McKESSON
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Performance Analytics

Powered by Horizon Business Insight

Managing Horizon Business Insight Data

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Reader comments

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Chapter 1: Introduction

The information in this manual is intended to help you manage the processes around organizing and then importing your source data into Horizon Business Insight. The goal is to provide you with suggestions that help you avoid time consuming scheduling and import errors and delays in displaying your data in highlights and scorecards.

This manual is currently incomplete; only Chapter 2 is available at this time. We expect to add the remaining chapters noted in the table below with subsequent releases of your Horizon Business Insight software.

About Customer Types

This manual provides information related to managing your Horizon Business Insight data:

Depending on the Horizon Business Insight product purchased by your organization, you may not have access to all areas and options available with the software. This section describes the various customer types and the areas of access.

Enterprise HBI Customers

Enterprise HBI customers have access to all of the Horizon Business Insight websites and all options available with the software.

Limited License HBI Customers

Limited License customers use Horizon Business Insight exclusively with another McKesson source system. Pre-defined data from your source system is brought into HBI and standard highlights have been designed and built so you can analyze and report on specific areas of your business.

Limited License HBI customers have access to all Horizon Business Insight websites and options except for the following:

- Viewer
  - Reports viewer not available
- Subset Editor
  - Subsets can be created only from the pre-defined data extracted from your McKesson source system. The data is used to create a pre-determined number of subsets provided with your HBI Limited License software package.
  - Copy subset options not available for use with pre-defined data subsets
  - Delete subset option not available for use with pre-defined data subsets
- Highlight Editor
  - Standard Highlights cannot be renamed, deleted or modified
- Administrator
  - Options related to Reports are not available

In general, Limited License customers cannot manipulate or delete the data from the source system or modify, copy or delete the standard highlights.

Note: In some cases, Limited License HBI customers are also referred to as HBI Standard Content customers.

Reports Only HBI Customers

Reports only customers use Horizon Business Insight to view data files only from Horizon Performance Manager, TRENDSTAR or Outcomes Advisor. Reports only customers have access only to the following websites/options:

- Viewer - all options related to the following objects
  - Reports
  - Resources
- Administrator
  - All options related to organizing, refreshing and managing access to Reports and Resources

The discussion in this manual is not relevant to Reports only Horizon Business Insight customers.

Chapter 2 - Managing Imports and Databases

This chapter provides you with information and recommendations about how to manage your import schedule in order to reduce the likelihood of the most commonly encountered types of import processing errors.

The recommendations provided should be considered in light of the needs of your Horizon Business Insight user community.

Scheduling Imports/Updates

This section provides you with recommendations regarding how to most effectively schedule imports of your source data to your Horizon Business Insight system.

Recurring imports may be scheduled to run hourly, daily, weekly or monthly. Most organizations have multiple import jobs scheduled to run at each of these frequencies. Gaining an understanding of how to prioritize and organize your import schedule can help you avoid errors and delays.

Review existing scheduled imports

To begin, if you are already using Horizon Business Insight and importing data, take the time to review the schedule for all existing HBI import jobs. Be sure to include all scheduled DTS imports in your review.

As you review your current import schedule, categorize all existing jobs by frequency so they can be rescheduled as necessary based on the suggestions and information provided in this chapter. If it is necessary to make significant changes to any of the jobs in your current schedule, be sure to notify the affected users.

All jobs currently scheduled on the HBI server, except for DTS jobs, can be reviewed from the following location:

Start>Settings>Control Panel>Scheduled Tasks

Alternatively, from the HBI Administrator (Resources or Reports List windows) or from the Subset Editor site, you can select **Calendar** from the menu bar to view all non-DTS HBI jobs currently scheduled to run on the server.

To review all scheduled DTS jobs, navigate to the location below depending on your HBI database server environment:

SQL Server 2000 customers:

Start>Programs>Microsoft SQL Server>Enterprise Manager>Microsoft SQL Servers>SQL Server Group>(local)(Windows NT)>Management>SQL Server Agent>Jobs

SQL Server 2005 customers:

Start/Programs>SQL Server 2005>Microsoft SQL Server Management Studio>Jobs>Manage Schedules

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Note: All DTS packages running on the HBI database server are listed in the Horizon Business Insight DTS Import Schedule highlight along with the date and time of the next scheduled import run for each package. This is a system-generated highlight that is automatically populated with data collected from the DTS schedule table.

General scheduling tips

The items in this section should be considered when you schedule any HBI import job regardless of frequency, subset size or other factors.

- Never schedule more than one import job to begin at the same time.
- Avoid using :00 as a start time. This time is popular with occasional users and other applications.
- Always prioritize your job schedule by frequency in the following order from highest to lowest: Hourly, Daily, Weekly, Monthly.
- Always give primary consideration to your imports that run on an hourly frequency.
- In general, large, time-consuming jobs should be scheduled to run after most of the morning imports have completed, i.e., very early in the morning and after 9:00 a.m.

Managing hourly import jobs

Hourly imports should be considered first in terms of managing your import schedule. Review the following recommendations for scheduling your hourly jobs:

- Reserve a specific time window within each hour for running your hourly jobs.

  Since these jobs repeat so often, it is important to avoid scheduling non-hourly subset imports during the reserved hourly timeframe. McKesson recommends that you reserve the first 10 or 15 minutes of every hour for any recurring hourly jobs.

  Be sure to reschedule any existing hourly jobs to run during the reserved timeframe. Also, be sure to reschedule any jobs with a non-hourly frequency that had previously been scheduled to run during the reserved timeframe.

- Within each hour, schedule small jobs that run more quickly earlier in the reserved timeframe than large jobs that take more time to run.

  This helps to avoid contention for database resources during the post-processing phase of the import.

Simplifying subsets and highlights

Simplifying your subsets and highlights can reduce the occurrence of various types of errors, allow your subsets to import more quickly and improve performance related to display of your highlight and scorecard data.

Consider the following opportunities for simplifying your subsets:

- Remove any unnecessary columns in your source data files. Note especially any unused date rollup columns.
- Reduce the number of data rows in tables that append data. Archive detail rows by fiscal quarter by copying them to subsets that no longer have any ongoing imports.
- Evaluate and whenever possible reduce the complexity of subsets and highlights by carefully considering the following:
  - limiting the number of dimensions in highlights
  - limiting the number of highlights built from a subset
  - summarizing data whenever possible
  - avoiding detail rows at the top dimension of highlights
  - adding a default qualification to highlights
  - limiting the number of alerts added to a highlight
  - limiting the number of associated scorecards
  - limiting distribution lists on highlights
  - adding table indices (See Highlight Indexing.)
  - selecting dimensions for caching (See Cache Dimensions.)

Avoiding SQL time-out and deadlock errors

Use the information in this section to help you avoid situations that may result in SQL time-out and deadlock errors. We have determined that only SQL server processes are implicated in causing these types of errors. When they occur, time-out and deadlock errors may delay the import of current data or result in the display of misleading data in HBI objects.

In general, these types of errors occur when your Horizon Business Insight imports are scheduled in such a way that processing overlaps for multiple imports. One subset import job must wait to update a database resource currently held by another import job causing a time-out or deadlock error.

If you experience these types of errors, the solution may be as simple as adjusting your import schedule to add more time between the start time of each job and the next.

You can use the HBI Event Viewer to identify time-out and deadlock conditions. Once the errors have been identified, navigate to the location shown below (depending on your server environment) to determine which jobs are causing the deadlock or timeout.

SQL Server 2000 customers:

Start>Settings>Control Panel>Scheduled Tasks and SQL Enterprise Manager> Management>Jobs

SQL Server 2005 customers:

Start>Programs>Microsoft SQL Server 2005>Microsoft SQL Server Management Studio>SQL Server Agent>Job Activity Monitor

Be sure to consider the following when managing your HBI subset import schedule:

- McKesson recommends that you set the query execution time-out value to zero for the WebData and WebTrend databases. Under certain circumstances, import processing can take sufficient time so that the server considers the process to have failed. A setting of [**0 (unlimited)]** allows an appropriately lengthy process to complete.

  You can access this option as follows depending on your HBI database server environment:

  SQL Server 2000 customers:

  In **Enterprise Manager**, expand **Microsoft SQL Servers**, select **SQL Server Group**, then right-click on *(local)(Windows NT)*. Select **Properties**/ **Connections** and change the **Query Time-out** value to 0**.**

SQL Server 2005 customers:

In **Microsoft SQL Server Management Studio**, expand **server name**>**databases**, then right-click on the database and select **Properties.** Click the **View Connection Properties** link and change the **Execution Time-out** value to 0.

- Reduce the time needed for import post-processing activities.

  Time-out errors most often occur during the post-process phase of an import. During post-processing, date rollup fields are calculated, alerts are evaluated, highlights and scorecards are updated, dimensions are cached, highlight indexes are built and import audit statistics are recorded. Careful subset and highlight design can reduce the length of the post-processing period.

  Note the following examples:

  - Use date rollup fields and alerts only where necessary.
  - Keep the number of highlights and scorecards per subset to a minimum.
- Avoid overlapping the import timeframes of subsets that include data used in the same scorecard.

  Note the following recommendations:

  - Keep the number of subsets associated with each scorecard to a minimum. When you create scorecards that include rows from highlights built from many different subsets, you increase the potential for deadlocks during the import of the associated subsets. In addition, this situation also increases the risk of time-outs in the Viewer during scorecard refreshes.
  - In order to eliminate the contention for the scorecard data by multiple subset import jobs, one job must complete before the next begins.

Importing data from a McKesson STAR system

All of the STAR standard content packages include very complex data from your STAR source system. In addition, the data is exported over a very short timeframe. As a result, avoiding import problems requires that the scheduling of the various imports of STAR data be very finely tuned.

When reviewing issues related to STAR imports be sure to consider not only those imports scheduled through the HBI Scheduler but also those imports that occur via DTS packages.

Managing Databases

This section discusses the options currently available with Horizon Business Insight to help you manage your databases to improve performance. These options are intended to improve performance related to the initial display and subsequent drill down activities for highlights in the Horizon Business Insight Viewer.

Use of these options may negatively impact import performance; be sure to read the details of each option before you elect to use the option for a given subset or highlight.

The following topics are included in this section.

Highlight Indexing

Highlight Indexing can be found in the Subset Editor and accessed as follows:

On the Subset List window: Click the check box to the left of a subset to select it, then click **Manage Subset/Optimization**.

On the Subset window, in the Optimization area.

From either location, checkmark the **Highlight Indexing** checkbox to enable the option.

Purpose

Use this option to improve highlight performance in the Viewer by decreasing the time it takes to initially display the highlight and to subsequently drill down once the highlight is open in the Viewer.

Criteria for use

Use with subsets that meet all of the following:

- Highlights built from the subset take several minutes to initially display (or redisplay upon drill down) in the Viewer. This usually applies to very large subsets, i.e., those with more than one million records
- Subset is not a database type.

Functionality

When this option is enabled and saved for a subset, highlight indexes are created and applied to the subset table during the next subset import. Indexes are built on each unique dimension and the default qualifier for all highlights associated with the subset.

Once the indexes have been created, they are automatically rebuilt with each subsequent import. Existing indexes can be manually rebuilt by clicking **Rebuild Indexes** *(available only from the Subset window)*.

For highlights without a default qualification, indexing alone may not effectively reduce the time necessary to initially display the highlight in the Viewer. For these highlights, the **Cache Dimension** option may provide a more noticeable performance improvement at the top drill level.

Note: A list of highlights that would benefit by use of the **Cache Dimensions** option is displayed in the subset import log file. You can review the file at the following location:

X:\HBI\WTLog\WebData_[*Subset ID*].log

The list is also displayed in the Subset Editor when you manually rebuild subset indexes and also when you perform a manual import of the subset.

Refer to the section entitled, Simplifying subsets and highlights for guidelines on how to consider performance improvements when defining new highlights.

Impacts of use

- Use of this option increases the amount of time it takes to import the subset regardless of whether the indexes are rebuilt manually or only upon import. The amount of additional time added to the import process is determined by the number of highlight indexes created as well as the amount of data in the subset fetch table.
- When you apply indexes to a subset, you may need to adjust your subset import schedule to account for the increase in processing time. HBI does not support concurrent import processing.
- Depending on the size and complexity of the subset, additional disk space may be required when you use highlight indexing. Indexing may take up to or slightly exceed the amount of space used by the data in the subset.
- If you have created custom indexes on a subset table and you enable **Highlight Indexing** on the subset, your custom indexes are deleted each time the subset is imported or the indexes are rebuilt.
- If highlight fields are added or existing formula fields are modified after the indexes have been built, performance improvements previously experienced in the Viewer may be eliminated until the next import or until the indexes are manually rebuilt.

Related Options

You can use **Highlight Indexing** in conjunction with Cache Dimensions, found in he Highlight Editor, to optimize highlight performance in the Viewer.

Note: Import performance will be impacted more significantly when these options are used together.

Cache Dimensions

Cache Dimensions is located on the Highlight window in the Highlight Editor (Options submenu).

Purpose

Use this option to improve highlight performance in the Viewer by decreasing the time it takes to initially display the highlight in the Viewer.

Criteria for use

Use **Cache Dimensions** with highlights that meet all of the following criteria:

- Highlight takes several minutes to display when initially opened in the Viewer
- Subset is not a database type
- Highlight Indexing has been applied to the subset from which the highlight was built. [Recommended]
- Highlight is no longer frequently edited in the Highlight Editor or modified by users in the Viewer. (See Invalidating the cache.)

Limited License users cannot modify the pre-defined highlights included with their HBI software package. Therefore, this option cannot be used with these highlights. You can, however, make a copy of a pre-defined highlight and set the **Cache Dimension** option on the copy.

Functionality

Cache Dimensions allows you to select up to five dimensions that are included in the highlight and store them in cache tables. We recommend that you choose to cache those dimensions that are typically used as the top-level dimension in the highlight. By doing so, they can be retrieved more quickly when the highlight is opened in the Viewer and the amount of time spent waiting for the highlight to display is reduced.

When you create cache tables for a highlight, they must be updated for each dimension each time the subset is imported. Cache tables are created (or updated with your changes) during the next and each subsequent import of the associated subset. You can click **Build** to create (or update) the cache tables immediately instead of waiting for the next subset import.

Invalidating the cache

There are certain activities that can be performed in the Highlight Editor and in the Viewer that will invalidate dimension cache tables built on the highlight. When a table is invalidated, the highlight data must be retrieved from the master subset table (rather than from the cache table). As a result, the performance improvements generated by use of the cache table are eliminated until the table is rebuilt.

Following is a list of activities that can be performed in the Highlight Editor and in the Viewer that will affect dimension cache tables and consequently have a negative impact on highlight performance in the Viewer.

Site / Description	Activity
Highlight Editor These activities delete the existing cache table. Performance improvements will be eliminated for all users when the highlight is opened in the Viewer until the table is rebuilt. Click **Build** to update it immediately; otherwise, it will be updated the next time the subset is imported.	• Adding dimensions or measures • Adding combined fields • Changing the drill order • Adding or modifying formulas • Adding, modifying or removing the default qualifyication on the highlight • Reordering the dimensions so that the top-level dimension is not cached
Viewer These activities eliminate any performance improvement generated by the cache table only for the current session of the Viewer.	• Qualifying on a field not included in the cache table • Qualifying of detail data records or a date/time field • Reordering dimensions so that the dimension that was cached is no longer the top-level dimension • Displaying any alert that uses the **Periods** option
Note: In addition to the activities noted above, performance improvements in the Viewer will be diminished, but not eliminated, when you display a highlight with a statistical formula measure that includes *count distinct, standard deviation, standard error of the mean* or *variance.*	

Impacts of use

- Use of the **Cache Dimensions** option increases the amount of time it takes to import the associated subset. The amount of additional time added to the import process is based on the number of dimensions cached and the number of fields in the subset.

Related options

You can use **Cache Dimensions** in conjunction with Highlight Indexing, located in the Subset Editor, to optimize highlight performance in the Viewer.

Note: Import performance will be impacted more significantly when these options are used together.