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Framework and data overview documentation

There are generally two ways to create a report when authoring a report in a Cognos reporting studio: use a direct SQL query from an established data source or use one of the pre-defined packages. The direct SQL method would require a report author to build out a SQL query in advance and this method only works in more advanced studios such as Report Studio. The predefined package uses "modeled" data that defines all of the table relationships on the back end. This provides a business presentation of the information to allow for easier drag and drop report creation in all of the studio environments.

This guide introduces the available packages and how best to use those when creating reports. It also provides information about tools you can use to help identify exactly where data in the package is derived from within the database.

Terminology

Multiple terms are used when discussing the data production aspect of Cognos. To avoid confusion, the following terminology is used in reference to the preparation of data for publication.

- **Framework** (or **Framework Manager**). A metadata modeling tool for Cognos that drives the query generation for the Cognos suite of products.
- **Model**. A collection of metadata that includes physical information and business information for one or more data sources.
- **Query item**. The smallest piece of the model that can be placed in a report. It represents a single characteristic, such as the date on which a document was created.
- **Query subject** (or **Model Query Subject**). A set of query items that have an inherent relationship. In most cases, query subjects behave like tables to produce rows of data regardless of which columns are queried.
- **Namespace**. A container that uniquely identifies query items, query subjects, and other objects.
- **Package**. A subset of query subjects and other objects defined in the project. A package is the grouping of query subjects published to the Cognos BI server, and it is the first thing the report author selects when creating reports and ad hoc queries.

Packages

There have been two packages published for public report consumption in Business Insight versions 6.5 - 7.0: the Business Logic View and the Data Source View. Both are modeled on the same data although each package exposes a different subset of query subjects for reporting purposes. Only one package can be used in a report at a time. Using multiple packages within the same report can cause corruption within the report resulting in erroneous output.

Business Logic View

The Business Logic View contains modular query subject groupings to make reporting easier for less experienced authors or for quick ad hoc reports. The namespaces mimic the main areas of the Perceptive Content client to guide the author to the correct area for the data they need.
### Namespace Descriptions

<table>
<thead>
<tr>
<th>Namespace</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Capture Fact Star Schema</td>
<td>Document based information with a focus on the capture process</td>
</tr>
<tr>
<td>Document Star Schema</td>
<td>Document based information</td>
</tr>
<tr>
<td>Folder Star Schema</td>
<td>Folder (or Project) based information</td>
</tr>
<tr>
<td>Task Star Schema</td>
<td>Task based information</td>
</tr>
<tr>
<td>Workflow Star Schema</td>
<td>Workflow based information (active only)</td>
</tr>
<tr>
<td>Workflow Star Schema with Archive</td>
<td>Workflow based information including both active and archived data</td>
</tr>
</tbody>
</table>

### Data Source View

The Data Source View contains all visible query subjects within the data model. For this reason, this package is intended for the more advanced author in the organization who has a better understanding of the interrelation of data. It provides information into the overall Perceptive Content system as well, such as the Management Console. The author can then do more complex queries between modular groupings if required.

<table>
<thead>
<tr>
<th>Namespace</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin</td>
<td>Administrative information regarding the ImageNow system (Management Console)</td>
</tr>
<tr>
<td>Instantiatable Objects</td>
<td>Object based information such as Document, folder and custom property</td>
</tr>
<tr>
<td>Retention</td>
<td>Retention and records based information</td>
</tr>
<tr>
<td>Tasks</td>
<td>Task based information</td>
</tr>
<tr>
<td>Workflow</td>
<td>Workflow based information (both active and archived)</td>
</tr>
</tbody>
</table>
Reading report nomenclature

Since some code is used within this documentation, the nomenclature of the code is explained as it is added in a Report Studio report. Both of these examples point to the same query item, [Process Name] but access it using two different methods. The first thing to notice is the each of the three items is enclosed in square brackets [ ]. These brackets help Cognos identify the query item to pull into the report. If a bracket is missing, the report fails.

The first example comes from the Business Logic View.

- [Workflow Star Schema].[Process].[Process Name]

This breaks down as the following items.

- [Workflow Star Schema] refers to the namespace in which the object resides.
- [Process] refers to the query subject.
- [Process Name] refers to the query item.

The second example comes from the Data Source View.

- [Workflow].[Process].[Process Name]

This breaks down as the following items.

- [Workflow] refers to the namespace the object resides in
- [Process] refers to the query subject
- [Process Name] refers to the query item

Common query subject types in packages

Many similar types of query subjects can be found within both packages. They provide further context to the underlying data which, when combined in a report, can produce valuable information to help answer questions about your system contents. Below is a description of each common query subject type. Refer to the Report creation examples section for information on how to combine these query subject types to produce a detailed report.

- **Fact.** A core table that contains key measure based information about a system or process. Fact tables published for BI revolve heavily around Documents (Document Capture Fact), Folders (Folder Fact), Workflow (Workflow Fact), and so on.

- **Time.** A dimension table providing additional hierarchical date/time information about a specific event. For example, an author wishes to determine how many documents were captured for the month of March in 2012. This can be obtained by using the [Document Star Schema].[Object Creation Time].[Calendar Year (Object Creation Time)] and [Document Star Schema].[Object Creation Time].[Month Name (Object Creation Time)]

- **Enum.** Many text values in the database are stored as integers to save space. To give them their proper contextual value, enumerations can be used. For example, an author wishes to view the state detail of objects in Workflow. Rather than use the integer (numeric) value from [Workflow].[Workflow Fact].[State Detail], it can be replaced with the enumerated value from [Workflow].[Enum - Workflow State Detail].[State Detail].
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- **User**. A dimension table providing additional user information about a specific event. For example, a fact table can provide values based on several key actions, such as when a user creates a document, modifies the document, annotates the document, and so on. The report author would prefer to view the user who actually captured the document. This can be found using the `[Instantiatable Objects].[Capture Creation User].[User Name]`.

- **Group**. A dimension table providing additional group information about a specific event. For example, an author wishes to understand more regarding the group privileges around Queues. This can be found using `[Queue Privileges].[Group].[Group Name]`.

**Metadata regarding query items**

**Tooltips**

Tooltips provide quick information at a glance for the query items. Tooltips are available by hovering over any query item within either package.

**Properties**

For more thorough information on any query item, right-click the item and select Properties. The Properties pane for that query item then opens to display information such as the Description, Full Path, Ref (referred to above in the Reading report nomenclature section), Data Type, and so on. This can be valuable when trying to obtain more information about a query item that is unfamiliar to you.
Lineage

The lineage view gives a pseudo ERD (entity relationship diagram) view of how the query item was derived from the source database. This can be of immense value if, for example, you are trying to determine if filters have been applied at the framework level to remove any values.

To access the lineage, right-click the item and select Lineage. A new web page launches with information for that item in a Business View and a Technical View. The Business View reiterates much the same information as the Properties pane discussed above. The second tab contains the Technical View, which displays the “lifecycle” of the query item from database to query subject. Click on any of these items to display them in the lower pane.

For example, if you look at the Queue Start Time query item from above, the Technical View pane looks like the following example.

View this diagram from right to left to navigate the history of this query item from the database (INOW) to the query subject (Queue Start Time). You can see that the Workflow Fact has an Embedded Filter that displays the following information when you click it.
A quick review of the contents of either package displays, what appear to be, several duplicate query subjects in different namespaces. A simple example can be found in the Admin section of the Data Source View package, as shown in the following example.
Notice that the [Privileges] and [Group] query subjects duplicate for both Annotation Privileges and Application Plan Privileges. Viewing the lineage for the [Annotation Privileges],[Privileges] shows that the query subject originates from the IN_SC_SUBOB_TEMPL_PRIV table. Viewing the lineage for the [Application Plan Privileges],[Privileges] shows that the query subject originates from the IN_SC_APP_PLAN_PRIV and IN_LM_APP_PLAN tables.

Viewing the lineage for the [Group] query subjects shows that they both originate from the [Group - Shared] query subject. The [Group] query subject is merely a copied query subject utilized multiple times. It is then joined to the appropriate PRIV table to build appropriate SQL queries when building the report. This is done at the Framework Manager layer.

This is a very simple example of some of the modeling techniques used to build out the package in its current form.

**Report creation examples**

Scenario 1: Management would like to know how many items are entering two specific workflow queues (Del1 and Start) during each day of the month and who is routing the item to that queue.

1. Open **Report Studio**.
2. Under **Recently used packages**, click **Business Logic View** (or if the **Recently used packages** is empty, click the **Packages** folder and select **Business Logic View**).
3. Click the **Create New** button.
4. In the **New** dialog box, click the **List** icon and then click **OK** to access the **Report Studio** template.
5. In the **Source** pane, navigate to and expand **Business Logic View > Workflow Star Schema > Queue**.
6. Click and drag the following items to the **List**.
   - **Queue Name**
7. To highlight the column, select the **Queue Name** from the list.
8. In the toolbar, click the **Filters** button and select **Create Custom Filter**.
9. In the Keywords dialog box, type Del1 and click Search.
10. In the Values section, double-click Del1 and ensure that it moves to the Selected values section.
11. Repeat the two previous steps for the Start Queue Name.
12. Click OK. This filters your data to bring back Del1 and Start Queues only.
14. Click and drag the following items to the List.
   - Calendar Year (Queue Start Time)
   - Month Name (Queue Start Time)
   - Calendar Day (Queue Start Time)
15. In the Source pane, navigate to and expand Business Logic View > Workflow Star Schema > Queue Start User.
16. Click and drag the following items to the List.
   - User Name
17. Click the Toolbox button in the Source pane.
18. Click and drag a Query Calculation into the List and perform the following substeps.
   1. In the Name section, type Item Count.
   2. In the Source pane, navigate to and expand Business Logic View > Workflow Star Schema > Workflow Fact
19. Click and drag Item ID into the Expression Definition.
20. Select the Functions tab in Available Components on the fourth tab.
21. Expand Summaries and then click and drag count to the left of [Workflow Star Schema].[Workflow Fact].[Item ID]
22. Place a ) to the right of [Workflow Star Schema].[Workflow Fact].[Item ID]
23. Click OK.
24. To highlight the column, select the Queue Name from the list.
25. In the toolbar, click the Group/Ungroup button.
26. Repeat the two previous steps for the following fields (in order):
   - Calendar Year (Queue Start Time)
   - Month Name (Queue Start Time)
   - Calendar Day (Queue Start Time)
   - User Name

27. Run the report.

Scenario 2: Rather than open the client to obtain a list of tasks on folders and their due dates, your manager has asked to have a report delivered to their desk each morning with a count of tasks for folders.

2. Under Recently used packages, click Data Source View (or if the Recently used packages is empty, click the Packages folder and select Data Source View).
3. Click the Create New button.
4. In the New dialog box, click the List icon and then click OK to access the Report Studio template.
5. In the Source pane, navigate to and expand Data Source View > Instantiatable Objects > Folder Fact.
6. Click and drag the following items to the List.
   - Folder Name
7. In the Source pane, navigate to and expand Data Source View > Instantiatable Objects > Drawer.
8. Click and drag the following items to the List.
   - Drawer Name
9. Run the report

10. Notice that the output for the report contains several system drawers. It is likely that the manager will not want to see those. There is a published filter available to help remove those.

11. In the Source pane, navigate to and expand Data Source View > Instantiatable Objects > Filters.

12. Click and drag the following items to the List.
   - No System Drawers
     A message displays stating that “The query 'Query1' is now filtered by 'No System Drawers'.”

13. Run the report.

<table>
<thead>
<tr>
<th>Folder Name</th>
<th>Drawer Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amy Winehouse</td>
<td>Folders</td>
</tr>
<tr>
<td>Approve for Accession (2013-09-16)</td>
<td>Retention Approval Drawer (System)</td>
</tr>
<tr>
<td>Approve for Accession (2014-04-22)</td>
<td>Retention Approval Drawer (System)</td>
</tr>
<tr>
<td>Approve for Accession (2014-10-13)</td>
<td>Retention Approval Drawer (System)</td>
</tr>
<tr>
<td>Approve for Destruction (2013-09-18)</td>
<td>Retention Approval Drawer (System)</td>
</tr>
<tr>
<td>Approve for Destruction (2013-09-23)</td>
<td>Retention Approval Drawer (System)</td>
</tr>
<tr>
<td>Approve for Destruction (2013-09-25)</td>
<td>Retention Approval Drawer (System)</td>
</tr>
<tr>
<td>Approve for Next Phase (2013-05-08)</td>
<td>Retention Approval Drawer (System)</td>
</tr>
<tr>
<td>Approve for Next Phase (2013-06-17)</td>
<td>Retention Approval Drawer (System)</td>
</tr>
</tbody>
</table>

14. In the Source pane, navigate to and expand Data Source View > Instantiatable Objects > Object Type.

15. Click and drag the following items to the List.
   - Object Type Name

16. In the Source pane, navigate to and expand Data Source View > Instantiatable Objects > Enum - Folder Status.
17. Click and drag the following items to the List.
   - Folder Status

18. In the Source pane, navigate to and expand Data Source View > Tasks > Enum - Task State.
19. Click and drag the following items to the List.
   - Task State

20. In the Source pane, navigate to and expand Data Source View > Tasks > Task.
21. Click and drag the following items to the List.
   - Due Time

22. Click and drag a Query Calculation into the List and perform the following substeps.
   1. In the Name section, type Task Count.
   2. In the Source pane, navigate to and expand Data Source View > Tasks > Task
   3. Click and drag Task ID into the Expression Definition
   4. Select the Functions tab in Available Components on the fourth tab.
   5. Expand Summaries and then click and drag count to the left of [Tasks].[Task].[Task ID].
   6. Place a ) to the right of [Tasks].[Task].[Task ID].
   7. Click OK.

23. To highlight the column, select the Folder Name from the list.
24. In the toolbar, click the Group/Ungroup button.

25. Repeat steps the previous two steps for the following fields (in order):
   - Drawer Name
   - Object Type Name
   - Folder Status
   - Task State

26. Run the report.