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HRIS 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 HRIS Data Warehouse is supported by:

- The FIS Systems Integrator, **Patty Ross** (541-737-0616), who provides user support specific to the HRIS Data Warehouse module and administers access to the data.
- The Data Warehouse web site: [http://osu.orst.edu/dept/computing/warehouse/general.htm](http://osu.orst.edu/dept/computing/warehouse/general.htm).
- The Administrative Systems Trainer, **Ross Jackson** (541-737-8767), who provides user training and assistance in administrative software navigation.

The HRIS Data Warehouse Model offers a College/Unit/Department view into Human Resources data for OSU, and restricted views for Central Administration and Benefits. Each view is associated with an area of activity, providing:

- General departmental and position information,
- General employee and job information,
- Payroll information by index and employee, and
- A historical perspective of job, salary, and labor distribution 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 information through the previous day.*

Security and Access to HRIS Data Warehouse

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

Access to HRIS Data Warehouse is based on your legitimate need to know, as established by your Dean, Department Head, or Business Manager. Human Resources, which has custodial responsibility for all human resources data, has authorized a general access level for colleges, units and departments, and a more restricted access levels for administrative and benefits information. All access is read only.

There are two other requirements for receiving access to HRIS 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 the HRIS Data Warehouse training. Data Warehouse Extras class is recommended for those who create advances queries, though not mandatory for general access.

HRIS Data Warehouse users are generally granted access using their Banner user name and password at the conclusion of the HRIS Data Warehouse class if their request forms have been completed, turned in, and approved. For more general information about passwords, refer to the *Your User Name and Password* section of the [Banner Systems for OSU](http://osu.orst.edu/dept/computing/banner/) guide.
HRIS Data Warehouse Reports

The [Human Resources Model] button takes you to the HRIS MODEL design view. It provides access to information for departmental users (not core office), and has an associated REPORTS window with buttons to run administrative reports. Most data is updated nightly.

- Navigate to the HRIS MODEL design view and click on the [Reports] button.

1. Explore some of the yellow buttons designed to retrieve employee information:
   - For individual employee and related job information: click on [Employee and Job Info], enter your own University ID in the UNIVERSITY ID prompt, and click [OK].
     
     NOTE: This information includes the ‘Home Organization’ code – make a note of it.
   - Directory Information (using your own Org code in the ORG CODE prompt).
   - Employee University ID Lookup (using your own Org code in the ORG CODE prompt).

2. Explore some of the HRIS Model payroll information reports (the green colored buttons), using your own University ID:
   - Payroll by Index for 1 UnivID / FY Earnings for Empl by Index – Note the Index
   - Payroll by Acct for 1 UnivID / FY Earnings for Empl by Acct

3. Explore some of the HRIS Model job and position information reports (the salmon colored buttons), using your own Org code in the ORG CODE prompt:
   - Active Jobs for an Index
   - Supervisor Names
   - Pooled Positions for an Org

The [History Model] button takes you to the HRIS HISTORY MODEL design view. It also provides access to information for departmental users, and has an associated REPORTS window with buttons to run administrative reports. Most data is updated nightly.

- Navigate to the HRIS HISTORY MODEL design view and click on the [Reports] button.

4. Explore the HRIS History Model reports:
   - Job and Salary History for an Employee
   - Labor Distribution History for an Employee
   - Jobs and Labor Distribution History for an Employee

The HRIS ADMINISTRATION MODEL design view provides access to information for core offices in the Admin building (Office of Human Resources, Payroll). It is available by selecting ‘Window | HRIS Administration Model’ from the drop down menu, and requires specific access. It is the only model to include benefits/deductions data, though only a few core office users have access to that object. Most data is updated nightly.

The HRIS VAL TABLES design view contains reference information about various items, like Job Change Reason codes, Major Organization codes, and Position Class codes, all updated regularly. It is also the area where you can run ad-hoc Data Dictionary queries for information other than what appears with the [Data Dictionary] button.
HRIS Data Warehouse Queries

1. Create a count of currently filled jobs by Employee Class Codes.
   
   - Select a New Query.
   - Open the JOBS object and select the attribute EMPLOYEE CLASS - JOBS.
   - Click on the ‘Function’ box of the PIDM attribute and select ‘Count’.
   - Run the Query.

   GQL will return the Query Results with one row per Employee Class - EMPL with the number of people filling those positions. What we don’t know from these results is the grand total, and a way to get the total is to let the report do the work for us …

   - Select ‘Results | Show as Report | BI Query Standard’ from the pull down menu.
   - Select ‘Report | Add Grand Total’ from the pull down menu, and when the grand total line appears at the bottom, click anywhere in the main body of the report to let the software do its calculations.

   The grand total might be a little high … each job that has been filled in the past will add one to the total for that class code. If a person has held three jobs, they get counted three times in the total count. To get a count of all unique employees within a class code, we must use the ‘Count Distinct’ function.

   - Close the report and results set, and the JOBS object should still open.
   - Click on the ‘Function’ box of the PIDM attribute and select ‘Count Distinct’.
   - Run the altered Query.

   GQL will take you all the way to the Report with different counts for some or all of the class codes, resulting in a different grand total than the previous query. There may be some employees that are no longer in the department … they may have been terminated, or are on leave. Also consider that a person may hold more than one job. How might we eliminate the exceptions? We will explore that concept as we begin refining our queries …

   - Close the report and results set.
   - Click in the ‘Qualify’ box on the JOB STATUS attribute, and enter an “A”.
   - Run the altered Query again.

   Remember that we were still using the function ‘Count Distinct’ and that may not be the results you want. Let’s look at the difference between results of ‘Count Distinct’ and ‘Count’ …

   - Close the report and results set.
   - Click on the ‘Function’ box of the PIDM attribute and change back to ‘Count’.
   - Run the Query one last time …

2. Create a report containing directory information for all the current positions in your Organization, with the exception of students and temps. Include their name, their department code, their US Mail address, their phone number, and their email address in the report.

   Consider how you are going to limit this query to your organization - one solution is to use your Home Organization Code. How might you find out that value if you don’t know it already? As the Attribute Comments only offer an example of a code, you may want to explore the Major Org validation table …

   - Close the results set and select ‘Query | New’ from the pull down menu to clear the completed query from memory.
   - Click on [Validation Tables] to move to the HRIS VAL TABLES design view.
   - Double click on the MAJOR ORG object to open it.
   - Click once on the ORGANIZATION CODE attribute to bring it back in your results set.
Click once on the **ORGANIZATION CODE DESCRIPTION** attribute to bring it back in your results set. Also click in the ‘Qualify’ box and type in a unique value to limit your results set to your department - I will use “Comp” (and case is important!).

Click on the operand once and choose ‘Contains’ from the pop-up menu.

Select ‘Query | Run’ from the pull down menu, or click the [Run Query] button.

You should now have a ‘Query Results’ window on your screen. It should contain two columns, one for each attribute that you selected above. The first column should contain a value that represents your Organization Code - please make a note of it …

Close the results set and click the [New Query] button.

Now we need to check out the other requirements for the query …

Move to the **HRIS MODEL** design view, and double click on the **EMPLOYEE** object.

Click in the ‘Qualify’ box on the **HOME ORG** attribute.

Type the first two digits of your Org Code in the Qualify area at the bottom of the query window, and change the operand to ‘Begins with’.

To identify student employee records, select the **Employee Class Code and Description**:

Click once on the **EMPLOYEE CLASS - EMPL** and **EMPLOYEE CLASS DESC - EMPL** attributes.

To evaluate employees that have been terminated, select the fields that indicate that status:

Click once on the **EMPLOYEE STATUS**, **TERMINATION DATE** and **LAST WORK DATE** attributes.

Select ‘Query | Run’ from the pull down menu, or click the [Run Query] button.

Wait for BI Query to retrieve all of the results. You may be asked if you want to continue after a certain number of rows have been returned (usually 100 rows). Click on the ‘All Rows’ button unless you want to stop your query.

Notice that the result set is in “random hysterical” order … the records are retrieved in the order that they are found in the database. It may make sense to sort the results by the **Employee Class Code** …

Sort the results by selecting ‘Results | Filter | Sort…’ from the pull-down menu.

Move **EMPLOYEE CLASS - EMPL** from the ‘Available Columns’ area to the ‘Sort Rows by’ area by selecting it and clicking on the right arrow (>) button, or by double clicking on the attribute name in the ‘Available Columns’ area.

Click on the [OK] button to sort your results, resulting in a super query.

Notice that temps are “TS” and student codes are “XA” and “XB”- what are “XX” codes?

Also notice the relationship between the status and date for the terminated positions … we may want to explore these attributes further. **Question:** Are there records with A’s and dates? You may want to prove it!

Select the **HOME ORGANIZATION** attribute.

Eliminate the **HOME ORG** qualification: click in the ‘Select Box’ of the qualification, and press the Delete key.

Click in the ‘Qualify’ box of the **EMPLOYEE STATUS** attribute and type in an “A”.

Click in the ‘Qualify’ box of the **TERMINATION DATE** attribute and change the operand to ‘IS NOT NULL’. Also sort by **TERMINATION DATE**.

Run the Query.

Now notice the relationship between the status and date for the terminated positions … for the working query, we may want to qualify both attributes. Now we are ready for that working query …

Close the results set and click the [New Query] button.
Do you remember the ‘Directory Information’ report? It probably has most of the things we need ...

- Click on the [Reports] button.
- Click on the [Directory Information] button, type in your Home Org from your previous query (we will use “121200”), and click on [OK].

The report is mostly what we want ... and some of what we do not want. Notice that the University ID is displayed, and if this report is to be routed, the confidential information must be removed. Also notice that the report appears to be by department, and we want to expand that out to include the organization.

Modify Existing Report

- Close the report and results set, and DO NOT do a [New Query].
- Move to the HRIS MODEL design view, and open the PERSON object.
- Close the PERSON object, and double click on the EMPLOYEE object to open it.
- Click on the HOME ORGANIZATION attribute to select it.
- Select ‘Query | Reorder Attributes...’ from the pull down menu.
- Move HOME ORGANIZATION to the top by clicking on it and then clicking on the double up arrow button. Then click [OK].
- Select ‘Query | Sort ...’ from the pull down menu.
- Move HOME ORGANIZATION to the Sort Order side by clicking on it and then clicking once on the right arrow (>) button. Move it to the top and then click [OK].

Notice the “1” in the Sort column across from Home Organization attribute. This is a short cut to selecting a sort order of attributes in a single object.

There are three things to learn from the qualification statement: the Major Org qualification uses a ‘Begins with’; student & temp position data are eliminated using a list of Employee Class codes; and Termination Date and Job Status codes determine current positions ...

This is all we need!

- Click on the [Run Query] button, change your Home Org to only the first two digits (we will use “12”), and click on [OK].

You have made changes to this report by deleting an attribute that was stacked with the Name, and by adding a new sorted attribute that will show up at the end of the report ...

Reorder Columns

- Click in the NAME column and select ‘Report | Unstack Columns’ from the menu.
- Select ‘Report | Reorder Columns...’ from the pull down menu, move HOME ORGANIZATION to the top, and click [OK].

You might also want to create page breaks between departments and hide the Home Organization code ...

Subtotals with Page Break

- Click on the HOME ORGANIZATION data, select ‘Report | Add Subtotal’ and clean up the subtotal line.
- With the subtotal line still active, select ‘Report | New Page after Subtotal’.

Hide Column

- Click in the HOME ORGANIZATION column, select ‘Report | Column Settings’ from the pull down menu, change the ‘Column width’ to zero, and click [OK].

Save Report

- Select ‘Report | Save Report Specification ...’, change the name to “Org Directory Information” (or a descriptive name of your own), and click [Save].
Creating a Report

3. Create a Department Labor Distribution report that shows employee pay percentages by Index for one Org. In the report, also include the Position Number, Job Suffix, Job Status, and Employee Class - JOBS. Set up the query so that you can save it to use again, using different values for the Org.

- Move to the HRIS MODEL design view.
- Select ‘Query | New’ from the pull down menu.
- Open the PERSON object and select the LFM NAME attribute.
- Close the PERSON object, open the JOBS object, and select the following attributes:
  POSITION NUMBER, JOB SUFFIX, JOB STATUS, EMPLOYEE CLASS - JOBS,
  and TIME SHEET ORGANIZATION & DESC.
- Click in the ‘Qualify’ box of the TIME SHEET ORGANIZATION attribute.
- Select ‘Edit | Prompts…’ from the pull down menu, and locate the ‘TSOrg’ prompt. Click on the prompt name and click on the ‘Insert’ button.
- Click in the ‘Qualify’ box of the JOB STATUS attribute, type in “T, and change the operand to ‘!='.
- Close the JOBS object and open the LABOR DISTRIBUTION object, and select:
  INDEX & INDEX DESC, ACTIVITY & ACTIVITY DESC, and PERCENT PAY.
- Select ‘Query | Reorder Attributes…’ from the pull down menu.
- Move TIME SHEET ORGANIZATION & DESC to the top, and click [OK].
- Select ‘Query | Sort…’ from the pull down menu.
- Move TIME SHEET ORGANIZATION, then LFM NAME, then POSITION NUMBER, then JOB SUFFIX, then INDEX, then ACTIVITY to the Sort Order side, all in ascending order. Then click [OK].
- Run the Query.

NOTE: The message “You do not permission to submit a query containing unconnected data objects. Choose a connection to relate data object ‘Pay’ to the other data objects …” indicates a problem in establishing the relationships between objects.

- Click on the ‘Cancel’ button whenever you get this message.
- Close the LABOR DISTRIBUTION object, and select the relationship between PERSON and EMPLOYEE, and also the relationship between EMPLOYEE and JOBS.
- Run the Query using your own Org (we will use “251800”), and get all rows.

As the attribute list gets longer, you may want to look at the results one record at a time in a columnar fashion. This is called ‘Form’ view. NOTE: You can not move the ‘Form’ view of the results into a report, you must close it beforehand.

- Double click on the line number of the record you want to see.
- Close the Query Results (Form) window, and click on the Query Results window background to deselect the highlighted record.

Now that you have the query set up the way you want it, save it.

- Select ‘Query | Save…’ from the pull down menu.
- Enter “Department Labor Distribution”, 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 humres/user directory on your hard drive.

Let’s check it out ...
**Load a Query**

- Select ‘Query | Open...’ from the pull down menu, and click on the ‘Open’ button. GQL will load the Query Script.
- Run the Query, and a prompt window will appear with the last Org code displayed. Click [OK].

*Having a saved result set from this example is important for working through the rest of the examples.*

**Check Results Options**

- To prepare GQL to export a results set, first check the Results Options. Select ‘Results | Options...’ from the pull down menu, and verify that the SAVE COLUMN HEADINGS item is checked, and that the RECORD area equals ‘<CR><LF>’.
- Click on the [OK] button.
- Select ‘Results | Save As... | Results...’ from the pull down menu.
- Enter a valid Windows filename, and click on [Save].

*With the file saved, you can now start another software (like Excel) and import the file.*

*There is also a “quick and dirty” method of moving the data to another software application.*

- Select ‘Edit | Select All’ from the pull down menu.
- Select ‘Edit | Copy’ from the pull down menu.
- Start the application and then select ‘Edit | Paste’ from the pull down menu.

*There is one catch ... The clipboard will truncate any numeric field with leading zeroes. We do not have any in this example, but the solution is to go into Excel and then open the tab delimited file we just saved using the Excel Import Wizard. If leading zeroes are an issue, the third step of the Wizard allows you to format columns that begin with zeroes as text.*

**Save a Tab Delimited File**

**Manipulating GQL Reports**

4. Use the saved query from Example 3 and create a report.

- 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, containing one column for each attribute that you selected. Notice that the columns run past the borders of the page.*

**Page Setup**

- Select ‘File | Print Setup...’ from the pull down menu, click ‘Landscape’ and [OK].
- Adjust the column width of each column to remove extra 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.
- 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.*

**Fit All Columns**

- Select ‘Report | Reorder Columns...’ from the pull down menu, move the DESCS under what they describe (Org, Index & Activity), and move JOB STATUS & EMPLOYEE CLASS - JOBS up under JOB SUFFIX, and click [OK].
- Click in the TIME SHEET ORGANIZATION DESC column, so that a box appears around the column, and select ‘Report | Suppress Duplicates’ from the pull down menu.
- Click in the JOB STATUS column, hold down the shift key and click in EMPLOYEE CLASS - JOBS the column, then select ‘Report | Suppress Duplicates’ from the pull down menu.
- Align Center the POSITION NUMBER column by selecting ‘Report | Text Style ...’. Right click in the JOB SUFFIX column, and align center. Double click in the JOB STATUS column, click on [Text Style ...], and align center EMPLOYEE CLASS - JOBS.
• Change the number format by selecting the PERCENT PAY column, and then select ‘Report | Format...’. Choose the format you want to display and click [OK].

• 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 Subtotal

• Click in the JOB SUFFIX column and select ‘Report | Add Subtotal’ and format the columns by clicking on the ‘Count...’ and selecting what you want to see for the column. You may also want to move the subtotal ornament closer to the total.

• 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].

• Hide the TIME SHEET ORGANIZATION column by selecting ‘Report | Column Settings...’ from the pull down menu, change the ‘Column width’ to “0” and then click [OK].

Save Report Specification

• Save your report setup by selecting ‘Report | Save Report Specification...’ from the pull down menu. Click on [Save] and then [OK] to save it over the existing file name.

Creating a Button

5. Use the saved report from Example 4 and create a button.

• Click on the [User Queries] button, and then 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' 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.

• Select ‘File | Save’ from the pull down menu to save the button in your model.

• Click again on the [Design Mode] button to exit, and click on you new button.

Voila ...!!

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

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