The Finance Information System

DATA WAREHOUSE

November, 2010
The Finance Information System Data Warehouse is a collection of training and reference materials for OSU Faculty and Staff who require access to the Financial Data Warehouse at Oregon State University. This document provides specific information and directions for accessing and using the FIS Data Warehouse model.

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FIS Data Warehouse Overview

The Data Warehouse software is a Graphical Query Language (GQL) interface developed and maintained by Hummingbird™ used to access, retrieve, and report on ORACLE database information created and managed by OSU’s Banner software. The FIS Data Warehouse is supported by:

- The FIS Systems Integrator, Patty Ross (541-737-0616), who provides user support specific to the FIS Data Warehouse model and FIS Banner module.
- The Data Warehouse web site: [http://oregonstate.edu/dept/computing/warehouse/index.html](http://oregonstate.edu/dept/computing/warehouse/index.html).
- The Administrative Systems Trainer, Ross Jackson (541-737-8767), who provides user training and assistance in administrative software navigation.

The FIS Data Warehouse Model is a collection of views into OSU financial data, each associated with an area of activity (e.g. Operating Ledger, General Ledger, Transaction Ledger, Fixed Assets, etc.), providing:

- General Accounting reports,
- Encumbrance reports,
- Transaction details for invoices and JVs,
- Fixed Asset tracking and depreciation, and
- A separate view into Approval information.

*Remember that in Banner you can get data for any time frame, including today’s data; the Data Warehouse reports will only give you totals through the previous day.*

Security and Access to FIS Data Warehouse

Security of the FIS Data Warehouse is tied to OSU’s Banner security, and individuals must have access in Banner similar to what they request in the Data Warehouse.

Access to FIS Data Warehouse is based on your legitimate need to know, as established by your Dean, Department Head, or Business Manager. Business Affairs, which has custodial responsibility for all financial data, has established campus-wide departmental access at General Access levels. Payroll Ledger access requires separate authorization. All access is read only.

There are two other requirements for receiving access to FIS Data Warehouse: 1) completing your access forms (available at: [http://osu.orst.edu/dept/computing/banner/access.html](http://osu.orst.edu/dept/computing/banner/access.html)), and 2) attending both the FIS Data Warehouse Reports and the FIS Data Warehouse Queries training. Data Warehouse Reporting Techniques is highly recommended, though not mandatory for access.

FIS Data Warehouse users are generally granted access using their Banner user name and password at the conclusion of the FIS Data Warehouse Queries class if their request forms have been completed and turned in. For more general information about passwords, refer to the *Your User Name and Password* section of the BANNER BASICS for OSU guide.
FIS Reports

Reports are available using Appworx Job Submission and the Data Warehouse. Access to the Data Warehouse reports requires a minimum access level in Banner of General Query.

Appworx Reports

Finance Reports are run using the Appworx Job Submission software. Reports are requested through the REQUESTS window:

- Type the job name into the SEARCH field,
- Select the job you want to run, and
- To open the report tab, click on [Request].

The report parameters are presented for modifications or use as is. Instructions for each form follows:

FGRIDOC – Incomplete Documents
Run this report monthly before the 10th. Review the parameters to decide what information you want included in the report:

- Choose all document types = Yes, and
- Enter the User ID - OR -
- Select the document types and the User ID for each using the scrollbar at the right.
- Click on [Submit & Close].

FGRODIN – Transaction Details for an Index
Run this report monthly after closing. Note: The most common mistakes are to enter incorrect dates and/or fiscal year.

- Enter the parameter values using the scroll bar. Note: the parameter instructions become visible when you hover over them.
- Click on [Submit].

Note: Any job and parameter set that has been run can be found in your Job History. You can use the Task Name Suffix at the top of the form to make the job stand out in the history file.
Data Warehouse Reports

The Data Warehouse software can be accessed through your desktop Start Bar. Click on Start, and choose the path: ‘Programs / Hummingbird / BI Query / BI Query User’.

The [Recent Data Model] button will open a list of models that you have had open previously on your machine. You can make your selection at that point, or if you have not opened the FIS DW model before ...

The [Local Data Model] button will open a browser where you can locate the FIS Data Warehouse model:
- Locate the DWMModels folder and open it,
- Open the OSU/FINANCE/USER folders, and
- Click on the Finance model.

Reports are specific to design views of the model, and are accessed through the [Reports] button on each window. To view any report, the same general navigation applies:
- Navigate to the design view (data set) you want to report on,
- Click on the [Admin Reports] button,
- Click on the report you wish to see,
- Type in the parameters, and click [OK].

The OPERATING LEDGER / REPORTS offer a complete current fiscal year picture. In them you will find summarized information about your revenues, expenditures, and budgets that is updated nightly from Banner. There are two differing groups of reports: the blue buttons report summarized financial information (Operating Statements similar to information in FGIBDST), and the yellow buttons report general Index, Fund, and Grant information.

Explore some of the O/L (CURRENT YR) reports using the example prompt values:

- Consolidated Operating St:
  - use “FOR741” for the INDEX
- Multiple Indexes:
  - add “TEX590” to the INDEX, retaining FOR741
- 1 Index with Activity:
  - use only “FOR741” for the INDEX, removing TEX590
- 1 Activity Code:
  - use “FKL1” for the ACTIVITY CODE
- Expense Crosstab:
  - use “FOR741” for the INDEX
- Indirect Cost:
  - use “230000” for begin, and “239999” for end ORG CODE
- Index for an Org:
  - use “231320” for ORG CODE
- PI Indexes:
  - use “Bond” for the PI’S LAST NAME
The OPERATING LEDGER / MULTI YEAR / REPORTS contain summarized information back to the start of Fiscal Year 1996. There are similar Operating Statements to the ones available in the current fiscal year design view, unique reports that include data from inception to either the current or a specified date, and to monitor grant expenditures and expirations.

Explore some of the O/L (MULTI YR) reports using the example prompt values:
- Inception to Date by Grant use “E01150” for the GRANT CODE form FRIGITD
- Ending Award by (Org) use “231120” for the ORG CODE prompt, and today’s date (DD-MTH-YYYY format) for the DATE prompt

The TRANSACTIONS / REPORTS offer detailed information about invoices, journal vouchers, and canceled checks. Similar reports are also available in the [Prior Year] and [Multi Year] design views. New Banner transactions are added to the Data Warehouse nightly.

Explore the TRANS (CURRENT YR) reports:
- Invoice Listing use “1421901” for the DOCUMENT#
- JV Listing use “J0335277” for the JV# form FGITRND
- Details by Index & Period use “AGD010” for the INDEX, and “01” for the PERIOD (You can get all periods by leaving the Period prompt blank)
- Commodities for 1 Invoice use “1421901” for the DOCUMENT# form FGIDOcr and form FAIINVE

The ENCUMBRANCES / REPORTS design view Reports window offers reports with information about non-payroll encumbrances. The primary difference from the Banner forms, are that these reports include all accounts that Banner considers open, including zero balance ones. Encumbrance data is updated nightly from Banner.

Explore the ENCUMBRANCE reports:
- Open Encumbrances by Index use “FOR741” for the INDEX form FGIOENC
- Open Encumbrances by Index use “C0208A” for the INDEX
- Detail for 1 Encumbrance Doc use “P0053477” for the ENCUMBRANCE# form FGIENCD
The **GENERAL LEDGER / REPORTS** offer a Fund Balance and Balance Sheet that summarize information about your balance sheet accounts: assets, liabilities, control accounts, and fund balance. Similar reports are also available in the [Multi Year] design view. The General Ledger information is updated nightly.

Explore the General Ledger reports

- **Fund Balance**
  - use “056011” for the FUND

- **Balance Sheet**
  - use “056011” for the FUND

The **PAYROLL LEDGER / REPORTS** offer detailed information about Payroll Expenses by Employee or Index. Similar reports are also available in the [Multi Year] design view, and [Default Pay] provides projected data based on specific criteria. Payroll transactions are added to the Data Warehouse monthly.

These reports require special access for those who need them to do their job, and are not demonstrated in the classroom because of privacy.

The **FIXED ASSETS / REPORTS** offer an inventory sheet either by Organization or PI (for Grants). The inventory includes physical information about each item, the purchase date, the accounting information it is tied to, and its value. The Fixed Asset information is updated nightly.

The **VAL TABLES / REPORTS** offer two differing groups of reports: the purple buttons report static financial information, and the orange buttons report information on Approvers.
FIS Data Warehouse Queries

1. How much money does the university spend on water each year?

- Navigate to the MFY – OPERATING LEDGER design view.
- Open the MFY ACCOUNT object and select the attributes: ACC and ACC TITLE, ACC TYPE and ACC TYPE TITLE
- Click on the qualify box for the ACC TITLE attribute.
- Type “Water” in the qualification statement
- Change the Boolean ‘=’ to the Boolean ‘Contains’.
- Run the Query.

The results from the query are in what I call random hysterical order – they are placed in the results set as they are encountered in the data base. It will be easier to evaluate what we are seeing if we use the ‘Modifiers Distinct’ function to eliminate the duplications ...

- Close the Results window.
- Select ‘Query | Modifiers | Distinct’ from the pull down menu.
- Run the Query a second time.

Now you can easily spot the Acct codes that we need to use ... 23010 and 23011.

- Close the Results window and select [New Query].
- Open the MFY OPERATING LEDGER object.
- Qualify the ACC attribute with the values you just looked up.
- Select the attributes

<table>
<thead>
<tr>
<th>Fiscal Year4</th>
<th>ACC and ACC Title</th>
<th>Per 14 YTD DR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close the Results window.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select ‘Query</td>
<td>Reorder Attributes ...’ from the pull down menu.</td>
<td></td>
</tr>
<tr>
<td>Move Fiscal Year4 down to follow ACC Title, then click [OK].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select ‘Query</td>
<td>Sort ...’ from the pull down menu.</td>
<td></td>
</tr>
<tr>
<td>Move ACC to the Sort Order side by clicking on it and then clicking once on the right arrow (&gt;) button. Add Fiscal Year4, then click [OK].</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scroll to the top and notice the Sort shortcut shows up to the right of each attribute.

- Run the Query.

Wow! What is all this detail? Seeing records are repeated with the exception of the dollar amounts, we will need to use a function that will summarize those amounts ...

- Close the Results window.
- Click in the ‘Function’ box for the PER 14 YTD DR attribute, and choose ‘SUM’.
- Run the Query.

You now have the information that can be placed in a report in which subtotals might be nice ...

- Select ‘Results | Show as Report | BI Query Standard’ from the pull down menu.
- Select ‘Report | Reorder Columns ...’ from the pull down menu.
- Move ACC TITLE up to follow ACC, then click [OK].
- Click in the ACC column and select ‘Report | Suppress Duplicates’ from the menu.
- Click in the ACC column and select ‘Report | Add Subtotal’ from the menu.
- Click in the Fiscal Year4 column of the subtotal in the box that says ‘none’ and select ‘Count’, then click outside the subtotal line.
- Click in the ACC column and select ‘Report | Add Grand Total’ from the menu.
2. Produce a report that summarizes expenses (actual and projected) for an Activity for a full fiscal year. Save the query and use a prompt for the Activity Code.

- Close the Report and Results windows and Click on [New Query].
- Select the OPERATING LEDGER design view and open the OPERATING LEDGER.
- Select the attributes:
  
<table>
<thead>
<tr>
<th>ACTIVITY and ACTIVITY TITLE</th>
<th>ACCT and ACCT TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAST CLOSED PER YTD DR</td>
<td>LAST CLOSED PER YTD ENC DR</td>
</tr>
<tr>
<td>RPT CATEGORY</td>
<td>RPT CATEGORY TITLE</td>
</tr>
</tbody>
</table>
- Qualify the DC attribute equal to “D” and qualify ACTIVITY equal to “SMOH”.
- Run the Query.

Random hysterical order again ... and notice that there are multiple records for Salaries - Wages and OPE. Indexes and Accts often work together, so it is logical to look there to see why there are two records that are the same except for the amount ...

- Close the Results window and select the INDEX attribute.
- Select ‘Query | Reorder Attributes...’ from the pull down menu.
- Click on the INDEX attribute, and click the single up arrow button until INDEX follows ACCT TITLE. Select RPT CATEGORY and TITLE and move them both to follow ACTIVITY TITLE, and click [OK.]
- Select ‘Query | Sort …’ from the pull down menu.
- Move RPT CATEGORY to the Sort Order side by double clicking on it, likewise with ACCT, and click [OK].
- Run the Query.

The multiple records for Salaries - Wages and OPE are split between two Indexes. If we really just want to see one line item for each account, we must SUM the dollar amounts - Modifiers Distinct and $$ do not work together!

- Close the Results window and deselect the INDEX attribute.
- Click in the ‘Function’ box for the LAST CLOSED PER YTD DR attribute, choose ‘SUM’, and likewise for the LAST CLOSED PER YTD ENC DR attribute.

We are ready to add our prompt ...

- Click in the ACTIVITY qualification, and select ‘Edit | Prompts …’
- Select the ‘Get!6Activ’ prompt, and click on the ‘Insert Prompt’ button.
- Select ‘Query  | Save | Query ...’ and click on the ‘My Queries’ button.
- Enter “Activity expenses for a full year”, or a descriptive name of your own, in the Query Name area. The name can be any number of characters, and it will save a .qry file to the Finance/User Queries directory on your hard drive when you click [Save].
- Run the Query, type “SMOH” in the prompt window again, and click [OK].

As the attribute list gets longer, it may be easier to view in the ‘Form’ view. NOTE: You can not move the ‘Form’ view of the results into a report, you must close it and create the report form the normal view.

- Double click on the line number (leftmost column) of the record you want to see.
- To save a Results set, close the Form view, select ‘Results | Save as...| Results …’, and name the results set. When you click [Save], an extension of .qrd will be appended to the file, and it will be saved to the Finance/User directory.
Manipulating GQL Reports

3. Use the saved query from Example 2 and create a report.
   - Close all results windows.
   - Select ‘Query | Open | Query...’ from the menu, and click on the ‘My Queries’ button.
   - Double click on the filename that you created in Example 2 and GQL will both ‘Open’ and ‘Run’ the Query. The prompt values you entered before will be displayed in the Query Script window, so all you do is click [OK].
   - Select ‘Results | Show as Report | BI Query Standard’ from the pull down menu.

You should now have a ‘Query Results X’ report on your screen. Notice that the columns run past the page ...

   - One option is to choose ‘Landscape’ from the ‘File | Print Setup...’ pull down menu.
   - Adjust the column width of each column to remove or add space in each column. Click in any column, place your cursor on the dividing line between columns and drag the right edge of the column to the left or right, until the columns look right to you.
   - Since this report has so many attributes, we may want to exclude some of them from the report. Select ‘Report | Column Settings...’ from the pull down menu, click each column that you want to hide (RPT CATEGORY and ACTIVITY TITLE), set the ‘Column width’ to zero, and then click [OK].

   To get the last pesky columns on one page, select ‘Report | Column Settings...’ from the pull down menu, click ‘Fit All Columns on Page’ and then click [OK].

   NOTE: The ‘Fit All Columns on Page’ function does not adjust the column widths. It merely reduces the page by the percentage necessary to fit all the data on the width of the paper.

   - Select ‘Report | Reorder Columns...’ from the pull down menu, move ACTIVITY and TITLE to the top, move RPT CATEGORY TITLE up once, and click [OK].
   - Click in the ACTIVITY column, hold down the shift key, and click in the RPT CATEGORY TITLE column so that a box appears around both columns.
   - Select ‘Report | Suppress Duplicates’ from the pull down menu.
   - Align Center the ACTIVITY column by selecting ‘Report | Text Style ...’. Right click in the ACCT column, and align center.
   - Change the number format by selecting both the LAST CLOSED PER YTD DR column and LAST CLOSED PER YTD ENC DR columns to select and then select ‘Report | Format...’. Click in the ‘Hide zero values’ checkbox and the ‘Negatives in red’ checkbox, and choose the format you want to display.
   - To change the font in all columns, click in the left or right margin to select them all, and then select ‘Report | Text Style ...’.
   - Add a Calculated Column and format to match the debit columns.
   - Add a RPT CATEGORY TITLE subtotal and format to match the columns.
   - Add a grand total and format to match the columns.
   - Change the text and font in the headings by double clicking on a heading.
   - Change the report title by double clicking on it and clicking on 'Edit Text'. Add the prompt you used in the Query to the report title before clicking [OK].

   - Save your report setup by selecting ‘Report | Save Report Specification...’ from the pull down menu. Notice that the same name is selected for you, just click on ‘Save’ and then [OK] when it asks if you want to save it over the existing file name.
Creating a Button

4. Use the saved report from Example 3 and create a button.
   • Close the report and the results windows and start a new query.
   • Click on the [User Queries] button.
   • Click on the [Design Mode] button.
   • Click on the [Button] button at the top of the vertical toolbar, and create a new button
     by clicking and dragging diagonally in a free area of the 'User Queries' design window.
   • To edit the button, double click on the new button, and click on ‘Edit Text …”
   • Create the Link to the saved Report Specification.
   • Click [OK] and place button where you want it ... resize if necessary.
   • To exit edit mode, click again on the [Design Mode] button
   • Select ‘File | Save’ from the pull down menu to save the button in your model.

Check it out ...

Let’s say, just for fun that you want to create a spreadsheet of multiple Activity Codes with the same data ...

• Close the report and the results windows and start a new query.
• Click on the button that you just created, and click the [Cancel] button rather than [OK]
  in the prompts window.
• Select the OPERATING LEDGER design view to find your query.
• Open the OPERATING LEDGER object, and deselect the ACTIVITY TITLE attribute.
• Add a primary sort by ACTIVITY.
• Select ‘Query | Save …’ and change the name to “Activity Code Spreadsheet”, or a
descriptive name of your own, in the Query Name area. Click [Save].
• Move to the ‘User Queries’ window.
• Click on the [Design Mode] button and create a second button.
• Name the button and link it to your new query.
• In ‘Output to’ change ‘Results Window’ to ‘Application’ and click on the [Export
  Options...] button.
• Change the ‘Application’ to ‘Microsoft Excel’.
• Click on the [...] button next to the ‘Execute command line’ and use your browser to find
  the .exe file for Microsoft Excel.
• Click the [OK] button.
• Select ‘File | Save’ from the pull down menu to save the second button.
• Exit edit mode by clicking on the [Design Mode] button.
• Run the Query and the prompt window will appear. Keep the original Activity Code,
down arrow, and add a second Activity Code “FKLI”, and click [OK].

⚠️ Please close the software and any open desktop folders, choose ‘Shut Down’ from the [Start]
button, and choose ‘Log Out’.
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