as gender, race, and citizenship
- Quality attributes such as secondary school GPA, percentile, individual subjects, and grades
- Applied program

You can use any combination of these attributes to analyze their impact on the yield of persons enrolled at your institution.

This business concept uses the Admissions Application fact table with a number of supporting facts. The facts include all the details submitted and recorded for admission applicants at your institution such as cohorts, attributes, requirements, ratings, decisions, select financial aid data; person data such as Banner communications, contacts, and interests.

This business concept includes, but is not limited to the following information about applicants:

- Academic program or field of study: student level, program, college, campus, degree, and major
- Application status, complete indicator, primary source, recruit type
- Bio-demographic: birth date, age, gender, phone number, e-mail address
- Pre-student status indicators and counts
- Secondary and post-secondary school: school name, diploma, GPA range, percentile range
- Testing
- Contacts and interests
- Banner communication data

You can use the Cognos package associated with the PM Manage Applicant business concept to create reports that offer the following information or can answer the following questions:
- Review applications and the number of applicants admitted to your institution that fail to enroll.
- Compare the applications and enrollment numbers based on demographic breakdowns to analyze the change in numbers between different academic years.
- How do quality attributes such as secondary school GPA or ACT composite score compare by the colleges selected by the applicants, programs, or majors?
- What are the different number of admit decision counts based on the quality attributes determined?
- What are the number of rejected applications by quality attributes?
- What are the trends in yield by demographic and diversity attributes admitted and enrolled from year to year?
- What roles do Banner Communication or Contacts query subjects play in influencing the number of persons admitted and persons enrolled at your institution?

### Populations included in PM Manage Applicant Business Concept

It is important to know what populations of people will be included in the reports that you generate using the PM Manage Applicant business concept. The population will include all the admissions applications submitted for an academic period. The applicant headcount will count each person who submits one or more applications only once for the academic period. The application count will count all applications submitted by the person irrespective of whether one or more were admitted by your institution. It is possible for institutions to record more than one application for a person applying to different programs in an academic period. Certain numbers might appear inflated by the number of applications if the person ID, name, and application number attributes are not used when generating a report.

### PM Manage Applicants Data Elements

The data elements included in the query subjects and folders enable you to generate reports based on applicant data. The following table provides a brief description of the type of information captured by the data elements in each query subject and folder in this business concept.
<table>
<thead>
<tr>
<th>Query Subject/Folder</th>
<th>Description</th>
<th>Data Elements</th>
</tr>
</thead>
</table>
| Academic Time         | Reports data related to the time and duration spent by a student at your university. | - Academic Time  
  - Academic Year  
  - Academic Year Description  
  - Academic Period Type  
  - Academic Period  
  - Academic Period Description  
  - Academic Period Begin Date  
  - Academic Period End Date |
| Academic Study        | Reports curriculum data such as student level, program, campus, degrees, and major opted by a student at your university. | - Academic Study  
  - Student Level  
  - Student Level Description  
  - Program  
  - Program Description  
  - Campus  
  - Campus Description  
  - College  
  - College Description  
  - Award Category  
  - Award Category Description  
  - Degree  
  - Degree Description  
  - Major  
  - Major Description  
  - Program Classification  
  - Program Classification Description  
  - Department  
  - Department Description  
  - Second Major Information |
<table>
<thead>
<tr>
<th>Query Subject/Folder</th>
<th>Description</th>
<th>Data Elements</th>
</tr>
</thead>
</table>
| Admissions Application | Reports based on the following data:  
  - Application status, count, and requirements  
  - Application cohorts and attributes  
  - Applicant headcount  
  - Ratings and decisions highlighting the latest decision for the application  
  - Supplemental data | ![Admissions Application](image) |
<p>| Banner Communication | Reports information for the mail and material sent, pending, or scheduled using the mail functionality in the Banner ERP system. | <img src="image" alt="Banner Communication" /> |
| Contact | Reports information on various contacts defined by the university being tracked through the Banner ERP. | <img src="image" alt="Contact" /> |</p>
<table>
<thead>
<tr>
<th>Query Subject/Folder</th>
<th>Description</th>
<th>Data Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic</td>
<td>Reports information on ethnicity, multiple race codes, marital status, disabilities, citizenship data, and veteran information for a student.</td>
<td><a href="#">Demographic</a></td>
</tr>
<tr>
<td>Financial Aid</td>
<td>Reports the selected details on aid applicant and total financial aid offered to students at your institution.</td>
<td><a href="#">Financial Aid Information</a></td>
</tr>
<tr>
<td>Interest</td>
<td>Reports information on the hobbies and non-academic interests recorded for persons in the enrollment funnel to be used by the institution to recruit the person.</td>
<td><a href="#">Interest</a></td>
</tr>
<tr>
<td>Internal Keys</td>
<td>Contains information on student rater UID and unique application key to be used for complex queries required for complex reporting.</td>
<td><a href="#">Internal Keys</a></td>
</tr>
<tr>
<td>Query Subject/Folder</td>
<td>Description</td>
<td>Data Elements</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Person</td>
<td>Reports the complete ID, name, e-mail, and other personal data for students at your university.</td>
<td><img src="image1" alt="Person" /></td>
</tr>
<tr>
<td>Post Secondary School</td>
<td>Reports GPA and transfer credit ranges related to any degree or certification obtained from any college, university, or technical school attended by the person.</td>
<td><img src="image2" alt="Post Secondary School" /></td>
</tr>
<tr>
<td>Pre Student Status</td>
<td>Reports to reflect the population for the standard statuses in the enrollment funnel for the academic period. The statuses include population that inquired, applied, admitted, accepted, tuition deposited, and enrolled.</td>
<td><img src="image3" alt="Pre Student Status" /></td>
</tr>
<tr>
<td>Query Subject/Folder</td>
<td>Description</td>
<td>Data Elements</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
</tbody>
</table>
| Prospective Student Address | Reports information on geographic region/division, postal address, nation, state/province, and county for the prospective student for your institution. | Prospective Student Address  
- Prospective Student Geographic Division  
- Prospective Student Geographic Division Description  
- Prospective Student Geographic Region  
- Prospective Student Geographic Region Description  
- Prospective Student Nation  
- Prospective Student Nation Description  
- Prospective Student State/Province  
- Prospective Student State/Province Description  
- Prospective Student County  
- Prospective Student County Description  
- Prospective Student City  
- Prospective Student City Description  
- Prospective Student Postal Code  
- Prospective Student Street Line 1  
- Prospective Student Street Line 2  
- Prospective Student Street Line 3  
- Prospective Student Street Line 4 |
| Report Default Selections | Variable data defined by the institution to make reporting easier. | Report Default Selections  
- Academic Year Prompt  
- Current Academic Year  
- Academic Period Prompt  
- Current Academic Period  
- Academic Period Type Prompt  
- Current Academic Period Type  
- Student Level Prompt  
- Default Student Level |
| Report Help Text | Defines a default set of information to be used by your institution as basic information to display on all reports. Also displays contact information for assistance with reporting. | Report Help Text  
- Cognos User Name  
- General Help Text  
- Release Information |
### Query Subject/Folder

<table>
<thead>
<tr>
<th>Query Subject/Folder</th>
<th>Description</th>
<th>Data Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Reports data such as education level and goal, location or site of study, population, admissions and student, and residency for prospects, current students, and alumni at your university.</td>
<td>Student&lt;br&gt;Admissions Population&lt;br&gt;Admissions Population Description&lt;br&gt;Education Goal&lt;br&gt;Education Goal Description&lt;br&gt;Education Level&lt;br&gt;Education Level Description&lt;br&gt;Housing 2nd&lt;br&gt;Intended Time Status&lt;br&gt;Intended Time Status Description&lt;br&gt;Rate&lt;br&gt;Rate Description&lt;br&gt;Residency&lt;br&gt;Residency Description&lt;br&gt;Residency 2nd&lt;br&gt;Residency 2nd Description&lt;br&gt;Site&lt;br&gt;Site Description&lt;br&gt;Student Classification&lt;br&gt;Student Classification Description&lt;br&gt;Student Population&lt;br&gt;Student Population Description</td>
</tr>
<tr>
<td>Query Subject/Folder</td>
<td>Description</td>
<td>Data Elements</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Test</td>
<td>Reports information related to the following standards:</td>
<td><img src="#" alt="Test" /></td>
</tr>
<tr>
<td></td>
<td>• Standardized test such as ACT or SAT</td>
<td><img src="#" alt="All Tests" /></td>
</tr>
<tr>
<td></td>
<td>• Departmental or placement tests given by an institution</td>
<td><img src="#" alt="Highest Tests" /></td>
</tr>
<tr>
<td></td>
<td>• Other special scores</td>
<td><img src="#" alt="Latest Tests" /></td>
</tr>
<tr>
<td></td>
<td>The test folders contain a subset of potential scores commonly used for reviews. The following information is recorded:</td>
<td><img src="#" alt="Test Dates" /></td>
</tr>
<tr>
<td></td>
<td>• Highest Tests: When more than one score is recorded, this value is the highest score value.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Latest Tests: When more than one score is recorded, this value is replaced with the latest score value.</td>
<td></td>
</tr>
<tr>
<td>Yield Measures</td>
<td>Calculates a value based on the following prospective student data for an academic period:</td>
<td><img src="#" alt="Yield Measures" /></td>
</tr>
<tr>
<td></td>
<td>• Count of persons enrolled</td>
<td><img src="#" alt="Enrolled Yield" /></td>
</tr>
<tr>
<td></td>
<td>• Count of persons admitted</td>
<td></td>
</tr>
<tr>
<td>Other Filters</td>
<td>(Optional) Filters generated data and displays information based on the selected pre-defined criteria.</td>
<td><img src="#" alt="Current Academic Year" /></td>
</tr>
<tr>
<td></td>
<td><img src="#" alt="Current Academic Period" /></td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="#" alt="ACT Composite Test" /></td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="#" alt="SAT Combined Test" /></td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="#" alt="Student Level Undergraduate" /></td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="#" alt="Student Level Graduate" /></td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="#" alt="Student Level Professional" /></td>
<td></td>
</tr>
</tbody>
</table>
Snapshot – PM Manage Applicants

The snapshot version of the PM Manage Applicants business concept includes the same information as the base version. The snapshot version also includes an event dimension. Using the event dimension, you can load the Banner EDW with a complete version of the PM Manage Applicants data pulled from the Banner ODS at a point in time (the event.) This gives you a static version of the data for a specific event. For example, you might load the Snapshot - PM Manage Applicants at the end of each month.
PM Analyze Constituent Giving business concept

The PM Analyze Constituent Giving business concept includes information for an institution’s entire constituent population, including biographical, demographic, academic, interaction and engagement information as well as summarized giving history as applicable. PM Analyze Constituent Giving also provides transaction level giving details and metrics for those constituents who have also donated to the institution.

Your institution can perform the following tasks with the help of the PM Analyze Constituent Giving business concept:

- Research and identify new prospects, potential donors, volunteers, event attendees, and engagement opportunities
- Identify specific constituent populations
- Evaluate attributes, characteristics, and behavior of constituents
- Compare giving characteristics of donors to potential donors
- Analyze giving patterns using transaction level data for summarization or detail analysis

PM Analyze Constituent Giving data elements

The Analyze Constituent Giving business concept contains related data combined into query subjects with query items that are used to generate reports.

The following sections give a business definition or description for the query subjects and filters specified in this package.

Constituent Filters

The data elements in the Constituent Entity Filters folder filter the report based on the constituent type, such as alumni, person, or organization.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumnus</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Donor</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Person</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Constituent Counts and Indicators

The Constituent Counts and Indicators query subject provides information about counts and indicators that are related to constituents.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Constituent Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Donor Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Donor Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Constituent Count</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Alumnus Count</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Donor Count</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Constituent

The Constituent query subject provides information about individual constituents including ID, name, relationship to the institution, spouse name, and other attributes such as current age birthdate and deceased date.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constituent ID</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Constituent Name</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Constituent Name Sort</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Alumnus Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Data Element</td>
<td>Advance</td>
<td>Banner</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>Alumnus Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Person Or Organization</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Preferred Class Year</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Preferred School</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Preferred School Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Primary Entity Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Primary Entity Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>All Constituent Entity Types (Folder)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entity Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Entity Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Entity Record Status</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Entity Record Status Description</td>
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<td></td>
</tr>
<tr>
<td>Solicitation Control</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Solicitation Control Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Spouse Name</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Birth Date</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Birth Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Age</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Age Range</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Age Range Order</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Age Range Order</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Deceased Date</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Deceased Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Constituent Start Date</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Constituent Stop Date</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Current-Prior Year and Lifetime Participation

The Current-Prior Year and Lifetime Participation query subject provides constituent participation details for the current or prior year of giving.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Consecutive Years</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Consecutive Years Range</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Consecutive Years Range Order</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Donor Retention Status</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current LYBUNT-SYBUNT</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Short-Long Lapse</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Prior Consecutive Years</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Prior Consecutive Years Range</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Prior Consecutive Years Range Order</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Prior Donor Retention Status</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Prior LYBUNT-SYBUNT</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Participation Amount</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Participation Amount Range</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Participation Amount Range Order</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Total Years of Participation</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Total Years of Participation Range</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Total Years of Participation Range Order</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Constituent Giving History

The Constituent Giving History query subject provides summarized giving history information including lifetime and largest giving amounts and spouse giving history details.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime Hard Credit Range</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Hard Credit Range Order</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Soft Credit Range</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Soft Credit Range Order</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Largest Hard Credit Range</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Largest Hard Credit Range Order</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Largest Soft Credit Range</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Largest Soft Credit Range Order</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Giving History Details (Folder)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Hard Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Soft Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Total Match</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Largest Hard Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Last Largest Hard Credit Date</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Largest Soft Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Last Largest Soft Credit Date</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Spouse Giving History Details (Folder)</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Spouse Lifetime Hard Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Spouse Lifetime Soft Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Spouse Lifetime Total Match</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
### Year of Giving Filters

The Year of Giving query subject reports campaign, pledge, and giving data for a particular academic year.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spouse Largest Hard Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Spouse Last Largest Hard Credit Date</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Spouse Largest Soft Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Spouse Last Largest Soft Credit Date</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Core Giving Amounts (Folder)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime Pledged Hard Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Pledged Soft Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Outright Gift Hard Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Outright Gift Soft Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Pledge Payment Hard Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Pledge Payment Soft Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Match Hard Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Match Soft Credit</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Total Open Match Claims</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

### Year of Giving

The Year of Giving query subject reports campaign, pledge, and giving data for a particular academic year.
The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of Giving</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Year of Giving Description</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>

**Campaign Filters**

The data elements in the Campaign Filters folder filter the campaign details based on active status of the campaign or capital campaign.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Campaign</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Active Capital Campaign</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Capital Campaign</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Current Annual Campaign</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Capital Campaign</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Comprehensive Campaign</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Campaign Indicators**

The Campaign Indicators query contains indicators for active status, capital campaign, and giving status.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Campaign Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Active Campaign Ind Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Capital Campaign Ind</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Capital Campaign Ind Description</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
The Campaign query subject reports information such as campaign participation, campaign status, campaign type, goal amount, and campaign duration used by your institution.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaign Include in Giving Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Campaign Include in Giving Ind Description</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

**Designation Filters**

The data elements in the Designation Filters folder filters the donation based on designations, such as annual fund, athletic equipment, endowment, and so on, as defined at your institution.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Designation</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
Designation Indicators

The Designation Indicators query subject reports based on designation indicators for financial aid fund, restricted, annual, athletics, extramural athletics, and the active status.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Designation Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Athletics Designation Ind</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

Designation

The Designation query subject reports the donor and donation designation type, interest, purpose, status, and restriction.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
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<td>Active Designation Ind</td>
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<td></td>
</tr>
<tr>
<td>Active Designation Ind Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Designation Finaid Fund Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Designation Finaid Fund Ind Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Designation Restricted Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Designation Restricted Ind Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Annual Designation Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Annual Designation Ind Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Athletics Designation Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Athletics Designation Ind Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Extramural Athletics Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Extramural Athletics Ind Description</td>
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<td></td>
</tr>
<tr>
<td>Data Element</td>
<td>Advance</td>
<td>Banner</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>---------</td>
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</tr>
<tr>
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<td>Y</td>
</tr>
<tr>
<td>Designation Description</td>
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<tr>
<td>Designation Sort</td>
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<tr>
<td>Designation Type</td>
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<tr>
<td>Designation Type Description</td>
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<tr>
<td>Designation Purpose</td>
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<td>Y</td>
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<td>Designation Purpose Description</td>
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<td>Designation Status</td>
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<td>Designation Restriction</td>
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<tr>
<td>Designation Restriction Description</td>
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<tr>
<td>Designation Attributes (Folder)</td>
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<td></td>
</tr>
<tr>
<td>Designation Attribute</td>
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<td>Y</td>
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<tr>
<td>Designation Attributes Description</td>
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<td>Y</td>
</tr>
<tr>
<td>Designation VSE Details (Folder)</td>
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<td></td>
</tr>
<tr>
<td>VSE Purpose</td>
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<tr>
<td>VSE Purpose Description</td>
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<td>Y</td>
</tr>
<tr>
<td>VSE Report Line</td>
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<td>Y</td>
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<tr>
<td>VSE Report Line Description</td>
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Designation Institution Attributes

The Designation Institution Attributes query subject reports the designation for the institution attributes of the donation, such as agency, campus, college, department, and division.

The following table indicates which product line the data elements belong to.

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Giving Transaction Type Filters

The data elements in the Giving Transaction Type Filters folder filter reports based on pledged amount transactions, gift transaction, and match claim transaction.

The following table indicates which product line the data elements belong to.

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Giving Transaction Amounts

The Giving Transaction Amounts query subject reports the total transaction amount, hard credit and soft credit amounts, currency, and the average amount involved in the transactions.

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### Giving Transaction Dates and Indicators

The Giving Transaction Dates and Indicators query subject reports based on indicators for gifts, pledges, and transaction for fiscal and the calendar years.

The following table indicates which product line the data elements belong to.

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First and Last Giving Transaction Dates

The First and Last Giving Transaction Dates query subject provides details about the first and last giving transactions made by a constituent.

The following table indicates which product line the data elements belong to.

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## Giving Transaction and Donor Counts

The Giving Transaction and Donor Counts query subject reports based on counts for donors, hard credit donors, and transactions.

The following table indicates which product line the data elements belong to.

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</table>

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donor Count</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Hard Credit Donor Count</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Match Claim Count</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Transaction Count</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Giving Transaction Source Donor

The Giving Transaction Source Donor query subject reports the following attributes for a donor:

- Donor name and ID
- Donor type - person or organization
- Donor entity type - alumni, friend, corporation, faculty, and so on

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Donor ID</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Source Donor Name</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Source Donor Name Sort</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Source Donor Person or Organization</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Source Donor Primary Entity Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Source Donor Primary Entity Type</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Gift Indicators

The Gift Indicator query subject reports based on indicators associated with the donation. The details include credit card payment, acknowledgements, adjustments to the donation amount, receipts or transaction slips provided (if any), and so on.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit card Payment Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Credit card Payment Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Gift Acknowledged Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Gift Acknowledged Ind Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Gift Adjusted Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Gift Adjusted Ind Description</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
Gift Attributes

The Gift Attributes query subject reports the gift details, such as pledge number, record sequence, check number, batch number, and comments from donor (if any). It also includes the gift type, payment, donor, and class information.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gift Anonymous Ind</td>
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<td></td>
</tr>
<tr>
<td>Gift Anonymous Ind Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gift Exclude Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Gift Exclude Ind Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Match Claim Exists Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Match Claim Exists Ind Description</td>
<td></td>
<td>Y</td>
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<tr>
<td>Match Gift Exists Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Match Gift Exists Ind Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Realized Bequest Ind</td>
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<td></td>
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<tr>
<td>Realized Bequest Ind Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Receipt Required Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Receipt Required Ind Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>3rd Party Payment Ind</td>
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<td></td>
</tr>
<tr>
<td>3rd Party Payment Ind Description</td>
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<td>Y</td>
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</tbody>
</table>
Match Claim Indicators

The Match Claim Indicators query subject reports based on the active status of the matching claim forms receipt.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Gift Class 1 Description</td>
<td></td>
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</tr>
<tr>
<td>Gift Class 2</td>
<td></td>
<td>Y</td>
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<tr>
<td>Gift Class 2 Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Gift Class 3</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Gift Class 3 Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Gift Payment Type</td>
<td></td>
<td>Y</td>
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<tr>
<td>Gift Payment Type Description</td>
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</tr>
<tr>
<td>Gift Payment VSE Type</td>
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<tr>
<td>Gift Payment VSE Type Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Gift Payment EFT Type</td>
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<td>Y</td>
</tr>
<tr>
<td>Gift Payment EFT Type Description</td>
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<td>Y</td>
</tr>
<tr>
<td>Gift Payment Tender</td>
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<tr>
<td>Gift Payment Tender Description</td>
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</tr>
<tr>
<td>Gift Details (Folder)</td>
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<td></td>
</tr>
<tr>
<td>Gift Number</td>
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</tr>
<tr>
<td>Gift Pledge Number</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Gift Record Sequence</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Gift Check Number</td>
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<td>Y</td>
</tr>
<tr>
<td>Gift Batch Number</td>
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<td>Y</td>
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<tr>
<td>Gift Comment</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
**Match Claim Attributes**

The Match Claim Attributes query subject reports based on the active status, payment, receipt date, gift number, and other details for the claim forms received by your institution.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matching Claim Form Received Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Matching Claim Form Received Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Pledge Indicators**

The Pledge Indicators query subject reports the pledge indicators, such as active status, adjustments to pledged amounts, conditions associated with donations, installments, records, and so on.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matching Claim Status</td>
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<tr>
<td>Matching Claim Status Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Matching Claim Paid Status</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Matching Claim Paid Status Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Match Claim Status Date</td>
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<td></td>
</tr>
<tr>
<td>Match Claim Form Received Date</td>
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<td></td>
</tr>
<tr>
<td>Match Claim Details (Folder)</td>
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<td></td>
</tr>
<tr>
<td>Claim Gift Number</td>
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<td>Y</td>
</tr>
<tr>
<td>Claim Gift Sequence</td>
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</tr>
</tbody>
</table>
The Pledge Attributes query subject reports the pledge details, such as record sequence, batch number, comments, and dates. The details also include the payment status, balance amount, category, and so on.

The following table indicates which product line the data elements belong to.

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<thead>
<tr>
<th>Data Element</th>
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<tr>
<td>Pledge Type Description</td>
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<td>Y</td>
</tr>
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<td>Advance</td>
<td>Banner</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>Pledge Status</td>
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<td>Y</td>
</tr>
<tr>
<td>Pledge Status Description</td>
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<td>Y</td>
</tr>
<tr>
<td>Pledge Paid Status</td>
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<td>Y</td>
</tr>
<tr>
<td>Pledge Paid Status Description</td>
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<td>Y</td>
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</tr>
<tr>
<td>Pledge VSE Type Description</td>
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<td>Y</td>
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<tr>
<td>Pledge Category Description</td>
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<td></td>
</tr>
<tr>
<td>Pledge Class 1</td>
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<td></td>
</tr>
<tr>
<td>Pledge Class 1 Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Pledge Class 2</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Pledge Class 2 Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Pledge Class 3</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Pledge Class 3 Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Pledge EFT Type</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Pledge EFT Type Description</td>
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<td></td>
</tr>
<tr>
<td>Pledge Details (Folder)</td>
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<td></td>
</tr>
<tr>
<td>Pledge Number</td>
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<td>Y</td>
</tr>
<tr>
<td>Pledge Record Sequence</td>
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<td></td>
</tr>
<tr>
<td>Pledge Batch Number</td>
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<td>Y</td>
</tr>
<tr>
<td>Pledge Comment</td>
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<tr>
<td>Pledge Written Off Date</td>
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</tbody>
</table>

**Progress Toward Fundraising Goals**

The Progress Toward Fundraising Goals query subject reports the campaign and fundraising related details, such as goals, designation, purpose, and year of giving.
The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
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</thead>
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<td>Campaign Pyramid (Folder)</td>
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<tr>
<td>Pyramid Range Low Value</td>
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<tr>
<td>Pyramid Range High Value</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>Pyramid Range</td>
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<td>Y</td>
</tr>
<tr>
<td>Pyramid Range Order</td>
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<td></td>
</tr>
<tr>
<td>Pyramid Transaction Count Goal</td>
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<td></td>
</tr>
<tr>
<td>Pyramid Range Goal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Pyramid Progress Rate</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Campaign Goals (Folder)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campaign Goal</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Campaign Progress Rate</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Campaign-Annual Goals (Folder)</td>
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<td></td>
</tr>
<tr>
<td>Annual Campaign Goal</td>
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<td>Y</td>
</tr>
<tr>
<td>Annual Campaign Progress Rate</td>
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<td>Y</td>
</tr>
<tr>
<td>Campaign-Designation Goals (Folder)</td>
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</tr>
<tr>
<td>Campaign-Designation Goal</td>
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<td>Y</td>
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<tr>
<td>Campaign-Designation Progress Rate</td>
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<td>Y</td>
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<tr>
<td>Funding Purpose Goals (Folder)</td>
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<tr>
<td>Funding Purpose Goal</td>
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</tr>
<tr>
<td>Funding Purpose Progress Rate</td>
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<td></td>
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<tr>
<td>Year of Giving</td>
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<td>Y</td>
</tr>
<tr>
<td>Year of Giving Description</td>
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<td>Y</td>
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<tr>
<td>Campaign</td>
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</tr>
<tr>
<td>Campaign Description</td>
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</tbody>
</table>
Address Filters

The data element in the Address Filters folder lets you filter a report based on the default geographic region address.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>Designation Description</td>
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<td>Funding Purpose</td>
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<td>Y</td>
</tr>
<tr>
<td>Funding Purpose Description</td>
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</tr>
</tbody>
</table>

Address Counts and Indicators

The Address Counts and Indicators query subject includes address related indicators including current, seasonal, and preferred and counts of addresses on file for a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Geo Region Address</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Address Exists Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Seasonal Address Exists Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Seasonal Address Exists Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Address Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Address Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Preferred Address Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Preferred Address Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Preferred Geo Region Address Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Address

The Address query subject provides address details for all current or inactive addresses for a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred Geo Region Address Ind Description</td>
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</tr>
<tr>
<td>Address Count</td>
<td>Y</td>
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<tr>
<td>Current Address Count</td>
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<td>Y</td>
</tr>
<tr>
<td>All Home-Business-Seasonal</td>
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<td>Y</td>
</tr>
<tr>
<td>All Address Status</td>
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<td>Y</td>
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<tr>
<td>All Address Status Description</td>
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<td>All Address Type</td>
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<td>All Address State Province Description</td>
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<td>All Address Street Line 1</td>
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<tr>
<td>All Address Street Line 2</td>
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<td>Y</td>
</tr>
</tbody>
</table>
The Address - All Current query subject provides information for all current addresses of a prospect, such as home address, business address, seasonal address, and so on.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Address Street Line 3</td>
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<tr>
<td>All Address Street Line 4</td>
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<tr>
<td>All Address Sequence Number</td>
<td>Y</td>
<td>Y</td>
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<td>All Address Start Date Partial</td>
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<td>All Address Stop Date Partial</td>
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<td>All Address Start Date</td>
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<td>All Address Stop Date</td>
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<td>Address Status Description</td>
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<td>Address Nation Description</td>
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<tr>
<td>Address State Province</td>
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<td>Y</td>
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</tbody>
</table>
The Preferred Address query subject reports the contact address preferred by the prospect. The details include postal address, nation, state/province, and county for the prospect.

The following table indicates which product line the data elements belong to.
<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred Address Status</td>
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<td></td>
</tr>
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Advancement Activity

The Advancement Activity query subject provides information about constituents who have participated in special activities. You can use the activity information to identify constituents based on their activity participation.

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The Affiliation query subject provides details of a constituent’s affiliations. A constituent can have affiliations inside and outside the institution.

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Awards and Honors

The Awards and Honors query subject provides information about any awards or honors received by a constituent.

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Committees

The Committees query subject provides information about all committees a constituent is or has been associated with at your institution.

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Constituent Assignment Indicators

The Constituent Assignment Indicators provide indicators related to active assignments, primary assignments, and staff assignments associated with constituents.

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The following table indicates which product line the data elements belong to.

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Constituent Assignments

The Constituent Assignments query subject provides information about constituent assignments.

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Constituent Interest

The Constituent Interest query subject helps you capture interests of your institution’s constituents to gain a deeper understanding about them. A constituent can have none or many interests.

A better understanding of a constituent’s interest can help to:
• Establish a deeper relationship with the constituent based on their interest for the institution.

• Identify all constituents with a similar interest and invite them to a related event.

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**Constituent Rating**

The Constituent Rating query subject provides insight into a constituent’s capacity to donate based on constituent profiles and evaluations. Profile information is sourced from Banner External Ratings or Advance Demographic Profiles but the Constituent Evaluations are sourced only from Advance.

Tracking Constituent Rating details can help your institution to:

• Validate Constituent Rating against their donation record.

• Access the details of constituents with a particular rating who have not made donation during a period.

• Obtain the list of constituent entities, which have been rated, but not yet assigned to a development officer.

• Analyze whether the current ask amount for a population of constituents fall within their rating range.

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Constituent Relationships - Spouse

The Constituent Relationships - Spouse query subject identifies the spousal relationship of constituent.

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**Contact Report Counts and Indicators**

The Contact Report Counts and Indicators provide counts and indicators related to contact reports.

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Contact Reports

The Contact Reports query subject provides information about the contacts or interactions your institution has with constituents. A single contact report can be associated with entities, prospects, proposals, and program prospects.

By capturing the contact records, your institution can:

- Analyze the contact reports that are filed during a specific period
- Plan for future action items based on contact reports
- Analyze the trends in the contact frequency by fundraiser
- Assess the average duration between contacts for rated prospects
- Analyze the average number of contacts leading up to a gift commitment

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Contact Reports - Latest

The Contact Reports - Latest query subject reports information on the most recent contact between the institution and the prospect or constituent entity, and how long since the contact was made.

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Degree Filters

The data element in the Degree Filters folder filters the report based on the home institution degree.

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Degree Counts and Indicators

The Degree Counts and Indicators query subject provides information on the counts and indicators related to degrees awarded by an institution.

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Degrees

The Degrees query subject provides information about any degrees earned by a constituent, either at your institution or any other institution, including secondary and post secondary school data.

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Demographic

The Demographic query subject reports information on ethnicity, multiple race codes, marital status, disabilities, citizenship data, and veteran information for a prospect.

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Email Counts and Indicators

The Email Counts and Indicators query subject provides information about the counts and indicators corresponding to a constituent’s email addresses.

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Email - Current

The Email - Current query subject provides information on all current email addresses for a constituent.

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</tbody>
</table>
Employment Counts and Indicators

The Employment Counts and Indicators query subject provides the various indicators associated with a prospect’s employment.

The following table indicates which product line the data elements belong to.

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<td>Employee Relation Ind Description</td>
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<td>Employee Relation Active Ind Description</td>
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<tr>
<td>Match Status Ind Description</td>
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</table>
Employment

The Employment query subject provides information about a prospect's employers and employment history.

The following table indicates which product line the data elements belong to.

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<tr>
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</table>
### Entity Populations

The Entity Populations query subject lets you access an entity population identified using Population Selection (Banner) or Clipboard (Advance) for reporting.

The following table indicates which product line the data elements belong to.

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<th>Data Element</th>
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</table>
Exclusions

The Exclusions query subject provides information about the solicitation activities from which a constituent has been or should be excluded. These may include active, inactive or pending exclusions.

The following table indicates which product line the data elements belong to.

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<td>Mail Phone Exclusion</td>
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<tr>
<td>Exclusion Start Date</td>
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<td></td>
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<tr>
<td>Exclusion Stop Date</td>
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<td>Exclusion Comment</td>
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<tr>
<td>Exclusion Record Count</td>
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</tbody>
</table>

Gift Society Counts and Indicators

The Gift Society Counts and Indicators query subject gives details about the number of gift societies and related indicators.
The following table indicates which product line the data elements belong to.

<table>
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<th>Data Element</th>
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<td>Y</td>
</tr>
<tr>
<td>Gift Society Record Count</td>
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<td>Y</td>
</tr>
</tbody>
</table>

**Gift Society**

The Gift Society query subject helps your institution to evaluate gift society membership attributes of a constituent, such as:

- Gift society member status
- Life time member of a gift society
- Gift society members, who have received premiums
- Constituents, who belong to a particular gift society

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
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<td>Gift Society Type</td>
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<td>Y</td>
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<td>Gift Society Category Description</td>
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<td>--------</td>
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<td>Gift Society Member Status Description</td>
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<td>Gift Society Premium</td>
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</table>
## Mail History

The Mail History query subject provides information about mailings received by a constituent.

The following table indicates which product line the data elements belong to.

<table>
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<tr>
<th>Data Element</th>
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<tr>
<td>Gift Society Premium Cost</td>
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</tbody>
</table>

## Mail Tracking

The Mail Tracking query subject provides information about the mailings and solicitations a constituent should receive.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
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<tr>
<td>Mail System ID Description</td>
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<td>Mail Print Date</td>
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</tr>
<tr>
<td>Mail Record Count</td>
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</tr>
</tbody>
</table>
The Mailing List query subject provides information about the mailings a constituent is or has been receiving, including any special instructions involved with a particular mailing to that constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
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<tr>
<td>Mail List Status</td>
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<td>Mail List Comment</td>
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</table>
Membership Counts and Indicators

The Membership Counts and Indicators query subject provides the details regarding number of memberships for a program and the corresponding indicators.

The following table indicates which product line the data elements belong to.

<table>
<thead>
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<tr>
<td>Mail List Record Count</td>
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</tbody>
</table>

Membership

The Membership query subject provides the details regarding a constituent's memberships. A constituent can have multiple memberships and a “membership” can have multiple benefits and premiums. By using the membership details of a constituent, an institution can:
The following table indicates which product line the data elements belong to.

<table>
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<tr>
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<tr>
<td>New Member</td>
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</tbody>
</table>
Prospect Filters

The data elements in the Prospect Filters folder enable you to filter the data in the generated report based on the following criteria:

- Display only constituents who have ever been a prospect
- Active status of the prospect
- Prospects who are rated

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
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<td>Member Interest Description</td>
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<td>Member Interest College</td>
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<tr>
<td>Member Interest College Description</td>
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<td>Member Interest Type</td>
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<tr>
<td>Membership Interest Count</td>
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</tbody>
</table>

Prospect Counts and Indicators

The Prospect Counts and Indicators query subject reports based on the following information:
• Prospect active status
• Prospects assigned to staff or volunteers
• Prospects identified as having an interest in planned giving
• Prospect rating
• Information on solicitor assigned to a prospect by your institution

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
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<td>Prospect Primary Entity Ind Description</td>
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Prospect Information

The Prospect Information query subject reports prospect information, such as name, person details, affiliation, campaign, and interest shown for a unit in your university.

The following table indicates which product line the data elements belong to.

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Prospect Assignment Filters

The Prospect Assignment Filters folder includes a filter that when used displays only prospects with active assignments in the report.

The following table indicates which product line the data elements belong to.

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Prospect Assignment Indicators

The Prospect Assignment Indicators query subject includes indicators related to prospect assignments.

The following table indicates which product line the data elements belong to.

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**Prospect Assignments**

The Prospect Assignments query subject provides information about past and present (active) assignments of a prospect.

The following table indicates which product line the data elements belong to.

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**Primary Prospect Assignment Filters**

The Primary Prospect Assignment Filters folder includes a filter that when used displays only prospects with an active primary assignments in the report.

The following table indicates which product line the data elements belong to.

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**Primary Prospect Assignments**

The Primary Prospect Assignments query subject provides information on primary solicitor assigned to a constituent.
The following table indicates which product line the data elements belong to.

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**Prospect Interest Filters**

The Prospect Interest Filters folder includes a filter that when used filters the report based on the active status of the prospect's level of interest in supporting one or more fundraising initiatives at your institution.

The following table indicates which product line the data elements belong to.

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**Prospect Interest Counts and Indicators**

The Prospect Interest Counts and Indicators query subject reports based on the following indicators for a prospect's level of interest in supporting one or more fundraising initiatives at your institution:

- Active status
- Ask made for the prospect

The following table indicates which product line the data elements belong to.
Prospect Interests

The Prospect Interests query subject reports the details of the interest shown by a prospect toward fundraising initiatives at your institution. This query subject classifies information based on the program, purpose (scholarship, endowment, and so on), unit, or interest duration for a calendar year.

The following table indicates which product line the data elements belong to.

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The data elements in the Relationship Filters folder enable you to filter the data in the generated report based on whether the relationship is with a person or organization, or to exclude a deceased relation.

The following table indicates which product line the data elements belong to.

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Relationship Counts and Indicators

The Relationship Counts and Indicators query subject reports the counts and indicators related to the relationships of a constituent.

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Relationship

The Relationship query subject reports details of all relationships for a constituent. A constituent can have entity relationships with other constituents and standalone relationships with a spouse, children, employer, and so on.

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<td>Relation Marital Status</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Marital Status Description</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
The Special - Variable Purpose query subject provides information about institution-defined attributes associated with a constituent. This data is used to categorize constituents into special groups.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spousal Relation Detail (Folder)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined Spouse Priority</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Marriage Date</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Marriage Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Marriage Change Date</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Marriage Change Date Partial</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Special - Variable Purpose**

The Special - Variable Purpose query subject provides information about institution-defined attributes associated with a constituent. This data is used to categorize constituents into special groups.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Purpose</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Type</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Type Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Comment</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Date</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Type Count</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Count</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Record Count</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Variable Purpose</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Variable Purpose Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Variable Purpose Count</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
**Sport Counts and Indicators**

The Sports Counts and Indicators query subject provides a team captain indicator and sport count.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Captain Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Team Captain Ind Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Count</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Record Count</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

**Sports**

The Sports query subject provides information about a constituent's participation in a sport while attending your institution.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Participation</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Participation Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Start Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Stop Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Sequence Number</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Comment1</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Comment2</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
**Student Activity**

The Student Activity query subject provides information about a constituent's participation or affiliation with an activity while a student.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Activity</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Group</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Group Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Participation</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Participation Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Office</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Office Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Sequence Number</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Start Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Stop Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Comment</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Count</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Record Count</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

**Telephone Counts and Indicators**

The Telephone Counts and Indicators query subject provides information on counts and indicators corresponding to constituent's contact telephone information.

The following table indicates which product line the data elements belong to.
### Telephone

The Telephone query subject provides information on the contact telephone information of the constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Phone Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Active Phone Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Primary Phone Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Primary Phone Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Unlisted Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Unlisted Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Count</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Count</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Number Combined</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Status</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Status Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone International Access</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Country Code</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Country Code Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Area Code</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Extension</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
The Telephone - Current query subject provides current contact phone information of a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone Address Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Address Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Address Sequence Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Attribute</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Attribute Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Attribute2</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Attribute2 Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Text Message</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Text Message Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Comment</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Sequence Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Start Date Partial</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Start Stop Partial</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Telephone - Current**

The Telephone - Current query subject provides current contact phone information of a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Phone Number Combined</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Status</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Status Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone International Access</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
## Data Element

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Phone Country Code</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Country Code Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Phone Area Code</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Extension</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Address Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Address Type Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Phone Address Sequence Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Attribute</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Phone Attribute Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Phone Attribute2</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Phone Attribute2 Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Phone Text Message</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Phone Text Message Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Phone Comment</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Sequence Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Start Date Partial</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Stop Date Partial</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>

### Internal Keys

The Internal Keys query subject contains IDs and the unique keys that can be used for complex queries required for Report Studio reports.

The following table indicates which product line the data elements belong to.
Report Default Selections

The data elements in the Report Default Selections filter the defines the default indicators. The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Positive Indicator</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Default Negative Indicator</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Institutional Values

The Institutional Values query subject defines a default set of information to be used by your institution as basic information to display on all reports that use the SGHE Template delivered with the product. This includes contact information for assistance with reporting. You should define these default values in the REPORT HELP TEXT and RELEASE INFORMATION Parameter Maps.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Help Text</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
PM Analyze Fundraising Progress business concept

The PM Analyze Fundraising Progress business concept contains current and historical gift, pledge, pledge payment, matching gift, and matching claim data. The reports generated from this business concept offer insights into major donor activities and gifts and pledges to support fundraising goals for your institution.

Data in the PM Analyze Fundraising Progress business concept permits reports to answer questions such as:

- What are the major donor fundraising goals?
- Who are the major donors?
- What is the progress toward the institution's fundraising goals for gifts, pledge, and pledge payments?
- What is the breakdown of fundraising progress by donor type, designation, campaign, year, and so on?
- Who are the most recent donors?

PM Analyze Fundraising Progress business concept data elements

The Analyze Fundraising Progress business concept contains related data combined into query subjects with query items that are used to generate reports. The following sections give a business definition or description for the query subjects and filters specified in this package.

New data areas

The following table identifies new areas of information that were added with this release and identifies the related query subjects that were added to the data models. The table also specifies which information can be sourced from Advance, Banner Advancement, or both.

<table>
<thead>
<tr>
<th>Data Area</th>
<th>Query Subject</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awards and Honors</td>
<td>Awards and Honors</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Committee</td>
<td>Committee</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
### Year of Giving Filters

The data elements in the Year of Giving Filters folder enable you to filter the data in the generated report based on the current year or prior year of giving.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Area</th>
<th>Query Subject</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constituent Assignment</td>
<td>Constituent Assignment Indicators and Constituent Assignments</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Degree</td>
<td>Degree Filters, Degree Counts and Indicators, and Degrees</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Email</td>
<td>Email Counts and Indicators, Email - Current</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Entity Populations</td>
<td>Entity Populations</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Exclusions</td>
<td>Exclusions</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Mail</td>
<td>Mail History</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>Mail Tracking</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>Mailing List</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Prospect Assignments</td>
<td>Prospect Assignment Filters, Prospect Assignment Indicators, Prospect Assignments, Primary Prospect Assignment Filters, Primary Prospect Assignments</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Special - variable purpose</td>
<td>Special - Variable Purpose</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Advancement Activity</td>
<td>Advancement Activity</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Sports</td>
<td>Sport Counts and Indicators, Sports</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity</td>
<td>Student Activity</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Telephone</td>
<td>Telephone Counts and Indicators, Telephone</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
The Year of Giving query subject reports campaign, pledge, and giving data for a particular academic year.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Year of Giving</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Prior Year of Giving</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Initial Year of Giving</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Year of Giving**

The data elements in the Campaign Filters folder filter the campaign details based on active status of the campaign or capital campaign.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Campaign</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Active Capital Campaign</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Capital Campaign</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Annual Campaign</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Capital Campaign</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Comprehensive Campaign</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Campaign Indicators

The Campaign Indicators query contains indicators for active status, capital campaign, and giving status.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Campaign Ind</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Active Campaign Ind Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Campaign Ind</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Capital Campaign Ind Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campaign Include in Giving Ind</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Campaign Include in Giving Ind Description</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Campaign

The Campaign query subject reports information such as campaign participation, campaign status, campaign type, goal amount, and campaign duration used by your institution.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaign</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Campaign Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Campaign Type</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Campaign Type Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Reunion Campaign</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Reunion Campaign Description</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
Designation Filters

The data elements in the Designation Filters folder filters the donation based on designations, such as annual fund, athletic equipment, endowment, and so on, as defined at your institution.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reunion Campaign Type</td>
<td>Y</td>
</tr>
<tr>
<td>Reunion Campaign Type</td>
<td>Y</td>
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Designation Indicators

The Designation Indicators query subject reports based on designation indicators for financial aid fund, restricted, annual, athletics, extramural athletics, and the active status.

The following table indicates which product line the data elements belong to.

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<td>Designation Restricted Ind Y Description</td>
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</table>
The Designation query subject reports the donor and donation designation type, interest, purpose, status, and restriction.

The following table indicates which product line the data elements belong to.

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</table>
The Designation Institution Attributes query subject reports the designation for the institution attributes of the donation, such as agency, campus, college, department, and division.

The following table indicates which product line the data elements belong to.

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<tr>
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**Designation Institution Attributes**

The Designation Institution Attributes query subject reports the designation for the institution attributes of the donation, such as agency, campus, college, department, and division.

The following table indicates which product line the data elements belong to.

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</table>
### Funding Purpose

The Funding Purpose query subject reports based on the purpose of a fundraiser campaign, such as faculty research, need, athletics, merit, internship, retainership, and so on.

The following table indicates which product line the data elements belong to.

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Giving Transaction Type Filters

The data elements in the Giving Transaction Type Filters folder filter reports based on pledged amount transactions, gift transaction, and match claim transaction.

The following table indicates which product line the data elements belong to.

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Giving Transaction Amounts

The Giving Transaction Amounts query subject reports the total transaction amount, hard credit and soft credit amounts, currency, and the average amount involved in the transactions.

The following table indicates which product line the data elements belong to.

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### Giving Transaction Attributes

The Giving Transaction Attributes query subject reports donation transaction details, such as transaction type, donor association with the institution, special handling of transaction (if any), source of information, transaction dates, and so on.

The following table indicates which product line the data elements belong to.

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</table>
Giving Transaction Dates and Indicators

The Giving Transaction Dates and Indicators query subject reports based on indicators for gifts, pledges, and transaction for fiscal and the calendar years.

The following table indicates which product line the data elements belong to.

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</table>
* These query items are not used in reporting, however they are required for data loading in the Fundraising Analysis cube.

**Giving Transaction and Donor Counts**

The Giving Transaction and Donor Counts query subject reports based on counts for donors, hard credit donors, and transactions.

The following table indicates which product line the data elements belong to.

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**Giving Transaction Source Donor**

The Giving Transaction Source Donor query subject reports the following attributes for a donor:

- Donor name and ID
- Donor type - person or organization
- Donor entity type - alumni, friend, corporation, faculty, and so on

The following table indicates which product line the data elements belong to.
**Gift Indicators**

The Gift Indicator query subject reports based on indicators associated with the donation. The details include credit card payment, acknowledgements, adjustments to the donation amount, receipts or transaction slips provided (if any), and so on.

The following table indicates which product line the data elements belong to.

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<tr>
<td>Gift Adjusted Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Gift Adjusted Ind Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Gift Anonymous Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Gift Anonymous Ind Description</td>
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<td></td>
</tr>
<tr>
<td>Gift Exclude Ind</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
Gift Attributes

The Gift Attributes query subject reports the gift details, such as pledge number, record sequence, check number, batch number, and comments from donor (if any). It also includes the gift type, payment, donor, and class information.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
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<td>Gift Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Gift Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Gift VSE Type</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Gift VSE Type Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Gift Class 1</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
**Data Element** | **Advance** | **Banner**
--- | --- | ---
Gift Class 1 Description | Y
Gift Class 2 | Y
Gift Class 2 Description | Y
Gift Class 3 | Y
Gift Class 3 Description | Y
Gift Payment Type | Y
Gift Payment Type Description | Y
Gift Payment VSE Type | Y
Gift Payment VSE Type Description | Y
Gift Payment EFT Type | Y
Gift Payment EFT Type Description | Y
Gift Payment Tender | Y
Gift Payment Tender Description | Y
Gift Details (Folder) |  
Gift Number | Y | Y
Gift Pledge Number | Y | Y
Gift Record Sequence | Y
Gift Check Number | Y
Gift Batch Number | Y | Y
Gift Comment | Y | Y

**Match Claim Indicators**

The Match Claim Indicators query subject reports based on the active status of the matching claim forms receipt.
The following table indicates which product line the data elements belong to.

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<tr>
<th>Data Element</th>
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</thead>
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<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Matching Claim Form Received Ind Description</td>
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<td>Y</td>
</tr>
</tbody>
</table>

**Match Claim Attributes**

The Match Claim Attributes query subject reports based on the active status, payment, receipt date, gift number, and other details for the claim forms received by your institution.

The following table indicates which product line the data elements belong to.

<table>
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<th>Data Element</th>
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<tr>
<td>Matching Claim Status Description</td>
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<td>Y</td>
</tr>
<tr>
<td>Matching Claim Paid Status</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Matching Claim Paid Status Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Match Claim Status Date</td>
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<td></td>
</tr>
<tr>
<td>Match Claim Form Received Date</td>
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<tr>
<td>Match Claim Details (Folder)</td>
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<td>Claim Gift Number</td>
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<tr>
<td>Claim Gift Sequence</td>
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<td></td>
</tr>
</tbody>
</table>

**Pledge Indicators**

The Pledge Indicators query subject reports the pledge indicators, such as active status, adjustments to pledged amounts, conditions associated with donations, installments, records, and so on.

The following table indicates which product line the data elements belong to.
Pledge Attributes

The Pledge Attributes query subject reports the pledge details, such as record sequence, batch number, comments, and dates. The details also include the payment status, balance amount, category, and so on.

The following table indicates which product line the data elements belong to.
<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
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<tbody>
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<tr>
<td>Pledge Type Description</td>
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<td>Y</td>
</tr>
<tr>
<td>Pledge Status</td>
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<td>Y</td>
</tr>
<tr>
<td>Pledge Status Description</td>
<td>Y</td>
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</tr>
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</tr>
<tr>
<td>Pledge Paid Status Description</td>
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</tr>
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<td>Pledge VSE Type</td>
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<td>Y</td>
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<td>Pledge VSE Type Description</td>
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<tr>
<td>Pledge Category</td>
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<tr>
<td>Pledge Category Description</td>
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<tr>
<td>Pledge Class 1 Description</td>
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<td></td>
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<td>Pledge Class 2</td>
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<td>Pledge Class 2 Description</td>
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<td>Pledge Class 3</td>
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<td>Pledge EFT Type Description</td>
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<td>Pledge Number</td>
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<td>Pledge Record Sequence</td>
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<td>Pledge Batch Number</td>
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<td>Y</td>
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<tr>
<td>Pledge Comment</td>
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<td>Pledge Written Off Date</td>
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</table>
### Progress Toward Fundraising Goals

The Progress Toward Fundraising Goals query subject reports the campaign and fundraising related details, such as goals, designation, purpose, and year of giving.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
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</thead>
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<tr>
<td>Pyramid Range Low Value</td>
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<tr>
<td>Pyramid Range High Value</td>
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<td>Y</td>
</tr>
<tr>
<td>Pyramid Range</td>
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<td>Y</td>
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<tr>
<td>Pyramid Range Order</td>
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<td>Y</td>
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<td>Pyramid Transaction Count Goal</td>
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<td>Y</td>
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<td>Pyramid Progress Rate</td>
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<td>Y</td>
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<td>Campaign Goals (Folder)</td>
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<tr>
<td>Campaign Goal</td>
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<tr>
<td>Campaign Progress Rate</td>
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<td>Campaign-Annual Goals (Folder)</td>
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<td></td>
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<td>Annual Campaign Goal</td>
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<tr>
<td>Annual Campaign Progress Rate</td>
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<td>Y</td>
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<td>Campaign-Designation Goals (Folder)</td>
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<td>Campaign-Designation Progress Rate</td>
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</table>
Constituent Donor Filters

The data elements in the Constituent Donor Filters folder filter the report based on the donor constituent type as alumni, person, or organization.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumnus</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Person</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Organization</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Constituent Donor

The Constituent Donor query subject reports based on person ID, preference, and other indicator for alumni, donor, and organization.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
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</tr>
</thead>
<tbody>
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<td>Donor ID</td>
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</tr>
<tr>
<td>Donor Name</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Data Element</td>
<td>Advance</td>
<td>Banner</td>
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<tr>
<td>--------------------------------------------------</td>
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<td>--------</td>
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<tr>
<td>Donor Name Sort</td>
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<tr>
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<td>Alumnus Ind Description</td>
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<td>Person or Organization</td>
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<td>Preferred Class Year</td>
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<td>Primary Entity Type Description</td>
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<td>All Constituent Donor Entity Types (Folder)</td>
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<td>Entity Type</td>
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<tr>
<td>Entity Type Description</td>
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<tr>
<td>Entity Record Status Description</td>
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<tr>
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<tr>
<td>Spouse Name</td>
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<tr>
<td>Birth Date</td>
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<tr>
<td>Current Age Range Order</td>
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<td>Y</td>
</tr>
</tbody>
</table>
Constituent Donor Relationships - Donor Spouse

The Constituent Donor Relationship - Donor Spouse query subject identifies the spousal relationship between existing donors for your institution.

The following table indicates which product line the data elements belong to.

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<thead>
<tr>
<th>Data Element</th>
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</thead>
<tbody>
<tr>
<td>Deceased Date</td>
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<td>Y</td>
</tr>
<tr>
<td>Deceased Date Partial</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

Constituent Donor Interest

The Constituent Donor Interest query subject helps you to capture interests of your institution’s constituents to gain a deeper understanding about them. A constituent can have none or many interests.

A better understanding of a constituent’s interest can help to:

- Establish a deeper relationship with the constituent based on their interest for the institution.
- Identify all constituents with a similar interest and invite them to a related event.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
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<tr>
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<td>Interest Group</td>
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<td></td>
</tr>
<tr>
<td>Interest Count</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Constituent Donor Rating

The Constituent Donor Rating query subject provides insight into a constituent’s capacity to donate based on constituent profiles and evaluations. Profile information is sourced from Banner External Ratings or Advance Demographic Profiles but the Constituent Evaluations are sourced only from Advance.

Tracking Constituent Donor Rating details can help your institution to:

- Validate Constituent Donor Ratings against their donation record.
- Access the details of donors with a particular profile or evaluation rating who have not made donation within a specified time frame.
- Analyze whether the giving history for a population of donors fall within their constituent profile or evaluation rating range.

The following table indicates which product line the data elements belong to.

<table>
<thead>
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<th>Data Element</th>
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<td>Profile Comment</td>
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<td>Evaluation Comment</td>
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Address Filters

The data element in the Address Filters folder lets you filter a report based on the default geographic region address.

The following table indicates which product line the data element belongs to.

<table>
<thead>
<tr>
<th>Data Element</th>
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<th>Banner</th>
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<tbody>
<tr>
<td>Default Geo Region Address</td>
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<td>Y.Y</td>
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</tbody>
</table>

Address - All Current

The Address - All Current query subject provides information for all current addresses of a donor, such as home address, business address, seasonal address, and so on.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred Address Ind</td>
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<td>Preferred Address Ind Description</td>
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<td>Y.Y</td>
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<tr>
<td>Preferred Geo Region Address Ind</td>
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<tr>
<td>Preferred Geo Region Address Ind Description</td>
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<tr>
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**Preferred Address**

The Preferred Address query subject reports the contact address preferred by the donor. The details include postal address, nation, state/province, and county for the donor.

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Advancement Activity

The Advancement Activity query subject provides information about constituents who have participated in special activities. You can use the activity information to identify constituents based on their activity participation.

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Affiliation

The Affiliation query subject provides details of a constituent’s affiliations. A constituent can have affiliations inside and outside the institution.

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The Awards and Honors query subject provides information about any awards or honors received by a constituent.

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**Committees**

The Committees query subject provides information about all committees a constituent is or has been associated with at your institution.

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The Constituent Assignment Indicators provide indicators related to active assignments, primary assignments, and staff assignments associated with constituents.

The following table indicates which product line the data elements belong to.

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Constituent Assignment Indicators
Constituent Assignments

The Constituent Assignments query subject provides information about constituent assignments.

The following table indicates which product line the data elements belong to.

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Degree Filters

The data element in the Degree Filters folder filters the report based on the home institution degree.

The following table indicates which product line the data element belongs to.

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**Degree Counts and Indicators**

The Degree Counts and Indicators query subject provides information on the counts and indicators related to degrees awarded by an institution.

The following table indicates which product line the data elements belong to.

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**Degrees**

The Degrees query subject provides information on degrees owned by a donor. A constituent may have none or many degrees and a degree can have none or many majors included in it. The institution can group and filter the donors based on the degrees received by them.

The following table indicates which product line the data elements belong to.

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*Data Element* is a list of data elements used in a data warehouse, including their availability in Advance and Banner systems.
The Demographic query subject reports information on ethnicity, multiple race codes, marital status, disabilities, citizenship data, and veteran information for a donor.

The following table indicates which product line the data elements belong to.

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Email Counts and Indicators

The Email Counts and Indicators query subject provides information about the counts and indicators corresponding to a constituent’s email addresses.

The following table indicates which product line the data elements belong to.

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Email - Current

The Email - Current query subject provides information on all current email addresses for a constituent.

The following table indicates which product line the data elements belong to.

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Employment Counts and Indicators

The Employment Counts and Indicators query subject provides the various indicators associated with a donor’s employment.

The following table indicates which product line the data elements belong to.

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Employment Counts and Indicators

The Employment Counts and Indicators query subject provides the various indicators associated with a donor’s employment.

The following table indicates which product line the data elements belong to.
The Employment query subject provides information for all of a donor's employers and employment history.

The following table indicates which product line the data elements belong to.

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**Employment**

The Employment query subject provides information for all of a donor's employers and employment history.

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**Entity Populations**

The Entity Populations query subject lets you access an entity population identified using Population Selection (Banner) or Clipboard (Advance) for reporting.

The following table indicates which product line the data elements belong to.

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**Exclusions**

The Exclusions query subject provides information about the solicitation activities from which a constituent has been or should be excluded. These may include active, inactive or pending exclusions.

The following table indicates which product line the data elements belong to.

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The Gift Society Counts and Indicators query subject gives details about the number of gift societies and related indicators.

The following table indicates which product line the data elements belong to.

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**Gift Society Counts and Indicators**

The Gift Society Counts and Indicators query subject gives details about the number of gift societies and related indicators.

The following table indicates which product line the data elements belong to.

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**Gift Society**

The Gift Society query subject helps your institution to evaluate gift society membership attributes of a constituent, such as:

- Gift society member status
- Life time member of a gift society
- Gift society members, who have received premiums
- Constituents, who belong to a particular gift society

The following table indicates which product line the data elements belong to.
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Mail History

The Mail History query subject provides information about mailings received by a constituent.

The following table indicates which product line the data elements belong to.

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**Mail Tracking**

The Mail Tracking query subject provides information about the mailings and solicitations a constituent should receive.

The following table indicates which product line the data elements belong to.

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**Mailing List**

The Mailing List query subject provides information about the mailings a constituent is or has been receiving, including any special instructions involved with a particular mailing to that constituent.

The following table indicates which product line the data elements belong to.

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Membership Counts and Indicators

The Membership Counts and Indicators query subject provides the details regarding number of memberships for a program and the corresponding indicators.

The following table indicates which product line the data elements belong to.

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</table>

Membership

The Membership query subject provides the details regarding a constituent's memberships. A constituent can have multiple memberships and a “membership” can have multiple benefits and premiums. By using the membership details of a constituent, an institution can:

- Identify constituents by membership
- Identify constituents, who have multiple memberships
- Identify constituents, who are lifetime members
- Identify the constituents, who are no longer active in a membership

The following table indicates which product line the data elements belong to.
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Prospect Filters

The data elements in the Prospect Filters folder enable you to filter the data in the generated report based on the following criteria:

- Donors who have a prospect record; active or inactive
- Prospects with an active status
- Prospects who are rated

The following table indicates which product line the data elements belong to.

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</table>
Prospects Counts and Indicators

The Prospects Counts and Indicators query subject reports based on the following information:

- Major prospect rating
- Prospect active status
- Prospects assigned to staff or volunteers
- Prospects identified as having an interest in planned giving
- Donation amount proposed (if any)
- Information on solicitor assigned to a prospect by your institution

The following table indicates which product line the data elements belong to.

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Prospect Information

The Prospect Information query subject provides a variety of prospect information, including prospect related attributes as well as prospect ratings, prospect evaluations, and latest prospect stage.

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Prospect Assignment Filters

The Prospect Assignment Filters folder includes a filter that when used displays only prospects with active assignments in the report.

The following table indicates which product line the data elements belong to.

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Prospect Assignment Indicators

The Prospect Assignment Indicators query subject includes indicators related to prospect assignments.
The following table indicates which product line the data elements belong to.

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<td>Staff Assignment Ind</td>
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<td></td>
</tr>
<tr>
<td>Staff Assignment Ind Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solicitor Ind</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Solicitor Ind Description</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>

**Prospect Assignments**

The Prospect Assignments query subject provides information about past and present (active) assignments of a prospect.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment ID</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Assignment Name</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Assignment Name Sort</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Assignment Category</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Assignment Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Assignment Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Assignment Program</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Assignment Program Description</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
Primary Prospect Assignment Filters

The Primary Prospect Assignment Filters folder includes a filter that when used displays only prospects with an active primary assignments in the report.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Primary Assignment</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

Primary Prospect Assignments

The Primary Prospect Assignments query subject provides information on primary solicitor assigned to a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Primary Assignment Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Assignment ID</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Primary Assignment Name</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Primary Assignment Name Sort</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Assignment Type</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Relationship Filters**

The data elements in the Relationship Filters folder enable you to filter the data in the generated report based on whether the relationship is with a person or organization, or to exclude a deceased relation.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person Relation</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Organization Relation</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Exclude Deceased Relation</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Relationship Counts and Indicators**

The Relationship Counts and Indicators query subject reports the counts and indicators related to the relationships of a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relation Entity Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Entity Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Spouse Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Spouse Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Donor Relation Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Donor Relation Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Household Ind</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Household Ind Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Relation Deceased Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Deceased Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Relationship

The Relationship query subject reports details of all relationships for a constituent. A constituent can have entity relationships with other constituents and standalone relationships with a spouse, children, employer, and so on.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relation Count</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Child Count</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relation Name Sort</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Relation ID</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Person Org</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Converse Relation</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Converse Relation Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Relation Category</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relation Source</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Primary Entity Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Primary Entity Type Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relation Class Year</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Preferred School</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Preferred School Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relation Age</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
The Special - Variable Purpose query subject provides information about institution-defined attributes associated with a constituent. This data is used to categorize constituents into special groups.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Purpose</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Type</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special Purpose Type Description</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
Sport Counts and Indicators

The Sports Counts and Indicators query subject provides a team captain indicator and sport count.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Captain Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Team Captain Ind Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Count</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Record Count</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

Sports

The Sports query subject provides information about a constituent's participation in a sport while attending your institution.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Description</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
The Student Activity query subject provides information about a constituent's participation or affiliation with an activity while a student.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport Participation</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Participation Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Start Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Stop Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Sequence Number</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Comment1</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Comment2</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Activity</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Group</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Group Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Participation</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Participation Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Office</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Office Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Sequence Number</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Start Date Partial</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
Telephone Counts and Indicators

The Telephone Counts and Indicators query subject provides information on counts and indicators corresponding to constituent's contact telephone information.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Activity Stop Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Comment</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Count</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Record Count</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

Telephone - Current

The Telephone - Current query subject provides current contact phone information of a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Phone Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Primary Phone Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Unlisted Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Unlisted Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Count</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Phone Number Combined</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Status</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Status Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Data Element</td>
<td>Advance</td>
<td>Banner</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>Current Phone International Access</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Country Code</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Country Code Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Area Code</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Extension</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Address Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Address Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Address Sequence Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Attribute</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Phone Attribute Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Phone Attribute2</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Phone Attribute2 Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Phone Text Message</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Phone Text Message Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Phone Comment</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Sequence Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Start Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Phone Stop Date Partial</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
Internal Keys

The Internal Keys query subject contains IDs and the unique keys that can be used for complex queries required for Report Studio reports.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entity UID</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Advance ID</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Banner PIDM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prospect Key</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Report Default Selections

The data elements in the Report Default Selections filter the defines the default indicators.

The following table indicates which product line the data element belongs to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Positive Indicator</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Default Negative Indicator</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Institutional Values

The Institutional Values query subject defines a default set of information to be used by your institution as basic information to display on all reports that use the SGHE Template delivered with the product. This includes contact information for assistance with reporting. You should define these default values in the REPORT HELP TEXT and RELEASE INFORMATION Parameter Maps.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Help Text</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Snapshot - PM Analyze Fundraising Progress business concept

The Snapshot - PM Analyze Fundraising Progress business concept is a copy of the PM Analyze Fundraising Progress business concept. It includes the same attributes and measures included in the operational model.

The only difference between the main business concept and its snapshot is the addition of an EVENT_KEY stored with each row of data that is specific for the defined Year of Giving. The published package contains an additional query subject named “Event”. The Event query subject includes the institution defined Event along with the associated event date, event category, event type, and event. This lets you group by any of these values within reports based on the snapshot business concept.

Using the event dimension, you can load the Banner EDW with a complete version of the PM Analyze Fundraising Progress data pulled from Banner EDW at a point in time (the event) for a specified Year of Giving. This gives you a static version of the data for a specific time event and Year of Giving. For example, you might load the Snapshot at the end of each month (for a specified Year of Giving). This allows you to do comparative analysis by an event or point in time, within the same, or across different Years of Giving.

The warehouse data is continually changing based on your institution's policies and procedures for gathering and inputting data and the schedule used to refresh the warehouse data. To capture these changes and allow for comparison across time, you need to determine your institution’s significant time events and create those events in the Event parameter in the Administrative User Interface. Once events are created, each time you load the data warehouse you can select the appropriate Event to associate with that snapshot of the data.

Note

Depending on your institution's needs, you might use some or all of the same Events for this snapshot business concept that you use for the related Snapshot PM - Manage Prospect Pipeline business concept. You can create Events once in the Administration UI and use them for both business concepts. You can also create Events unique to each business concept.
PM Manage Prospect Pipeline business concept

The PM Manage Prospect Pipeline business concept contains information on prospects, program prospects (if applicable), and proposals in the pipeline at your institution. The reports generated from this business concept offer insights into the prospect pool, the current status of prospects, and proposals for your institution.

Data in the PM Manage Prospect Pipeline business concept permits reports to answer questions such as:

- How many prospects are in the system?
- What is the most recent contact information available for a prospect?
- Who are the major prospects for your institution?
- What is the breakdown of prospects by type, stage in the pipeline, and interest?
- How many proposals have been granted, funded, and declined?
- How many prospects are associated with a specific campaign and by what rating?
- What are the programs that generate maximum interest?
- What is the status of prospects and proposals by assignment?

PM Manage Prospect Pipeline business concept data elements

The Manage Prospect Pipeline business concept contains related data combined into query subjects with query items that are used to generate reports. The following sections give a business definition or description for the query subjects and filters specified in this package.

New data areas

The following table identifies new areas of information that were added with this release and identifies the related query subjects that were added to the data models. The table also specifies which information can be sourced from Advance, Banner Advancement, or both.

<table>
<thead>
<tr>
<th>Data Area</th>
<th>Query Subject</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awards and Honors</td>
<td>Awards and Honors</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Committee</td>
<td>Committee</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
Prospect Filters

The data elements in the Prospect Filters folder enable you to filter the data in the generated report based on the following criteria:

- Active status
- Prospect assigned to a staff member or volunteer
- Prospects who are rated
- Prospects where results have been achieved

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Area</th>
<th>Query Subject</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree</td>
<td>Degree Filters, Degree Counts and Indicators, and Degrees</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Email</td>
<td>Email Counts and Indicators, Email - Current</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Entity Populations</td>
<td>Entity Populations</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Exclusions</td>
<td>Exclusions</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Mail</td>
<td>Mail History</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>Mail Tracking</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>Mailing List</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Special - Variable</td>
<td>Special - Variable Purpose</td>
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<td>Y</td>
</tr>
<tr>
<td>Purpose</td>
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<tr>
<td>Advancement Activity</td>
<td>Advancement Activity</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Sports</td>
<td>Sport Counts and Indicators, Sports</td>
<td>Y</td>
<td></td>
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Prospect Counts and Indicators

The Prospect Counts and Indicators query subject reports based on the following information:

- Major prospect rating
- Prospect active status
- Prospects assigned to staff or volunteers
- Prospects identified as having an interest in planned giving
- Donation amount proposed (if any)
- Information on solicitor assigned to a prospect by your institution

The following table indicates which product line the data elements belong to.

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Prospect

The Prospect query subject reports prospect information, such as name, person details, affiliation, campaign, and interest shown for a unit in your university.

The following table indicates which product line the data elements belong to.

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Prospect Rating

The Prospect Rating query subject reports information on the prospect rating, prospect rated amount, solicitation priority, and so on.

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The Prospect Results query subject reports information based on the contact results and amount proposed (if any).

The following table indicates which product line the data elements belong to.

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**Prospect Results**

The Prospect Results query subject reports information based on the contact results and amount proposed (if any).

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**Prospect Stage - Latest**

The Prospect Stage - Latest query subject reports on the current stage composition of the prospect pool and the duration for which the prospects have been in their current stage.

The following table indicates which product line the data elements belong to.

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**Program Prospect Filters**

The filters in the Program Prospect Filters folder filters the generated report based on the following criteria for the prospect associated with one or more programs at your institution:

- Active status
- Assigned status
- Rating
- Results (if any)
The following table indicates which product line the data elements belong to.

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**Program Prospect Counts and Indicators**

The Program Prospect Counts and Indicators query subject reports based on the following indicators for program prospects at your institution:

- Status of the program prospect
- Rating based on the target amount for the prospect and program
- Indicator of prospect's interest in making a planned gift for the program

The following table indicates which product line the data elements belong to.

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The Program Prospect query subject reports information on the prospects that are a part of a campaign or other programs in your institution.

The following table indicates which product line the data elements belong to.

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**Program Prospect**

The Program Prospect query subject reports information on the prospects that are a part of a campaign or other programs in your institution.

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Program Prospect Rating

The Program Prospect Rating query subject reports on the rating rated amounts, giving capacity, and others for prospects who are part of a campaign or other programs at your institution. This query subject provides rating attributes for program prospects at your institution.

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The Program Prospect Results query subject reports the result of soliciting prospects associated with one or more programs at your institution.

The following table indicates which product line the data elements belong to.

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**Program Prospect Results**

The Program Prospect Results query subject reports the result of soliciting prospects associated with one or more programs at your institution.

The following table indicates which product line the data elements belong to.

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Program Prospect Stage - Latest

The Program Prospect Stage - Latest query subject reports the current stage composition of the program prospect pool and the duration for which the program prospects have been in their current stage at your institution.

The following table indicates which product line the data elements belong to.

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**Prospect Interest Filters**

The Prospect Interest Filters folder includes a filter that when used filters the report based on the active status of the prospect's level of interest in supporting one or more fundraising initiatives at your institution.

The Prospect Interest Measure filter (see data elements in the table below) is used for reporting on the prospect interest amount measures. This filter ensures that the prospect interest amounts are constrained to an individual prospect and are not inflated by the existence of multiple proposal records for a prospect.

The following table indicates which product line the data elements belong to.

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**Prospect Interest Counts and Indicators**

The Prospect Interest Counts and Indicators query subject reports based on the following indicators for a prospect's level of interest in supporting one or more fundraising initiatives at your institution:

- Active status
- Count

The following table indicates which product line the data elements belong to.

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**Prospect Interests**

The Prospect Interests query subject reports the details of the interest shown by a prospect toward fundraising initiatives at your institution. This query subject classifies information based on the program, purpose (scholarship, endowment, and so on), unit, or interest duration for a calendar year.

The following table indicates which product line the data elements belong to.

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**Prospect Interest Results**

The Prospect Interest Results query subject reports the records of the known target amount ranges, target dates, ask dates, and so on.

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Proposal Filters

The data elements in the Proposal Filters folder filter the generated report on proposals based on the active status.

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Proposal Counts and Indicators

The Proposal Counts and Indicators query subject reports based on the following indicators for the proposals prepared at your institution:

- Planned gift proposal
- Staff assigned (if any)
- Proposal status, such as asked, pending, granted, or declined
- Proposal result amount

The following table indicates which product line the data elements belong to.

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### Proposals

The Proposals query subject reports information on the proposals prepared by your institution.

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Proposal Results

The Proposal Results query subject reports information on the proposal design based on the range of donation amount asked, donation granted, and other proposal results.

The following table indicates which product line the data elements belong to.

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Proposal Stage - Latest

The Proposal Stage - Latest query subject reports information on the current stage composition of the proposal pipeline and the duration for which the proposals have been in their current stage.

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Proposal Purpose Filters

The data elements in the Proposal Purpose Filters folder filter the generated report on proposal purpose based on their active status.

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Proposal Purpose Counts and Indicators

The Proposal Purpose Counts and Indicators query subject reports information based on the following indicators for the fundraising initiative targeted for the proposal:

- Donation amount asked, granted, or declined
- Proposal pending status
- Active status
- Assigned status
- Results (if any)

The following table indicates which product line the data elements belong to.

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Proposal Purposes

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Proposal Purposes

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Proposal Purpose Stage - Latest

The Proposal Purpose Stage - Latest query subject reports information based on the current stage of the proposal purpose and the duration for which the proposal purposes have been in their current stage.

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Primary Assignment Filters

The Primary Assignment Filters displays only prospects or program prospects with active primary assignments in the report.

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**Primary Assignment Indicators**

The Primary Assignment Indicators show whether the primary assignment for the prospect or program prospect is active.

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**Primary Assignments**

The Primary Assignments query subject reports information based on the primary solicitor assigned to a prospect or program prospect.

The following table indicates which product line the data elements belong to.

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**Assignment Filters**

The data elements in the Assignment Filters folder filters the generated report based on the following assignment criteria for prospect, program prospect, or proposal assignments:

- Active status
- Program assigned
- Proposal assigned

The following table indicates which product line the data elements belong to.
Assignment Indicators

The Assignment Indicators query subject reports the following indicators for the staff assigned to a prospect, program prospect, or proposal:

- Active status
- Assigned status
- Proposal
- Preferred program
- Staff assignment
- Solicitor

The following table indicates which product line the data elements belong to.

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Assignments

The Assignments query subject reports information on the solicitor assigned to a prospect, program prospect, or proposal.

The following table indicates which product line the data elements belong to.

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Program Prospect Assignment Filters

The data elements in the Program Prospect Assignment Filters folder filter the report based on the active status of the assignment and a program prospect assignment.

The following table indicates which product line the data elements belong to.

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Program Prospect Assignment Indicators

The Program Prospect Assignment Indicators query subject shows the active status of the program prospect assignment.

The following table indicates which product line the data elements belong to.

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Program Prospect Assignments

The Program Prospect Assignments query subject reports information for program prospect assignments only.

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Proposal Assignment Filters

The data elements in the Proposal Assignment Filters folder filter the report based on the active status of the assigned proposal.

The following table indicates which product line the data elements belong to.

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**Proposal Assignment Indicators**

The Proposal Assignment Indicators query subject shows the active status of the proposal assignment.

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**Proposal Assignments**

The Proposal Assignments query subject reports information on the proposal assignments only.

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**Contact Report Counts and Indicators**

The Contact Report Counts and Indicators provide counts and indicators related to contact reports.

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Contact Reports

The Contact Reports query subject provides information about the contacts or interactions your institution has with constituents. A single contact report can be associated with entities, prospects, proposals, and program prospects.

By capturing the contact records, your institution can:

- Analyze the contact reports that are filed during a specific period
- Plan for future action items based on contact reports
- Analyze the trends in the contact frequency by fundraiser
- Assess the average duration between contacts for rated prospects
- Analyze the average number of contacts leading up to a gift commitment

The following table indicates which product line the data elements belong to.

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### Contact Reports - Latest

The Contact Reports - Latest query subject reports information on the most recent contact between the institution and the prospect or constituent entity, and how long since the contact was made.

The following table indicates which product line the data elements belong to.

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Constituent Entity Filters

The data elements in the Constituent Entity Filters folder filter the report based on the constituent type, such as alumni, donor, person, or organization.

The following table indicates which product line the data elements belong to.

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**Constituent Entity**

The Constituent Entity query subject reports based on person ID, name, relationship to the institution, e-mail and phone contact information, spouse name, and other indicator for alumni, donor, and organization.

The following table indicates which product line the data elements belong to.

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Constituent Entity Giving History

The Constituent Entity Giving History query subject reports based on the donation history for alumni, donor, and organization.

The following table indicates which product line the data elements belong to.

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Giving History Details (Folder)

| Lifetime Hard Credit                           | Y       | Y      |
| Lifetime Soft Credit                           | Y       | Y      |
| Lifetime Total Match                           | Y       | Y      |
| Largest Hard Credit                            | Y       | Y      |
| Largest Soft Credit                            | Y       | Y      |
| Current Giving Year Hard Credit                | Y       | Y      |
| Current Giving Year Soft Credit                | Y       | Y      |
| Largest Giving Year Hard Credit                | Y       | Y      |
| Largest Giving Year Soft Credit                | Y       | Y      |
| Spouse Lifetime Hard Credit                    | Y       | Y      |
| Spouse Lifetime Soft Credit                    | Y       | Y      |
| Spouse Lifetime Total Match                    | Y       | Y      |
| Spouse Largest Hard Credit                     | Y       | Y      |
| Spouse Largest Soft Credit                     | Y       | Y      |
| Spouse Current Giving Year Hard Credit         | Y       | Y      |
| Spouse Current Giving Year Soft Credit         | Y       | Y      |
| Spouse Largest Giving Year Hard Credit         | Y       | Y      |
| Spouse Largest Giving Year Soft Credit         | Y       | Y      |
**Constituent Interest**

The Constituent Interest query subject helps you capture interests of your institution’s constituents to gain a deeper understanding about them. A constituent can have none or many interests.

A better understanding of a constituent’s interest can help to:

- Establish a deeper relationship with the constituent based on their interest for the institution.
- Identify all constituents with a similar interest and invite them to a related event.

The following table indicates which product line the data elements belong to.

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**Constituent Rating**

The Constituent Rating query subject provides insight into a constituent’s capacity to donate based on constituent profiles and evaluations. Profile information is sourced from Banner External Ratings or Advance Demographic Profiles but the Constituent Evaluations are sourced only from Advance.

Tracking Constituent Rating details can help your institution to:

- Validate Constituent Rating against their donation record.
- Access the details of constituents with a particular rating who have not made donation during a period.
- Obtain the list of constituent entities, which have been rated, but not yet assigned to a development officer.
- Analyze whether the current ask amount for a population of constituents fall within their rating range.

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Address Filters

The data element in the Address Filters folder lets you filter a report based on the default geographic region address.

The following table indicates which product line the data element belongs to.

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Address - All Current

The Address - All Current query subject provides information for all current addresses of a prospect, such as home address, business address, seasonal address, and so on.

The following table indicates which product line the data elements belong to.

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**Preferred Address**

The Preferred Address query subject reports the contact address preferred by the prospect. The details include postal address, nation, state/province, and county for the prospect.

The following table indicates which product line the data elements belong to.

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Advancement Activity

The Advancement Activity query subject provides information about constituents who have participated in special activities. You can use the activity information to identify constituents based on their activity participation.

The following table indicates which product line the data elements belong to.

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**Affiliation**

The Affiliation query subject provides details of a constituent’s affiliations. A constituent can have affiliations inside and outside the institution.

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Awards and Honors

The Awards and Honors query subject provides information about any awards or honors received by a constituent.

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## Committees

The Committees query subject provides information about all committees a constituent is or has been associated with at your institution.

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Degree Filters

The data element in the Degree Filters folder filters the report based on the home institution degree.

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Degree Counts and Indicators

The Degree Counts and Indicators query subject provides information on the counts and indicators related to degrees awarded by an institution.

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**Degrees**

The Degrees query subject provides information about any degrees earned by a constituent, either at your institution or any other institution, including secondary and post secondary school data.

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**Demographic**

The Demographic query subject reports information on ethnicity, multiple race codes, marital status, disabilities, citizenship data, and veteran information for a prospect.

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<tr>
<td>Native American or Alaskan Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Black or African Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Pacific Islander Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>White Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Veteran Information (Folder)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veteran Category</td>
<td></td>
<td>Y</td>
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<tr>
<td>Veteran Category Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Veteran Type</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Veteran Type Description</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
**Email Counts and Indicators**

The Email Counts and Indicators query subject provides information about the counts and indicators corresponding to a constituent’s email addresses.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
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<tr>
<td>Preferred Email Ind</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>Preferred Email Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Email Count</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Email - Current**

The Email - Current query subject provides information on all current email addresses for a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Email Address</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Email Address Status</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Email Address Status Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Email Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Email Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Email Attribute</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Email Attribute Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Email Comment</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Email Sequence Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Forwarding Email Address</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
**Employment Counts and Indicators**

The Employment Counts and Indicators query subject provides the various indicators associated with a prospect’s employment.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Employment Exists Ind</td>
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<td>Y</td>
</tr>
<tr>
<td>Current Employment Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Employment Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Primary Employment Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Primary Employment Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Employer Entity Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Employer Entity Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Employee Relation Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Employee Relation Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Employee Relation Active Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Employee Relation Active Ind Description</td>
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<td></td>
</tr>
<tr>
<td>Coop-Intern Ind</td>
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<td></td>
</tr>
<tr>
<td>Coop-Intern Ind Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Match Status Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Match Status Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Retired Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Retired Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Self Employed Ind</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Self Employed Ind Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Employment Count</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
**Employment**

The Employment query subject provides information about a prospect's employers and employment history.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Employer Name</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Employer Name2</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Employer Relation</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Employer Relation Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Employer SICC Code</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Employer SICC Code Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Employment Status</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Employment Status Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Field Of Work</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Field Of Work Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Job Categories (Folder)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Category</td>
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<td>Y</td>
</tr>
<tr>
<td>Job Category Description</td>
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<tr>
<td>Job Category Sequence</td>
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<tr>
<td>Job Title</td>
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</tr>
<tr>
<td>Nature Of Business</td>
<td></td>
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</tr>
<tr>
<td>Occupational Name</td>
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</tr>
<tr>
<td>Position Comment</td>
<td></td>
<td>Y</td>
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<tr>
<td>Place Of Work</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Place Of Work Description</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
The Entity Populations query subject lets you access an entity population identified using Population Selection (Banner) or Clipboard (Advance) for reporting.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position Level</td>
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<tr>
<td>Position Level Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Employee Weekly Hours</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Employment Data Source</td>
<td>Y</td>
<td></td>
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<tr>
<td>Employment Data Source Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Employee Start Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Employee Stop Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Employee Start Date</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Employee Stop Date</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>

**Entity Populations**

The following table indicates which product line the data elements belong to.

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<thead>
<tr>
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<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Entity Population Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Entity Population Owner</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Entity Population User</td>
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<td>Y</td>
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<tr>
<td>Entity Population Date</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Entity Application</td>
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<td>Y</td>
</tr>
<tr>
<td>Entity Population Private Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Entity Population Private Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Exclusions

The Exclusions query subject provides information about the solicitation activities from which a constituent has been or should be excluded. These may include active, inactive or pending exclusions.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
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</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>Exclusion Description</td>
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<td>Y</td>
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<tr>
<td>Exclusion Status</td>
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<td>Y</td>
</tr>
<tr>
<td>Mail Phone Exclusion</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Exclusion Start Date</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Exclusion Stop Date</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Exclusion Comment</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Active Exclusion Count</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Exclusion Count</td>
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<td>Y</td>
</tr>
<tr>
<td>Exclusion Record Count</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>

Gift Society Counts and Indicators

The Gift Society Counts and Indicators query subject gives details about the number of gift societies and related indicators.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime Gift Society Ind</td>
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<td>Y</td>
</tr>
<tr>
<td>Lifetime Gift Society Ind Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Gift Society Joint Member Ind</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Gift Society Joint Member Ind Description</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
**Gift Society**

The Gift Society query subject helps your institution to evaluate gift society membership attributes of a constituent, such as:

- Gift society member status
- Lifetime member of a gift society
- Gift society members, who have received premiums
- Constituents, who belong to a particular gift society

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gift Society Count</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Gift Society Record Count</td>
<td>Y</td>
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</tbody>
</table>

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
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</thead>
<tbody>
<tr>
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<td>Y</td>
</tr>
<tr>
<td>Gift Society Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Gift Society Type</td>
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<td>Y</td>
</tr>
<tr>
<td>Gift Society Type Description</td>
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<td>Y</td>
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<tr>
<td>Gift Society Category</td>
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<tr>
<td>Gift Society Category Description</td>
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<tr>
<td>Gift Society Family Description</td>
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<tr>
<td>Gift Society Year</td>
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<td></td>
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<tr>
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</tr>
<tr>
<td>Gift Society Year End Date</td>
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</tr>
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<td>Gift Society Start Date Partial</td>
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<tr>
<td>Gift Society Exp Date Partial</td>
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<td>Banner</td>
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<tr>
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<tr>
<td>Gift Society Member Status</td>
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</tr>
<tr>
<td>Gift Society Member Status Description</td>
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<td></td>
</tr>
<tr>
<td>Gift Society College</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Gift Society College Description</td>
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<td></td>
</tr>
<tr>
<td>Gift Society Priority Number</td>
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<td></td>
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<tr>
<td>Gift Society Type Priority Number</td>
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<td>Gift Society Assign Method</td>
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<td>Gift Society Assign Authorized Description</td>
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<td>Gift Society Owner Group Description</td>
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<tr>
<td>Gift Society Unit Code Description</td>
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<td>Gift Society Premium (Folder)</td>
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<tr>
<td>Gift Society Premium Date</td>
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</tbody>
</table>
The Mail History query subject provides information about mailings received by a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
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<tbody>
<tr>
<td>Mail Letter</td>
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<td></td>
</tr>
<tr>
<td>Mail Letter Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Mail System ID</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Mail System ID Description</td>
<td>Y</td>
<td></td>
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<tr>
<td>Mail Print Date</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Mail Record Count</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

The Mail Tracking query subject provides information about the mailings and solicitations a constituent should receive.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail Code</td>
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<td></td>
</tr>
<tr>
<td>Mail Code Description</td>
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<td></td>
</tr>
<tr>
<td>Mail Code Address Type</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Mail Code Address Type Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Mail Code Start Date</td>
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<td></td>
</tr>
<tr>
<td>Mail Code Record Count</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
Mailing List

The Mailing List query subject provides information about the mailings a constituent is or has been receiving, including any special instructions involved with a particular mailing to that constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail List</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Mail List Description</td>
<td>Y</td>
<td></td>
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<tr>
<td>Mail List Control</td>
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<td></td>
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<tr>
<td>Mail List Control Description</td>
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<tr>
<td>Mail List Source</td>
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<tr>
<td>Mail List Source Description</td>
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<td>Mail List Status</td>
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<td>Mail List Status Description</td>
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<td>Mail List Type</td>
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<td>Mail List Comment</td>
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</tr>
<tr>
<td>Mail List Start Date Partial</td>
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<td></td>
</tr>
</tbody>
</table>
Membership Counts and Indicators

The Membership Counts and Indicators query subject provides the details regarding the number of memberships for a program and the corresponding indicators.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
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<tbody>
<tr>
<td>Mail List Stop Date Partial</td>
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</tr>
<tr>
<td>Mail List Count</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Mail List Record Count</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>

Membership

The Membership query subject provides the details regarding a constituent's memberships. A constituent can have multiple memberships and a “membership” can have multiple benefits and premiums. By using the membership details of a constituent, an institution can:

- Identify constituents by membership
- Identify constituents, who have membership in multiple programs
- Identify constituents, who are lifetime members

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
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</tr>
<tr>
<td>Current Member Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Member Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Lifetime Member Ind Description</td>
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<tr>
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</tr>
<tr>
<td>New Member Ind Description</td>
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</tr>
<tr>
<td>Expired Member Ind</td>
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<td></td>
</tr>
<tr>
<td>Expired Member Ind Description</td>
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</tr>
<tr>
<td>Membership Count</td>
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</tr>
</tbody>
</table>
• Identify the constituents, who are no longer active in a membership

The following table indicates which product line the data elements belong to.

<table>
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<tr>
<th>Data Element</th>
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<tr>
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<tr>
<td>Member Number</td>
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<tr>
<td>Previous Member Number</td>
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<tr>
<td>Member Status</td>
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</tr>
<tr>
<td>Member Status Description</td>
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</tr>
<tr>
<td>Active Member Status</td>
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<tr>
<td>Member Start Date</td>
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<tr>
<td>Member Stop Date</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Member Category Description</td>
<td>Y</td>
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</tr>
<tr>
<td>Member Association</td>
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</tr>
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</tr>
<tr>
<td>Member Type Description</td>
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<td></td>
</tr>
<tr>
<td>Member Club</td>
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<td></td>
</tr>
<tr>
<td>Member Club Description</td>
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<td></td>
</tr>
<tr>
<td>Member Campaign</td>
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<td></td>
</tr>
<tr>
<td>Member Campaign Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Membership Source</td>
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</tr>
<tr>
<td>Membership Source Description</td>
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<tr>
<td>Member Period</td>
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</tr>
</tbody>
</table>
**Relationship Filters**

The data elements in the Relationship Filters folder enable you to filter the data in the generated report based on whether the relationship is with a person or organization, or to exclude a deceased relation.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Person Relation</td>
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<td>Y</td>
</tr>
<tr>
<td>Organization Relation</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Exclude Deceased Relation</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
**Relationship Counts and Indicators**

The Relationship Counts and Indicators query subject reports the counts and indicators related to the relationships of a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relation Entity Ind</td>
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</tr>
<tr>
<td>Relation Entity Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Spouse Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Spouse Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Donor Relation Ind</td>
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<td>Y</td>
</tr>
<tr>
<td>Donor Relation Ind Description</td>
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<td>Y</td>
</tr>
<tr>
<td>Household Ind</td>
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<td>Y</td>
</tr>
<tr>
<td>Household Ind Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Relation Deceased Ind</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Deceased Ind Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Count</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Child Count</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Relationship**

The Relationship query subject reports details of all relationships for a constituent. A constituent can have entity relationships with other constituents and standalone relationships with a spouse, children, employer, and so on.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relation Name</td>
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</tr>
<tr>
<td>Relation Name Sort</td>
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<td>Y</td>
</tr>
<tr>
<td>Data Element</td>
<td>Advance</td>
<td>Banner</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>Relation ID</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Person Org</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>Relation</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Relation Description</td>
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<td>Y</td>
</tr>
<tr>
<td>Converse Relation</td>
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<td>Y</td>
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<tr>
<td>Converse Relation Description</td>
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<td>Relation Category</td>
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<td>Relation Source</td>
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<td>Relation Preferred School Description</td>
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<tr>
<td>Relation Birth Date</td>
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<td>Relation Birth Date Partial</td>
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<td>Y</td>
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<td>Relation Deceased Date</td>
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<td>Relation Marital Status Description</td>
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<tr>
<td>Spousal Relation Detail (Folder)</td>
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</tr>
</tbody>
</table>
The Special - Variable Purpose query subject provides information about institution-defined attributes associated with a constituent. This data is used to categorize constituents into special groups.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
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<td>Marriage Date Partial</td>
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<td>Y</td>
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<td>Marriage Change Date</td>
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<td>Marriage Change Date Partial</td>
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<td>Special Purpose Type</td>
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<td>Y</td>
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<td>Special Purpose Type Description</td>
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<td>Special Purpose Comment</td>
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<td>Y</td>
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<tr>
<td>Special Purpose Date</td>
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<td>Y</td>
</tr>
<tr>
<td>Special Purpose Type Count</td>
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<td>Special Purpose Count</td>
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<td>Y</td>
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<tr>
<td>Special Purpose Record Count</td>
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<tr>
<td>Variable Purpose Count</td>
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</table>
**Sport Counts and Indicators**

The Sports Counts and Indicators query subject provides a team captain indicator and sport count.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
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<tr>
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<tr>
<td>Team Captain Ind Description</td>
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</tr>
<tr>
<td>Sport Count</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Record Count</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

**Sports**

The Sports query subject provides information about a constituent's participation in a sport while attending your institution.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
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<tr>
<td>Sport Description</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Sport Participation Description</td>
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<td></td>
</tr>
<tr>
<td>Sport Start Date Partial</td>
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<td></td>
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<td>Sport Stop Date Partial</td>
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<td></td>
</tr>
<tr>
<td>Sport Sequence Number</td>
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<tr>
<td>Sport Comment1</td>
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<td></td>
</tr>
<tr>
<td>Sport Comment2</td>
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</tbody>
</table>
**Student Activity**

The Student Activity query subject provides information about a constituent's participation or affiliation with an activity while a student.

The following table indicates which product line the data elements belong to.

<table>
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<tr>
<th>Data Element</th>
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<td>Student Activity Group Description</td>
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<tr>
<td>Student Activity Participation</td>
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<tr>
<td>Student Activity Participation Description</td>
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<tr>
<td>Student Activity Office Description</td>
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<tr>
<td>Student Activity Sequence Number</td>
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<tr>
<td>Student Activity Start Date Partial</td>
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<tr>
<td>Student Activity Stop Date Partial</td>
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</tr>
<tr>
<td>Student Activity Comment</td>
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<tr>
<td>Student Activity Count</td>
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<tr>
<td>Student Activity Record Count</td>
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</table>

**Telephone Counts and Indicators**

The Telephone Counts and Indicators query subject provides information on counts and indicators corresponding to constituent's contact telephone information.

The following table indicates which product line the data elements belong to.
### Telephone - Current

The Telephone - Current query subject provides current contact phone information of a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
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<td>Phone Unlisted Ind Description</td>
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</tr>
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</tr>
<tr>
<td>Current Phone Number Combined</td>
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<td>Current Phone Status Description</td>
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<tr>
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<td>Current Phone Area Code</td>
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<td>Current Phone Address Type</td>
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</tbody>
</table>
Internal Keys

The Internal Keys query subject contains IDs and the unique keys that can be used for complex queries required for Report Studio reports.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
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<tr>
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<tr>
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<td>Current Phone Attribute2 Description</td>
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<tr>
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</tr>
<tr>
<td>Dim Prospect Key</td>
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</tbody>
</table>
Report Default Selections

The data elements in the Report Default Selections filter the defines the default indicators.

The following table indicates which product line the data element belongs to.

<table>
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<tr>
<th>Data Element</th>
<th>Advance</th>
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<td>Y</td>
</tr>
<tr>
<td>Advancement Program Key</td>
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<td></td>
</tr>
<tr>
<td>Advancement Program Year Key</td>
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</tr>
</tbody>
</table>

Institutional Values

The Institutional Values query subject defines a default set of information to be used by your institution as basic information to display on all reports that use the SGHE Template delivered with the product. This includes contact information for assistance with reporting. You should define these default values in the REPORT HELP TEXT and RELEASE INFORMATION Parameter Maps.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Help Text</td>
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<td>Y</td>
</tr>
<tr>
<td>Cognos User Name</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Snapshot - PM Manage Prospect Pipeline business concept

The Snapshot - PM Manage Prospect Pipeline business concept is a copy of the PM Manage Prospect Pipeline business concept. It includes the same attributes and measures included in the operational model.

The only difference between the main business concept and its snapshot is the addition of an EVENT_KEY stored with each row of data. The published package contains an additional query subject named “Event”. The Event query subject includes the institution defined Event along with the associated event date, event category, event type, and event. This lets you group by any of these values within reports based on the snapshot business concept.

Using the event dimension, you can load the Banner EDW with a complete version of the PM Manage Prospect Pipeline data pulled from Banner EDW at a point in time (the event). This gives you a static version of the data for a specific time event. For example, you might load the Snapshot at the end of each month. This allows you to do comparative analysis by an event or point in time.

The warehouse data is continually changing based on your institution’s policies and procedures for gathering and inputting data and the schedule used to refresh the warehouse data. To capture these changes and allow for comparison across time, you need to determine your institution’s significant time events and create those events in the Event parameter in the Administrative User Interface. Once events are created, each time you load the data warehouse you can select the appropriate Event to associate with that snapshot of the data.

مصادر

Depending on your institution’s needs, you might use some or all of the same Events for this snapshot business concept that you use for the related Snapshot PM - Analyze Fundraising Progress business concept. You can create Events once in the Administration UI and use them for both business concepts. You can also create Events unique to each business concept.
The PM Research and Qualify Potential Prospects business concept contains information for an institution’s entire constituent population, including biographical, demographic, academic, interaction and engagement information as well as summarized giving history as applicable. PM Research and Qualify Potential Prospects also provides pre-aggregated yearly donor participation metrics for the institution overall and optionally at the designation college and designation department levels.

Your institution can perform the following tasks using the PM Research and Qualify Potential Prospects business concept:

- Research and identify new prospects, potential donors, volunteers, event attendees, and engagement opportunities.
- Identify specific constituent populations.
- Evaluate attributes, characteristics, and behavior of constituents.
- Compare giving characteristics of donors to potential donors.
- Analyze giving patterns and donor retention by yearly giving or participation.

### Research and Qualify Potential Prospects business concept data elements

The Research and Qualify Potential Prospects business concept contains related data combined into query subjects with query items that are used to generate reports. The following sections give a business definition or description for the query subjects and filters specified in this package.

#### Constituent Filters

The data elements in the Constituent Entity Filters folder filter the report based on the constituent type, such as alumni, person, or organization.

The following table indicates which product line the data elements belong to.

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<tr>
<th>Data Element</th>
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<tr>
<td>Donor</td>
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<tr>
<td>Person</td>
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</table>
Constituent Counts and Indicators

The Constituent Counts and Indicators query subject provides information about counts and indicators that are related to constituents.

The following table indicates which product line the data elements belong to.

<table>
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<tr>
<th>Data Element</th>
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<tr>
<td>Alumnus Count</td>
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</tr>
<tr>
<td>Lifetime Donor Count</td>
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Constituents

The Constituent query subject provides information about individual constituents including ID, name, relationship to the institution, spouse name, and other attributes such as current age birthdate and deceased date.

The following table indicates which product line the data elements belong to.

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**Current-Prior Year and Lifetime Participation**

The Current-Prior Year and Lifetime Participation query subject provides constituent participation details for the current or prior year of giving.

The following table indicates which product line the data elements belong to.

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Constituent Giving History

The Constituent Giving History query subject provides summarized giving history information including lifetime and largest giving amounts and spouse giving history details.

The following table indicates which product line the data elements belong to.

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## First and Last Giving Transaction Dates

The First and Last Giving Transaction Dates query subject provides details about the first and last giving transactions made by a constituent.

The following table indicates which product line the data elements belong to.

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</table>
**Year of Giving Filters**

The data elements in the Year of Giving Filters folder enable you to filter the data in the generated report based on the current year or prior year of giving.

The following table indicates which product line the data elements belong to.

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<tr>
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**Year of Giving**

The Year of Giving query subject includes the year of giving and description.

The following table indicates which product line the data elements belong to.

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<td>Year of Giving Description</td>
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**Yearly Participation Counts and Indicators - Institution**

The Yearly Participation Counts and Indicators - Institution query subject provides counts and indicators corresponding to a constituent’s yearly participation at the institution.

The following table indicates which product line the data elements belong to.

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<tr>
<td>Participation Donor Ind</td>
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<td>Participation Donor Ind Description</td>
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Yearly Participation - Institution

The Yearly Participation - Institution query subject provides information on the yearly participation details of constituent at the institutional level.

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### Yearly Participation Counts and Indicators - Designation College

The Yearly Participation Counts and Indicators - Designation College query subject provides counts and indicators related to yearly participation of a constituent at the designation college level.

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**Yearly Participation - Designation College**

The Yearly Participation - Designation College query subject provides information about a constituent’s participation at the designation college level.

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The Yearly Participation Counts and Indicators - Designation Department query subject provides counts and indicators related to yearly participation of constituents at the designation department level.

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### Yearly Participation - Designation Department

The Yearly Participation - Designation Department query subject provides information about a constituent’s participation at the designation department level.

The following table indicates which product line the data elements belong to.

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Address Filters

The data element in the Address Filters folder lets you filter a report based on the default geographic region address.

The following table indicates which product line the data elements belong to.

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Address Counts and Indicators

The Address Counts and Indicators query subject includes address related indicators including current, seasonal, and preferred and counts of addresses on file for a constituent.

The following table indicates which product line the data elements belong to.

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</table>
The Address query subject provides address details for all current or inactive addresses for a constituent.

The following table indicates which product line the data elements belong to.

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Address - All Current

The Address - All Current query subject provides information for all current addresses of a prospect, such as home address, business address, seasonal address, and so on.

The following table indicates which product line the data elements belong to.

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**Preferred Address**

The Preferred Address query subject reports the contact address preferred by the prospect. The details include postal address, nation, state/province, and county for the prospect.

The following table indicates which product line the data elements belong to.

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The Advancement Activity query subject provides information about constituents who have participated in special activities. You can use the activity information to identify constituents based on their activity participation.

The following table indicates which product line the data elements belong to.

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**Advancement Activity**

The Advancement Activity query subject provides information about constituents who have participated in special activities. You can use the activity information to identify constituents based on their activity participation.

The following table indicates which product line the data elements belong to.

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### Affiliation

The Affiliation query subject provides details of a constituent’s affiliations. A constituent can have affiliations inside and outside the institution.

The following table indicates which product line the data elements belong to.

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Awards and Honors

The Awards and Honors query subject provides information about any awards or honors received by a constituent.

The following table indicates which product line the data elements belong to.

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Committees

The Committees query subject provides information about all committees a constituent is or has been associated with at your institution.

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**Constituent Assignment Indicators**

The Constituent Assignment Indicators provide indicators related to active assignments, primary assignments, and staff assignments associated with constituents.

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**Constituent Assignments**

The Constituent Assignments query subject provides information about constituent assignments.

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**Constituent Interest**

The Constituent Interest query subject helps you capture interests of your institution’s constituents to gain a deeper understanding about them. A constituent can have none or many interests.

A better understanding of a constituent’s interest can help to:

- Establish a deeper relationship with the constituent based on their interest for the institution.
- Identify all constituents with a similar interest and invite them to a related event.

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Constituent Rating

The Constituent Rating query subject provides insight into a constituent’s capacity to donate based on constituent profiles and evaluations. Profile information is sourced from Banner External Ratings or Advance Demographic Profiles but the Constituent Evaluations are sourced only from Advance.

Tracking Constituent Rating details can help your institution to:

• Validate Constituent Rating against their donation record.
• Access the details of constituents with a particular rating who have not made donation during a period.
• Obtain the list of constituent entities, which have been rated, but not yet assigned to a development officer.
• Analyze whether the current ask amount for a population of constituents fall within their rating range.

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### Constituent Relationships - Spouse

The Constituent Relationships - Spouse query subject identifies the spousal relationship of a constituent.

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### Contact Report Counts and Indicators

The Contact Report Counts and Indicators provide counts and indicators related to contact reports.

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Contact Reports

The Contact Reports query subject provides information about the contacts or interactions your institution has with constituents. A single contact report can be associated with entities, prospects, proposals, and program prospects.

By capturing the contact records, your institution can:

- Analyze the contact reports that are filed during a specific period
- Plan for future action items based on contact reports
- Analyze the trends in the contact frequency by fundraiser
- Assess the average duration between contacts for rated prospects

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• Analyze the average number of contacts leading up to a gift commitment

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**Contact Reports - Latest**

The Contact Reports - Latest query subject reports information on the most recent contact between the institution and the prospect or constituent entity, and how long since the contact was made.

The following table indicates which product line the data elements belong to.

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**Degree Filters**

The data element in the Degree Filters folder filters the report based on the home institution degree.

The following table indicates which product line the data element belongs to.

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Degree Counts and Indicators

The Degree Counts and Indicators query subject provides information on the counts and indicators related to degrees awarded by an institution.

The following table indicates which product line the data elements belong to.

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Degrees

The Degrees query subject provides information about any degrees earned by a constituent, either at your institution or any other institution, including secondary and post secondary school data.

The following table indicates which product line the data elements belong to.

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Demographic

The Demographic query subject reports information on ethnicity, multiple race codes, marital status, disabilities, citizenship data, and veteran information for a prospect.

The following table indicates which product line the data elements belong to.

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Email Counts and Indicators

The Email Counts and Indicators query subject provides information about the counts and indicators corresponding to a constituent’s email addresses.

The following table indicates which product line the data elements belong to.

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Email - Current

The Email - Current query subject provides information on all current email addresses for a constituent.

The following table indicates which product line the data elements belong to.

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</table>
The Employment Counts and Indicators query subject provides the various indicators associated with a prospect’s employment.

The following table indicates which product line the data elements belong to.

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Employment

The Employment query subject provides information about a prospect's employers and employment history.

The following table indicates which product line the data elements belong to.

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## Entity Populations

The Entity Populations query subject lets you access an entity population identified using Population Selection (Banner) or Clipboard (Advance) for reporting.

The following table indicates which product line the data elements belong to.

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The Exclusions query subject provides information about the solicitation activities from which a constituent has been or should be excluded. These may include active, inactive or pending exclusions.

The following table indicates which product line the data elements belong to.

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**Gift Society Counts and Indicators**

The Gift Society Counts and Indicators query subject gives details about the number of gift societies and related indicators.

The following table indicates which product line the data elements belong to.

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**Gift Society**

The Gift Society query subject helps your institution to evaluate gift society membership attributes of a constituent, such as:

- Gift society member status
- Life time member of a gift society
- Gift society members, who have received premiums
- Constituents, who belong to a particular gift society

The following table indicates which product line the data elements belong to.

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Mail History

The Mail History query subject provides information about mailings received by a constituent.

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Mail Tracking

The Mail Tracking query subject provides information about the mailings and solicitations a constituent should receive.

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### Mailing List

The Mailing List query subject provides information about the mailings a constituent is or has been receiving, including any special instructions involved with a particular mailing to that constituent.

The following table indicates which product line the data elements belong to.

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Membership Counts and Indicators

The Membership Counts and Indicators query subject provides the details regarding number of memberships for a program and the corresponding indicators.

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</table>
Membership

The Membership query subject provides the details regarding a constituent's memberships. A constituent can have multiple memberships and a “membership” can have multiple benefits and premiums. By using the membership details of a constituent, an institution can:

The following table indicates which product line the data elements belong to.

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</table>
**Prospect Filters**

The data elements in the Prospect Filters folder enable you to filter the data in the generated report based on the following criteria:

- Display only constituents who have ever been a prospect
- Active status of the prospect
- Prospects who are rated

The following table indicates which product line the data elements belong to.

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**Prospect Counts and Indicators**

The Prospect Counts and Indicators query subject reports based on the following information:

- Prospect active status
- Prospects assigned to staff or volunteers
- Prospects identified as having an interest in planned giving
- Prospect rating)
- Information on solicitor assigned to a prospect by your institution

The following table indicates which product line the data elements belong to.

<table>
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Prospect Information

The Prospect Information query subject reports prospect information, such as name, person details, affiliation, campaign, and interest shown for a unit in your university.

The following table indicates which product line the data elements belong to.

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Prospect Assignment Filters

The Prospect Assignment Filters folder includes a filter that when used displays only prospects with active assignments in the report.

The following table indicates which product line the data elements belong to.

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Prospect Assignment Indicators

The Prospect Assignment Indicators query subject includes indicators related to prospect assignments.

The following table indicates which product line the data elements belong to.

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### Prospect Assignments

The Prospect Assignments query subject provides information about past and present (active) assignments of a prospect.

The following table indicates which product line the data elements belong to.

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### Primary Prospect Assignment Filters

The Primary Prospect Assignment Filters folder includes a filter that when used displays only prospects with an active primary assignments in the report.

The following table indicates which product line the data elements belong to.

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Primary Prospect Assignments

The Primary Prospect Assignments query subject provides information on primary solicitor assigned to a constituent.

The following table indicates which product line the data elements belong to.

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Prospect Interest Filters

The Prospect Interest Filters folder includes a filter that when used filters the report based on the active status of the prospect's level of interest in supporting one or more fundraising initiatives at your institution.

The following table indicates which product line the data elements belong to.

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Prospect Interest Counts and Indicators

The Prospect Interest Counts and Indicators query subject reports based on the following indicators for a prospect's level of interest in supporting one or more fundraising initiatives at your institution:

- Active status
- Ask made for the prospect
The following table indicates which product line the data elements belong to.

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**Prospect Interests**

The Prospect Interests query subject reports the details of the interest shown by a prospect toward fundraising initiatives at your institution. This query subject classifies information based on the program, purpose (scholarship, endowment, and so on), unit, or interest duration for a calendar year.

The following table indicates which product line the data elements belong to.

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**Relationship Filters**

The data elements in the Relationship Filters folder enable you to filter the data in the generated report based on whether the relationship is with a person or organization, or to exclude a deceased relation.

The following table indicates which product line the data elements belong to.

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**Relationship Counts and Indicators**

The Relationship Counts and Indicators query subject reports the counts and indicators related to the relationships of a constituent.

The following table indicates which product line the data elements belong to.

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### Relationship

The Relationship query subject reports details of all relationships for a constituent. A constituent can have entity relationships with other constituents and standalone relationships with a spouse, children, employer, and so on.

The following table indicates which product line the data elements belong to.

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</table>
The Special - Variable Purpose query subject provides information about institution-defined attributes associated with a constituent. This data is used to categorize constituents into special groups.

The following table indicates which product line the data elements belong to.

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### Sport Counts and Indicators

The Sports Counts and Indicators query subject provides a team captain indicator and sport count.

The following table indicates which product line the data elements belong to.

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### Sports

The Sports query subject provides information about a constituent's participation in a sport while attending your institution.

The following table indicates which product line the data elements belong to.

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</tbody>
</table>
Student Activity

The Student Activity query subject provides information about a constituent's participation or affiliation with an activity while a student.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport Participation</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Participation Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Start Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Stop Date Partial</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Sequence Number</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Comment1</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Sport Comment2</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Activity</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Group</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Group Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Participation</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Participation Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Office</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Office Description</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Sequence Number</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Student Activity Start Date Partial</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
**Telephone Counts and Indicators**

The Telephone Counts and Indicators query subject provides information on counts and indicators corresponding to constituent's contact telephone information.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Activity Stop Date Partial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Activity Comment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Activity Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Activity Record Count</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Telephone**

The Telephone query subject provides information on the contact telephone information of the constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Phone Ind</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active Phone Ind Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Phone Ind</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Phone Ind Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone Unlisted Ind</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone Unlisted Ind Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Phone Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone Number Combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Element</td>
<td>Advance</td>
<td>Banner</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>Phone Status Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone International Access</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Country Code</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Country Code Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Area Code</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Extension</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Address Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Address Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Address Sequence Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Attribute</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Attribute Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Attribute2</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Attribute2 Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Text Message</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Text Message Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Comment</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Sequence Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Start Date Partial</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Phone Start Stop Partial</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Telephone - Current

The Telephone - Current query subject provides current contact phone information of a constituent.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Phone Number Combined</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Status</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Status Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone International Access</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Country Code</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Country Code Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Area Code</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Number</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Extension</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Address Type</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Address Type Description</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Address Sequence Number</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Attribute</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Attribute Description</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Current Phone Attribute2</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Current Phone Attribute2 Description</td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>
Internal Keys

The Internal Keys query subject contains IDs and the unique keys that can be used for complex queries required for Report Studio reports.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entity UID</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Advance ID</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Banner PIDM</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Prospect Key</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Report Default Selections

The data elements in the Report Default Selections filter the defines the default indicators.

The following table indicates which product line the data element belongs to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Positive Indicator</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Default Negative Indicator</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
**Institutional Values**

The Institutional Values query subject defines a default set of information to be used by your institution as basic information to display on all reports that use the SGHE Template delivered with the product. This includes contact information for assistance with reporting. You should define these default values in the `REPORT HELP TEXT` and `RELEASE INFORMATION` Parameter Maps.

The following table indicates which product line the data elements belong to.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Advance</th>
<th>Banner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Help Text</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
8 Third Party Reporting Tools (Banner ODS and Banner EDW)

A critical factor in determining the success of a reporting solution is the existence of a well defined and useful meta data layer. The meta data layer enables you to define relationships between objects in the database. It also enables additional filtering or formatting that can be useful to you when creating reports.

The Cognos Business Intelligence meta data layer is delivered as part of the warehouse. Relationships between the reporting views in the Banner ODS are included in these meta data layers for the supported reporting tools. Relationships between the dimension and fact tables in the Banner Enterprise Data Warehouse (Banner EDW) are included in these meta data layers.

The meta data layer provides the joins used by the database to connect the views or database tables so that you do not need to define those relationships when creating queries or reports using the reporting tools. You can use any reporting tool with the Banner Performance Reporting & Analytics products; however, you gain added value from using the Cognos and Discoverer meta data layers created and delivered with the products.

The warehouse reporting meta data defines the database column definitions and how to aggregate measures. It also provides a presentation view of the data to facilitate reporting.

In Cognos Business Intelligence, the reporting meta data is defined using the Cognos Business Intelligence Framework Manager (FM) to create FM models.

Cognos Business Intelligence

The Cognos Business Intelligence (BI) meta data layer is delivered as part of the Banner ODS and the data warehouse. The Cognos BI meta data layer includes the following layers:

- Database view
- Business view
- Presentation view
Framework Manager models

Databases are typically designed to store data captured through business processes. The stored data is not easily accessible for reporting and analysis to make enterprise decisions in business terms. Because of this, data requires metadata, the ‘data about data’, so that it can be effectively retrieved for analysis and reporting. The Cognos Framework Manager (FM) tool allows you to redefine the data in the database to answer business questions.

Cognos is designed to deliver centralized metadata via the FM model. The model provides a common definition of data in business terms that add value across the organization. The database is redefined so that you can publish metadata in a package and make it available through the Cognos Connection to the Cognos BI reporting tools Report Studio, Query Studio, and Analysis Studio to answer business questions.

The Framework Manager model presents the data using business terms and definitions. This enables you to use, build, and modify your own reports and enables consistent understanding and use of data and metrics across your institution. The logical relationships between data are defined within the model to enable complete data integration so that you spend less time gathering and organizing data.

For more information about data modeling, see the “Framework Manager User Guide” or “Metric Designer User Guide”.

Metadata layers

Cognos Framework Manager provides the ability to layer metadata as a means to insulate end users from changes made to the underlying data sources and the defined data relationships within the database. When changes to an existing model are required, Framework Manager can identify the impact to existing reports. This enables your institution to manage model changes without having to rewrite reports.

The delivered FM models use two layers to manage the metadata content: the database view and the business view. A third layer, the presentation layer, is used to publish the data in logical groupings.

Database view metadata layer

The database view metadata layer is the layer into which Framework Manager imports all database objects.

There is very little difference between the database view and the database itself. The only differences are the following:

- Object names for columns that are eventually published from subsequent layers include a business name using mixed-case nomenclature and no underscores.
• Some calculated columns make commonly used functions more readily available. They generate a unique key for specific fact tables, and provide the flexibility to configure institution-specific descriptions for certain concepts using parameter maps.

**Business view metadata layer**

The business view metadata layer organizes content around a specific business process or processes. The business view layer references objects from the database view and relationships among them are defined to support the associated business process.

The content defined within the business view is as follows:

• The warehouse business concepts define the relationships between the fact and dimension tables. These joins define the SQL generated behind the scenes by the various Cognos BI Reporting Tools.

• Determinants are defined for the various dimensions to ensure that the proper cardinality is preserved with multi-fact queries that have a conformed, or shared, dimension.

• Role-based, or ‘alias’, query subjects are defined for those objects that serve multiple business purposes. An example of one such object would be ‘Application Date’ which is a copy of the ‘Calendar Date’ query subject. These role-based query subjects allow an object to be utilized multiple times within the same query for different purposes.

**Presentation view metadata layer**

The presentation view metadata layer is the layer in which information is reorganized into useful logical groups of data that you can use together for reporting. The query subjects in the presentation layer include data elements and folders of data elements that present the data in an intuitive fashion so it is easy for you to locate desired data for any report.

The following standards were applied when creating the presentation layer:

• Related data or query items are grouped in the same query subject.

• Subsets of data that are typically used together are organized into folders.

• Commonly used filters are defined to enhance functionality. Examples of delivered filters include Student Level Undergraduate, Student Level Graduate, and Student Level Professional.

• Commonly used calculations have been added to make reporting easier.

• Additional range and aging concepts have been added that work in conjunction with parameter maps. Each has an accompanying ‘order’ concept to ensure they appear in proper order when you use them.
From the presentation layer you can publish a complete package of all the data in that presentation view and or a number of smaller packages of information that target specific types of analysis and users. These packages allow you to create and use dashboards, run reports, build ad hoc reports, and analyze trends without the need to sift through large amounts of unneeded information.

**Cognos and BPRA Meta Data Integration**

Banner ODS includes Cognos Framework Manager (FM) models and packages for the ODS Reporting Views organized in groupings called business concepts. Banner EDW includes Cognos Framework Manager models and packages, and Transformer cubes.

The Performance products - Banner Recruiting and Admissions Performance, Banner Student Retention Performance, and Advancement Analytics for Cognos - include Cognos Framework Manager models and packages and Transformer cubes. The products also include a variety of reports, performance charts, dashboards, and scorecard samples and the supporting Metric Studio/Metric Manager content using the Cognos BI tools.

The layers of Cognos content relate to the underlying Banner ODS and Banner EDW data structures that include the Banner ODS reporting views and the Banner EDW fact and dimension tables. The bulk of the data dictionary that describes these data structures is defined as BPRA Meta Data that is stored in the “IA-Admin Meta Data”, (IAMD) and is delivered with each BPRA product.

The BPRA Meta Data includes column level “business definitions” that describe the data and is stored for each target column along with its source system, table, and column. Another other key part of the BPRA Meta Data is the mapping from one layer to the next. For a given Banner EDW column, which Banner ODS column it comes from, and in turn, which Banner column that ODS column is sourced from. (This mapping information is hereafter referred to as “lineage”.)

To provide a meaningful relationship between the BPRA Meta Data information and the Cognos reporting tools, the BPRA Meta Data is integrated with the Cognos tools. The Meta Data business definition and lineage information are delivered in the FM models and packages and displayed in the Cognos reporting tools (Query Studio, Report Studio, and Analysis Studio). Within each query item in the FM models, the Description field includes the business definition and lineage, while the ScreenTip field includes the EDW source column name.

**View BPRA Meta Data in Cognos**

To view the business definition and lineage for a query item, use the arrows at the bottom of the navigation window to open the information for the selected query item. See examples of BPRA Meta Data displayed in Query Studio and Report Studio as illustrated in the following figures.
Figure 18: View BPRA Meta Data in Query Studio
Figure 19: View BPRA Meta Data in Report Studio

View BPRA Meta Data details

If you are using Cognos 8.4 or higher, you can also view more detailed information in both Query Studio and Report Studio. Right-click a query item and select the Lineage option to view the Database and Technical information displayed in Query Studio and Report Studio as illustrated in the following figures.

Figure 20: View Database and Technical BPRA Meta Data in Query Studio
Figure 21: View Database and Technical BPRA Meta Data in Report Studio
The BPRA Meta Data business definition and lineage are stored in the FM model query item Description as illustrated in the following picture.

![Figure 22: BPRA Meta Data Information in Framework Manager](image)

The Banner EDW source table and column are also stored in the FM model query item Screen Tip, which will be displayed when you move the cursor over a query item in either the Cognos Query Studio or Report Studio reporting tool.

**Packages**

A package is a subset of data designed to support a specific set of reporting needs. Packages may contain content designed within Framework Manager or cubes generated using the Cognos Transformer tool. They are the means by which Query Studio, Report Studio, and Analysis Studio are able to access data using the Cognos BI reporting tools. They are essentially the data sources used for reporting and analysis.

Within the various Cognos studios you can report against only one package at a time. It is important to use the correct package for the intended business purpose. When creating a new report, you are prompted to select which package to use.
Filters

Filtering capabilities simplify and enhance reporting. When using the reporting tool metadata to write a report, you can apply a filter on any columns of the report so that specific report will retrieve a subset of the data in the database.

There are multiple ways to add filters to the metadata layer. One way is to add a query item to the metadata that will filter a subset of data that is used on a regular basis. This type of filter is referred to as a stand-alone or pre-defined filter. A stand-alone filter can be included in multiple data model packages. For example, the time filter “Year of Giving” is included in several packages. The filter definition is the same across all packages that include it. When you place a stand-alone filter on a report, the report will select only the data defined with that filter.

Another way to define a filter is to apply it to an entire set of data, like a query subject in the Cognos FM Model. When there is a need to define a a subset of data by one of the attributes, a role based or alias query subject is defined. This type of filter would have the specific restriction embedded in the filter query item.

The Banner ODS and the data warehouse include both types of filters. Your institution can define additional filters of either type within the Framework Manager tool to meet your specific reporting requirements.

**Banner EDW Filters**

<table>
<thead>
<tr>
<th>Filter Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedded</td>
<td>Secondary School</td>
</tr>
<tr>
<td></td>
<td>Post Secondary School</td>
</tr>
<tr>
<td>Stand-alone</td>
<td>Student Undergraduate Level</td>
</tr>
<tr>
<td></td>
<td>Student Level Graduate</td>
</tr>
<tr>
<td></td>
<td>Student Level Professional</td>
</tr>
<tr>
<td></td>
<td>Highest Test Score</td>
</tr>
<tr>
<td></td>
<td>Latest Test Score</td>
</tr>
</tbody>
</table>
Functionality

<table>
<thead>
<tr>
<th>Filter</th>
<th>Data Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT Composite Test (filter)</td>
<td>ACT Composite Test</td>
</tr>
<tr>
<td>SAT Combined Test (filter)</td>
<td>SAT Combined Test</td>
</tr>
<tr>
<td>Student Level Undergraduate (filter)</td>
<td>Student Level Undergraduate</td>
</tr>
<tr>
<td>Student Level Graduate (filter)</td>
<td>Student Level Graduate</td>
</tr>
<tr>
<td>Student Level Professional (filter)</td>
<td>Student Level Professional</td>
</tr>
</tbody>
</table>

Preselected Records of Interest

For some business areas, it is useful to represent certain records of interest along with the entirety of records. Concepts such as ‘First Contact’, ‘Latest Contact’, and ‘Highest Test Score’ are typically of interest. It, therefore, is desirable to make such items easily available within the presentation view. To support this functionality, such concepts have been included in various query subjects where deemed to be useful.

An example of this can be found within the Contact query subject. Information relative to all contacts is included as well as content associated with the first contact and the latest contact.

Indicators

Some query subjects within the presentation layer include indicator fields. Dependent upon the database source for a given data element, the indicator is translated to a meaningful ‘Yes’ or ‘No’ representation. For those data elements drawn from dimension tables within the warehouse, indicator fields are translated via cleansing during ETL processing.

For those data elements drawn from fact tables, however, the indicator descriptions remain as either a 1 or 0. Two Parameter Map parameters, defined within the Administrative User Interface, define the ‘Yes’ and ‘No’ description values for indicators based on fact table data. Refer to the sections Negative Indicators (0) parameter map and Positive Indicators (1) parameter map for more information about them.
Derived Concepts

In some business cases it is important to associate certain values together for reporting purposes that may not otherwise have an association in the database. To address this need derived concepts have been created that utilize parameter maps to define how values translate to the new data element.

For example, the Traditional Student Ind is based on the prospective student being under a specified age or over the specified age defined within a parameter map.

Predefined Value Concepts

There are specific data elements that are commonly used but may have different codes from client to client. For these situations, you should have a predefined element that could be driven off a parameter map to provide a standardized structure within the presentation layer. Elements such as this have been added to the presentation layer.

An example of this is the Test query subject. Analysis of undergraduate applicants typically centers on test scores such as the ACT Composite and the SAT Combined. The codes within the database, however, may vary from institution to institution. A parameter has been defined to allow these codes to be translated so that they are standardized and meaningful.

Distinct Counts

One measure often used for analysis within higher education is unduplicated headcount. This concept, as well as other unduplicated counts, can be a bit complex to create in a report because one needs to have a true understanding of what the uniqueness of a record truly is. Various counts have been added throughout the presentation layer to eliminate any such confusion and to ensure a “single version of the truth” for these measures.

Headcount is a primary example of this concept which is included in the presentation layer. An additional example would be counts based upon the set of financial aid steps a person may have completed within the Financial Aid Status query subject. A distinct count is calculated for each indicator based upon whether they have a “Yes” value.

Special Calculations

Special calculations are frequently required based upon various measures already represented in the presentation layer. Some of these useful calculations have been included in their own folders seen at the bottom of available components in the presentation layer. Examples of such calculations would be the various calculations provided with the Analyze Enrollment Funnel business concept which return rates, yields, and percentages for associated funnel history data.
**Internal Keys**

Unique identifiers for people or records may be required in certain situations within Cognos when performing more complex analysis. For this reason, an additional query subject has been included within each business concept to house these unique identifiers. These values are useful when joining queries within Report Studio and when identifying distinct headcounts or applications counts within a cube model.

**Cognos Security Integration**

**Cognos Authorization and fine-grained access**

In a security context, authorization refers to permissions or defining “who can see what.” Cognos provides a complete infrastructure to define rules regarding “object” permissions (the ability to see folders or reports) as well as “data” permissions (which rows or columns of data individual users or groups are permitted to see). Cognos picks up its list of users and groups from the authentication providers defined at a given site, and maintains its own list of data permissions internally.

Data permissions can also be defined within the Banner Performance Reporting and Analytics (BPRA) database using the Fine-Grained Access (FGA) facility which allows for centralized maintenance of those rules for any non-Cognos based access as well. A typical Cognos configuration uses a single database connection (using a single Oracle username and password) for the BPRA database which does not allow for use of the BPRA FGA feature. However, it is also possible to configure Cognos to use multiple database connections, which then use the BPRA Fine-Grained Access rules.

**Cognos and BPRA authorization**

Authorization enables you to create logins so that each user can access the same data source while still allowing them to use the fine-grained access rules already defined for them in the Administrative User Interface. Authorization could be used to set up more general Oracle users whose associated fine-grained access rules might apply to a type of report writer instead of a single person. Multiple Cognos users or roles could then be set up to secure the actual Cognos content (reports, dashboards, etc.), and then matched with data source signons which would provide the means to secure the actual data contained in the database.

For existing users, you would remove or disable the extra users so that as each user performs a query, their fine-grained access rules would be used. This should be done because their signon would be using their actual Oracle username to access the database.

1. Open Cognos Connection.
2. Click **Launch**.
3. Click **Cognos Administration**.

4. Click the **Configuration** tab.

   The named data source connections display. The connections provide detailed connectivity information as to where to retrieve data.

5. Click one of the data sources to view the possible servers on which source data may reside.

   In the screen samples, we have chosen the warehouse data source. By default, the defined server connection has the same name as the data source connection. (See the navigation bread crumbs at the top of the screen.)

6. Navigate to the next layer of detail to define what users connect to this data source.

   Again, as with the server connection name, the user connection name is inherited by the data source connection unless otherwise specified.

7. Click the **Set Properties** icon in the Actions column.

8. Click the **Signon** tab.
9. Click the **Edit the signon** link to view or change the Oracle username and password for this connection.

In this case you’ll see the warehouse data source connection defined with a username of EDWMGR, which would have access to all data.

Let’s say, for example, that your institution has two Cognos users: John Doe and Bob Smith. You would like to make use of the Oracle fine-grained access (FGA) rules that are already defined for these two users in your Administrative User Interface. Accomplishing this is a simple matter of defining two different logins to the warehouse data source that is proprietary to each user.

10. To create a new connection for the warehouse data source, return to the user connection screen within the Cognos Administration.

11. Click the **New Signon** icon.

12. Create a signon for John Doe and call the signon “JDOE”.

13. Click **Next**.
You are prompted for the Oracle username and password that will be used for this signon.

14. Enter the information, then click **Next**.

You are prompted for which Cognos users can access this signon.

15. Add JDOE to the list of users able to use this signon.

16. Click **OK**.

17. Click **Finish**.

You’ll see that now there is a second signon for the warehouse data source.

18. Repeat the above steps for Bob Smith.

You will view three distinct signons for the warehouse.
At this point, if you logged in as John Doe, and ran a query within Cognos, you would be prompted for what signon to use. (John or Bob) This would not be an ideal situation, because you would be prompted for which connection to use each time you accessed Cognos, and the warehouse signon is not FGA secured. You, therefore, would want to remove John or Bob’s access to the warehouse signon, delete the signon, or disable it.

How to view or change what users have access to a signon was detailed previously. Deleting a signon is a straight forward activity. You select a signon and delete it. Disabling a signon is most likely the preferred method so that the overall warehouse signon is retained, but simply not active. This is a simple matter of checking the **Disable this entry** check box within the general properties of the signon.

Once this signon is disabled, the signons John and Bob will be the only two active signons. Therefore, if John Doe now signs into Cognos and performs a query, he will no longer be prompted to choose a signon (because he does not have permission to use the Bob signon) and his FGA rules would be enforced on his query because his signon is using his actual Oracle username of JDOE to access the database. Similarly, if Bob Smith signs into Cognos and performs a query, his FGA rules will be enforced because his signon is using his Oracle username of BSMITH.

To put this into more practical application, one might set up more general Oracle users within the data warehouse whose associated FGA rules might apply more broadly to a
type of report writer as opposed to a single person. Multiple Cognos users or roles could then be set up to secure the actual Cognos content (reports, dashboards, etc.), and matched with data source signons which would provide the means to secure the actual data contained in the database.

For additional detailed information on Cognos security, see the *Cognos Administration and Security Guide*.

**Luminis authentication (single sign-on)**

Authentication is the process of logging into a secured application. This section describes integrating Authentication considerations when using Cognos BI with BPRA solutions using the Luminis portal.

Usually Luminis and Cognos are configured to require users to enter a username and password to access their content. And usually, these credentials are stored and maintained separately. This requires users to log in once for Luminis and then again for Cognos every time you use Cognos within the Luminis Portal. However, this dual log-in problem can be avoided by configuring Luminis to perform Single Signon (SSO) into Cognos. Luminis provides various techniques to accomplish SSO with external applications, but the simplest is their Generic Connector Framework (GCF). (This is documented extensively in the Luminis SDK / Generic Connector Framework Implementation Guide), but basically what happens after setting up a GCF is this:

- The user sees a Cognos BI link in a Luminis page and clicks it.
- The first time a user clicks a Cognos link within Luminis they are prompted for their Cognos username/password.
- Luminis passes that through to Cognos. If it authenticates, Luminis redirects that link to the appropriate Cognos page.
- Luminis also stores that Cognos username/password, so that for future attempts, the user doesn’t have to enter anything. Luminis automatically passes through the username/password and authenticates the user for them.

An important consideration regarding Cognos security is that, unlike other applications, Cognos does not have its own security infrastructure. That is, it does not have its own “user store” (where it stores usernames/passwords). Instead, it interfaces with standard security providers (such as LDAP, NTLM, Windows Active Directory, etc.) so that users can re-use existing security setups without having to duplicate them. This is fully documented in the Cognos Setup/Install documentation, as well as various other Cognos extensibility documents. So this provides an opportunity to re-use an existing user store, so that clients only have to enter/remember a single username/password.

Combining reusing an existing user store for Cognos authentication with the Luminis GCF construct simplifies SSO because users can re-use existing usernames/passwords and (after an initial Luminis session) not have to re-enter credentials to access Cognos from
Luminis. The only exception to this is when their password changes. They will have to re-enter it in Luminis once.

Luminis also supports different user stores as well. By default, Luminis uses its default LDAP implementation (the SunOne Directory server) as the location where it stores security credentials, but it can also be configured to use other external systems (such as Windows Domain, or other LDAP implementations). This flexibility regarding authentication storage between Luminis and Cognos provides the client the ability to centralize their authentication processes, which can further help with the SSO process.

Determining where to store security credentials is a client-specific choice, but for SSO illustration purposes, this documentation describes how to implement that using the default Luminis LDAP implementation. Some of the concepts are applicable to other configurations as well and are noted.

**Setting up Luminis single sign-on to Cognos using Luminis LDAP authentication**

These steps were written for Cognos Business Intelligence 8.3 and Luminis 4.0.2. Later releases may follow the same steps. Refer to the release-specific versions of each product’s associated documentation for more details.

All sample configuration files referenced can be found in the `luminis_sso` folder, under the `ods\reports\cognos_8` folder in the ODS source tree.
In Cognos:

1. Configure an LDAP authentication namespace in Cognos to point to the Luminis LDAP instance. The properties page for the new namespace should look similar to the screen capture:

![Namespace Properties](image)

The majority of the default settings for an LDAP namespace can be retained with the following exceptions (as noted in the screen above, either with a red asterisk or a yellow circle icon):

**Name** | **Value**
--- | ---
Namespace ID | A unique name for the namespace - can be whatever you choose
Host and port | Needs to point to the Luminis machine and LDAP listener port
Base Distinguished Name | `Ou=People, o=<machine>,o=cp`
User lookup | `uid=${userID}`
Use external identity? | True
Under folder mappings (advanced):

<table>
<thead>
<tr>
<th>Property Names</th>
<th>Property Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object Class</td>
<td>organizationalunit, organization</td>
</tr>
<tr>
<td>Name</td>
<td>ou,o</td>
</tr>
</tbody>
</table>

2. Once configured, disable the Anonymous Login property in the default Cognos namespace. (Your Cognos content now requires login.)

3. Place a copy of the Luminis pickup.html file in the document root location of the Cognos web/application server, where it can be accessed from the Luminis machine.

In Luminis:

1. Place a copy of the cognos.xml, cognos.properties and cognos.config files from the distribution in the GCF connector configuration folder, specifically:

   Luminis IV
   
   $CP_ROOT/webapps/cpipconnector/WEB-INF/config

   Luminis III
   
   $CP_ROOT/products/sso(or gcf)/config

2. Edit the cognos.properties file and update the values of the following fields to represent your Cognos installation:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cognos.externalSystem URL</td>
<td>Point to the main URL for your Cognos environment.</td>
</tr>
<tr>
<td>cognos.pickup.remoteurl</td>
<td>Point to the copy of the file you placed in the Cognos environment in step 3 of the previous section.</td>
</tr>
</tbody>
</table>
3. Edit the `cognos.properties` file only if Cognos and Luminis are not authenticating to the same LDAP to allow the credentials to be entered the first time a person selects the link:

```
cognos.cpipconnector.getconfig.createonlogin = 0
cognos.cpipconnector.getconfig.usePDSCredentials = false
```

4. Edit the `cognos.config` file and make sure the property:

```
es.cognos.configURL
```
points to your Luminis installation.

5. Edit the `cpipconnector.properties` file and append `cognos.properties` to the end of the `property.files` line toward the top of the file.

6. Perform the following configuration. Import the configuration parameters within `cognos.config` into the Luminis configuration:

```
configman -i cognos.config
```

7. Alter the `es.systems` parameter to include the cognos connector:

```
configman -g es.systems This gets the current list of connectors
configman -s es.systems "<current list> cognos"
```

8. Restart Luminis to reload the cache with the new configuration values.

9. Build a channel using a portal admin account and the following URL:

```
http://<Site Luminis Server>/cp/ip/
login?sys=cognos&url=${urlPass}
```

```
or
refer to the next section “Cognos channels in Luminis” on page 8-22.
```

10. Once these changes have been made, restart Luminis, or at least the cpipconnector service.

This explains how to configure Luminis and Cognos to share a username/password using Luminis’s LDAP implementation. However, both Luminis and Cognos can be configured to use other authentication sources, even potentially different ones. When they are configured to use the same source, then the password information can be maintained in a single place. If they point to different sources, Luminis can store the username/password information and then it can be configured to prompt the user to re-enter the password whenever it changes.
For more information on configuring a Luminis GCF implementation, refer to the Luminis SDK / Generic Connector Framework Implementation Guide.

You can also find more information about configuring Cognos security in the Cognos Configuration and Installation Guide.

**Cognos channels in Luminis**

Once SSO has been established, you can create links to Cognos within Luminis. Typically, this is accomplished using channels within the Luminis tabs. This process is documented in the “Luminis SDK/Channel Developer Guide”. The end result is to be able to display Cognos content within Luminis, such as in the example screen below:

![Cognos channels in Luminis example](image)

The simplest way to set up the links is using CPIP Inline Frames, which can then be defined for an entire tab, or as a column (portion) of a specific tab. These tabs can then be associated with a Luminis fragment definition, which can then be rolled out to specific Luminis users, or audiences (based on Luminis role). The key is to define which Cognos content should be displayed within a channel. That is done by capturing the actual URL used to access the Cognos content, and defining that in the cognos.xml file as a variable, which can then be referenced in the Luminis channel definition URL.

For example, consider the following URL definition that is delivered in the cognos.xml file delivered (in the luminis_sso folder in the data store source tree):

```xml
<SET a:symbol="urlPass" a:value="${properties.externalSystemURL}/${properties.cognosSystemID}/"/>
```
This defines a CPIP variable called urlPass which points to the base Cognos URL for Cognos Connection viewer.

**Note**

Notice the use of the es.externalSystemURL and es.cognosSystemID variables, which are defined in the properties file for the cognos CPIP definition. This convention allows you to parameterize commonly used portions of URL definitions.

Also notice the conversion of all ampersand characters to the URL-encoding equivalent. This is required for proper parsing of the URL in the XML syntax.

This variable “urlPass” can now be used when referencing Cognos via a Luminis channel definition, as per:

```
http://<Site Luminis Server>/cp/ip/login?sys=cognos&url=${urlPass}
```

which points to the Cognos Connection viewer (based on the definition of urlPass). By defining CPIP variables in the XML file to point to the desired Cognos reports/pages you wish to expose in Luminis, you can then create Luminis channels using those variables.

A series of example Cognos URLs are delivered as variables in the cognos.xml file (urlPass, cogURL1, cogURL2, cogDash1 - cogDash4). These demonstrate the ability to define various Cognos content (reports) that can be viewed specifically using a Luminis channel, and these can be modified/updated/deleted as needed. Note that these URL values need to be URL-encoded when they are stored in the XML file for proper parsing by Luminis.

**Setting up Cognos channels in Luminis**

Now we will use all the pieces of what we have defined so far to create a basic Luminis channel to display the standard Cognos Connection viewer application. To start, assume a
new user is defined in Luminis (who has Luminis Administrative privileges, in order to administer the portal and content layout).

1. Click the **Portal Admin** link to define the channel.

2. Select **Publish a new channel**.
3. Select **Inline Frame** as the Channel type.
4. Click **Next**

5. Enter the title, names, and description information for the channel.

6. Click **Next**.

7. Enter the URL for this channel, which is the CPIP definition described earlier:

   http://<Site Luminis Server>/cp/ip/login?sys=cognos&url=${urlPass}

   Include the CPIP variable “urlPass” which points to the desired Cognos content.
8. Click **Next**.

9. Click **Next** to accept the default values for Channel Controls.

10. Select a category (or categories) for the channel to be associated with.

11. Click **Next**.

   (The category is used to locate channels when searching for them later)

12. Click **Next** to accept the default values for Audience.

13. Click **Finished** to publish this channel.

14. Click the **Back to Home Tab** link in the upper left-hand side of the screen to return to the main Luminis page.
The next step is to associate this channel with a tab on the portal.

15. Click the Content Layout link

16. Click the Add Tab button to create a new tab.
17. Enter the name for this Tab as **Cognos Connection**.

18. Click **Submit**.

19. Select the new Cognos Connection tab.

20. Click the **New Channel** button:
21. Select the channel by first entering the category (or Select All)

22. Click Go.

23. Select the channel from the listbox.

24. Click Add Channel:
25. Click the **Back to Home Tab** link to return to the main Luminis page,

26. Click the new **Cognos Connection** tab to see the new channel.

You will see the authenticated user in both Luminis and Cognos, with the name coming from the common user store (Luminis LDAP):

Following the same basic process, any Cognos pages can be deployed within Luminis, such as in the example screen below:
This screen is using the Cognos URL for the “Director of Financial Aid Dashboard”, which is defined in the cognos.xml file as:

```xml
<SET a:symbol="cogURL2" a:value="${properties.externalSystemURL}/ ${properties.cognosSystemID}/cgi-bin/cognos.cgi?b_action=dashboard&amp;pathinfo=/cm&amp;frag-header=true&amp;path=storeID(%22i04AD276242AF47B680223538F724B06C%22)&amp;ui=h1h3h4" />
```

so that the channel definition of this is then:

```
http://<Site Luminis Server>/cp/ip/login?sys=cognos&amp;url=${cogURL2}
```

In the Cognos URL definition, note the use of the `path=storeID` parameter to refer to the Cognos object (the dashboard report) to display. This ID number is unique within a given Cognos installation so it can be advisable to use the actual search path for the object instead of the object ID when referencing it in the URL. The search path for a page/object is found in the Properties dialog, which is available in the Cognos Connection navigator interface.
Further Cognos UI customization

While the Cognos applications (such as Cognos Connection viewer or the Studio applications) can be embedded within a Luminis page using the channel concepts discussed, some of the Cognos UI features may be unnecessary and distract from the overall usability of the page. To address this issue, Cognos provides various URL-based parameters which can control some aspects of the UI for these applications. This section describes those parameters and describes a few examples of setting these up.

Consider again the Cognos URL used to launch the Cognos Connection viewer previously, that was defined in the cognos.xml file:

```xml
<SET a:symbol="urlPass" a:value="${properties.externalSystemURL}/${properties.cognosSystemID}/cgi-bin/cognos.cgi?b_action=xts.run&m=portal/cc.xts&amp;gohome=&amp;ui=" />
```

**Note**

Consider the use of the trailing “ui=” parameter in the URL above. Cognos supports using URL parameters to customize the appearance and functionality of the web pages displayed by the Cognos Connection/Viewer interface. The “ui” parameter can take different values to display (or hide) various parts of the page. For example, ui=h1h2h3h4 will display all 4 header bars on a Cognos Connection page, whereas “ui=h1” would only display the first header bar. Similarly, the “frag-header” parameter (=true/false) can be used to customize the appearance of Cognos dashboard reports displayed in Cognos connection. Following the technique described here, these values would get added to the URLs defined in the cognos.xml file, so they could then be referenced in Channel definitions.

For more information on using these parameters, see information about customizing the functionality of Cognos in the Cognos Administration and Security Guide.

Putting this into action, you can modify the Cognos Connection URL used earlier (defined in the cognos.xml as urlPass) as:

```xml
<SET a:symbol="urlPass" a:value="${properties.externalSystemURL}/${properties.cognosSystemID}/cgi-bin/cognos.cgi?b_action=xts.run&amp;m=portal/cc.xts&amp;gohome=&amp;ui=h1h3h4" />
```
Note

Luminis can be configured to cache certain internal configuration data (such as channel definitions) so you may need to restart Luminis in order for channel definition changes to take effect.

For additional details on defining Luminis channels and UI elements, see the Luminis SDK/Channel Development Guide.

**Transaction history tracking process**

In Framework Manager, you can view and play back actions performed on the project. An action log is an XML file that contains a set of transactions. Each transaction has a sequence number and one or more actions. The action log file is stored in the project folder.

For example, you make changes to a project in a test environment. When it is time to move the project to production, you can use log files to play back every action, or series of actions, that you performed in the test environment to create an identical project in the production environment. Similarly, as an alternative to branching and merging projects one might want to track a series of customizations applied to a project to enable the identical customizations to be applied to an upgraded version of that model.

There are two action log files. The log.xml file contains all the transactions that have been run and saved in the project. This file is created the first time you save the project and exists until you delete the project. The temporary file contains transactions that have been
run during the current session, but not saved. The temporary file is deleted when you close
the project.

>Note
Previously you had the option to use the Cognos Branch Merge
functionality to retain your customizations. It is recommended using the
Cognos Transaction History Tracking functionality instead to maintain
institution-specific changes and upgrade your Framework Manager
model.

View and save transaction history

You can view the transaction history in an action log file and then save it as a script.

1. From the Project menu, click View Transaction History.

   **Tip**
   To make the dialog box larger, double-click the caption. Double-click
   again to restore the dialog box to its original size.

2. Click the transaction numbers that you want.

   **Tip**
   To view the details of a transaction, click the plus sign (+) next to a
   transaction number.

3. Click Save as Script.

4. Type a name for the file.

5. Click Save. Do not save the file in the logs folder.

6. Click Close.

Play back transactions from a log file

You can choose to play back a specific transaction or a combination of transactions in a
project or segment action log file.

When you play back transactions from a log file, the script player applies the commands in
the log file to the contents of the existing model. Errors appear if objects created by the log
file already exist in the model.

After the script in a log file has run successfully, a backup of the original project is created
in the parent directory of the project. If you want to undo the transactions performed in the
script, you can use the backup to restore the project to its original state.
You must disable or clear any commands that will conflict with the contents of the model. You can then run the script again.

1. From the Project menu, click Run Script.
2. Select the script you want, and click Open.
3. If you want to view the details of a transaction, click the transaction.
4. Set the starting or stop point that you want.
   • To set the starting point for running the script, select the script and then click Set the starting point. You can do this at any time to skip an instruction or run instructions that have already been executed.
   • To set a stop point for the script, select the script and then click Set the stop point.
   You can stop the script to make a manual fix and then start it again.
   • To remove the stop point, click Remove the stop point.
5. Using the toolbar buttons, choose the run action that you want.

<table>
<thead>
<tr>
<th>Buttons</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Run Script" /></td>
<td>Runs the script. After an error is encountered, clicking this button attempts to re-execute the failed instruction.</td>
</tr>
<tr>
<td><img src="image" alt="Skip Transaction" /></td>
<td>Skips to the next transaction and runs the script to the end</td>
</tr>
<tr>
<td><img src="image" alt="Runs Selected Transaction" /></td>
<td>Runs the selected transaction only</td>
</tr>
<tr>
<td><img src="image" alt="Skip Transaction and Stop" /></td>
<td>Skips to the next transaction and stops, but does not run any transactions</td>
</tr>
</tbody>
</table>

6. The project window is updated as the script is run.
7. Fix any errors encountered by the script either by retargeting objects or modifying the temporary project as required.
8. When the script has completed, click Accept to accept the changes or click Revert to undo the changes.

**Note**
After you click Accept or Revert, you cannot use Undo and Redo for the current session.
Brand Cognos Connection page

You can brand the Cognos Connection page to meet your institution’s needs by customizing the banner, display text fonts, gradient, display color, and other format aspects.

To brand the Cognos Connection, perform the following steps.

1. Go to the \[install root\]\cognos\c8\webcontent\skins folder in your Cognos installation server.

2. Modify the following style sheets and XML files to reflect the desired display settings:
   - fonts.css
   - default.css
   - banner.css
   - system.xml

   For detailed instructions on how to modify these files, refer to the Customizing the IBM Cognos 8 UI document provided with Cognos.

3. You can also replace the images in the following folders and update the style sheets and XML files (see step 2) accordingly:
   - \[install root\]\cognos\c8\webcontent\skins\sungardhe\branding
   - \[install root\]\cognos\c8\webcontent\skins\sungardhe\shared\images

Customize the welcome splash screen

You can customize the Welcome splash screen to reflect the desired look and feel.

To modify the default splash screen, perform the following steps.

1. Go to the \[install root\]\cognos\c8\webcontent\skins folder in your Cognos installation server.

2. Replace the following image files with your branded files:
   - cognos_product_label.gif
   - portal_splash.gif

   For additional information on customizing the splash screen, refer to the Administration and Security Guide document delivered with your Cognos installation.
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 Banner Operational Data Store (Banner ODS) is comprised of over 300 reporting views containing data across eight subject areas applicable to higher education; Accounts Receivable, Advancement, Common, Finance, Financial Aid, Human Resources, Student, and Travel and Expense.

Because of the size and scope of the Banner ODS data model, reporting views are grouped into logical “business concepts” to better illustrate the various business uses or reporting opportunities within the Banner ODS. These data models depict the reporting views contained in each business concept and how the reporting views, and the data within these reporting views, is related to each other.

The data models (Entity Relationship Diagrams or ERDs) in this chapter incorporate most of the reporting views available in the Banner ODS, and illustrate business concepts within and across all Banner ODS subject areas. However, this is not an inclusive representation as additional business concepts could be conceived and supported by the Banner ODS. There may also be alternative associations between the reporting views within any given data model depending on the type of report you are running.

**Entity Relationship Diagrams (ERD)**

The most widely used method for representing a data model is the Entity Relationship Diagram (ERD). This chapter uses ERDs to represent the logical relationships between the reporting views within a given Banner ODS business concept. Each ERD represents a business concept. The entities within each ERD correspond to the reporting views associated with that business concept. They don’t include all the columns in the reporting views. They only display the primary key columns.

The following legend explains the relationships used in the business concept ERDs.
ERD Relationship Legend

The legend contains three categories:

-Identifying Relationships
-Optional Non-Identifying Relationships
-Special Relationships

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.

<table>
<thead>
<tr>
<th>Identifying Relationship</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>One to Exactly One</td>
<td>Each Person Detail has exactly one Person.</td>
</tr>
</tbody>
</table>

![Diagram of Identifying Relationship]
<table>
<thead>
<tr>
<th>Identifying Relationship</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>One to Zero or One</strong></td>
<td>Each Finaid Fund has zero or one Award by Fund.</td>
</tr>
<tr>
<td><img src="9-3" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td><strong>One to One or More</strong></td>
<td>Each Pledge Transaction has one or more Pledges.</td>
</tr>
<tr>
<td><img src="9-3" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td><strong>One to Zero, One or More</strong></td>
<td>Each Person has zero, one, or more Students. This makes sense because a Student really represents a student for each academic period.</td>
</tr>
<tr>
<td><img src="9-3" alt="Diagram" /></td>
<td></td>
</tr>
</tbody>
</table>
Optional Non-Identifying Relationship

Non-identifying relationships are represented by a dashed line. A non-identifying relationship is a relationship between two entities in which an instance of the child entity is not identified through its association with a parent entity. This means the child entity is not dependent on the parent entity for its identity and can exist without it. In an optional non-identifying relationship, the attributes that are migrated into the non-key area of the child entity are not required in the child entity. Therefore, nulls are allowed in the foreign key.

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.

<table>
<thead>
<tr>
<th>Special Relationship</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Many to Many</strong></td>
<td>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.</td>
</tr>
</tbody>
</table>

**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
Advancement Prospect
Advancement Rating

ADVANCEMENT_RATING
  - RATING_TYPE
  - RATING
  - ENTITY_UID (FK)

CONSTITUENT_ENTITY
  - ENTITY_UID

ORGANIZATIONAL_CONSTITUENT
  - ENTITY_UID (FK)

CONSTITUENT
  - PERSON_UID.ENTITY_UID (FK)

Constituent Entity can join Organization Entity or Person Detail.

ORGANIZATION_ENTITY
  - ENTITY_UID

ORGANIZATION_ENTITY_ADDRESS
  - ENTITY_UID (FK)
  - ADDRESS_RULE

PERSON_DETAIL
  - PERSON_UID

PERSON_ADDRESS
  - ADDRESS_RULE
  - PERSON_UID (FK)
Campaign Giving History

**CAMPAIGN_GIVING_HISTORY**
- ENTITY_UID (FK)
- CAMPAIGN (FK)
- FISCAL_YEAR

**ANNUAL_GIVING**
- ENTITY_UID (FK)
- FISCAL_YEAR

**CONSTITUENT_ENTITY**
- ENTITY_UID

**ORGANIZATIONAL_CONSTITUENT**
- ENTITY_UID (FK)

**CONSTITUENT**
- PERSON_UID (FK)

Constituent Entity can join Organization Entity or Person Detail.

**ORGANIZATION_ENTITY**
- ENTITY_UID

**PERSON_DETAIL**
- PERSON_UID

**ORGANIZATION_ENTITY_ADDRESS**
- ENTITY_UID (FK)
- ADDRESS_RULE

**PERSON_ADDRESS**
- ADDRESS_RULE
- PERSON_UID (FK)
Designation Giving History

Constituent Entity can join Organization Entity or Person Detail.
Gift

Constituent Entity can join either Organization Entity or Person Detail.

GIFT to Endowment Units via gift number and gift date. Many to Many relationship is possible.
Person Supplemental

Special Activity can be joined to Person Detail by ENTITY_UID. It also has a relationship to Organizational_Consortium by ENTITY_UID.

Internet Address and Internet Address Current can be joined to Person Detail by ENTITY_UID.
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.
Finance

Account Index Audit

For each join from Account_Index, it is joined by Chart_Of_Accounts and Account_Index and where the date on child entity is <= Effective_Date and > Next_Change_Date
Endowment Distribution

Endowment Attributes are joined to Endowment Distribution via the CHART_OF_ACCOUNTS and FUND.

Endowment Distribution joins Transaction History via DOCUMENT, SUBMISSION_NUMBER and the DOCUMENT_TYPE equals 20.

Transaction History has multiple rows for each source financial transaction.

Fund Text is joined to Fund Hierarchy or Endowment Distribution via the FUND.

Endowment Distribution joins to Account Hierarchy via CHART_OF_ACCOUNTS, ACCOUNT_TYPE and when Account Hierarchy ACCOUNT is null for account type hierarchy.
Endowment Units

Fund Text is joined to Fund Hierarchy or Endowment Units or Endowment Summarized Units via the FUND.

Endowment Attributes are joined to Endowment Units or Endowment Summarized Units via the CHART_OF_ACCOUNTS and FUND.
Fixed Asset

INVOICE_ITEM
- INVOICE (FK)
- ITEM

PURCHASE_ORDER_ITEM
- PURCHASE_ORDER (FK)
- ITEM

VENDOR
- VENDOR_UID

FIXED_ASSET_TEXT
- ORIGINATION_TAG_NUMBER (FK)
- SEQUENCE_NUMBER

FIXED_ASSET_ATTRIBUTES
- ORIGINATION_TAG_NUMBER (FK)
- ATTRIBUTE_TABLE
- ATTRIBUTE_TABLE_VALUE

FIXED_ASSET_DEPRECIATED_ITEM
- ORIGINATION_TAG_NUMBER (FK)

FIXED_ASSET_ACCOUNTING_HISTORY
- ORIGINATION_TAG_NUMBER (FK)
- CHANGE_SEQUENCE_NUMBER
- SEQUENCE_NUMBER

FIXED_ASSET_ACCOUNTING_SOURCE
- ORIGINATION_TAG_NUMBER (FK)
- SEQUENCE_NUMBER

FIXED_ASSET_FUNDING_SOURCE
- ORIGINATION_TAG_NUMBER (FK)
- SEQUENCE_NUMBER

ORGANIZATION_HIERARCHY
- CHART_OF_ACCOUNTS
- ORGANIZATION_CODE

LOCATION_HIERARCHY
- CHART_OF_ACCOUNTS
- LOCATION

FIXED_ASSET_ADJUSTMENT
- DOCUMENT
- ACCOUNT_ITEM
- SEQUENCE_NUMBER
- ACCOUNTING_SEQUENCE_NUMBER

DOCUMENT (FK)
- DOCUMENT_TYPE
- SUBMISSION_NUMBER (FK)
- ITEM (FK)
- SEQUENCE_NUMBER (FK)
- SERIAL_NUMBER
- REVERSAL_IND
- LEDGER_IND

Transaction History has multiple rows for each source financial transaction.

Fixed Asset Adjustment joins to Transaction History on DOCUMENT, ACCOUNT_ITEM, and SEQUENCE_NUMBER where DOCUMENT_TYPE equals 60.
General Ledger joins to Transaction History via general ledger keys and where LEDGER_IND equals 'G'.

Transaction History has multiple rows for each source financial transaction.
Grant and Project

**Grant and Project**

**Grant Attributes**
- GRANT_ID (FK)
- ATTRIBUTE_TABLE
- ATTRIBUTE_TABLE_VALUE

**Grant Text**
- GRANT_ID (FK)
- SEQUENCE_NUMBER

**Grant Ledger**
- CHART_OF_ACCOUNTS (FK)
- GRANT_ID (FK)
- GRANT_YEAR
- GRANT_PERIOD
- ACCOUNT (FK)
- PROGRAM (FK)
- ACTIVITY
- LOCATION (FK)
- ORGANIZATION_CODE (FK)

**Fund Attributes**
- CHART_OF_ACCOUNTS (FK)
- FUND (FK)
- ATTRIBUTE_TYPE (FK)
- ATTRIBUTE_VALUE (FK)
- SET_CODE (FK)

**Fund Hierarchy**
- CHART_OF_ACCOUNTS
- FUND

**Proposal**
- PROPOSAL_CODE

**Proposal Text**
- PROPOSAL_CODE (FK)
- SEQUENCE_NUMBER

**Grant View**

**Grant Receivable Account Detail**
- GRANT_ID (FK)
- ACCOUNT TRANSACTION NUMBER

**Grant Applied Payments**
- APPLIED_GRANT_ID (FK)
- PAYMENT TRANSACTION NUMBER (FK)

**Transaction History**
- DOCUMENT (FK)
- DOCUMENT_TYPE
- SUBMISSION_NUMBER (FK)
- ITEM (FK)
- SEQUENCE_NUMBER (FK)
- SERIAL_NUMBER
- REVERSAL_IND
- LEDGER_IND

**Grant Billing Detail**
- BILL_DOCUMENT
- BILL_DOCUMENT_TYPE
- BILL_SEQUENCE_NUMBER
- BILL_ITEM
- BILL_SUBMISSION_NUMBER
- BILL_FUND
- ACCOUNT CLASS
- BILL_ACCOUNT
- BILL_REVERSAL_IND

[Diagram showing relationships between tables and entities]
Grant Ledger joins to Transaction History via FISCAL_YEAR and FISCAL_PERIOD, the accounting distribution and the LEDGER_IND equals 'O' and RULE_PROCESS not equal 'O33'.

Transaction History has multiple rows for each source financial transaction.
Invoice Payable

Invoice joins to Encumbrance via PURCHASE_ORDER and the ENCUMBRANCE_TYPE equals 'E'.

Invoice INVOICE joins to Invoice Accounting and ITEM = 0 for document level accounting.

Invoice Accounting INVOICE, ITEM, SEQUENCE_NUMBER joins to Transaction History DOCUMENT, ITEM, SEQUENCE_NUMBER and DOCUMENT_TYPE = 3.

Transaction History has multiple rows for each source financial transaction.

Invoice Accounting INVOICE, ITEM, SEQUENCE_NUMBER joins to Invoice Tax Rate.

Invoice Item INVOICE and ITEM join to Invoice Accounting for commodity level accounting.

Invoice_Tax_Rate INVOICE and ITEM join to Invoice Tax Rate.

Person Detail PERSON_UID joins to Vendor VENDOR_UID.

Organization Entity ENTITY_UID joins to Vendor VENDOR_UID.

INVOICE_TEXT INVOICE (FK)
SEQUENCE_NUMBER

VENDOR_TYPE VENDOR_UID (FK)
VENDOR_TYPE

PERSON_DETAIL PERSON_UID
ENTITY_UID
Operating Ledger

Data Models (Banner ODS)

Operating Ledger joins to Transaction History via the Operating Ledger keys and the LEDGER_IND equals 'O'.

Transaction History has multiple rows for each source financial transaction.
**Data Models (Banner ODS)**

**Handbook**

**Transaction History**

Application of Payment has multiple rows per account per payment transaction. Application of Payment posts to Transaction History and DOCUMENT_TYPE equals 20.

**Grant Applied Payments**

- Applied Grant ID (PK)
- PAYMENT_TRANSACTION_NUMBER

Grant Billing Detail

- BILL_DOCUMENT
- BILL_DOCUMENT_TYPE
- BILL_SEQUENCE_NUMBER
- BILL_ITEM
- BILL_SUBMISSION_NUMBER
- BILL_REVERSAL_NUMBER
- BILL_FUND
- BILL_ACCOUNT

**Grant Receivable Account Detail**

- BILL_DOCUMENT
- BILL_DOCUMENT_TYPE
- BILL_SEQUENCE_NUMBER
- BILL_ITEM
- BILL_SUBMISSION_NUMBER
- BILL_FUND
- BILL_ACCOUNT

**Payroll Distribution**

- POSTING_DOCUMENT
- DOCUMENT_TYPE
- DOCUMENT
- ACCOUNT
- ITEM
- SEQUENCE_NUMBER
- ACCOUNTING_SEQUENCE_NUMBER

**Endowment Distribution**

- POSTING_DOCUMENT
- DOCUMENT_TYPE
- DOCUMENT
- ACCOUNT
- ITEM
- SEQUENCE_NUMBER
- CHART_OF_ACCOUNTS
- FUND

**Invoicing Accounting**

- BILL
- BILL_DOCUMENT
- BILL_DOCUMENT_TYPE
- BILL_SEQUENCE_NUMBER
- BILL_ITEM
- BILL_SUBMISSION_NUMBER
- BILL_FUND
- BILL_ACCOUNT
- BILL_REVERSAL_NUMBER

**Invoice Accounting**

- POST_CASHIER
- TRANSACTION_NUMBER
- RECEIPT_NUMBER

**Payroll Identifier**

- PAYROLL_IDENTIFIER
- CALENDAR_YEAR
- PAYROLL_NUMBER
- EVENT_SEQUENCE_NUMBER
- PERSON_ID
- TRANSACTION_NUMBER

**Budget Detail**

- BUDGET_IDENTIFIER
- BUDGET_PHASE
- FUND
- ORGANIZATION_CODE
- ACCOUNT
- ACTIVITY
- LOCATION

**Fixed Asset Adjustment**

- FIXED_ASSET_ID
- ITEM
- SEQUENCE_NUMBER
- ACCOUNTING_SEQUENCE_NUMBER

**Membership Interest**

- ENTITY_UID
- MEMBERSHIP_PROGRAM
- MEMBERSHIP_NUMBER
- INTEREST
- MEMBERSHIP_TRANSACTION_NUMBER

**Miscellaneous Transaction**

- POST_CASHIER
- TRANSACTION_NUMBER
- RECEIPT_NUMBER

Transaction History has multiple rows for each source financial transaction.
Financial Aid Award and Disbursement

Government Financial Aid contains all the information that is required for government reporting. It does not need to join with other reporting views.

Receiveable Account Detail
POSTING_DOCUMENT joins with DOCUMENT in Transaction History.

Transaction History has multiple rows for each source financial transaction.
Government Financial Aid Fund contains all the information that is required for government reporting. It does not need to join with other reporting views.
Loan Disbursement

Transaction History has multiple rows for each source financial transaction.

Receivable Account Detail
POSTING DOCUMENT joins with DOCUMENT in Transaction History.
Human Resource Application

HR_REQUISITION
- POSITION (FK)
- REQUISITION_NUMBER

FINAID_APPLICANT_STATUS
- AID_YEAR (FK)
- PERSON_UID (FK)

EMPLOYEE
- PERSON_UID (FK)

REFERENCE_SLOT
- PERSON_UID (FK)

REFERENCE
- PERSON_UID (FK)
- NAME

EMPLOYMENT_HISTORY
- PERSON_UID (FK)
- EMPLOYER_UID
- START_DATE
- END_DATE

CURRENT_EMPLOYMENT
- EMPLOYER_UID (FK)

HR_APPLICATION
- PERSON_UID (FK)
- POSITION_APPLIED_FOR,POSITION (FK)
- REQUISITION_NUMBER (FK)

INTERVIEW
- PERSON_UID (FK)
- REQUISITION_NUMBER (FK)
- INTERVIEWER_UID
- INTERVIEW_DATE
- POSITION_APPLIED_FOR (FK)

HR_APPLICATION_STATUS
- PERSON_UID (FK)
- REQUISITION_NUMBER (FK)
- STATUS
- POSITION_APPLIED_FOR (FK)

INTERVIEW_SLOT
- PERSON_UID (FK)
- REQUISITION_NUMBER

STUDENT
- ACADEMIC_PERIOD
- PERSON_UID (FK)

PREVIOUS_EDUCATION_ATTENDANCE
- PERSON_UID (FK)
- INSTITUTION
- POST_SECONDARY_DEGREE

PERSON_ADDRESS
- ADDRESS_RULE
- PERSON_UID (FK)

COMBINED_ACADEMIC_OUTCOME
- PERSON_UID (FK)
- INSTITUTION
- OUTCOME_NUMBER

PREVIOUS_DEGREE
- PERSON_UID (FK)
- INSTITUTION (FK)
- DEGREE
- SEQUENCE_NUMBER

CERTIFICATION
- PERSON_UID (FK)
- CERTIFICATION
- CERTIFICATION_DATE

SKILL
- PERSON_UID (FK)
- SKILL

CERTIFICATION_SLOT
- PERSON_UID (FK)
Human Resource Faculty

Faculty can be joined with Employee Position via PERSON_UID, POSITION, and JOB_SUFFIX.

Instructional and Non Instructional Assignment(s) are joined to Employee Position by PERSON_UID, POSITION, and JOB_SUFFIX and where EFFECTIVE_END_DATE = '31-DEC-2099'.

Faculty Tracking contains the most recent information (if available) for a faculty member from each of the Appointment History, Rank History and Sabbatical History views.
Payroll

**Person Details**

- **Person Address**
  - **Address Rule**
    - **Person UID (FK)**

**Person Details**

- **Person**
  - **Person UID**

**Employee Position**

- **Employee Position**
  - **Person UID (FK)**
  - **Position (FK)**
  - **Job Suffix (FK)**
  - **Effective Date**

**Payroll Employee Position**

- **Payroll Employee Position**
  - **Payroll Identifier (FK)**
  - **Calendar Year (FK)**
  - **Payroll Number (FK)**
  - **Event Sequence Number (FK)**
  - **Shift Number (FK)**

**Payroll Document**

- **Payroll Document**
  - **Payroll Identifier (FK)**
  - **Calendar Year (FK)**
  - **Payroll Number (FK)**
  - **Event Sequence Number (FK)**

**Payroll Earnings**

- **Payroll Earnings**
  - **Payroll Identifier (FK)**
  - **Calendar Year (FK)**
  - **Payroll Number (FK)**
  - **Event Sequence Number (FK)**
  - **Shift Number (FK)**
  - **Earnings**
  - **Person UID (FK)**

**Payroll Deduction**

- **Payroll Deduction**
  - **Payroll Identifier (FK)**
  - **Calendar Year (FK)**
  - **Payroll Number (FK)**
  - **Event Sequence Number (FK)**

**Payroll Labor Dist Override**

- **Payroll Labor Dist Override**
  - **Payroll Identifier (FK)**
  - **Calendar Year (FK)**
  - **Payroll Number (FK)**
  - **Event Sequence Number (FK)**
  - **Person UID (FK)**

**Payroll Position TimeSheet**

- **Payroll Position TimeSheet**
  - **Payroll Identifier (FK)**
  - **Calendar Year (FK)**
  - **Payroll Number (FK)**
  - **Event Sequence Number (FK)**
  - **Person UID (FK)**

**Leave Accrual**

- **Leave Accrual**
  - **Payroll Identifier**
  - **Calendar Year (FK)**
  - **Payroll Number (FK)**
  - **Leave Identifier**
  - **Person UID (FK)**

**Leave Allocation**

- **Leave Allocation**
  - **Payroll Identifier (FK)**
  - **Calendar Year (FK)**
  - **Payroll Number (FK)**
  - **Event Sequence Number (FK)**

**Transaction History**

- **Transaction History**
  - **Document (FK)**
  - **Document Type (FK)**
  - **Submission Number (FK)**
  - **Item (FK)**
  - **Sequence Number (FK)**
  - **Serial Number**
  - **Reversal Ind (FK)**
  - **Ledger Ind (FK)**

**Description**

- Payroll Employee Position joins Employee Position via **Person UID, Position, Job Suffix**, and **Effective Date** equal to **Position Begin Date**.
- Leave Accrual joins to Payroll Document via **Calendar Year**, **Payroll Identifier**, **Payroll Number**, and (**Person UID or Position**).
- Payroll Distribution joins to Transaction History via **Document** and where **Document Type** = 20.
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.
Advisor Student List

- **Advisor Slot**
  - PERSON_UID (FK)
  - ACADEMIC_PERIOD

- **Pre-Student**
  - PERSON_UID (FK)

- **Academic Outcome Slot**
  - PERSON_UID (FK)

- **Advisor**
  - PERSON_UID (FK)
  - ACADEMIC_PERIOD

- **Person Detail**
  - PERSON_UID
  - **Advisor** PERSON_UID (FK)
  - **Address** ADDRESS RULE

- **Student**
  - PERSON_UID (FK)
  - ACADEMIC_PERIOD

- **GPA By Term**
  - PERSON_UID (FK)
  - ACADEMIC_PERIOD (FK)
  - ACADEMIC_STUDY_VALUE
  - GPA_TYPE

- **Enrollment**
  - PERSON_UID (FK)
  - ACADEMIC_PERIOD (FK)
  - STUDENT_COURSE ATTRIBUTE

- **Student Course**
  - PERSON_UID (FK)
  - COURSE_REFERENCE_NUMBER
  - COURSE_ATTRIBUTE

- **Advisor joins to Person Detail on PERSON_UID or ADVISOR_UID.**

- **Advisor Student List**

- **Academic Study**
  - ACADEMIC_PERIOD (FK)
  - PRIMARY_PROGRAM_IND
  - PERSON_UID (FK)

- **Advisor Student List**

- **Student Course Grade Change**
  - PERSON_UID (FK)
  - COURSE_REFERENCE_NUMBER (FK)
  - FINAL_GRADE_SEQUENCE_NUMBER

- **Advisor Student List**
Schedule Offering is joined to Course Catalog by SUBJECT, COURSE_NUMBER, and ACADEMIC_PERIOD.
Enrollment Management

PERSON_DETAIL
  PERSON_UID
    ADDRESS_RULE
      PERSON_UID (FK)
  PERSON_ADDRESS
    ADDRESS_RULE
      PERSON_UID (FK)

CONSTITUENT
  PERSON_UID (FK)
  Person Detail
  PERSON_UID can join Constituent.
  Constituent is a subtype of Constituent_Entity.

STUDENT
  ACADEMIC_PERIOD
    PERSON_UID (FK)

RECRUITMENT_INFORMATION
  PERSON_UID (FK)
  ACADEMIC_PERIOD
  RECRUIT_NUMBER

ADMISSIONSAPPLICATION
  ACADEMIC_PERIOD
    PERSON_UID (FK)
  APPLICATION_NUMBER

ENROLLMENT
  ACADEMIC_PERIOD (FK)
    PERSON_UID (FK)
  APPLICATION_NUMBER

ACADEMIC_OUTCOME
  PERSON_UID (FK)
    PERSON_UID (FK)
  OUTCOME_NUMBER
Faculty Assignment

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**Faculty Assignment**

- **Instructional Assignment**
  - **PERSON_UID (FK)**
  - **ACADEMIC_PERIOD (FK)**
  - **POSITION**
  - **JOB_SUFFIX**
  - **COURSE_REFERENCE_NUMBER**

  Instructional Assignment is joined to Employee Position by PERSON_UID, POSITION, and JOB SUFFIX and where EFFECTIVE_END_DATE = '31-DEC-2099'.

  Instructional Assignment is joined to Meeting Time by the ACADEMIC_PERIOD and COURSE_REFERENCE_NUMBER.

- **Schedule Offering**
  - **ACADEMIC_PERIOD (FK)**
  - **COURSE_REFERENCE_NUMBER**

- **Meeting Time**
  - **ACADEMIC_PERIOD (FK)**
  - **COURSE_REFERENCE_NUMBER (FK)**
  - **BEGIN_TIME**
  - **MONDAY_IND**
  - **TUESDAY_IND**
  - **WEDNESDAY_IND**
  - **THURSDAY_IND**
  - **FRIDAY_IND**
  - **SATURDAY_IND**
  - **SUNDAY_IND**

- **Labor Cost Distribution**
  - **PERSON_UID**
  - **POSITION**
  - **JOB_SUFFIX**
  - **EFFECTIVE_DATE**

  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.

- **Person Detail**
  - **PERSON_UID**
  - **ACADEMIC_PERIOD (FK)**

- **Faculty Department College**
  - **PERSON_UID (FK)**
  - **ACADEMIC_PERIOD (FK)**

- **Faculty Attribute**
  - **PERSON_UID (FK)**
  - **ACADEMIC_PERIOD (FK)**

- **Faculty Att Slot**
  - **PERSON_UID (FK)**
  - **ACADEMIC_PERIOD (FK)**
  - **ATTRIBUTE_RULE**

- **Non Instructional Assignment**
  - **PERSON_UID (FK)**
  - **ACADEMIC_PERIOD (FK)**
  - **PROFILE_CODE**

- **Noninstruct Assign Slot**
  - **PERSON_UID (FK)**
  - **ACADEMIC_PERIOD (FK)**
  - **PROFILE_CODE**

- **Employee Position**
  - **PERSON_UID (FK)**
  - **POSITION**
  - **JOB_SUFFIX**
  - **EFFECTIVE_DATE**

  Non Instructional Assignment is joined to Employee Position by PERSON_UID, POSITION, and JOB SUFFIX and where EFFECTIVE_END_DATE = '31-DEC-2099'.

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Government Reporting

Student Related Government Reporting

Financial Aid Related Government Reporting

Government_Admisions

- PERSON_UID (FK)
- ACADEMIC_PERIOD

Person_Detail

- PERSON_UID

Person_Address

- ADDRESS_RULE
- PERSON_UID (FK)

Government_Student

- PERSON_UID (FK)
- ACADEMIC_PERIOD

Government_Course

- PERSON_UID (FK)
- ACADEMIC_PERIOD (FK)
- SUBJECT
- COURSE_NUMBER

Government_Academic_Outcome

- PERSON_UID (FK)
- ACADEMIC_PERIOD (FK)
- OUTCOME_NUMBER

Government_Financial_Aid

- AID_YEAR (FK)
- FUND (FK)
- FUND_SOURCE_TYPE (FK)
- FINANCIAL_AID_TYPE (FK)
- PERSON_UID (FK)
- AID_ENROLLMENT_PERIOD (FK)
- ACADEMIC_PERIOD (FK)

Government_FA_Fund

- AID_YEAR (FK)
- FUND (FK)
- FUND_SOURCE_TYPE
- FINANCIAL_AID_TYPE

ACADEMIC_PERIOD is NULL in Government Financial Aid Fund.
Residential Life

Address by Rule
- ENTITY_UID
- ADDRESS_TYPE
- ADDRESS_NUMBER
- ADDRESS_RULE

Room Assignment
PERSON_UID
joins Address by Rule ENTITY_UID

Person Detail
- PERSON_UID

Room Assignment
- PERSON_UID (FK)
- ACADEMIC_PERIOD
- BUILDING
- ROOM_NUMBER

Phone Assignment
- PERSON_UID (FK)
- ACADEMIC_PERIOD
- PHONE_RATE

Meal Assignment
- PERSON_UID (FK)
- ACADEMIC_PERIOD
- MEAL_PLAN

Academic Study
- ACADEMIC_PERIOD (FK)
- PRIMARY_PROGRAM_IND
- PERSON_UID (FK)
Course Prereq Combined is a reformat to text of the detail in Course Prereq.
Government Student contains all the information that is required for government reporting. It does not need to join with other related views.

Government Course contains all the information that is required for government reporting. Combines information from Student_Course, Schedule_Offering, and Meeting_Time.
Travel and Expense

Authorization

Authorization Item joins to Reimbursement Item on portfolio key, and expense type key
Reimbursement

TRAVEL AND EXPENSE PROFILE

PROFILE_KEY

PORTFOLIO

PORTFOLIO_KEY

PORTFOLIO_SUMMARY

PORTFOLIO_KEY (FK)

REIMBURSEMENT APPROVAL HISTORY

REIMBURSEMENT_KEY (FK)

CIRCULATION_KEY

CIRCULATION_NOTIFICATION_KEY

INVOICE

INVOICE

REIMBURSEMENT

REIMBURSEMENT_KEY

REIMBURSEMENT ITEM

REIMBURSEMENT_KEY (FK)

EXPENSE_TYPE (FK)

REIMBURSEMENT ITINERARY

REIMBURSEMENT_KEY (FK)

ITINERARY_KEY

REIMBURSEMENT_STATUS HISTORY

REIMBURSEMENT_KEY (FK)

REIMBURSEMENT_STATUS

REIMBURSEMENT ACCOUNTING

EXPENSE_TYPE (FK)

Reimbursement Summary joins to Reimbursement Item on year, fiscal period and expense type.
# Travel and Expense Reporting Views

The following reporting views enable you to report on the Travel and Expense product.

<table>
<thead>
<tr>
<th>Reporting View</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTHORIZATION</td>
<td>Reports on expense report authorization requests from travel and expense. This enables reporting by authorization status and contains information about the request for an authorization, its current status, expense owner information, and summary authorization amounts for reimbursable and non-reimbursable expenses. If the authorization has associated reimbursements, then this also contains summary amounts for the reimbursements as reimbursable and non-reimbursable.</td>
</tr>
<tr>
<td>AUTHORIZATION_ACCOUNTING</td>
<td>Reports on an expense authorization request’s accounting distribution. This enables reporting of expense amounts by department and contains general expense accounting data including, fiscal year/period, accounting distribution, and approved amount. Additional reporting can be by financial manager or the various hierarchy levels of the fund, organization code, account, program, and location.</td>
</tr>
<tr>
<td>AUTHORIZATION_APPROVAL_HISTORY</td>
<td>Reports on the approval cycle and notifications for authorization requests from travel and expense. This contains approval history information for the authorization for each change in notification, including the person who is approving the document, what action was taken and when, and when email notification was sent.</td>
</tr>
<tr>
<td>AUTHORIZATION_ITEM</td>
<td>Reports on expense authorization request details from travel and expense. This enables reporting of requested expenses at a detail level for each authorization containing what the expense description is, expected expense date, the expense type, unit rate for distance calculations or per diem calculations, payment method, if the expense is reimbursable or not, the calculated amount for the expense, and if the expense is to be paid for by personal credit card or institution card.</td>
</tr>
<tr>
<td>Reporting View</td>
<td>Description</td>
</tr>
<tr>
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</tr>
<tr>
<td>AUTHORIZATION_ITINERARY</td>
<td>Reports on a travel itinerary associated with an authorization. This contains information about a person’s or group’s plans for traveling with the start and end dates of travel as well as each starting and ending locations. The itinerary can be created at the time of the authorization request. This enables reporting to determine where and when a person may be at any one point in time while traveling.</td>
</tr>
<tr>
<td>AUTHORIZATION_STATUS_HISTORY</td>
<td>Reports on the various statuses of an expense authorization request as it migrates through various stages of completion. This enables reporting to determine how long the life cycle of an authorization may take as well as the history; if it was returned for corrections, denied, or approved. This contains each status change, the date it changed, the time in hours since the prior change, and the time in hours from inception to current status.</td>
</tr>
<tr>
<td>PORTFOLIO</td>
<td>Reports on the portfolio information from travel and expense. This enables reporting on travel and non-travel related expenses, travel start and end date, expense owner, business purpose, and various summarized amounts for the authorization and reimbursements within the portfolio. The portfolio is used to associate reimbursements with an authorization.</td>
</tr>
<tr>
<td>PORTFOLIO_SUMMARY</td>
<td>Reports on summarized amounts by expense type within a portfolio for the authorization and the reimbursement. This enables management to verify the reimbursements against the authorization.</td>
</tr>
<tr>
<td>PROFILE_DEFAULT_ACCOUNTING</td>
<td>Reports on default accounting information for a travel and expense owner profile. This contains one or more accounting distributions and can be used to audit what accounting was actually used for reimbursements versus what account distributions were set up as defaults.</td>
</tr>
<tr>
<td>REIMBURSEMENT</td>
<td>Reports on expense report reimbursement requests from travel and expense. This enables reporting by reimbursement status and contains information about the request for a reimbursement, its current status, expense owner and payee information, and summary reimbursement amounts for reimbursable and non-reimbursable expenses. If the reimbursement is associated with an authorization, then this also contains summary amounts for the authorization as reimbursable and non-reimbursable.</td>
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<tr>
<td>Reporting View</td>
<td>Description</td>
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<tr>
<td>REIMBURSEMENT_ACCOUNTING</td>
<td>Reports on an expense reimbursement request’s accounting distribution. This enables reporting of expense amounts by department and contains general expense reimbursement accounting data including, fiscal year/period, accounting distribution, and approved amount. Additional reporting can be by bank, and financial manager or the various hierarchy levels of the fund, organization code, account, program, and location.</td>
</tr>
<tr>
<td>REIMBURSEMENT_APPROVAL_HISTORY</td>
<td>Reports on the approval cycle and notifications for reimbursement requests from travel and expense. This contains approval history information for the reimbursement for each change in notification, including the person who is approving the document, what action was taken and when, and when email notification was sent.</td>
</tr>
<tr>
<td>REIMBURSEMENT_ITEM</td>
<td>Reports on expense reimbursement request details from travel and expense. This enables expenses to be reported at a detail level for each reimbursement. It contains the expense description, receipt date, the expense type, unit rate for distance calculations or per diem calculations, payment method, if the expense is reimbursable or not, the calculated amount for the expense, and if the expense was paid for by personal credit card or institution card.</td>
</tr>
<tr>
<td>REIMBURSEMENT_ITINERARY</td>
<td>Reports on a travel itinerary associated with a reimbursement. This contains information about a person’s or group’s plans for traveling with the start and end dates of travel as well as each starting and ending locations. The itinerary may be created at the time of a reimbursement request. This enables reporting to determine where and when a person was at any one point in time while traveling.</td>
</tr>
</tbody>
</table>
Data from your source system database (for example, Student, Human Resources, Finance, etc.) is used to populate Banner ODS composite tables, and can be retrieved in reports using the Banner ODS reporting views. Use the Administrative UI to maintain and view meta data reports for each composite view (data on the source system used as an intermediate step to produce the composite tables and reporting views) and reporting view. The meta data reports enable you to look at the information about the composite or reporting view definition, and the column business definitions by either target, composite or reporting view, or by source administrative system sources.

For additional information on how to view meta data for the composite views or reporting views, refer to the Administrative User Interface chapter, “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 Administrative User Interface chapter, “Meta Data” section.

### Reporting Views

<table>
<thead>
<tr>
<th>Reporting View</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REIMBURSEMENT_STATUS_HISTORY</td>
<td>Reports on the various statuses of an expense reimbursement request as it migrates through various stages of completion. This enables reporting to determine how long the life cycle of a reimbursement may take as well as the status history; if it was returned for corrections, denied, approved and when it was paid. This contains each status change, the date it changed, the time in hours since the prior change, and the time in hours from inception to the current status.</td>
</tr>
<tr>
<td>TRAVEL_AND_EXPENSE_PROFILE</td>
<td>Reports on current and default information for a travel and expense owner profile. This contains the approver for the expense owner, address type for check payment, email address, profile ID and name, workflow logon if the profile is for an approver, and the total amount reimbursed for the expense owner.</td>
</tr>
</tbody>
</table>

### List of Value Views

A list of values (LOV) contains a list of predefined values for a reporting view column in a report. For example, a list of values for Academic Period might contain the values Fall 2006, Spring 2007, and Summer 2007. You use
lists of values in parameters or conditions for a report. When used in parameters or conditions, lists of values enable you to select predefined values rather than enter arbitrary values in a text field.

The Banner ODS has a database schema called ODSLOV that owns the list of value views. Most, but not all, of the views are based on the MGT_VALIDATION composite table. (At least one view is based on an MGRSDAX rule.) MGT_VALIDATION is loaded using Oracle Warehouse Builder (OWB) from validation tables (or in some cases static lists of values) in Banner. Validation tables loaded into MGT_VALIDATION from Banner have been identified as lists of values that have views assigned to them. (Not all the MGT_VALIDATION validation tables have been created as LOV views.) Each view has the columns TABLE_NAME, VALUE, and VALUE_DESC. TABLE_NAME is the name of Banner validation table. VALUE and VALUE_DESC are values, or codes, and descriptions for the values. Some of the views also have QUALIFIER, and QUALIFIER_DESC. QUALIFIER is used to group values by a common attribute. For example, it can be Chart of Accounts, Academic Period or a Banner PIDM. QUALIFIER_DESC is a description for the QUALIFIER. Qualifier description is only populated when the qualifier is an Academic Period. For example, it can be Chart of Accounts, Academic Period or a Banner PIDM. QUALIFIER_DESC is a description for the QUALIFIER.

The list of value view provides one place to define the predefined values for a column in reporting views. For example, the LOV_ACADEMIC_PERIOD view contains a list of values that is used by Academic Period columns in many reporting views - such as ACADEMIC_OUTCOME, ACADEMIC_STUDY, etc. By creating the predefined list in one view and using it for all the columns in the reporting views that require a predefined list of Academic Periods, the Banner ODS provides a simple to understand and use mechanism for creating parameters and conditions. If there were a different list of Academic Periods for every Academic Period column in every reporting view in the Banner ODS, there would be hundreds of different predefined lists of values that would be difficult for end users to understand and information technology departments to maintain.

The list of value view also provides fast access when producing the predefined values. If lists of values were created by selecting distinct values from the reporting views, more rows would be read to produce the list. This can result in unacceptable query times in reports when generating lists for parameter prompts and conditions.

ODSLOV list of value views are used in Self Service Reporting (SSR), the Banner ODS Cognos ReportNet model and Oracle Discoverer End User Layer. How these views are used is described in the SSR and Third Party Reporting Tools chapters.

The following table provides information about the list of value views in the ODSLOV schema.
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<thead>
<tr>
<th>List of Value View Name</th>
<th>Table Name</th>
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<th>Has Chart of Accounts Qualifier</th>
<th>Has PIDM Qualifier</th>
<th>Has Academic Period Qualifier</th>
<th>Uses EFFECTIVE_DATE and NEXT_CHANGE_DATE logic</th>
<th>Uses PIDM as Value</th>
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10 Banner EDW Cubes

A cube is a precalculated set of data based on a single SQL query. The data model in the IBM Cognos Framework Manager presentation layer is the source for cube data. After you load and publish a cube, it contains data from the database including pre-defined facts (measures or calculated values) and dimensions (attributes or descriptions). Once data items are loaded, you can then rearrange and reformat them in a cube to answer multiple business questions.

Data stored within a cube is presorted and pre-aggregated as defined by each intersection of a fact and a dimension or set of dimensions. This offers you faster data retrieval and more robust analysis capabilities when building reports. This is a benefit when compared to using typical relational database structures for reporting.

The cubes delivered with the performance products are defined using IBM Cognos Transformer. The complete design of a cube includes measures, attributes, and hierarchies, along with their associated data sources. After a cube is defined, you can perform the following cube operations in Cognos:

- Run Cognos Extract, Translate and Load (ETL) processes to load the Cognos cube (these are equivalent to Oracle Warehouse Builder (OWB) ETLs)
- Define relationships within your data warehouse
- Pre-aggregate the measures presented to users within the cubes

Each cube is delivered with a baseline cube report that gives you a default view of the cube data. You can use Analysis Studio, Report Studio or Query Studio to create reports based on the cube data and analyze your business performance. This analysis allows you to answer many questions that assess progress toward your institution’s business goals and objectives.

The powerful, robust nature of cubes makes them work best with the IBM Cognos Reporting Tool Analysis Studio. Analysis Studio is ideal for doing multidimensional analysis and exploring large data sources to generate trend and analytical types of reports. Cubes are ideally used to quickly analyze and identify patterns by ‘slicing and dicing’ the measures by many attributes and combinations of attributes. Once patterns are isolated, our details like Query Studio or Report Studio may be better used to look at more detail data.
## Cubes - At a Glance

Each cube in the Banner EDW corresponds to a star schema. The following table lists the cube name, the corresponding business/star schema name and a brief description.

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<td>Financial Aid Student</td>
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<td>WFT_FINANCIAL_AID_STUDENT</td>
<td>Financial Aid Information by aid year to compare the student attributes by financial aid types and source offers and amounts.</td>
</tr>
<tr>
<td>General Ledger</td>
<td>Star</td>
<td>WFT_GENERAL_LEDGER</td>
<td>General Ledger Information by fiscal year, quarter and period year to date information comparing beginning and ending balances.</td>
</tr>
<tr>
<td>General Ledger By Event</td>
<td>Star</td>
<td>WFT_GENERAL_LEDGER</td>
<td>General Ledger By Event Information by fiscal year, quarter, period and a time slice compare the information by funds and or accounts.</td>
</tr>
<tr>
<td>Graduation Completion</td>
<td>Star</td>
<td>WFT_GRADUATION_COMPLETION</td>
<td>Graduation Information or rates by academic year and academic period and graduation and academic outcome attributes.</td>
</tr>
<tr>
<td>Grant and Project</td>
<td>Star</td>
<td>WFT_GRANT_AND_PROJECT</td>
<td>Grants and Projects Information by fiscal year, quarter and period to compare the usage of funding by ledger accounting and or grant program attributes.</td>
</tr>
<tr>
<td>Operating Ledger</td>
<td>Star</td>
<td>WFT_OPERATING_LEDGER</td>
<td>Operating Ledger Information by fiscal year, quarter and period to compare original adopted budget and adjustments, etc. by ledger accounting attributes.</td>
</tr>
</tbody>
</table>
The following sections include a sample report for each cube that you can view using the Enterprise Data Warehouse Analytical Reports link when in the IBM Cognos Connection. The sample, or template, reports show the data by one of the time dimensions and display all or most of the measures available with your Banner 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 IBM Cognos documentation for details.
**Academic Program Course**

The Academic Program Course cube includes Academic Program Course information by academic period to compare the courses enrolled by students with specific majors, combinations of majors, sequence registered for courses, and so on.

The cube includes, but not limited to the following measures:

- Headcount
- Course Count

The cube includes, but not limited to the following attribute information:

- Event
- Major
- Majors in Sequence
- Academic Year
- Academic Period Type
- Course College

**Cube business questions**

1. What is the average number of courses taken by each major?
2. What are the numbers of persons with more than one major?
3. What colleges have more students with multiple majors?
4. What are the common combinations?
The following figure illustrates the Academic Program Course cube.
Advancement Gift

Displays the number of donors and number of gifts given (and all available measures) by fiscal year filtered by latest event.

The cube includes, but is not limited to, the following measures:

- Donor Count
- Gift Count
- Pledge Count
- Gift Amount
- Original Pledge Amount
- Outstanding Pledge Amount
- Average Gift Amount
- Average Gift Auxiliary Amount
- Average Original Pledge Amount

The cube includes, but is not limited to, the following attribute information:

- Event
- Calendar Year

**Cube business questions**

1. Are the numbers of pledges increasing each subsequent calendar year?

2. What is the trend of average gift amounts over the last five years?
The following figure illustrates the Advancement Gift cube.
Course Registration

Displays the generated credits and number of seats (and all available measures) by academic year and academic period filtered by latest event.

The cube includes, but is not limited to, the following measures:

- Seat Count
- Credits Generated
- GPA
- Credits Attempted
- Credits Earned
- Credits Passed
- Average Credits Generated
- Average GPA
- Average Credits Attempted
- Average Credits Earned
- Average Credits Passed

The cube includes, but is not limited to, the following attribute information:

- Event
- Academic Year
- Academic Period Type

**Cube business questions**

1. What is the average credits generated for courses taught by each college?

2. Which departments have a trend of continuing to increase their average credits earned?
The following figure illustrates the Course Registration cube.
Employee

Displays employee count (and all available measures) by calendar year filtered by latest event.

The cube includes, but is not limited to, the following measures:

- Employee Count
- Years of Service
- Annual Salary
- Total Earnings
- Regular Earnings
- Overtime 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 Overtime Earnings
- Average Employer Deduction Amount
- YTD Employee Deduction Amount
- Average YTD Employee Deduction Amount
- Average Encumbrance Amount
- Average Leave Benefits Amount
• Hourly FTE
• Salaried FTE

The cube includes, but is not limited to, the following attribute information:
• Event
• Calendar Year

**Cube business questions**

1. What is the trend of average years of service over the last five years?

2. Is the average overtime earnings decreasing or increasing over the past three years?
The following figure illustrates the Employee cube.
Employee Degree

Displays the total employees by calendar year and post secondary degree filtered by latest event.

The cube includes, but is not limited to, the following measures:

- Employee Count

The cube includes, but is not limited to, the following attribute information:

- Event
- Calendar Year
- Post Secondary Degree

Cube business questions
The following figure illustrates the Employee Degree cube.
Employee Position

Displays the earnings and years of service (and all available measures) by calendar year filtered by latest event.

The cube includes, but is not limited to, the following measures:

- Employee Count, YTD Total Earnings
- Position Count
- Total Years of Service
- Annual Salary
- Hourly FTE
- Salaried FTE
- YTD Total Earnings
- YTD Regular Earnings
- YTD Overtime Earnings
- YTD Other Earnings
- YTD Employer Deduction Amount
- YTD Employee Deduction Amount
- Encumbrance Amount
- Average Total Years of Service
- Average Annual Salary
- Average YTD Total Earnings
- Average YTD Regular Earnings
- Average YTD Overtime Earnings
- Average YTD Other Earnings
- Average YTD Employer Deduction Amount
- Average YTD Employee Deduction Amount
- Average Encumbrance Amount

The cube includes, but is not limited to, the following attribute information:

- Event
- Calendar Year

**Cube business questions**

1. How many employees have more than one position in the current calendar year?

2. What positions have the highest average YTD earnings?
The following figure illustrates the Employee Position cube.
Employment Application

Displays the earnings and years of service (and all available measures) by calendar year filtered by latest event.

The cube includes, but is not limited to, the following measures:

- Applied Count
- Interview Offered Count
- Interviewed Count
- Employment Offered Count
- Accepted Count
- Employed Count
- Previous Yearly Salary
- Previous Months Of Service
- Desired Hourly Salary
- Desired Yearly Salary
- Average Previous Yearly Salary
- Average Previous Months Of Service
- Average Desired Hourly Salary
- Average Desired Yearly Salary

The cube includes, but is not limited to, the following attribute information:

- Event
- Calendar Year
**Cube business questions**

1. Has the number of employment acceptances increased over the past five years?

2. Which home organizations have the largest numbers of new hires or turnover of staff consistently?

The following figure illustrates the Employment Application cube.

---

**Insertable Objects**

- EDW Employment Application
  - cube Employment Application (40 of 47)
    - Multi Source
    - Calendar Year
    - Calendar Month
    - Latest Event Ind
    - Event
    - Age Range
    - Alumni Ind
    - Appointment Percentage
    - Current Employee Ind
    - Days Requisition Open
    - Employer Code
    - Employer Industry Type
    - Employer Name
    - Ethnicity Category
    - Ethnicity
    - Final Degree Ind
    - Gender
    - Home Organization
    - Home Organization Chart
    - Intend Employee Status
    - Minimum Degree Level
    - Nation Of Citizenship
    - Position
    - Position Campus
    - Position Class
    - Position Contract Type
    - Position EEO Skill
    - Position Status

---

**Information**

- Employment Application

---
**Enrollment**

Displays enrolled count (and all available measures) by academic year filtered by latest event.

The cube includes, but is not limited to, the following measures:

- Registered count
- Enrolled count
- Total Credits Generated
- Student FTE
- Total Contact Hours
- GPA
- Credits Attempt
- Credits Earned
- Credits Passed
- Tuition Charges
- Financial Aid Amount
- Average Tuition Charges
- Average Financial Aid Amount
- Academic Outcome Enrolled Count
- Total Billing Units
- Total CEU
- Total CEU Billing

The cube includes, but is not limited to, the following attribute information:

- Event
- Academic Year
**Cube business questions**

1. What is the trend of credits earned compared to credits attempted year to year?

2. Has the number registered increased consistently over the past five years?

The following figure illustrates the Enrollment cube.
Financial Aid Pre-Student

Displays inquired, applied, admitted, accepted, and enrolled counts for pre-students (and all available measures) by aid year filtered by latest event.

The cube includes, but is not limited to, the following measures:

• 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
• 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

The cube includes, but is not limited to, the following attribute information:

- Event
- Aid Year

**Cube business questions**

1. Have the number of awards offered and accepted increased or decreased over the past five years for prospective students?

2. Are the average award offered amounts varying substantially by financial aid source or by financial aid type for prospective students?
The following figure illustrates the Financial Aid Pre-Student cube.
Financial Aid Student

Displays all available measures by aid year information filtered by latest event.

The cube includes, but is not limited to, the following measures:

- 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

The cube includes, but is not limited to, the following attribute information:

- Event
- Aid Year

**Cube business questions**

1. Have the number of awards offered and accepted increased or decreased over the past five years for students?

2. Are the average award offered amounts varying substantially by financial aid source or by financial aid type for students?
The following figure illustrates the Financial Aid Student cube.
General Ledger

Displays the debits, credits beginning balance, activity and ending balances by fiscal year and account type level by latest event.

The cube includes, but is not limited to, the following measures:

- Debits
- Credits
- Beginning Balance
- Activity
- Ending Balance

The cube includes, but is not limited to, the following attribute information:

- Event
- Fiscal Year
- Account Type Level

Cube business questions

1. Do the year beginning balances remain consistent by account type year to year?

2. Which accounts are decreasing their beginning balances at a higher rate fiscal period to period?
The following figure illustrates the General Ledger cube.
General Ledger by Event

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.

The cube includes, but is not limited to, the following measures:

- Debit
- Credits
- Beginning Balance
- Activity
- Ending Balance

The cube includes, but is not limited to, the following attribute information:

- Event
- Fiscal Year
- Account Type Level

Cube business questions

1. Do the year beginning balances remain consistent by account type for each fiscal year when compared in the same time frame?

2. Which accounts are decreasing their balance at the close of each fiscal period?
The following figure illustrates the General Ledger by Event cube.

<table>
<thead>
<tr>
<th>Year</th>
<th>Account Type Level</th>
<th>Debits</th>
<th>Credits</th>
<th>Beginning Balance</th>
<th>Activity</th>
<th>Ending Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>10 - Assets</td>
<td>17,096,420.64</td>
<td>17,674,474.05</td>
<td>61,696,047.97</td>
<td>221,946.59</td>
<td>61,916.52</td>
</tr>
<tr>
<td></td>
<td>20 - Liabilities</td>
<td>8,109,263.75</td>
<td>13,600,904.02</td>
<td>-101,888,053.70</td>
<td>-4,906,640.24</td>
<td>-135,994.03</td>
</tr>
<tr>
<td></td>
<td>30 - Control Accounts</td>
<td>366,006,612.62</td>
<td>360,761,274.60</td>
<td>31,905,066.03</td>
<td>6,125,338.02</td>
<td>30,030.43</td>
</tr>
<tr>
<td></td>
<td>40 - Fund Balance</td>
<td>130,000.00</td>
<td>1,572,200.90</td>
<td>7,365,322.90</td>
<td>-1,441,409.17</td>
<td>5,928.13</td>
</tr>
<tr>
<td></td>
<td>50 - Revenues</td>
<td>0.00</td>
<td>0.00</td>
<td>112,404.00</td>
<td>0.00</td>
<td>112.40</td>
</tr>
<tr>
<td></td>
<td>60 - Labor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>90 - Fund Additions</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Account Type Level</th>
<th>Debits</th>
<th>Credits</th>
<th>Beginning Balance</th>
<th>Activity</th>
<th>Ending Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>393,014,897.77</td>
<td>393,014,862.57</td>
<td>-8,412.80</td>
<td>-764.80</td>
<td>-9.1</td>
</tr>
<tr>
<td>2007</td>
<td>351,048,344.52</td>
<td>351,048,344.52</td>
<td>-9,177.90</td>
<td>0.00</td>
<td>-9.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Account Type Level</th>
<th>Debits</th>
<th>Credits</th>
<th>Beginning Balance</th>
<th>Activity</th>
<th>Ending Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>10 - Assets</td>
<td>59,397,459.13</td>
<td>42,663,624.83</td>
<td>243,514,409.91</td>
<td>16,723,334.30</td>
<td>250,236.23</td>
</tr>
<tr>
<td></td>
<td>20 - Liabilities</td>
<td>11,067,006.11</td>
<td>10,214,947.22</td>
<td>-169,647,990.63</td>
<td>-7,147,141.11</td>
<td>-176,794.12</td>
</tr>
<tr>
<td></td>
<td>40 - Fund Balance</td>
<td>60,662.51</td>
<td>195,490.29</td>
<td>72,733,663.55</td>
<td>-134,927.68</td>
<td>72,598.16</td>
</tr>
<tr>
<td></td>
<td>50 - Revenues</td>
<td>0.00</td>
<td>0.00</td>
<td>112,404.00</td>
<td>0.00</td>
<td>112.40</td>
</tr>
<tr>
<td></td>
<td>60 - Labor</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>90 - Fund Additions</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Account Type Level</th>
<th>Debits</th>
<th>Credits</th>
<th>Beginning Balance</th>
<th>Activity</th>
<th>Ending Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>351,048,344.52</td>
<td>351,048,344.52</td>
<td>-9,177.90</td>
<td>0.00</td>
<td>-9.1</td>
</tr>
<tr>
<td>2007</td>
<td>351,048,344.52</td>
<td>351,048,344.52</td>
<td>-9,177.90</td>
<td>0.00</td>
<td>-9.1</td>
</tr>
</tbody>
</table>
Graduation Completion

Displays the number of students (and all available measures) by academic year filtered by latest event.

The cube includes, but is not limited to, the following measures:

- Student Count
- Degree Awarded Count
- 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

The cube includes, but is not limited to, the following attribute information:

- Event
- Academic Year
- Award Category
**Cube business questions**

1. Which colleges and majors are doing the best job of increasing their graduation completion rates when seeing the trend year to year?

2. What is the average GPA for persons graduating by department and major?
The following figure illustrates the Graduation Completion cube.
Grant and Project

Displays all available measures for a grant or other project by fiscal filtered by latest event.

The cube includes, but is not limited to, the following measures:

- Adopted Budget
- Budget Adjust
- Direct Expend
- Matching Costs
- Indirect Costs
- Memo Costs
- Direct Revenue
- Activity
- Reservations
- Encumbrances
- Remaining Balance
- Average Adopted Budget
- Average Budget Adjust
- Average Direct Expend
- Average Matching Costs
- Average Indirect Costs
- Average Memo Costs
- Average Direct Revenue
- Average Activity
- Average Reservations
• Average Encumbrances
• Average Remaining Balance

The cube includes, but is not limited to, the following attribute information:
• Event
• Fiscal Year

**Cube business questions**

1. What grant types and grants have the highest average direct expenses in the last five years?

2. Is the average activity by fiscal period increasing or decreasing for all grant types? For grants by fund, by account or by Organization?
The following figure illustrates the Grant and Project cube.
Operating Ledger

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.

The cube includes, but is not limited to, the following measures:

- Fiscal Year Adopted Budget
- Fiscal Year Budget Adjustments
- Fiscal Year Total Budget
- Adopted Budget
- Adjustments
- Reservations
- Encumbrances
- Activity
- Remaining Balance

The cube includes, but is not limited to, the following attribute information:

- Event
- Fiscal Year
- Account Type

Cube business questions

1. Is the activity in the operating ledger increasing or decreasing by fiscal periods in the current fiscal year?

2. Is the trend up or down for the remaining balance amount for the last five fiscal years?
The following figure illustrates the Operating Ledger cube.
**Receivable Customer**

Displays the all available measures by academic year and academic period filtered by latest event.

The cube includes, but is not limited to, the following measures:

- Customer count
- Balance
- Amount Due
- Average Balance
- Average Amount Due

The cube includes, but is not limited to, the following attribute information:

- Event
- Academic Year
- Academic Period Type

**Cube business questions**

1. Are the receivable balances decreasing each fiscal period as anticipated?

2. What is the receivable balance at the close of the last five fiscal year increasing for customers in specific colleges, majors or programs?
The following figure illustrates the Receivable Customer cube.
**Receivable Revenue**

Displays all available measures by academic year and academic period filtered by latest event.

The cube includes, but is not limited to, the following measures:

- Customer count
- Balance
- Amount Due
- Average Balance
- Average Amount Due

The cube includes, but is not limited to, the following attribute information:

- Event
- Academic Year
- Academic Period Type

**Cube business questions**

1. What are the trends in the average receivable balance by organization codes over the last three years?

2. Which fund, organization, account, or program has the highest receivable balance over the past five years?
The following figure illustrates the Receivable Revenue cube.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Balance</th>
<th>Amount Due</th>
<th>Average Balance</th>
<th>Average Amount Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998-1999</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
</tr>
<tr>
<td>1999-2000</td>
<td>62,636.50</td>
<td>97,370.00</td>
<td>2,084.58</td>
<td>3,245.67</td>
</tr>
<tr>
<td>2000-2001</td>
<td>259,268.00</td>
<td>313,698.04</td>
<td>6,102.69</td>
<td>9,715.56</td>
</tr>
<tr>
<td>2001-2002</td>
<td>275,623.08</td>
<td>380,735.34</td>
<td>16,374.87</td>
<td>25,382.36</td>
</tr>
<tr>
<td>2002-2003</td>
<td>309,011.02</td>
<td>599,975.50</td>
<td>3,961.66</td>
<td>7,640.71</td>
</tr>
<tr>
<td>2003-2004</td>
<td>397,501.66</td>
<td>615,525.41</td>
<td>6,972.77</td>
<td>10,790.71</td>
</tr>
<tr>
<td>2004-2005</td>
<td>2,147,200.59</td>
<td>3,637,150.35</td>
<td>22,136.09</td>
<td>39,558.25</td>
</tr>
<tr>
<td>2005-2006</td>
<td>1,141,336.63</td>
<td>2,478,815.76</td>
<td>8,466.49</td>
<td>18,753.76</td>
</tr>
<tr>
<td>2006-2007</td>
<td>808,770.51</td>
<td>1,205,351.63</td>
<td>10,929.33</td>
<td>16,301.78</td>
</tr>
</tbody>
</table>

**Academic Year** 5,401,319.19 9,520,853.10 10,467.67 18,451.27
 Recruiting and Admission

Displays all available measures by academic period filtered by latest event.

The cube includes, but is not limited to, the following measures:

- 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

The cube includes, but is not limited to, the following attribute information:

- Event
- Academic Period
- Academic Period Type

_Cube business questions_

1. Is the trend of prospective students who have inquired or applied to the institution increased or decreased?

2. Is this trend different by campus, college, and program or major?

3. Do the numbers of awards appear to have any impact on the number of students who enrolled?

The following figure illustrates the Recruiting and Admission cube.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inquired Count</strong></td>
<td>67</td>
<td>27</td>
<td>173</td>
<td>202</td>
<td>251</td>
<td>300</td>
<td>235</td>
<td>5</td>
<td>1296</td>
</tr>
<tr>
<td><strong>Applied Count</strong></td>
<td>70</td>
<td>35</td>
<td>119</td>
<td>237</td>
<td>609</td>
<td>609</td>
<td>335</td>
<td>10</td>
<td>2220</td>
</tr>
<tr>
<td><strong>Admitted Count</strong></td>
<td>62</td>
<td>24</td>
<td>97</td>
<td>190</td>
<td>627</td>
<td>455</td>
<td>233</td>
<td>7</td>
<td>1720</td>
</tr>
<tr>
<td><strong>Accepted Count</strong></td>
<td>61</td>
<td>23</td>
<td>94</td>
<td>186</td>
<td>622</td>
<td>448</td>
<td>230</td>
<td>7</td>
<td>1696</td>
</tr>
<tr>
<td><strong>Enrolled Count</strong></td>
<td>44</td>
<td>22</td>
<td>72</td>
<td>143</td>
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Advancement Analytics for Cognos cubes

You can use the following cubes in the Cognos Analysis Studio to meet your reporting and analysis needs when using the Advancement Analytics for Cognos product:

- PM Prospect Proposal Analysis Cube as a part of the PM Manage Prospect Pipeline package
- PM Fundraising Analysis Cube as a part of the PM Analyze Fundraising Progress package

PM Prospect Proposal Analysis cube

You can use the PM Prospect Proposal Analysis cube to determine funding areas of interest, target, ask, and result amount breakdowns for the total prospect population. This cube is based on the PM Manage Prospect Pipeline business concept.

The cube includes, but is not limited to, the following measures:

- Proposal Amounts
- Average Proposal Amounts
- Active Prospect Count
- Active Proposal Count
- Prospect Count
- Proposal Count

The cube includes, but is not limited to, the following information:

- Time elements - proposal and target calendar months
- Latest stage - prospect, proposal, proposal purpose
- Attribute information to group prospects or proposals for reporting
- Prospect information - major prospect, affiliation
- Prospect location and postal data - based on preferred address

Cube business questions

This cube enables you to answer the following types of business questions:

1. How many active prospects are in the system?
2. What is the latest prospect contact information?
3. How many prospects do we have?

4. Which are the major prospects?

5. What are the minimum for maximum fundraising possibilities based on target ask amounts?

6. How many prospects (or proposals) have confirmed results?

7. What are the programs that generate maximum interest?

8. What are the staff assignment possibilities?

The following image displays a sample Prospect Proposal Analysis cube report.

PM Fundraising Analysis cube

You can use the PM Fundraising Analysis cube to evaluate overall fundraising progress and trends, solicitation outcomes, engagement renewal, and other aspects of fundraising. This cube is based on the PM Analyze Fundraising Progress business concept.

The cube includes, but is not limited to, the following measures:

- Donor Count
- Transaction Count
- Hard Credit Donor Count
- Hard Credit
- Average Hard Credit
- Soft Credit
- Average Soft Credit
- Match Claims
- Pledge Paid Amount
- Pledge Fulfillment Rate
- Hard Credit Amounts
- Soft Credit Amounts

The cube includes, but is not limited to, the following information:

- Time elements - year of giving, gift or pledge calendar dates, preferred class year
- Credit - hard credit and soft credit amounts
- Donor information - campaign indicator, designation, transaction type, giving details, pledge indicator, gender, alumni indicator, preference
- Geographic distribution of donors - based on preferred address

**Cube business questions**

This cube enables you to answer the following business questions:

1. What are the major donor fundraising goals?
2. Who are the major donors?
3. What is the progress with prospects, gifts, and pledged amounts?
4. What are the anticipated donation amounts, transaction installments received, transaction type, and overall transaction amounts?
5. What are the campaign designations?

The following image displays a sample Fundraising Analysis cube report.
This section contains specialized definitions for terminology used within the Banner Enrollment Management Suite.

**academic outcome**

Outcome is the Banner generic word that identifies the end result of study at an institution. The outcome may be a certificate, associate degree, bachelor degree, and so on.

**academic performance**

Attributes and measures that demonstrate how a student is progressing in his/her study at the institution. Attributes includes all Credits and GPA and all Academic Standing like attributes.

**academic period GPA**

Measure that is calculated and reported for the student for each academic period. Calculation: Quality Points/Credits for GPA.

**academic standing**

Academic standing is the Banner data that measures the student's academic performance in the previous timeframe. Banner rules define the credits and GPA data to be examined before assigning an academic standing value to the student. In the warehouse, we track two values for academic standing (at the beginning and end of each academic period). For example, good standing, probation 1, probation 2, and dismissed. The beginning academic standing is the overridden academic standing from the student's general student record or if the overridden academic standing does not exist, the one stored for the previous academic period is used. The end academic standing is the one stored for the academic period in history.

**academic study**

Academic Study is used as the generic warehouse label for the student's program, course of study, or curriculum. The Recruiting and Admissions Performance includes the primary or first curriculum attached to each record number (Recruit Number or Application Number) and Student Retention Performance includes only the primary curriculum associated with the student record for each academic period.

✏️ **Note**

PM Analysis Student Progress and its snapshot include the primary curriculum from academic period admit and for the outcome for the academic period graduation.
academic time

Attributes relevant to time frames such as academic year and academic period and some attributes related to those main attributes. They set the time frame for most comparison reporting done in the package.

academic year

Academic Year is a Banner attribute of the academic period. An academic year is made up of multiple academic periods that are usually 2 semesters, 3 trimesters, or 4 quarters that make up a school year.

academic year GPA

Measure that is calculated as Quality Points/Credits for GPA for all the academic periods within the academic year.

ad hoc report

Ad hoc reports are reports that are created without advance notice. These are created at the moment they are needed. They can contain trends, summaries or detail, and can be sorted, grouped, summarized, and filtered using many different data fields. Ad hoc reports are often created by non-technical staff members.

admit

To admit a student, the institution creates an admission record (SARADAP) and enters an application decision that extends an offer of admission (SARDCRV with a STVAPDC with STVAPDC_INST_ACC_IND with the value 'Y').

admit academic study

Admit Academic Study is the generic warehouse label for the student's program, course of study, or curriculum at the time of admission to the institution.

Note

PM Analysis Student Progress includes the primary curriculum from academic period admit and for the outcome for the academic period graduation. The Admit academic study attributes appear for all academic periods after the academic period admit until there is a new academic period admit usually implying admission to a new student level.

admit rate

Calculation used to compare the number and percent of prospective students who move from an Applicant funnel status to an Admit funnel status in the reported time frame. Calculation: (Admit/Applicant).
advisor

See “faculty”.

aggregate table

Aggregate tables are database tables that begin with 'WAT'. This table combines the data from multiple fact tables to make streamline their use in the Cognos FM Model.

applicant

The person or the institution has entered an application for admission (SARADAP) record for a specific term and level.

banner contact

Banner contact is the attribute defined by the institution to track the number of contacts a person had with the institution.

business concept

A logical (or functional) grouping of data that supports the reporting requirements of the business. See “multi-fact business concepts”.

business rule

The set of objects, consisting of rules, rule sets, URIs, and constants, that works in combination to carry out an action within the system. You define business rules to manage your institution's requirements within a campaign. You should create a rule to perform a reusable business task. For example, you might create a rule to provide information needed by a campaign to determine the next activity that should occur. One or more rules are grouped in rule sets identified by a unique name called a Universal Resource Identifier (URI). To execute a rule, you reference the URI associated with the rule set that contains the rule. When you use the rule, the named input and output arguments defined in the rule are passed to the campaign or other application using the rule.

campaign

A pre-defined sequence of activities designed to achieve a specific goal. The focus of a campaign is a communication plan that is directed towards people and organizations. It may have fixed or relative dates. A fixed date is a specific designated date and time, such as October 12, 2008 at 1:00 am. A relative date is a date and time that is expressed in relationship to another date/time, and is specified by a date/time interval, such as two weeks later.
campaign activity

A single task in a campaign that is performed by the system and/or the user. A campaign activity is executed automatically by the system and does not require direct human intervention, for example, the system-generated mass circulation of an e-mail.

campaign administrator role

The role that is responsible for creating and building the campaign. The campaign administrator role has all the system privileges (create, read, update, delete) for the campaign record, the activities in the campaign, and the graphical model of the campaign.

campaign goal

The desired outcome of a campaign, such as to increase the diversity of the student body or to attract and enroll more out-of-state students.

campaign modeler

Campaign Modeler is a Banner Relationship Management graphic tool used to define and build a campaign process using drawing tools and canvas. You can drag and drop activities and steps onto the drawing canvas, connect them using transition lines, and indicate decision points.

campaign status

The status of a campaign identifies the steps from the initial definition of the campaign record through the completion of the graphical model associated with the campaign. Campaign statuses may include stopped, completed, and ready.

campus engagement and activities participant

A set of attributes that display by academic period Banner Activities, Banner Athletic Competition (sports association), Advisor Assignments, Banner Contacts, BRM Campaign, Communication, and Interactions.

class behaviors

Indicators to identify the persons who registered late, the date of registration and those who officially withdraw from a section after the beginning of the academic period by the course registration status. There are a number of Banner data elements stored either for the student or for a student course that identify class behaviors.

cognos package

The Cognos end user layer that represents the data included in a business concept used to create reports.
cohort

See “student cohort”

college retention rate

The college retention rate is calculated as: (Number of students who register in a college (academic study attribute College) in the latter academic period)/(number of students who registered in that college for the former academic period minus anyone who should be excluded in that college). This may be Like (Fall to Fall) or Sequential (Fall to Spring), former and latter academic periods.

communication template

A communication template is used to produce and send a large number of similarly formatted communications to a group of individuals. Within a campaign, communication templates are included using the MCC activity type.

confirm

The student’s confirmation is identified by the system if an admissions (SARADAP) record exists and the applicant has accepted the offer (commonly, an application decision that says the person accepts the offer only if the SARADCRV record consists of STVAPDC record with STVAPDC_STDN_ACC_IND with the value ‘Y’) in any number of ways (paid a deposit, signed up for orientation, accepted financial aid or a scholarship, and so on.)

confirm yield

Calculation used to compare the number or percent of prospective students who move from an Admit funnel status to a Confirm funnel status in the reported time frame. Calculation: (Confirms/Admits)

constant

A piece of information within a rule whose value you do not want to change. You can reuse constants in an unlimited number of rules.

Contact

See “banner contact”

contacts with advisors, faculty, financial aid

The contacts with advisors, faculty, and financial aid include Banner Contacts and Banner Relationship Management Manual Interaction data.
**conversion rate**

Calculation used to compare the number or percent of prospective students who move from an Inquiry funnel status to an Applicant funnel status in the reported time frame. Calculation: (Applicants/Inquiries)

**count**

The number of individual items (for example, the total count of applications where someone may submit applications to different programs, curriculums, or they have many student attributes, and so on).

**course credits**

Credits as determined by the course credits designed by registration in a course.

**course drop rate**

The course drop rate is the number of students who were registered for a course but now have a course registration status where the count in enrolled indicator is equal to 'No' (SFRSTCR_RSTS_CODE with a STVRSTS_INCL_SECT_ENRL with the value 'N').

**course failed rate**

The course failed rate is calculated as: course failed count in a specific Course Identification (subject and course number)/number of students who were included in the initial course registered count for that course, course reference number, and so on.

**course initial registered count**

Student who has or had a course registration status with an indicator to count the student as registered (SFRSTCR_RSTS_CODE with a STVRSTS_INCL_SECT_ENRL = 'Y') in the student course (Course Identification). The sum of Course Registered plus Course Dropped plus Course Withdrawn Count is equal to the Course Initial Registered Count. This count may be used with the Registered by Census indicator In to determine the number registered as of the census date.

**course passed rate**

This is the number of students who receive a grade that adds to Credits Passed (SHRTCKG_GRDE_CODE_FINAL or SFRSTCR_GRDE_CODE with a SHRGRDE_PASSED_IND = 'Y') in a specific Course Identification (Subject and Course number)/number of students whose grade counted in credits attempted.

**course registered count**

Student with a course registration status with an indicator to count as enrolled (SFRSTCR_RSTS_CODE with a STVRSTS_INCL_SECT_ENRL = 'Y') for a specified
course (Course Identification). This count may be used with the Registered by Census indicator In to determine the number registered as of the Census Date.

course success rate

See “course passed rate”

course withdrawn rate

Course withdrawn rate is calculated as: Number of students who are registered for a course but now have a course registration status where the withdrawn indicator equal to 'Yes' (SFRSTCR_RSTS_CODE with a STVRSTS_WITHDRAW_IND = 'Y')/number of students who are initially registered.

cross tab report

A report format that is organized into rows and columns, similar to an Excel spreadsheet format. Cross tab reports display summarized counts, totals, amounts, percentages and ratios according to the columns and rows included in the report.

cube

A cube is a three dimensional storage of data that increases speed for analysis of data. Performance products are delivered with prebuilt Cognos cubes that are loaded with data by scheduling a job. Cubes are basically precalculated reports with data that you can rearrange and reformat.

cumulative credits

Cumulative credit is the subset of student total credits as determined by the grades associated with all student courses through the academic period reported.

cumulative GPA

Cumulative GPA is the measure that is calculated as: Cumulative Quality Points/ Cumulative Credits for GPA for all the academic periods attended by the student through the academic period being reported. This is an accumulating measure for each academic period.

cycle

Cycle can be the Recruitment Funnel, Admissions Cycle, Enrollment Funnel, or other names used to identify the processing cycle. Variations can be current cycle, active cycle, and past cycle.

demographics

Demographic attributes include gender, minority (race/ethnicity), traditional age, citizenship, veteran, legacy, and so on.
**detail report**

A report format that lists detailed information about individual prospects, applicants, recruiters, campaigns or any other business component. Typically detailed reports are lists that are grouped or sorted in a particular order.

**developmental course**

Instructional courses designed for students deficient in the general competencies necessary for a regular postsecondary curriculum and educational setting. Student courses are loaded as developmental courses using institution defined EDW extract parameter that identifies the student course attribute(s) that identify the course as developmental.

**dimension table**

Database tables that store related sets of attributes that may be associated with one or more fact tables in the data warehouse.

**diversity**

Diversity is the set of person demographic attributes and indicators that may be used to group students. These attributes include gender, minority (race/ethnicity), traditional age, residency citizenship, veteran, international student, legacy, and so on.

**drop rate**

See "course drop rate"

**EDW Extract Parameter**

EDW Extract parameters are the values entered through the Admin UI by the institution to define the way in which the data is loaded in the data warehouse tables. These must be reviewed and set prior to executing any of the jobs to load the data into the data warehouse.

**EM campaign**

A pre-defined sequence of activities designed to achieve a specific goal. The focus of a campaign is a communication plan that is directed towards people and organizations. It may have fixed or relative dates. A fixed date is a specific designated date and time, like October 12, 2008 at 1:00 am. A relative date is a date and time that is expressed in relationship to another date and time, and is specified by a date/time interval, such as two weeks later.

**enroll**

A person is considered enrolled at the institution when that person has the Banner registration record (SFBETRM) for the academic period.
enrolled headcount

Enrolled headcount is the number of students who have an enrolled indicator with a value of 'Yes' for the academic period.

enrolled ind

The Enrolled Ind attribute identifies a student where the student has an enrollment record (Banner SFBETRM with the SFRSTCR_ESTTS_CODE where the STVESTS_EFF_HEADCOUNT has the value 'Y') or they have a Institutional Course Maintenance Term Header (SHRTTRM) for the academic period. This does not check the student level. So, if used in a headcount of students, the attribute student level must be used in the report.

enrollment yield

Calculation used to compare the number and percent of prospective students who move from an Admit funnel status to an Enroll funnel status in the reported time frame. Calculation: (Enrolled/Admits).

exclusion

Students who may be removed (deleted) from the divisor when calculating a retention or graduation rate. Students are excluded because they are deceased, graduated or have been called into active military service, service with a foreign aid service of the federal government, such as the Peace Corps; or service on official church missions. Students with these exclusions are identified using an institution defined EDW Extract parameter that identifies the student statuses (STVSTST) or enrollment statuses (STVESTS) that identify students who should be excluded when calculating retention rates.

expression

Expression is the SQL query used to search the system and retrieve a set of data that meet the criteria specified in the query. The resulting data set, for example a group of prospects, recruits, or applicants identified by their IDs, share the common attributes defined in the query. After you execute an expression, you can save the resulting data set as a population list. You create an expression using the Expression Builder by selecting attributes and operators to build rules.

You can build complex expressions by creating groups of conditions within an expression. You can provide values for attributes when you build the expression or make the values dynamic by supplying them when you run the expression.

fact table

Fact table is the database table that begins with 'WFT'. The fact tables store all of the measures related to a concept defined in a star schema. There are one or many dimension tables associated with a fact table defined to the data warehouse.
faculty

Faculty represents two groups of persons added to the business concept. First group is the advisors who are added to Banner as faculty information with an advisor flag that is set as 'Yes' and given as an advisor assigned to a student. The second group is added to Banner as an instructor with a faculty flag that is set as 'Yes' and shown as the primary instructor for a student course.

field of study

Part of the students curriculum that identifies the major or minor subject emphasis. Currently, only the first and second major for a curriculum are brought into the warehouse.

financial aid need classifications

Attributes that measure with the percent of the aid offered by financial aid source or type are provided. Also, these attributes classify students as Financial Aid Applicant, Need Eligible Ind, Need Met Ind, and indicators of if there was an Aid Offered, Aid Accepted, and Aid Paid.

financial aid source

Attributes of aid offered by Banner financial aid sources such as institution, federal, state, or other.

financial aid type

Attributes of aid offered by the Banner financial aid types such as grant, loan, scholarship, and work.

FM model

Cognos meta data layer that usually represents a business concept and is delivered as one or more packages.

funnel

The component of the academic life cycle that defines the progression of steps within the student recruitment process. The Admissions cycle tracks prospective students from the point they become known to the institution until the institution enrolls them. During the process, each prospective student progresses through a series of interactions with the institution that are steps toward a successful conclusion - for example the individual’s completion of an application, the institution’s evaluation of that application, and the a final decision on that application. The Admissions process continues after acceptance up until the student arrives on campus and attends classes. Banner Relationship Management provides the following qualifying recruitment funnel states as baseline samples in the system: Prospect, Inquiry, Applicant, Admit, Confirm, and Enroll.
funnel instance

An implementation of a funnel model for a particular term and student academic level, used to track the progress of that group of constituents toward enrollment.

funnel model

A specific pattern for a funnel, containing the series of conditions, or states, that an institution defines to mark a prospective student’s progress towards a particular enrollment goal. These states include events such as a prospect’s inquiry, the prospect’s filing of an application, your review of that application, your subsequent actions upon it, and the prospect’s response.

funnel status

An individual constituent’s position or placement at a given time within the funnel. The funnel status is also referred as funnel state.

gеographic region/postal

Geographic division, geographic region, city, state/province, county, and nation that are available for the person and for secondary school and post secondary school address.

graduation headcount

Measure that provides an unduplicated headcount of the persons who have an academic outcome awarded indicator equal to 'Yes' for the academic period reported. Persons must have Banner SHRDGMR record with an academic period graduation recorded to be included in this headcount (SHRDGMR_DEGS_CODE with the STVDEGS_AWARD_STATUS_IND = 'A').

Also, see “student cohort graduation headcount”

headcount

The number of distinct individuals (for example, if an applicant applies more than once, the headcount option only counts the person one time).

highest test score

Attribute that identifies the test score as defined by the institution in the EDW Load parameter value when data was moved to the warehouse. Values are defined for a Graduate Test 1 & 2, Placement Test 1 & 2, Mathematics, Language, some standard scores such as ACT Composite and SAT Combined, and so on.

Also, see “EDW Extract Parameter”
inquiry

A recruiting (SRBRECR) record exists for a specific term and level and either a Prospective Student Portal account has been created, or there are one or more specific types of interactions that have been initiated by the prospect with the institution (attended a high school fair, had a campus visit, called for more information, and so on).

key performance indicator (KPI)

Help achieve organizational goals by defining and measuring progress. They are agreed upon as indicators which can be measured, and that reflect success factors. The KPIs selected must reflect the organization's goals, be key to its success, and be measurable, and they are long-term considerations for an organization.

Organizations usually monitor progress towards KPIs on a monthly (or daily, weekly) basis. They assign target (such as desired) values for each month and then compare their targets with actual values. Actual values are normally extracted from an organization’s information system or data warehouse. Assessing the difference between target and actual measures performance and progress towards achieving related goals and objectives.

layout library

A file that includes reusable report components like headers, footers, and prompt page information. The components defined in the layout library are used within the SGHE Template, which is a report template used as the basis for Report Studio reports. You can change a component once in the layout library and the change will carry to the SGHE Template and all reports based on the template.

level cumulative GPA

Cumulative GPA is calculated as: Sum of all credits for GPA/all quality points through the academic period displayed on a report. It can be divided by student level when adding that academic study attribute to the report.

major change count

Number of different first major on the priority or primary academic study records from the first academic period attended through the last academic period attended.

manual interaction

A manual interaction is created in the Banner Relationship Management product. A manually entered BRM interaction has Interaction Source as "ManuallyEntered" and an Integration Category as "Manual" or any other category code that the client may create for manual interactions. Examples are Advising, Mentorship, Tutoring, Financial, and so on.
**Multi Channel Communication (MCC)**

The component of the Banner Relationship Management application that clients use to create communication templates (such as for e-mail distribution) to send information to prospective students. MCC activities allow for sending a communication to a number of prospective students at once or to a single individual. The MCC tool also tracks distributed communications. You can send e-mails, letters, or targeted announcements. When used in a campaign and the campaign process reaches the MCC activity, the communication will automatically be sent to each individual on the population list. If alerts or errors occur for a campaign instance, you will be able to monitor and respond to these alerts.

**multi-fact business concepts**

Several of the Banner Enterprise Data Warehouse business concepts use many fact tables together to report on any of the data combined in the Framework Manager model on a report. Some use an aggregate fact table to combine and report the data from multiple facts.

Also, see “aggregate table”.

**outcome academic study**

Generic warehouse label for the student's program, course of study, or curriculum at the time of graduation from the institution.

**Note**

PM Analysis Student Progress includes the primary curriculum from academic period admit and for the outcome for the academic period graduation.

Outcome academic study attributes appear when there is a Banner outcome record and all academic periods after it is created, whether or not the outcome awarded indicator equal to 'Yes'.

**outcome credits**

Outcome credit is the subset of student total credits as determined by the grades associated with courses that are used to complete requirements, and calculate GPA for the academic outcome.

**parameter map**

Values entered through the Admin UI by the institution to define the way in which data is displayed in the Cognos packages. These values can be changed at any time and reflected immediately through the Cognos Connection. However, it is recommended that values set for the parameter maps should be reviewed and set during data setup for the warehouse.
**performance chart**

A performance chart is simply a graphic report built with Report Studio, and designed to fit in one of the dashboard report sections. Several different performance charts are delivered with each performance product.

**permission**

Permissions are a means of implementing security within Banner Relationship Management. Permissions are assigned to a user role. Each permission defines the level of access a user has within the workspace. You use a permission to allow or restrict access to areas of the workspace. For example, you can create a permission that allows a user to only view campaign details and create another permission that allows a user to add, edit or delete campaign information.

**persisted**

Indicates whether the student who is with the institution in the previous academic period is also there in the next academic period. There are a number of attributes in the Student Retention Performance packages that give this information but do not have this specific label.

See “retention status” and the various headcounts provided.

**population list**

A defined group of individual profiles used as the target audience for a particular goal. A population list consists of a number of prospective constituents, or profiles, that share one or more common attributes or groups of attributes. You create a population list to serve as the target of an enrollment campaign or communication.

**post secondary school**

All post secondary schools attended are available in the Performance package. Post secondary school degree and major information include academic outcomes and a record for this institution. This helps to provide accurate information for undergraduates from this institution applying for a graduate program. The Latest Post Secondary Ind attribute set with a value ‘Yes’ identifies the last Post-Secondary school attended by the student recorded in Banner.

**post secondary school characteristics**

Attribute that identifies the institution as either public/private or 2 year/4 year. The Banner source background characteristic codes defined by the institution must be defined as EDW Extract Parameters to make this data to be available.
**post secondary school last attended**

Attribute that identifies the last post secondary school attended by the student who is recorded on Banner. Data from previous education (SORPCOL) and from institution academic outcomes (SHRDGMR) are used to determine the last institution attended.

**pre student academic ability**

See “quality attributes”

**primary advisor**

The advisor assigned for the academic period marked with a primary advisor indicator 'Yes' is known as the Primary Advisor. The Primary Advisors are (with advisor type and primary indicator) assigned to the student by academic period using the Banner Advisor Assignment Form (SGAADVR).

**probability and desirability score**

The probability and desirability score is calculated based on the model defined by your institution. The data can be reviewed as the overall score or divided by factor groups and factors.

**profile manager**

The workspace component of the Banner Relationship Management application that recruiters use to manage information about prospective students. It provides a complete view of a recruiter’s prospects.

**program retention rate**

The program retention rate is calculated as: Number of students who register in a program (academic study attribute Program) in the latter academic period/(the number of students who registered in that program for the former academic period minus any one who should be excluded in that program). The program retention rate can be calculated for Like (Fall to Fall) or Sequential (Fall to Spring), former, and latter academic periods.

**progress to degree**

The progress to degree is the Banner data that is used for identifying End of Term Academic Standing, Cumulative, Academic Year, and Academic Period GPAs and Total and Cumulative Credits.

**prospect**

Prospect is a recruiting (SRBRECR) record that exist for a specific term and level. For example, names or data purchased from the College Board.
**prospective student**

Any person who has either a recruitment information or admission application record or both for the academic period.

**Prospective Student Portal (PSP)**

The web interface that provides an individual’s access to the university, prior to his or her acceptance and enrollment. The PSP is a designated “slice” of the Luminis Platform; in other words, you do not need to own the entire Luminis product to use Banner Relationship Management. PSP excludes the Luminis e-mail and calendar functionality.

**quality attributes**

Quality attributes are the pre-student academic quality measures (academic ability) that include Secondary School GPA, Secondary School Percentile, ACT Composite, SAT Combined test scores, and other institution specified tests. These may also include Transfer Credits & Ranges and Transfer GPA & Ranges as applicable.

**registered headcount**

Registered headcounts are calculated as the number of students who have at least one registered section (SFRSTCR with the SFRSTCR_RSTS_CODE with a STVRSTS_INCL_SECT_ENRL = 'Y') record for the academic period.

**registered ind**

Attribute that identifies whether a student has registration in the academic period for at least one student course (Banner SFRSTCR or SHRTCKN).

**remedial courses**

See “developmental course”

**response rate**

Calculation used to compare the number and percent of prospective students who move from a Prospect funnel status to an Inquiry funnel status in the reported time frame. Calculation: (Inquiries/Prospects)

**retention period/academic period (specific)**

Timeframe that permits comparison reporting of metrics. Each retention period in the package includes a unique set of academic periods (from - to) for reporting. It is important to understand that the retention status displayed with a retention period identifies the retention forward. It identifies status for the person who was registered in the from academic period in the to academic period.
It is important to understand that the retention status displayed with a retention period identifies the retention forward. It identifies the retention status for the person who was registered in the “from” academic period and their retention status for the “to” academic period.

**retention rate**

The Retention Rate measures the number of students who register (have a registration status that counts in enrolled) for the next academic period/number of students who were registered in the first academic period minus any excluded students.

**retention status**

Retention Status identifies whether the student who is registered in one academic period is registered in the next (like or sequential) academic period. The retention status values are excluded (as the student is deceased, graduated, or has one of the status specified in the EDW Extract Parameters), retained (registered in the to academic period), or not retained (did not register for the to academic period).

**role**

An institution-defined job responsibility that can be associated with one or more business processes and tasks, such as a recruiter, an admissions officer, admissions office student worker. Each user account must be assigned to at least one role. The role assignment defines what areas of the system the user can access.

**rule**

The component within business rules that defines the rule statement, which specifies business logic used within the system. You define business rules to manage your institution’s requirements, such as to modify funnel status calculation. One or more business rules are grouped in a rule set that is associated with a Universal Resource Identifier (URI). To execute a business rule, you execute the URI associated with the rule set that contains the rule. When you run the rule, the named input and output arguments defined in the rule are passed to the set of rules, and the results are returned as a ResultSet of objects.

**rule set**

A rule set is a container that holds one or more rules. The rule set is the executable unit within business rules. You execute a rule in the context of a rule set by identifying the URI associated with the rule set.

**secondary school characteristics**

Identifies the institution as either public, private, or the person was representing homeschooled. The Banner source background characteristic codes defined by the institution must be defined as EDW Extract Parameters for this data to be available.
snapshot

Data warehouse tables that are 'frozen' in time. Snapshots capture data for specific events (such as Early Decision) or on a recurring calendar basis (for example, daily, weekly, monthly). Snapshot tables are designed to support longitudinal reporting and scorecards. Reports that show results over time are easily created from snapshots. Snapshots also contain measures that may be loaded into Scorecard KPI 'actual' values.

student attribute

Institution defined student attributes recorded in Banner for the student by academic period to track special characteristics used to identify and segregate students for reporting.

student classification

Student classification attribute normally defined as first year, second year, third year, freshman, sophomore, and so on as the student begins the academic period.

student cohort

Institution defined student cohorts recorded in Banner for the student by academic period. For example, the cohort may be the Fall 2010 Bachelor of Science Students or any other group that the institution wants to track from admission to graduation.

student cohort graduation headcount

Unduplicated number of students who have a student cohort and an academic outcome awarded indicator equal to 'Yes' in an academic period.

student cohort graduation rate

The student cohort graduation rate is calculated as: Number of student cohort graduated/number of persons expected to complete an outcome (student cohort graduation status equal 'Expected').

student cohort graduation status

Institution defined student cohorts that are defined in Banner with a cohort end academic period will have a calculated graduation status in the warehouse. Student are either Not Expected, Expected, or Past Expected as a graduation status by comparing the student cohort academic period end to the academic period loaded into the data warehouse tables.

student course

Includes all student courses that are Registration (in progress), History (completed), and Transfer (transferred from a previous post secondary school) with student specific details such as the final grade and credits. The student course attributes include course
data such as course identification, subject, course number, section detail like schedule type, instructional method, session and meeting days and times, primary instructor, initial registration status date, current registration status, and date. Measures include course headcounts and rates, credits, and GPA.

**student engagement**

student engagement includes measures and attributes that analyze how engaged the student is with and by the institution. Data includes all interactions (manual, Banner contact, communication, campaigns), activities, athletics, and advisor assignment.

**student financials**

Includes a subset of the data used for financial aid needs analysis. These attributes include some federal and institutional methodology data as well as indicators that may be used to determine, if the financial assistance offered to the student may have an impact on their retention.

**student headcount**

Student headcount is the unduplicated count of persons who are eligible to enroll or have course registration in the academic period. The system calculates the student headcount from the number of student records that meet at least one of the following criteria:

- Student has a Permit to Enroll Ind attribute with value *Yes* (`SGBSTDN_STST_CODE` that has a `STVSTST_REG_IND = 'Y'`).

- Student has registration or history student courses for the academic period (has a `SFRSTCR` or `SHRTCKN` record).

- Student meet the readmission academic period criteria for the academic period loaded (registered in the academic period or a later academic period that the one specified in the `SOBTERM_READMREQ` rule).

When looking at Student Academic Period measures the student headcount should equal the sum of Registered Headcount, Withdrawn Headcount, and Student Not Registered Headcount, when all Banner indicators are set as expected.

**student level**

Attribute that identifies the student levels such as graduate, undergraduate, and so on.

**student level retention rate**

The student level retention rate is calculated as: Number of students who register in a student level (academic study attribute Student Level) in the latter academic period/ (the number of students who registered in that student level for the former academic period minus any who should be excluded in that student level). This may be like (Fall to Fall) or sequential (Fall to Spring), former and latter academic periods.
**student not registered headcount**

Student not registered headcount is the unduplicated count of persons who do not have any enrollment or registration activity for the academic period (no Banner SFBETRM or SHRTTRM records). Also, this attribute gives the number of persons who are eligible to enroll or have a SGBSTDN_STST_CODE parameter with a Permit to Enroll Ind attribute that is set with a value ‘Yes’.

**student performance**

Measures and attributes that analyze how the student is progressing and performing while being retained by the institution. Student performance data includes all enrollment patterns, academic standing, GPAs, credits earned, outcomes awarded, and student course detail.

**student population**

Student population attribute identifies the Banner student type normally defined as new first time, transfer, continuing, and so on.

**student progress**

see “academic performance”

**student retention rate**

See “retention rate”

**student retention status**

Identifies whether the student counts in the overall, student level, program, and college retention headcount for the Retention Period (like or sequential). This attribute has one of the values such as Retained, Not Retained, or Excluded.

**student status indicators**

Set of indicators that may be used to divide and classify student numbers and to analyze students by common attributes. For example, students with housing assignments, applying for an outcome (degree), new students for the academic period, and so on.
**summary report**

A report format that contains aggregated, summary numbers, counts, ratios, or percentages. Usually, summary reports display aggregated values grouped and sorted by a set of specific attributes such as Funnel Status, demographics, ranges of academic scores, or diversity categories.

**target**

target is the group of individuals or an organization (such as a high school) that share a set of common characteristics (attributes) and is connected to a campaign. Targets can also be used for other purposes, such as for ad-hoc activities and communications.

**term GPA**

See “academic period GPA”

**total credits**

Subset of student total credits as determined by the grades associated with all student courses for a specific academic period.

**trend report**

A report format that shows summary results over time (for example, weekly, monthly, academic terms, academic years). Trend reports are used to document changes in outcomes over time. Often they are used during a planning phase to understand previous results before setting goals and objectives for future campaigns or initiatives.

**URI (Universal Resource Identifier)**

A URI, or Universal Resource Identifier, is the unique name used to identify a rule set. You associate a URI with a rule set to give the rule set an immutable and unique identifier. The URI name is the actual rule component that you execute to perform the rules within the associated rule set.

**user**

A person who log in to Banner Relationship Management, Performance product, or Banner system. A user needs a user account with a unique user ID and password to access the system. In addition, each user account must be assigned permissions within the specific product security set up. For example, in the Banner Relationship Management product, a role assignment defines what areas of the system the user can access. After you create user accounts and roles, you apply permissions to roles and then associate user accounts with roles. This gives each user the access permissions defined by their assigned roles.
withdrawn headcount

Number of students who had an enrolled indicator of 'Yes' for the academic period but now has an Enrollment Status with a withdrawn indicator equal to 'Yes' (SFBETRM_ESTS_CODE with a STVESTS_WD_IND or STVESTS_THIRD_PARTY_WD_IND = 'Y').
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