Genesys Info Mart Operations Guide

Genesys Info Mart Current

12/30/2021

Table of Contents

Genesys Info Mart Operations Guide

First published: August 30, 2019

9.x This version of the Operations Guide applies to Genesys Info Mart that is part of 9.0. For 8.5 releases of Genesys Info Mart prior to August 30, 2019, see the 8.5.0 version of this document.

Welcome to the Genesys Info Mart Operations Guide. This guide describes the procedures that you must follow to schedule and monitor the Genesys Info Mart jobs that extract, transform, and load (ETL) data. It is intended for administrator use, and is valid only for the releases of this product that are part of 9.0.

> **Important**
>
> For versions of this document created for other releases of this product, see the main Genesys Info Mart page or request the Documentation Library DVD, which you can order by e-mail from Genesys Order Management.

For information about related resources and about the conventions that are used in this document, see Related Documentation Resources.

Intended Audience

This guide is intended primarily for those responsible for database administration and management. It has been written with the assumption that you have a basic understanding of:

- Computer-telephony integration (CTI) concepts, processes, terminology, and applications
- Network design and operation
- Your network and database configurations
- Relational database management systems (RDBMS)
- Data extraction
- Data warehousing
- Data integration
- SQL

About Genesys Info Mart

Genesys Info Mart produces a data mart that you can use for contact center historical reporting.

Genesys Info Mart includes a server component, database, and a graphical user interface (GUI) that enables you to manage Genesys Info Mart. The Genesys Info Mart server runs a set of predefined jobs that execute ETL processes to:

- Extract data that has been gathered by Interaction Concentrator (ICON) from data sources such as Configuration Server, T-Server, Interaction Server, and Outbound Contact Server. Genesys Info Mart stores this low-level interaction data, which is consolidated from Interaction Concentrator databases (Interaction Databases [IDB]), in the Info Mart database.
- Transform the low-level interaction data and load it into a dimensional model (or star schemas) in the Info Mart database.

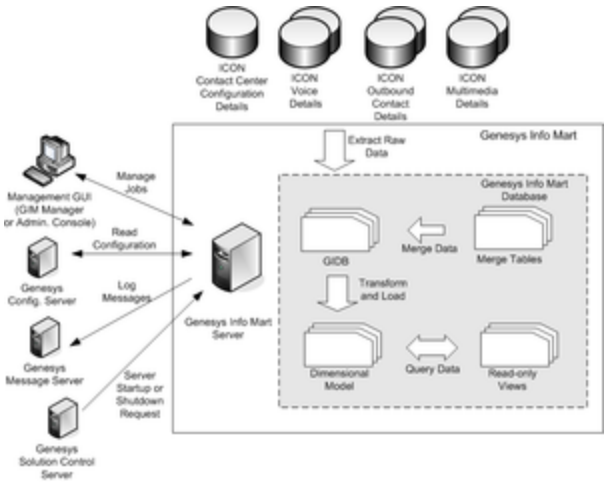
Genesys Info Mart can also be configured to host an aggregation engine that aggregates or re-aggregates the data and populates Aggregate tables in the Info Mart database.

You query the Fact and Dimension tables in the dimensional model, using Structured Query Language (SQL), to obtain results that enable you to examine the data in detail, identify patterns, and predict trends for your organization.

Data sources

Genesys Info Mart 8.5 extracts data from one or more ICON databases to produce the Info Mart Database, your data store for contact center historical reporting.

Genesys Info Mart consolidates data from multiple IDBs in the Global Interaction Database (GIDB), which is part of the Info Mart schema. Voice data, which might be extracted from one or more IDBs, first passes through Merge tables (within the Info Mart database), where the merge operation combines related interactions before moving the data into the GIDB tables. Genesys Info Mart further processes the data in GIDB, and then stores the data in the Info Mart fact and dimension tables (dimensional model).



Genesys Info Mart Architecture and Data Flow Diagram

The figure **Genesys Info Mart Architecture and Data Flow Diagram** duplicates a diagram from the *Genesys Info Mart Deployment Guide*, to illustrate the Genesys Info Mart 8.x architecture and the primary data flow between the Genesys Info Mart components and other Genesys components. (The diagram does not depict high availability architecture for any components.)

In the figure, the various types of *ICON details* refer to the type of reporting data that Genesys Info Mart extracts from one or more IDBs, which are populated by one or more ICON applications. Depending on the way that it is configured, Genesys Info Mart stores the following types of ICON details:

- Configuration details—Configuration object and configuration object relationship data, which ICON obtains from Configuration Server.
- Voice details—Voice interaction-related and agent-related data, which ICON obtains from T-Server.
- Multimedia details—Multimedia interaction-related and agent-related data, which ICON obtains from Interaction Server.

> **Important**
>
> The term *multimedia interactions* refers collectively to all interactions that are processed through Genesys eServices/Multimedia solution, including eServices/Multimedia interactions (for example, `Email` and `Chat` media types) and 3rd Party Media interactions (formerly referred to as *Open Media*—for example, the `Workitem` media type).

- Outbound Contact details—Historical Outbound Contact object and Outbound Contact object relationship data, as well as precalculated Outbound Contact metrics, which ICON obtains from the Outbound Contact Server (OCS).

For more information about the kinds of data that are included in the various types of ICON details, see Data Domains in the *Genesys Info Mart Deployment Guide.*

For information about the meaning of other terms, such as data domains, see Terminology Conventions in the *Genesys Info Mart Deployment Guide.*

For more information about the Genesys Info Mart architecture, see Supported Topologies in the *Genesys Info Mart Deployment Guide.*

Components and functions

The Genesys Info Mart operational environment consists of the following components:

- Genesys Info Mart Server—A Java-based server component that is configured with the Genesys Info Mart application. Jobs, which run under the Genesys Info Mart Server, perform extract, transform, and load (ETL) processes and other functions.
- Genesys Info Mart Manager—A graphical user interface GUI for managing jobs.
- Info Mart Database—A database that is organized into a multi-level data model and contains data that was processed by Genesys Info Mart Server.

Finding more information about Genesys Info Mart

For more information about:

- The Genesys Info Mart components, see Genesys Info Mart Components in the *Genesys Info Mart Deployment Guide.*
- The Info Mart database schema, see the *Genesys Info Mart Physical Data Model* for your RDBMS type.
- The Genesys Info Mart jobs and their functioning, see About Genesys Info Mart jobs.
- Managing Genesys Info Mart operations, see Working with jobs.

New in Release 8.5.0

This page highlights new or changed functionality introduced in Genesys Info Mart 8.5.x releases that are part of 9.0, for features that are relevant to the topics discussed in the *Operations Guide.* For more information about these and other new features, see the New in Release 8.5.0 page in the *Deployment Guide.*

New in Release 8.5.014.14

Starting with release 8.5.014.14 on August 30, 2019, Genesys Info Mart is part of 9.0.

- **Logging enhancement** — To improve the readability of logs, Genesys Info Mart no longer logs Genesys Info Mart Manager (GIM Manager) requests or responses by default.

About Jobs

Genesys Info Mart provides several *jobs* that you can run when needed, or schedule to run on a periodic basis. These jobs perform routine or special-purpose functions, as follows:

- **Routine functions** — Genesys Info Mart provides jobs to perform the following routine functions:
  - Extract data from your source databases.
  - Cleanse and transform the data.
  - Load the data into the fact and dimension tables of the Info Mart dimensional model.
  - Optionally, calculate and load aggregated data into the Aggregate tables.
  - Purge old data from the Info Mart database.
  - Maintain calendar dimension tables.
  - Add and delete partitions for partitioned tables.
  - Starting with release 8.5.010, process General Data Protection Regulation (GDPR) "export" or "forget" requests.
- **Special-purpose functions** — Genesys Info Mart provides jobs to perform the following special-purpose functions:
  - Initialize the Info Mart database.
  - Migrate your existing version 8.x Info Mart database so that it is ready for use by the current 8.x release of Genesys Info Mart.
  - In PostgreSQL deployments, perform supplementary database maintenance.
  - Export data from the Info Mart database to make it available for further import into a data warehouse.

Understanding the jobs

The following table summarizes the jobs that are provided with Genesys Info Mart. Click a job name to link to more information about the job. For more information about how the Genesys Info Mart jobs function, see the part about how Genesys Info Mart works in the *Genesys Info Mart 8.1 Deployment Guide*. For information about using the jobs to extract and transform data, job interdependencies, and a sample schedule, see Managing and scheduling jobs.

Genesys Info Mart Jobs Summary

Job	Frequency	Notes
Job_InitializeGIM *Populates many of the dimension tables in the Info Mart database with fixed information. Adds partitions to partitioned*	Once	This job automatically executes once during the first run of Genesys Info Mart after the initial deployment.

tables for partitioned databases, and automatically updates Interaction Databases (IDBs) for use with Genesys Info Mart.		
Job_ExtractICON *Extracts new and changed records from one or more IDBs, and stores those records in Global Interaction Database (GIDB) tables in the Info Mart database.*	Intraday, as scheduled	
Job_TransformGIM *Transforms and loads previously extracted IDB data and data from other data streams into the fact and dimension tables of the Info Mart database.*	Intraday, depending on **Job_ExtractICON**	
Job_AggregateGIM *Aggregates or re-aggregates the facts based on data that was added or changed during the last transformation job. Stores the data in historical Aggregate tables.*	Continuous, within a configured daily time period	This job is available in Genesys Info Mart deployments with the Genesys historical reporting presentation layer—Genesys CX Insights (GCXI) reports—or Reporting and Analytics Aggregates (RAA).
Job_MaintainGIM *Maintains the Info Mart database.*	Daily, with parts of the job running as configured or as needed	
Job_UpdateStats *In PostgreSQL deployments, performs supplementary maintenance on the Info Mart database.*	Intraday, as scheduled	This job cannot be run from Genesys Info Mart Manager.
Job_MigrateGIM *Runs all scripts and makes any other updates necessary to prepare your Info Mart database for the new release of Genesys Info Mart, and automatically updates IDB(s) for use with Genesys Info Mart, if required.*	Once during the process of moving from an earlier 8.x release to the current one	This job must be run from Genesys Info Mart Manager except in the special circumstance where you are using it to create optional export views (see Creating or updating export views, below).
Job_ExportGIM *Periodically copies the data that is stored in the Info Mart database into local .csv files, one file per table, so that the data is available for further import into a data warehouse.*	Intraday, as scheduled	This job cannot be run from Genesys Info Mart Manager. This job, which was originally introduced for Genesys Engage cloud deployments, is supported in on-premises deployments starting with release 8.5.011.22.

Job_InitializeGIM

Genesys Info Mart Server automatically launches **Job_InitializeGIM** to initialize the Info Mart database during the first run of Genesys Info Mart after the initial deployment. **Job_InitializeGIM**

performs the following functions:

- Populates the following dimensions with fixed information:
  - ATTEMPT_DISPOSITION
  - CALL_RESULT
  - CAMPAIGN_GROUP_STATE
  - CONTACT_INFO_TYPE
  - DATE_TIME
  - DIALING_MODE
  - INTERACTION_RESOURCE_STATE
  - INTERACTION_TYPE
  - MEDIA_TYPE
  - RECORD_STATUS
  - RECORD_TYPE
  - RESOURCE_STATE
  - TECHNICAL_DESCRIPTOR
- In a partitioned database, creates the first set of partitions to be populated during the first extract, transform, and load (ETL) cycle.
- Automatically modifies the IDB schema(s) for use with Genesys Info Mart.

Starting with release 8.5.006, the job automatically creates any missing IDB indexes that Genesys Info Mart requires for the particular DAP role(s). Starting with release 8.5.007, the job also automatically creates any missing views, if database links are used. In earlier releases, the job automatically executed SQL scripts to modify the IDB schema(s) as Genesys Info Mart requires.

Job_ExtractICON

Job_ExtractICON extracts data from one or more IDBs in discrete chunks and stores it either directly in the Global Interaction Database (GIDB) tables or, for voice interaction data, initially in the Merge tables within GIDB. As part of the extraction process for Voice details, **Job_ExtractICON** merges related data in the Merge tables, and then moves the data to the GIDB tables.

In particular, **Job_ExtractICON**:

- Populates the START_DATE_TIME_KEY field in the GIDB and Merge tables.
- Merges call data in the Merge tables.
- Creates audit log records in the CTL_AUDIT_LOG table for each chunk.
- Starting with release 8.5.006, automatically creates any missing IDB indexes that Genesys Info Mart requires for the particular DAP role(s). Starting with release 8.5.007, the job also automatically creates any missing views, if database links are used.

In high availability (HA) deployments, the extraction job also analyzes the Interaction Concentrator (ICON)–provided session information in the redundant IDBs that store the same type of data (Configuration, Voice, Outbound Contact, or Multimedia details), to evaluate which IDB to use for data extraction in a particular extraction cycle. This analysis occurs prior to data extraction in a particular extraction cycle.

After the successful completion of the extraction job, the Genesys Info Mart Server launches the job that transforms all the extracted ICON data.

> **Important**
>
> By default, all time dimension data is calculated in Coordinated Universal Time (UTC) format.

Extraction Roles

The algorithm that **Job_ExtractICON** uses to extract data depends on the extraction role that you configured in the database access point (DAP) that enables Genesys Info Mart to access IDB. The extraction roles are:

- ICON_CFG
- ICON_CORE
- ICON_OCS
- ICON_MM

The extraction algorithms use high-water mark (HWM) timestamps, configured chunk sizes, and configured stuck thresholds to determine an extraction window (in other words, a time span for which data will be extracted) for each data domain during a particular ETL cycle. For more information about the extraction algorithms and how the extraction job processes data, see the chapter about ETL processing in the *Genesys Info Mart 8.1 Deployment Guide*.

ICON_CFG

For the ICON_CFG role, **Job_ExtractICON** extracts:

- All new and changed data from IDB tables that store the contact center configuration history, and stores the data in the GIDB tables of the Genesys Info Mart database. The job extracts all available configuration data in one extraction cycle so that the transformation of other data can proceed.
- Object relationship records from IDB tables. New relationship fact records are inserted into GIDB, and updates are simply merged into existing historical records.

ICON_CORE

For the ICON_CORE role, **Job_ExtractICON** extracts:

- Completed virtual queue details

- Completed voice interaction details, such as calls and user data (including call-based attached data and UserEvent-based key-value pair [KVP] data)
- Both active and completed voice agent login session details
- Both active and completed voice agent states
- Completed voice agent state reason codes
- Both active and completed voice do-not-disturb (DND) modes

The job stores the information in the GIDB tables of the Genesys Info Mart database. The job also merges voice data in the Merge tables before transformation.

ICON_OCS

For the ICON_OCS role, **Job_ExtractICON** extracts all new and changed data from IDB tables that store Outbound Contact data from Outbound Contact Server (OCS), and stores the data in GIDB.

> **Important**
>
> The IDB GC_TIME_ZONE table is extracted as part of the ICON_CFG ETL process. The GC_TIME_ZONE table is used by Genesys Info Mart by the transformation job to create the Info Mart table TIME_ZONE, which is used within Genesys Info Mart OCS processing to associate OCS interactions with specifically defined Configuration Layer–based time zones (this includes custom time zones).

ICON_MM

For the ICON_MM role, **Job_ExtractICON** extracts:

- All new and changed data from IDB tables that store multimedia interactions. Both active and completed multimedia interactions are extracted along with user data (including interaction-based attached data and eServices/Multimedia-specific attributes). These interactions do not need to be merged.
- Both active and completed virtual queue details.
- Both active and completed multimedia agent login session details.
- Both active and completed multimedia agent states.
- Completed multimedia agent state reason codes.
- Both active and completed multimedia do-not-disturb (DND) modes.

The extraction job stores the extracted multimedia data in the GIDB tables of the Genesys Info Mart database.

Job_TransformGIM

Job_TransformGIM transforms the data that has been extracted from all IDBs or that is available to Genesys Info Mart through other data streams such as Elasticsearch databases or Apache Kafka. The Genesys Info Mart Server launches this job during each ETL cycle after it has extracted data from all IDBs. **Job_TransformGIM** transforms GIDB and non-IDB data and then loads it into the Info Mart database as the last step of the transformation process.

The transformation logic implements a dependency between the data in primary and secondary tables. This concept is referred to as *horizontal transform.* For more discussion of horizontal transform, including transformation behavior when there is delayed or missing data, see the section about data transformation in the chapter about ETL processing in the *Genesys Info Mart 8.1 Deployment Guide*.

Error Handling

Genesys Info Mart handles errors differently, depending on the type of data and the reasons for the error. The main categories of error that the transformation job might encounter are:

- Missing configuration data
- Partially merged voice interactions
- Data inconsistencies

For more information, see Troubleshooting Genesys Info Mart jobs. For more information about the behavior of the transformation job when it encounters errors, see the section about error handling in the chapter about ETL processing in the *Genesys Info Mart 8.1 Deployment Guide*. For more information about the configuration options that control error handling, see the error-policy Section in the *Genesys Info Mart Configuration Options Reference.*

Job_AggregateGIM

In deployments that include GCXI or RAA, **Job_AggregateGIM** calculates or recalculates the historical Aggregate tables in the Info Mart database based on:

- Data that changed since the last load of the historical fact tables
- New settings for configuration options that control aggregation

In release 8.x, **Job_AggregateGIM** runs continuously within a time window that you specify.

During ETL processing, before the transformation is committed, the transformation job notifies the aggregation engine that there is new or changed data. The aggregation engine writes the data to an auxiliary table. The aggregation job, which is implemented as a plug-in inside the Genesys Info Mart Server process, reads the data from the auxiliary table, aggregates new data and recalculates historical aggregates, and updates the aggregate tables in the Info Mart database.

For more information about the aggregation package and running the aggregation process, see the *Reporting and Analytics Aggregates User's Guide*. For information about managing the aggregation

job through the Genesys Info Mart Manager, see Managing jobs with Genesys Info Mart Manager.

Scheduling the Aggregation Job

Job_AggregateGIM is an optional job. You can run **Job_AggregateGIM** from the Genesys Info Mart Manager if you plan to use GCXI reports. You can also aggregate directly from the command prompt, in autonomous aggregation mode. For more information about these aggregation modes, see the RAA documentation.

Configuration options enable you to specify:

- Whether **Job_AggregateGIM** will run the aggregation engine within the Genesys Info Mart Server process, under the control of the scheduler.
- The start times and duration of the daily intervals within which **Job_AggregateGIM** will run. Within these intervals, **Job_AggregateGIM** will run continuously.

For more information about the scheduling options, see the schedule Section in the *Genesys Info Mart Options Reference.*

You can calculate or recalculate the aggregates for a certain time span using Genesys Info Mart Manager (see Procedure: Re-aggregating data).

Job_MaintainGIM

Job_MaintainGIM performs the following tasks:

- Purges the Info Mart database in accordance with configurable data-retention policies, as described below (see Purging the Info Mart database).
- Populates the calendar table(s) for future reports, as described below (see Maintaining calendar tables).
- If you are using partitions in a partitioned database, adds partitions as necessary to process incoming data, as described below (see Maintaining database partitions).
- Starting with release 8.5.010, processes GDPR requests, as described below (see Processing GDPR requests).

Purging the Info Mart database

Job_MaintainGIM purges:

- Completed and artificially terminated fact data from GIDB.
- Completed and artificially terminated fact data from the dimensional model.
- Discarded operational data from discard tables.
- Outdated information from the AUDIT_LOG and History tables.
- Configuration fact data from GIDB and relevant fact tables.

- For partitioned tables, partitions that contain only completed and artificially terminated fact data that is eligible to be purged.

Job_MaintainGIM uses different algorithms to purge different categories of data from various areas of the Info Mart schema. Separate configuration options enable you to configure different retention policies for the different categories of data. For more information about the various **days-to-keep-*** configuration options that control data retention, see the gim-etl Section in the *Genesys Info Mart Options Reference.* For more information about data retention policies in general and the purging algorithms that **Job_MaintainGIM** uses, see the chapter about maintenance and other activities in the *Genesys Info Mart 8.1 Deployment Guide.* For a list of the tables **Job_MaintainGIM** purges, see Info Mart Tables Purged by the Maintenance Job.

> **Important**
>
> **Job_MaintainGIM** does not purge old aggregate data or dimension data.

Purging mechanism

The actual SQL commands that **Job_MaintainGIM** issues depend on whether the tables are partitioned.

- When **Job_MaintainGIM** deletes rows in nonpartitioned tables, the job issues SQL DELETE operations against the tables. Running this job daily results in a small percentage of the table being deleted, which minimizes the time that it takes the RDBMS server to find the rows, delete them, and make index adjustments.
- When **Job_MaintainGIM** purges partitioned tables, the job issues the appropriate SQL commands against the tables, as required by the RDBMS implementation, to drop partitions.

Scheduling purging

To use **Job_MaintainGIM** to purge data, configure the time of day that you want Genesys Info Mart Server to launch this job. The job is run once a day. For more information about enabling or disabling a purging schedule, see Setting scheduling options for Genesys Info Mart Server, particularly Step 10.

Maintaining calendar tables

The *calendar tables* are the default DATE_TIME dimension table and any custom calendar tables that you create to support your reporting. **Job_InitializeGIM** initially populates the calendar table(s) for the period of time that you specify in the date-time-max-days-ahead option, so that calendar dimensions are available for your reports. **Job_MaintainGIM** continues to populate the calendar tables when the next batch of calendars is required.

> **Tip**
>
> Genesys does not recommend that you populate the calendar tables more than a year

> in advance.

For information about:

- The configuration options that control population of the calendar dimensions, see the date-time Section in the *Genesys Info Mart Options Reference.*
- Creating custom calendars, see Creating Custom Calendars in the *Genesys Info Mart Deployment Guide.*
- Modifying existing calendar dimensions, see Changing calendar dimension values.

Maintaining database partitions

You can use partitioning on Oracle (range partitioning only), Microsoft SQL Server, and PostgreSQL databases. Fact tables and associated indexes in GIDB and the dimensional model are partitioned. Configuration object tables, configuration relationship fact tables, and dimension tables are not partitioned.

During initialization, **Job_InitializeGIM** creates the first set of partitions, and **Job_MaintainGIM** subsequently creates additional partitions as required to be populated during ETL cycles.

You can configure Genesys Info Mart to specify the size of the partitions in GIDB and the dimensional model and to control how far ahead the Genesys Info Mart jobs (**Job_InitializeGIM** in the first instance, then **Job_MaintainGIM** on an ongoing basis) will create partitions, in preparation for future ETL cycles. For more information, see the descriptions of the **partitioning-*** options in the gim-etl Section in the *Genesys Info Mart Options Reference.*

Processing GDPR requests

Starting with release 8.5.010, the maintenance job processes input JSON files that customers provide to comply with Right to Access ("export") or Right of Erasure ("forget") requests from their customers ("consumers"). Starting with release 8.5.010.16, Genesys Info Mart also supports customer compliance with GDPR requests relating to employee data.

As described in Genesys Engage Premise Support for GDPR in the *Genesys Security Deployment Guide,* customers place the input files in a tenant-specific, configurable location. The JSON files identify the consumers or employees who have made GDPR requests. **Job_MaintainGIM** processes any "export" or "forget" JSON files that have been added or modified since the job last ran. For "forget" requests, the data is redacted in Info Mart fact tables. For both export and "forget" requests, the unredacted data is stored for a configurable amount of time (maximum 30 days) in the CTL_GDPR_HISTORY table.

The personally identifiable information (PII) that Genesys Info Mart exports or redacts is specified in the input JSON files in:

- The phone and email attributes that identify the requesting consumer
- The username attribute that identifies the requesting employee

- Custom user data KVPs and custom Outbound Contact Server (OCS) fields customers might specify in the "gim-attached-data" element

For more information, see Genesys Info Mart Support for GDPR in the *Genesys Security Deployment Guide*.

Job_UpdateStats

Job_UpdateStats performs important aspects of database maintenance to improve query performance in PostgreSQL deployments. The job uses a combination of Genesys Info Mart and default PostgreSQL functionality to:

- Detect tables for which statistics are out of date and update them
- Run a vacuum process, which supplements autovacuum, to reclaim storage space from updated or deleted rows

> **Important**
>
> **Terminology Note:** Although **Job_UpdateStats** performs maintenance activities, in the Genesys Info Mart documentation, the term *maintenance job* refers to **Job_MaintainGIM** only.

Scheduling Job_UpdateStats

Genesys recommends that you configure the Genesys Info Mart Server to run **Job_UpdateStats** frequently throughout the day. You must use configuration options to schedule the job; you cannot schedule or run the job manually from the Genesys Info Mart Manager.

For more information about enabling or disabling the schedule for **Job_UpdateStats**, see Setting scheduling options for Genesys Info Mart Server. For more information about the scheduling options, see the schedule Section in the *Genesys Info Mart Options Reference.*

Job_MigrateGIM

When you need to migrate from an existing Genesys Info Mart 8.x deployment to a later release of Genesys Info Mart, you run **Job_MigrateGIM** as a part of the transition process. **Job_MigrateGIM** automatically runs all of the scripts necessary to prepare your existing Info Mart database for use with the current release of Genesys Info Mart 8.x. If required, **Job_MigrateGIM** automatically modifies the IDB schema(s) for use with the upgraded Genesys Info Mart.

- When you restart an upgraded Genesys Info Mart Server application with an unmigrated Info Mart database, Genesys Info Mart automatically detects an out-of-date Info Mart database schema version and puts the Genesys Info Mart Server into migration state. In this state, you cannot run any jobs other

than **Job_MigrateGIM**.

- Starting with release 8.5.006, **Job_MigrateGIM** automatically creates any missing IDB indexes that Genesys Info Mart requires for the particular DAP role(s). Starting with release 8.5.007, the job also automatically creates any missing views, if database links are used. In earlier releases, each time the job was run, the job automatically executed **update_idb_*.sql** scripts to modify the IDB schema(s) as Genesys Info Mart requires.
- When Genesys Info Mart checks the deployment configuration before the start of the extraction job during normal functioning, it detects any IDBs in the Genesys Info Mart application connections that are not the correct version for Genesys Info Mart. This situation might arise when you upgrade Interaction Concentrator or when you add a new IDB to an existing deployment. In this situation, Genesys Info Mart Server goes into the migration state and will not run any jobs until you manually run **Job_MigrateGIM**, which automatically executes the required scripts to update the IDB(s).

> **Important**
>
> **Job_MigrateGIM** migrates only existing 8.x deployments to the later 8.x release of Genesys Info Mart. There is no migration path from 7.x to 8.x.

Migration scheduling considerations

Ensure that no queries or other activities are performed against the Info Mart database while **Job_MigrateGIM** runs. Be sure to take this into account when you plan migration.

Because **Job_MigrateGIM** might be required to execute the scripts to update IDB(s), consider all ways in which you can minimize or prevent contention between Genesys Info Mart and ICON activity on IDB while **Job_MigrateGIM** runs. For more information, see "Preventing Deadlocks on IDB During Genesys Info Mart Migration" in the “Genesys Info Mart 8.x Migration Procedures” chapter in the *Genesys Migration Guide*.

> **Tip**
>
> The on-demand-migration configuration option enables you to configure Genesys Info Mart to run **Job_MigrateGIM** automatically when the Genesys Info Mart schema version is not up to date. However, Genesys recommends that you use this method only if you have completed all relevant pre-migration and post-migration steps.

For complete migration preparations and procedures, see the Genesys Info Mart 8.x section of the Genesys Migration Guide.

Creating or updating export views

The "About Data Export" page in the *Genesys Info Mart Physical Data Model* for your RDBMS (for Microsoft SQL Server, Oracle, or PostgreSQL, respectively) describes how you can use **Job_ExportGIM** to export Info Mart data for import into another data warehouse and why you might want **Job_ExportGIM** to export your data using export views.

To create or update (refresh) the export views for **Job_ExportGIM** to use, execute **Job_MigrateGIM** from the command line with the **make-export-views** parameter. For example:

```
gim_etl_server.bat -host localhost -port 8000 -app <app> -job Job_MigrateGIM -make-export-
views
```

Genesys Info Mart will create export views of the schema that was in effect before the migration job was run. The following table summarizes considerations for when to run the migration job for this purpose.

I want to...	What must I do?
Set up export views or update existing export views to match an Info Mart schema that was migrated some time ago.	1. Verify that the target database schema and import and consumption queries are ready to process data from tables and columns in the current Info Mart schema. 2. Execute the migration job from the command line, with the **make-export-views** parameter, at any time before the first export (or the first export that you want to use the updated views). The new export views will reflect the current Info Mart schema.
Migrate Genesys Info Mart without updating existing export views (in other words, the post-migration export will export the same tables and columns as the pre-migration exports).	Run the migration job from Genesys Info Mart Manager in the usual way during the migration process, to migrate the Info Mart schema.
Migrate Genesys Info Mart and update existing views to reflect the post-migration schema.	1. Verify that the target database schema and import and consumption queries are ready to process the new data. 2. Run the migration job from Genesys Info Mart Manager in the usual way during the migration process, to migrate the Info Mart schema. 3. Run the migration job again from the command line, with the **make-export-views** parameter. The new export views will reflect the migrated Info Mart schema.

Job_ExportGIM

Job_ExportGIM exports data from fact and dimension tables that are part of the Genesys Info Mart dimensional model, including fact extension tables in the Info Mart database, and creates a .zip archive containing individual .csv files for each table. You can configure various aspects of the export function, including the frequency with which the job runs and the amount of data that it exports. You can also configure Genesys Info Mart to export the data using export views, which represent a frozen snapshot of the Info Mart schema, so that the export will always include the same tables and columns even if future migrations introduce schema changes.

See the page about Data Export capability in the *Genesys Info Mart Physical Data Model* for your RDBMS (for Microsoft SQL Server, Oracle, or PostgreSQL, respectively) for full details, including information about:

- Using export views
- Using the Genesys-provided **update_target_*.sql** script to create a compatible target database schema
- The export file/directory structure and export metadata
- Configuration options that control aspects of **Job_ExportGIM** behavior

Scheduling data export

Use configuration options to configure the Genesys Info Mart Server to run **Job_ExportGIM**; you cannot schedule or run the job manually from the Genesys Info Mart Manager.

For more information about enabling or disabling the schedule for **Job_ExportGIM**, see Setting scheduling options for Genesys Info Mart Server.

Info Mart Tables Purged by the Maintenance Job

This page lists the tables in the Info Mart database schema that the Genesys Info Mart maintenance job, Job_MaintainGIM, purges. The maintenance job automatically purges all data that it determines is eligible to be purged, based on configurable retention policies. The maintenance job can be scheduled to run daily, or it can be run manually from the Genesys Info Mart management GUI.

The maintenance job purges data from particular tables within the following table groups:

- Dimensional model tables
- GIDB fact tables
- Discard and control tables
- Configuration fact tables

For more information about the maintenance job, see Job_MaintainGIM. For information about the configuration options that specify the data-retention policies, see the **days-to-keep-*** options in the *Genesys Info Mart Options Reference.*

Dimensional model tables

The following table lists the fact tables in the dimensional model that are purged by Job_MaintainGIM.

Dimensional Model Fact Tables Purged by Job_MaintainGIM

Type of Data	Tables Purged	Purge Eligibility
Voice and Multimedia interactions	• INTERACTION_FACT • INTERACTION_RESOURCE_FACT • IXN_RESOURCE_STATE_FACT • IRF_USER_DATA_KEYS and custom high-cardinality user-data tables (IRF_CUST_* in the make_gim_UDE_template.sql or make_gim_UDE_template_partitioned.sql script) • MEDIATION_SEGMENT_FACT	days-to-keep-gim-facts
Agent activity	• SM_MEDIA_NEUTRAL_STATE_FACT	days-to-keep-gim-facts

Type of Data	Tables Purged	Purge Eligibility
	• SM_RES_SESSION_FACT • SM_RES_STATE_FACT • SM_RES_STATE_REASON_FACT	
Outbound Contact activity	• CAMPAIGN_GROUP_SESSION_FACT • CALLING_LIST_METRIC_FACT • CAMPAIGN_GROUP_STATE_FACT • CONTACT_ATTEMPT_FACT	days-to-keep-gim-facts
Other reporting data	• BGS_SESSION_FACT • CALLBACK_FACT • CDR_FACT • CHAT_SESSION_FACT • CHAT_THREAD_FACT • COBROWSE_FACT • GPM_FACT • LDR_FACT • SDR_ACTIVITIES_FACT • SDR_BOTS_FACT • SDR_CUST_ATRIBUTES_FACT • SDR_EXT_REQUEST_FACT • SDR_SESSION_FACT • SDR_SURVEY_FACT • SDR_SURVEY_TRANSCRIPT_FACT • SDR_USER_INPUTS_FACT • SDR_USER_MILESTONE_FACT	days-to-keep-gim-facts

The following table lists the dimension tables in the dimensional model that are purged by Job_MaintainGIM.

Dimensional Model Dimension Tables Purged by Job_MaintainGIM

Type of Data	Tables Purged	Purge Eligibility
Configuration-related	• GROUP_ANNEX	days-to-keep-deleted-annex

Type of Data	Tables Purged	Purge Eligibility
	• RESOURCE_ANNEX	

GIDB fact tables

The following table lists the fact tables in GIDB that are purged by Job_MaintainGIM.

GIDB Tables Purged by Job_MaintainGIM

Type of Data	Tables Purged	Purge Eligibility
Voice interactions	• GIDB_G_IR_V • GIDB_G_IR_HISTORY_V • GIDB_G_CALL_V • GIDB_G_VIRTUAL_QUEUE_V • GIDB_G_CALL_HISTORY_V • GIDB_G_CALL_STAT_V • GIDB_G_ROUTE_RES_VQ_HIST_V • GIDB_G_ROUTE_RESULT_V • GIDB_G_SECURE_UD_HISTORY_V • GIDB_G_USERDATA_HISTORY_V • GIDB_G_CUSTOM_DATA_S_V • GIDB_G_IS_LINK_V • GIDB_G_IS_LINK_HISTORY_V • GIDB_G_PARTY_V • GIDB_G_PARTY_HISTORY_V	days-to-keep-gidb-facts
Multimedia interactions	• GIDB_G_IR_MM • GIDB_G_IR_HISTORY_MM • GIDB_G_CALL_MM • GIDB_G_VIRTUAL_QUEUE_MM • GIDB_G_CALL_HISTORY_MM • GIDB_G_ROUTE_RES_VQ_HIST_MM • GIDB_G_ROUTE_RESULT_MM	Starting with release 8.5.015.19, days-to-keep-gidb-facts In releases earlier than 8.5.015.19, days-to-keep-active-facts or days-to-keep-gidb-facts, whichever is greater

Type of Data	Tables Purged	Purge Eligibility
	• GIDB_G_SECURE_UD_HISTORY_MM • GIDB_G_USERDATA_HISTORY_MM • GIDB_G_CUSTOM_DATA_S_MM • GIDB_GM_F_USERDATA • GIDB_GM_L_USERDATA • GIDB_G_PARTY_MM • GIDB_G_PARTY_HISTORY_MM	
Agent activity	• GIDB_G_AGENT_STATE_HISTORY_V • GIDB_G_AGENT_STATE_RC_V • GIDB_G_DND_HISTORY_V • GIDB_G_LOGIN_SESSION_V • GIDB_GX_SESSION_ENDPOINT_V • GIDB_G_AGENT_STATE_HISTORY_MM • GIDB_G_AGENT_STATE_RC_MM • GIDB_G_DND_HISTORY_MM • GIDB_G_LOGIN_SESSION_MM • GIDB_GX_SESSION_ENDPOINT_MM	days-to-keep-gidb-facts
Outbound Contact activity	• GIDB_GO_CAMPAIGN • GIDB_GO_CAMPAIGNHISTORY • GIDB_GO_METRICS • GIDB_GO_CHAIN • GIDB_GO_CHAINREC_HIST • GIDB_GO_FIELDHIST • GIDB_GO_SEC_FIELDHIST • GIDB_GOX_CHAIN_CALL	days-to-keep-gidb-facts

Discard and control tables

Job_MaintainGIM purges discarded operational data from the following **Staging** tables:

- STG_TRANSFORM_DISCARDS
- STG_IDB_FK_VIOLATION

Job_MaintainGIM purges data lineage and ETL history data from the following **Control** tables:

- CTL_AUDIT_LOG
- CTL_ETL_HISTORY
- CTL_EXTRACT_HISTORY
- CTL_PURGE_HISTORY
- CTL_TRANSFORM_HISTORY

Starting with release 8.5.010, Job_MaintainGIM purges the personally identifiable information (PII) that related to a General Data Protection Regulation (GDPR) request and that was stored in the GDPR **Control** table:

- CTL_GDPR_HISTORY

Except for the GDPR control table, purge eligibility is determined by the days-to-keep-discards-and-job-history configuration option, calculated from the timestamp of the ETL processing event—ETL_TS for the Staging tables and CREATED_TS for the Control tables. For CTL_GDPR_HISTORY, purge eligibility is determined by days-to-keep-gdpr-history, calculated from the time the maintenance job processed the GDPR request.

Configuration fact tables

Starting with release 8.5.003, Genesys Info Mart purges deleted configuration fact data from the following tables:

- GIDB_GCX_AGENT_PLACE
- GIDB_GCX_CAMPGROUP_INFO
- GIDB_GCX_CAMPLIST_INFO
- GIDB_GCX_ENDPOINT_PLACE
- GIDB_GCX_FORMAT_FIELD
- GIDB_GCX_GROUP_AGENT
- GIDB_GCX_GROUP_ENDPOINT
- GIDB_GCX_GROUP_PLACE
- GIDB_GCX_GROUP_ROUTEDN
- GIDB_GCX_LIST_TREATMENT
- GIDB_GCX_LOGIN_INFO
- GIDB_GCX_SKILL_LEVEL
- GIDB_GCX_SUBCODE
- CALLING_LIST_TO_CAMP_FACT_
- GROUP_TO_CAMPAIGN_FACT_
- PLACE_GROUP_FACT_
- RESOURCE_GROUP_FACT_
- RESOURCE_SKILL_FACT_

Purge eligibility is determined by the days-to-keep-cfg-facts configuration option, calculated from the timestamp of the DELETED_TS or END_TS value of the fact record.

Job History and Status

You can view information about job history and status using either of the following methods:

- **Voice of Process**—This page describes how you can use Voice of Process to find information about the status and processing history of Genesys Info Mart jobs.
- **Genesys Info Mart Manager**—For information about viewing the status and history of jobs using Genesys Info Mart Manager, see Using Genesys Info Mart Manager.

About Voice of Process

Use Voice of Process functionality to access information related to the processing history of Genesys Info Mart jobs, including to:

- Quickly check the state of Genesys Info Mart jobs.
- Track the data extraction progress of each extraction job cycle.
- Track the data transformation progress of each transformation cycle.
- Identify the job that inserted a particular row of data or made the most recent update to it.

The Genesys Info Mart database provides several service control tables, which in addition to existing administrative views, store the ETL processing history details.

Checking the state of ETL processing

The ADMIN_ETL_JOB_HISTORY administrative view is updated each time a job is executed. By monitoring this view, administrators can quickly assess the current state of all jobs.

The ADMIN_ETL_JOB_HISTORY administrative view provides the following information related to the jobs:

- Name of the job
- Time of execution
- Time of completion
- Duration
- Status (success or failure

Tracking the progress of data extraction

A row is added to the ADMIN_EXTRACT_HISTORY administrative view when **Job_ExtractICON** successfully completes extracting a source data table. Administrators can closely track the progress of the data extract cycle by monitoring this view.

The ADMIN_EXTRACT_HISTORY provides the following information related to the data extraction job, including:

- Name of the source table
- Number of records extracted
- Start and end time of each extraction job cycle

Tracking the progress of data transformation

Administrators can closely track the progress of the data transform cycle by viewing the contents of the CTL_TRANSFORM_HISTORY table.

The CTL_TRANSFORM_HISTORY provides the following information related to the data transformation job:

- Name of the destination table
- Number of records transformed
- Start and end time of each transformation job cycle

Identifying the job that inserted or updated data

In Info Mart's dimensional model, every table that receives inserts has a CREATE_AUDIT_KEY service field. Every table that can also receive updates has an additional UPDATE_AUDIT_KEY service field. Both these fields contain a reference to a row in the CTL_AUDIT_LOG table.

By linking fact data to the CTL_AUDIT_LOG table, administrators can determine:

- The identifier of the job that inserted/updated the data. This information can be used to quickly locate relevant portions of the log file when troubleshooting data quality issues.
- The total number of records processed by the job.
- The range of partitions (when using partitioning) that received the new/updated data.

Additionally, fields CREATE_AUDIT_KEY and UPDATE_AUDIT_KEY can be used to identify newly arriving data for subsequent aggregation or other processing. For more information about any of the Info Mart tables, views, and fields, see the *Physical Data Model* for your RDBMS:

- *Genesys Info Mart Physical Data Model for a Microsoft SQL Server Database*

- *Genesys Info Mart Physical Data Model for an Oracle Database*
- *Genesys Info Mart Physical Data Model for a PostgreSQL Database*

Using Genesys Info Mart Manager

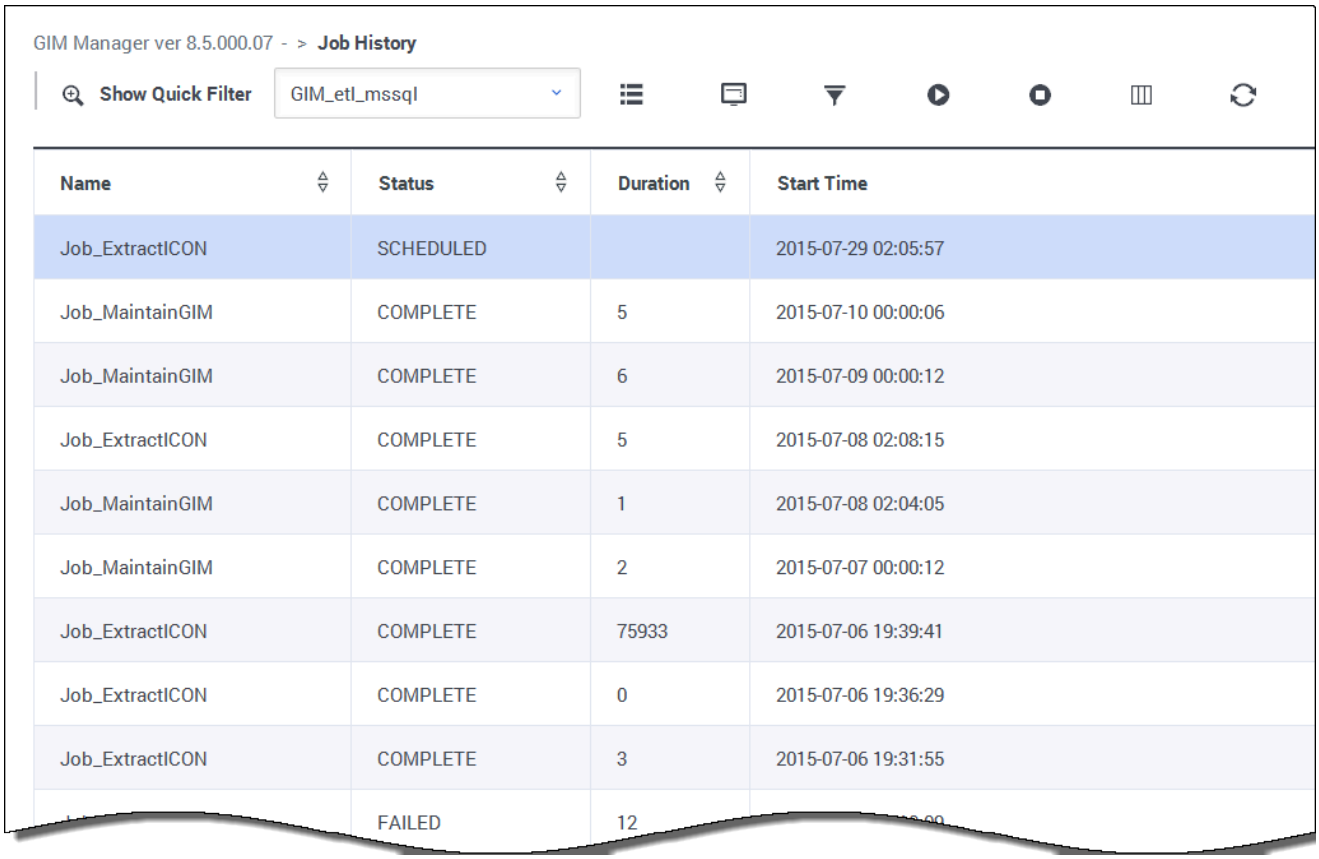
The Genesys Info Mart Manager (GIM Manager) provides an interface that you can use to manage Genesys Info Mart jobs.

GIM Manager provides the following views to monitor and manage jobs:

- **Job History** view, where you can view detailed historical information about jobs.
  - Displays the current job execution status.
  - Displays a history of job execution, such as start time, stop time, duration, and final status, and displays detailed information about any delays in processing jobs.
  - Enables you to filter the jobs based on time, status, and other factors.
- **ETL Status** view, which displays information about latency for each functional area.

The following subsections describe the mechanics of using the GUI. For information about using Genesys Info Mart Manager to manage jobs, see Managing Jobs with Genesys Info Mart Manager.

Accessing Genesys Info Mart Manager



Name	Status	Duration	Start Time
Job_ExtractICON	SCHEDULED		2015-07-29 02:05:57
Job_MaintainGIM	COMPLETE	5	2015-07-10 00:00:06
Job_MaintainGIM	COMPLETE	6	2015-07-09 00:00:12
Job_ExtractICON	COMPLETE	5	2015-07-08 02:08:15
Job_MaintainGIM	COMPLETE	1	2015-07-08 02:04:05
Job_MaintainGIM	COMPLETE	2	2015-07-07 00:00:12
Job_ExtractICON	COMPLETE	75933	2015-07-06 19:39:41
Job_ExtractICON	COMPLETE	0	2015-07-06 19:36:29
Job_ExtractICON	COMPLETE	3	2015-07-06 19:31:55
	FAILED	12	

The following brief explanation partially duplicates information from the *Genesys Info Mart Deployment Guide*. For more detailed instructions about accessing Genesys Info Mart Manager, see the Post-Installation Activities in the *Deployment Guide.*

[+] Expand: Prerequisites: Before you can access Genesys Info Mart Manager

To access Genesys Info Mart Manager, ensure that:

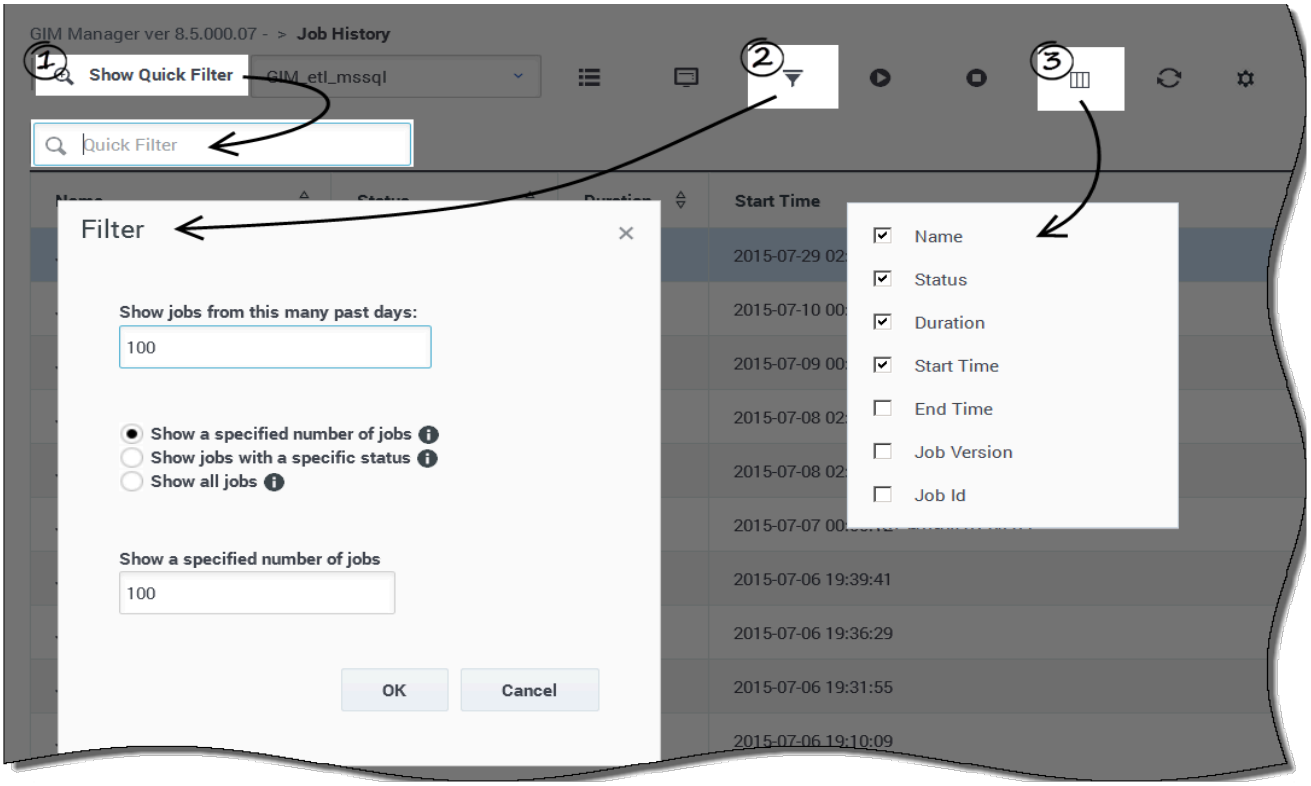
- Genesys Administrator Extension (GAX) and Genesys Info Mart Manager have been installed.
- A Genesys user account with the appropriate permissions and role privileges to access plug-ins and the Genesys Info Mart application has been provisioned. For more information about the required permissions and privileges, see the prerequisites for installing Genesys Info Mart Manager in the *Genesys Info Mart Deployment Guide.*
- The Genesys Info Mart Server application is started.

To access Genesys Info Mart Manager, use a web browser to log in to GAX, and select **Administration** > **GIM Manager**.

The **GIM Manager** page displays the status of the Genesys Info Mart ETL jobs. If there is more than

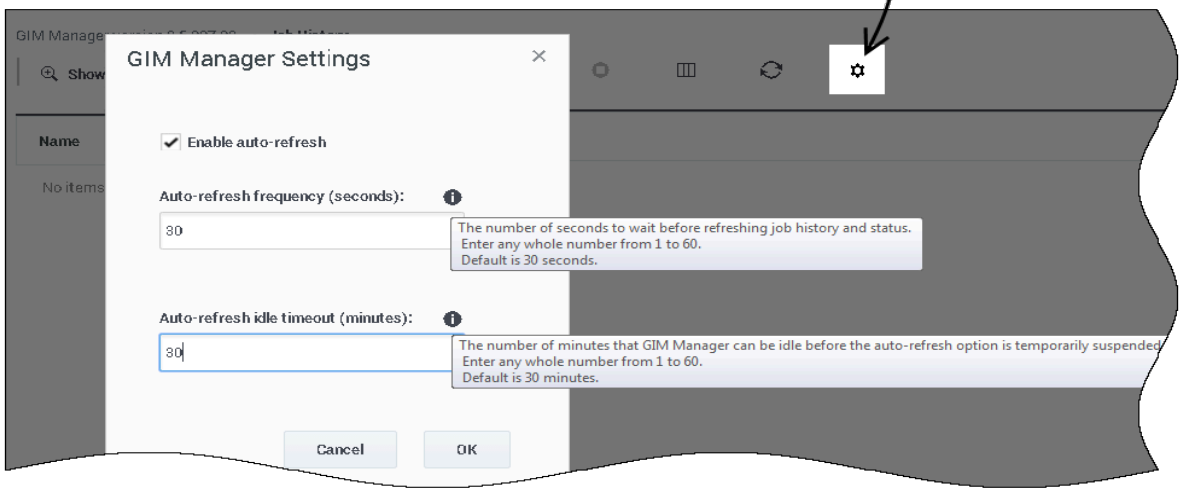
one Genesys Info Mart Server in your deployment, use the drop-down list box to choose a server to manage.

How do I view job history?



To filter what jobs appear in the Job History list, you can use either:
1. Quick Filter or 2. Filter
Or use the two tools together for even greater control.
To select what columns appear in the Job History list, click 3. Columns.

To control how often job history and status information is refreshed in the list view, click GIM Manager Settings.



To view detailed information about jobs, click **Job History**. You can customize and filter the display:

To Control What Information is Displayed About Each Job

- To sort the data in the list view, click the column headings. For example, to sort by duration, click the **Duration** column heading. Click again to sort in reverse order.
- To choose what columns appear in the list view, click **Select Columns**. In addition to the default columns, you can, for example, add a column to show the **End Time**, **Job Version**, or **Job ID**.

> **Tip**
> Changes you make to column visibility and data sort order are not preserved when you reload/refresh the browser page.

To Refresh the Data in the List View

In Genesys Info Mart Manager 8.5.007 and later, Genesys Info Mart Manager automatically refreshes the data in the list view. To enable, disable, or configure this feature, click **GIM Manager Settings**. In the **GIM Manager Settings** dialog, you can configure the following options:

- **Enable auto-refresh**—Select this option to enable auto-refresh (enabled by default).
- **Auto-refresh frequency**—Enter the number of seconds Genesys Info Mart Manager should wait before refreshing job history and status information. Enter any whole number between 1 and 60; the default is 30 seconds.
- **Auto-refresh idle timeout**—Enter the number of minutes that Genesys Info Mart Manager can be idle before the auto-refresh option is temporarily suspended. Enter any whole number between 1 and 60; the default is 30 minutes.

If Genesys Info Mart Manager is inactive for a period of time, the auto-refresh option is temporarily suspended. Click **Refresh List** to resume auto-refresh. You can manually refresh data at any time by clicking **Refresh List**.

> **Important**
> In Genesys Info Mart Manager 8.5.004 and earlier, data in the list view is not automatically refreshed. If you are waiting for a job status to change, periodically click **Refresh**.

To Control (filter) What Jobs Appear in the Job History List View

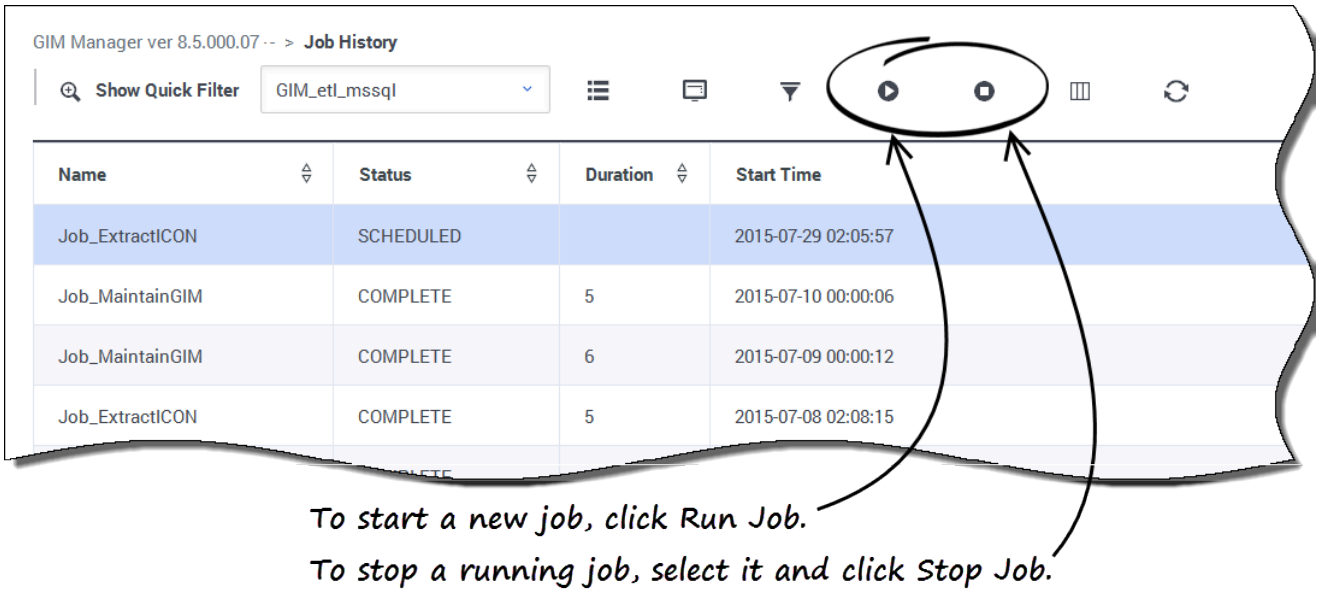
Genesys Info Mart Manager offers two filtering tools: the *Quick Filter* filters the jobs already listed in the Genesys Info Mart Manager view, while the *Filter dialog* retrieves fresh, filtered data from the Genesys Info Mart Server:

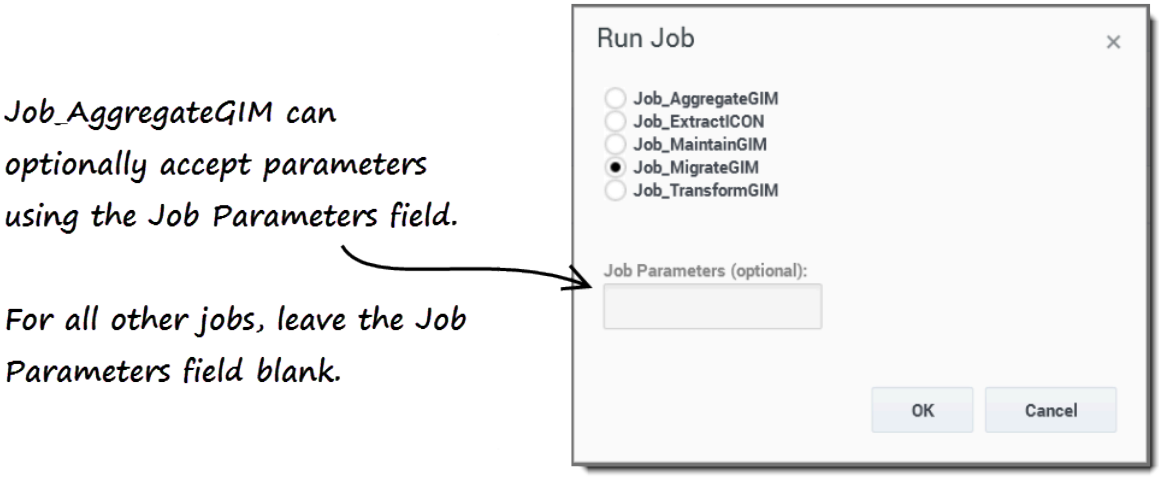
- Click **Show Quick Filter** to display the **Quick Filter** field. In the **Quick Filter** field, type one or more characters. As you type, the list of jobs automatically updates to show only those jobs that contain the text you type. This filter checks all visible columns, so you can easily filter by job name, status, duration, job ID, or start/end times. Often a few characters is enough to usefully filter the view; for example, type `Ext` to show only JobExtractICON jobs.
- Click **Filter** to open the **Filter** dialog box. On the **Filter** dialog box, you can enter a value in the **Show jobs from this many past days** field, which controls how many days' worth of data is displayed. This value works in parallel with any one of the following three filtering options:
  - **Show a specified number of jobs**: Enter the maximum number of jobs to display. For example, enter `10` to display 10 jobs with the most recent start times.
  - **Show jobs with a specified status**: Select an option from the list to display only jobs that have the selected status. For example, select **Running** to display only jobs that are currently running.
  - **Show all jobs**: Show all jobs from the specified past number of days.

For example, to view all of the jobs that failed in the last week, enter 7 in the **Show jobs from this many past days** field, and select **FAILED** from the **Show jobs with a specified status** list.

> **Tip**
>
> Selections you make in the **Filter** dialog box persist between sessions. Also, the **Quick Filter** and **Filter** features interact with each other. Thus, if you set options in the **Filter** dialog box, you can further refine the filter by entering a value in the **Quick Filter** field.

How do I start or stop jobs?





You can easily start and stop jobs using Genesys Info Mart Manager:

To Start a Job

To start a Genesys Info Mart job:

1. Click **Run Job** to open the **Run Job** dialog box.
2. On the **Run Job** dialog box, select a job to run. **Job_AggregateGIM** can optionally accept parameters

using the **Job Parameters** field; for all other jobs, leave the **Job Parameters** field blank.

3. Click **OK** to start the job.

   Note that the job may not run immediately (for example, the job cannot run while other jobs are running). In this case, the status will change to Scheduled, and the job will run as soon as conditions permit.

> **Tip**
>
> If you want to stop **Job_AggregateGIM**, you must first ensure that the `run-aggregates` configuration option in the Genesys Info Mart application is set to `false`.

To Stop a Job

To stop a currently running job, or cancel the **Run Job** command for a job that has not yet started (in other words, a job that has a status of Scheduled), first click **Job History** and select the job, then click **Stop Job**.

The data in the list view is automatically refreshed when you stop a job by clicking **Stop Job**.

To Re-aggregate Data

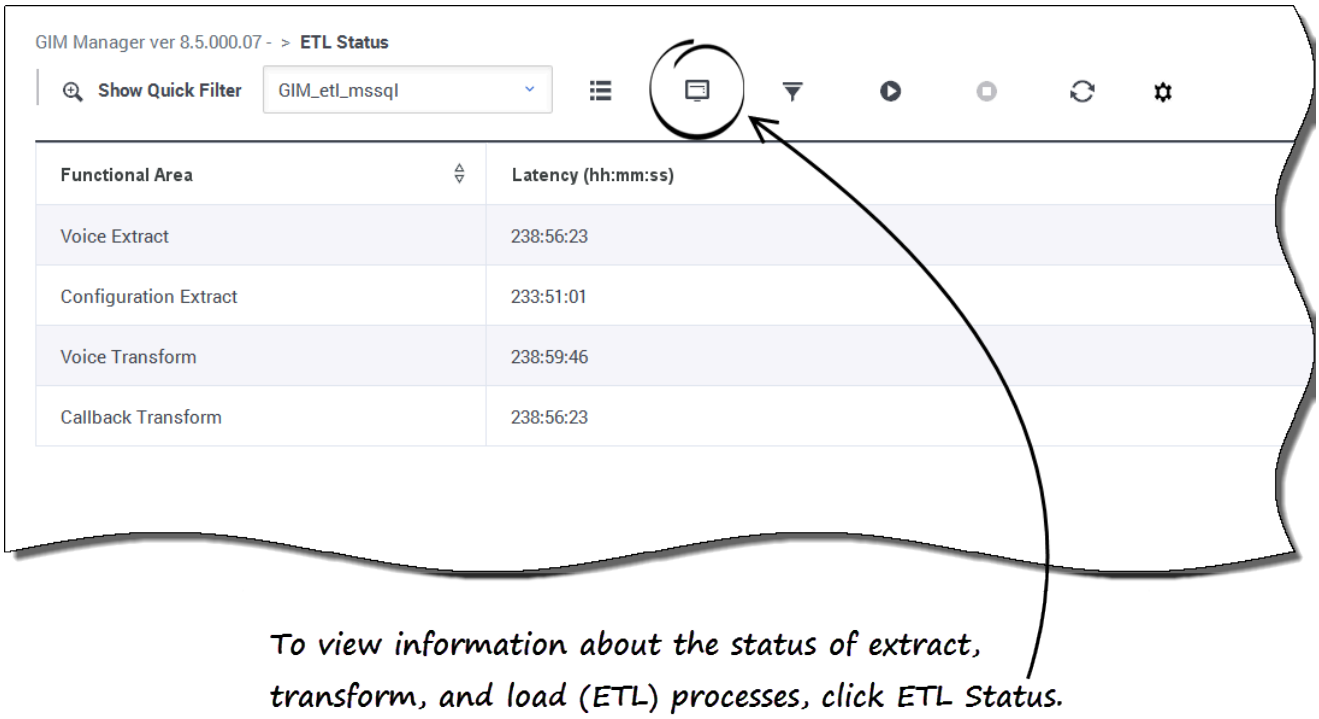
Run **Job_AggregateGIM**, and in the **Job Parameters** field, enter:
`-insertPendingAgg <AGR_SET>:<START>:<END>`
where:

- <AGR_SET> indicates what set to aggregate (ALLSETS, or an aggregate set name). Aggregate set name is formatted as follows: <HIERARCHY_NAME>-<AGG_LEVEL>[.Flavor])
  where:
  - <HIERARCHY_NAME> is the name of the hierarchy to be aggregated.
  - <AGG_LEVEL> is the aggregation level (SUBHOUR, HOUR, DAY, MONTH, QUARTER, YEAR).
  - [.Flavor] indicates what data to include (Online or Offline).
- <START> is a value (YYYY-MM-DD) from the DATE_TIME table that indicates the beginning of the reporting interval.
- <END> is a value (YYYY-MM-DD) from the DATE_TIME table that indicates the end of the reporting interval.

Re-aggregation is possible only if **Job_AggregateGIM** is already running. As a result, if you attempt to pass re-aggregation job parameters when **Job_AggregateGIM** is not running, Genesys Info Mart simply starts aggregation, ignoring the job parameters. In this case, you can re-aggregate by issuing the command to run the job, with the re-aggregation parameters, a second time.

> **Important**
> A request to re-aggregate data for a specific time range first deletes aggregated data from that time range (to prevent duplicate data from being written to Info Mart). Before you issue a re-aggregation command, make sure that facts for your selected time range exist in the Info Mart database and have not been purged. Otherwise, you could be left with no aggregates at all for that time range.

How do I view ETL status?



To view information about latency for each functional area, click **ETL Status**.

Latency, which is expressed in the `hh:mm:ss` format, reflects the time elapsed since the occurrence of the last contact center event for which reporting data has been successfully stored in the Info Mart database. Latency of a few minutes indicates a typical value in a normal operational environment. Immediately after the maintenance job runs, you may notice that latency values are higher than what you usually see for your environment. If there is no activity for a particular data domain over a number of ETL cycles, the latency indicated for that type of data will noticeably increase.

Genesys Info Mart Manager displays the latency for the following functional areas, but only if they are configured on the Genesys Info Mart Server: Extract, Voice Transform, Multimedia Transform, Outbound Contact Transform, Callback

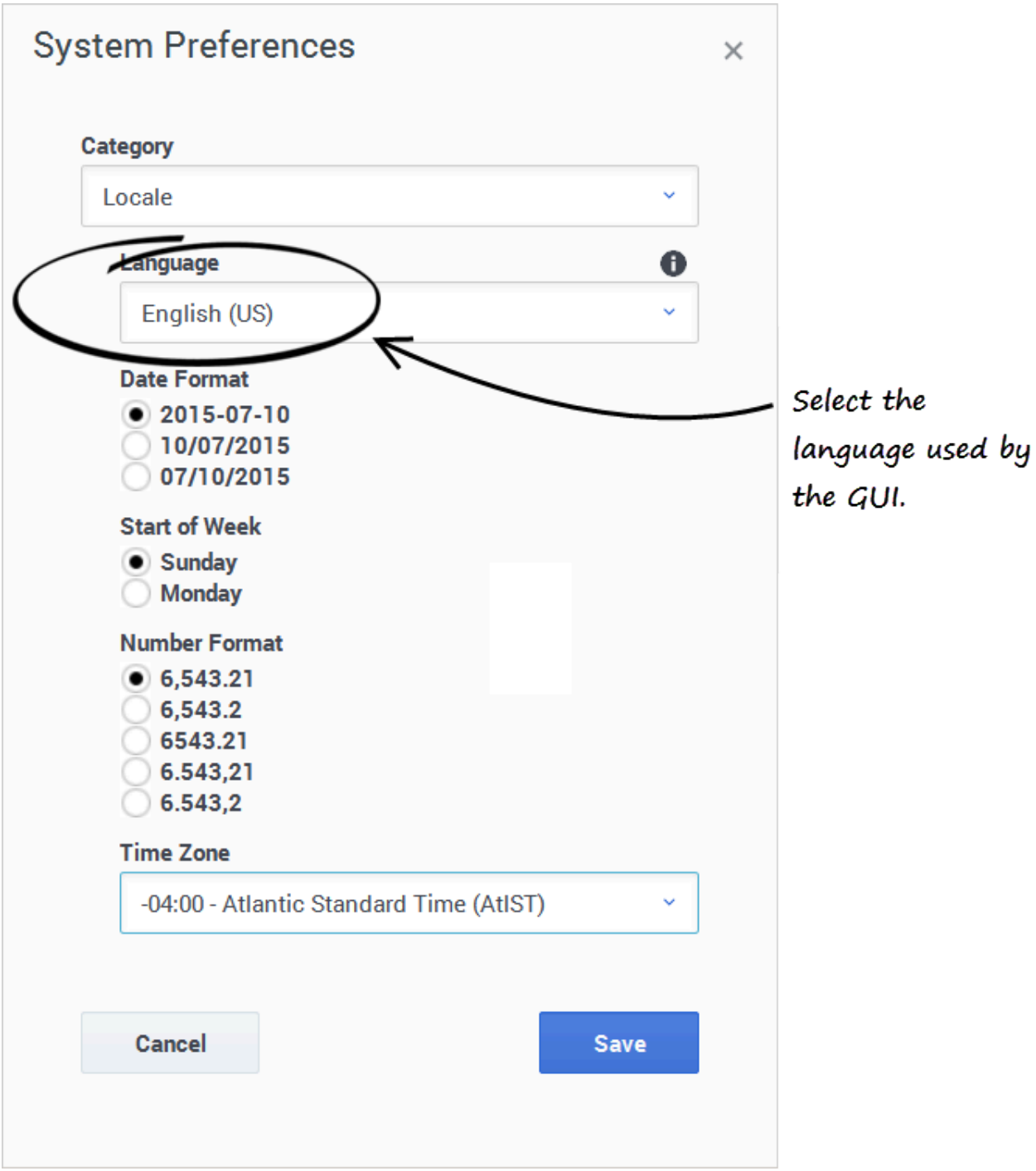
Transform, Media Neutral SM Transform, Elasticsearch, and Aggregation.

In Genesys Info Mart Manager 8.5.004 and earlier, the data displayed represents the status of jobs in the most recent cycle. To display the most recent data at any time, click **Refresh List**.

Sort Order

To sort the data in the list view, click the column headings. For example, to sort by latency, click the **Latency** column heading. Click again to sort in reverse order.

How do I see the Genesys Info Mart Manager Help in another language?



You can select the language used by the GIM Manager GUI. Select the language in the Preferences

menu (click your user name in the menu bar, and choose **System Preferences > Locale** or **User Preferences > Locale**). If the language you want is not listed, see Installing Language Packs for information about how to install localization toolkits for the GIM Manager GUI.
GIM Manager uses the time zone setting, date format, and number format that you select in Genesys Administrator Extension preferences.

Managing and Scheduling Jobs

This page describes how to manage and schedule the Genesys Info Mart jobs, either automatically or manually, using Genesys Info Mart Server and Genesys Info Mart Manager.

For descriptions of the Genesys Info Mart jobs, see About Jobs. For information about how Genesys Info Mart handles errors that it might encounter during job execution, see Troubleshooting Genesys Info Mart jobs.

> **Important**
>
> - Before you can execute any job, you must complete the tasks in the *Genesys Info Mart Deployment Guide*.
> - The Genesys Info Mart Server checks the integrity of the Genesys Info Mart deployment and prevents any new job from starting if the configuration check encounters errors in the items that it validates. For more information about when Genesys Info Mart performs the configuration check and which items it checks, see the section about deployment verification in the chapter about maintenance and other activities in the *Genesys Info Mart 8.1 Deployment Guide* (link available here).

Scheduling jobs with Genesys Info Mart Server

The Genesys Info Mart Server launches jobs based on the scheduling options that you configure in the Genesys Info Mart application, with any necessary adjustments to accommodate logical rules that guide scheduling. (For convenience, this function is called the Scheduler.) The basic unit of scheduling is the ETL cycle. The ETL cycle performs the following functions:

- Extracts data from each data source.
- Transforms the extracted data, and loads the transformed data into the Dimension tables and the Fact tables.

Additional jobs run on a scheduled basis to perform the following functions:

- An optional aggregation process, which runs in parallel with the ETL cycle, runs continuously within configured time intervals to populate Aggregate tables, in an environment where either the Genesys historical reporting presentation layer (GCXI or Reporting and Analytics Aggregates (RAA) package is deployed.
- **Job_MaintainGIM**, which runs outside the ETL cycle, purges data from the Info Mart database, in accordance with configurable data retention policies. The job also maintains the default and custom calendars. In partitioned databases, the job also maintains the partitions.
- In PostgreSQL deployments, **Job_UpdateStats**, which runs in parallel with the ETL cycle, performs supplementary database maintenance.

The following topics provide additional information about scheduling jobs:

- Scheduling the ETL cycle
- Job sequencing rules
- Sample schedule
- Setting scheduling options for Genesys Info Mart Server

Scheduling the ETL cycle

ETL Cycle Configuration Options—The options that control the ETL cycle enable you to specify the:

- Time of day that the first ETL cycle should begin
- Time of day that the final ETL cycle should begin
- Frequency of the ETL cycle

Non–ETL-Related Scheduling Options—You configure additional options to specify:

- Whether calculation of aggregates occurs in parallel with the ETL cycle
- The times of day when the purging of old Info Mart data should start and end
- In PostgreSQL deployments, whether and when **Job_UpdateStats** will run
- The time zone in which the schedule will be defined

The configuration options also enable you to:

- Temporarily stop Genesys Info Mart Server from launching scheduled jobs
- Stop Genesys Info Mart Server from launching the job that calculates the Aggregate tables
- Stop Genesys Info Mart from launching the job that purges old data from the Info Mart database

Job sequencing rules

Genesys expects that jobs will usually follow an orderly sequence in accordance with a configured schedule: **Job_ExtractICON** followed by **Job_TransformGIM** in repeated ETL cycles, with **Job_AggregateGIM** (in deployments with Genesys-provided aggregation) and **Job_UpdateStats** (in PostgreSQL deployments) running in parallel with the ETL cycle, followed by a daily run of **Job_MaintainGIM** in a maintenance window during which no other jobs are running.

You can start a job manually at any time from Genesys Info Mart Manager—for example, you might need to run **Job_MaintainGIM** in order to populate a reconfigured calendar or, if your Info Mart database is partitioned, in order to create new partitions before the next extraction.

Job_TransformGIM has a logical dependence on **Job_ExtractICON**, and **Job_AggregateGIM** has a logical dependence on **Job_TransformGIM**. That is, until you perform an extraction, there is nothing to transform, and until you have performed extraction and transformation, there is no data to aggregate. Genesys Info Mart does not enforce any rules regarding logical dependence. If you

manually run a job before the logically prior job has completed, the “later” job will simply not process any data.

To prevent deadlocks, it is important that no other jobs run while **Job_MaintainGIM** is running. Genesys Info Mart enforces this rule against parallel execution when jobs are run by the Scheduler.

Scheduler-run jobs

When you have Scheduler-run jobs on a configured schedule (see selow, Setting scheduling options for Genesys Info Mart Server), Scheduler manages jobs automatically according to the following rules:

- The Genesys Info Mart Server does not start a job if there is another instance of that job already running.
- During a scheduled ETL cycle, Scheduler launches the transformation job after the extraction job completes.
- Scheduler ensures that the extraction and transformation jobs do not run at the same time as the maintenance job, which purges Info Mart data. If the last cycle of the extraction and transformation jobs is still running when the maintenance window starts, Scheduler waits for the extraction and transformation jobs to complete before it allows the maintenance job to start.
  If a scheduled ETL cycle is set to begin before a maintenance job is finished, Scheduler stops the maintenance job and starts the ETL cycle.
- In PostgreSQL deployments, Scheduler allows **Job_UpdateStats** to run in conjunction with the ETL jobs. Scheduler will not wait for **Job_UpdateStats** to complete before it allows the maintenance job to start. However, once the maintenance job has started as part of the configured schedule, Scheduler suspends the schedule for **Job_UpdateStats** until the maintenance job finishes.

Jobs run from Genesys Info Mart Manager

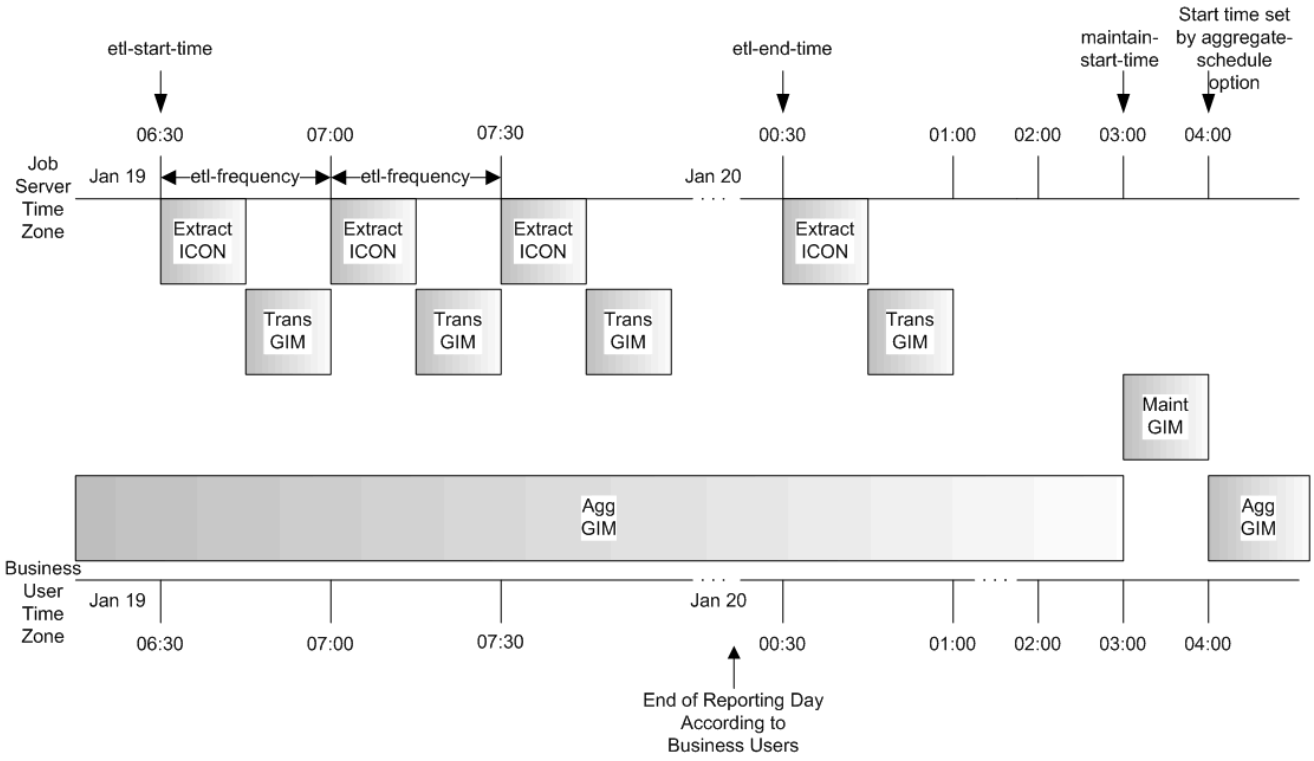
When you start a job from Genesys Info Mart Manager (see below, Managing jobs with Genesys Info Mart Manager) the Genesys Info Mart Server manages the jobs according to the following rules:

- The Genesys Info Mart Server does not start a job if there is another instance of that job already running.
- You can launch the transformation job manually from Genesys Info Mart Manager while an extraction job is running, but the transformation job will not do anything if no data has been extracted.
- The Genesys Info Mart Server does not prevent other jobs from running at the same time as the maintenance job. To prevent deadlocks that can lead to job failures, ensure that you suspend the ETL schedule and, in PostgreSQL deployments, the **Job_UpdateStats** schedule, before you run **Job_MaintainGIM** from Genesys Info Mart Manager.
- In the case of the aggregation job, Genesys Info Mart Server does not allow an instance of the job to run outside the regularly scheduled intervals within which **Job_AggregateGIM** has been configured to run. For example, if **Job_AggregateGIM** has been configured to run every day between 01:00 AM and 06:00 AM, you will not be able to launch **Job_AggregateGIM** manually from Genesys Info Mart Manager at any time outside that time period (for example, at 08:00 AM).

Sample schedule

The figure **Sample Genesys Info Mart Server Schedule** depicts a sample Genesys Info Mart Server job schedule that runs repeated ETL cycles throughout the day. The deployment includes

aggregation, and the aggregation job has been scheduled to run for 23 hours out of each day, leaving one hour each day when **Job_AggregateGIM** is stopped, providing an opportunity for **Job_MaintainGIM** to run.



The schedule options are set as follows:

```
etl-start-time = 06:30
etl-end-time = 00:30
etl-frequency = 30 minutes
maintain-start-time = 03:00
aggregate-schedule = 0 4
aggregate-duration = 23:00
timezone = <business user local time zone>
```

The schedule has been defined in the local time zone of the business user that will query the Info Mart data. Therefore, from the perspective of the business user, the Genesys Info Mart Server is in the same time zone, and the final extraction cycle, which begins at 00:30, contains all the reporting data from the previous day.

> **Important**
>
> Midnight in local time is considered to be the end of the reporting day for a particular time zone.

Setting scheduling options for Genesys Info Mart Server

The information in this subsection supplements information in the *Genesys Info Mart Deployment Guide* about configuring the Genesys Info Mart Application.

Use the following procedure to configure the Genesys Info Mart Server **[schedule]** options. Genesys Info Mart Server uses these options to launch the ETL, aggregation, maintenance, and, in PostgreSQL deployments, supplementary maintenance jobs. Each configuration option is related to one or more of the jobs.

The schedules for the ETL and maintenance jobs are defined in 24-hour time spans in the format HH:mm, where HH is the number of hours (00–23), and mm represents the number of minutes (00–59). The 24-hour schedule can span two calendar days. For example, if the **etl-start-time** is defined as 18:00 and the **etl-end-time** is defined as 06:00, the start time is 6:00 PM one day and the end time is 6:00 AM the following day.

For information about the functions of the jobs, see Understanding Genesys Info Mart jobs. For information on job interdependencies, see Job sequencing rules.

Procedure: Setting up the Genesys Info Mart jobs schedule

Purpose: To create or modify the schedule for running Genesys Info Mart jobs.

You can perform this procedure at any time, even while Genesys Info Mart jobs are running. Changes take effect immediately.

Steps

1. In the interface you use to configure your Genesys applications, navigate to the **Options** tab of the Genesys Info Mart **Application** object.
2. Navigate to the **[schedule]** section.
3. (Optional) Time Zone—Enter a value for timezone to specify a local time zone in which you want to define the schedule. You can use any valid time zone that is supported by the version of the Java Runtime Environment (JRE) that runs the Genesys Info Mart Server. The default time zone is GMT.
4. ETL Schedule—Set the options that control the ETL schedule:
   a. Enter a value for etl-start-time to specify the time of day that the first ETL cycle begins.
   b. Enter a value for etl-end-time to specify the time of day that the final ETL cycle begins. The **etl-end-time** value should be a time of day when no other ETL cycles will begin.
   c. Enter a value for etl-frequency to specify the number of minutes between the start times of adjacent ETL cycles.
   If the time that it takes to complete a cycle is shorter than the ETL frequency, the next cycle

is delayed until the time interval is met. If the time that it takes to complete a cycle is greater than this value, the next cycle starts immediately.

> **Important**
>
> Various **extract-*** options in the **[gim-etl]** section control aspects of extraction and transformation job functioning that significantly affect ETL cycle performance. When you set the ETL scheduling options, consider the values of these related options as well. For more information, see the configuration recommendations in the chapter about ETL processing in the *Genesys Info Mart 8.1 Deployment Guide.* See also the gim-etl Section option descriptions in the *Genesys Info Mart Configuration Options Reference.*

5. To start or resume the ETL schedule, set run-scheduler to `true`. You can set this option to `false` to temporarily stop Genesys Info Mart Server launching jobs.
6. Routine Maintenance for PostgreSQL—In PostgreSQL deployments, configure Genesys Info Mart to update statistics regularly and perform additional supplementary maintenance:
   a. Set run-update-stats to `true`. This option specifies whether the Genesys Info Mart Server launches the supplementary maintenance job, **Job_UpdateStats**, as scheduled.
   b. Set update-stats-schedule to the start time and time intervals at which you want the job to run every day. The value must be expressed as a valid CRON expression—a string, which in this case uses only two fields, minute and hour, separated by whitespace. For more information, see the extended description of the option in the *Genesys Info Mart Configuration Options Reference*.
      The default value (`0/10 *`) schedules the job to run every 10 minutes throughout the day. You do not need to consider the ETL and maintenance schedules when setting the **Job_UpdateStats** schedule, for reasons that are described in Job sequencing rules.
7. Aggregation Schedule—If you plan to use the Info Mart historical Aggregate tables:
   a. Set run-aggregates to `true`. This option specifies whether the Genesys Info Mart Server launches the job, **Job_AggregateGIM**. This job calculates the Aggregate tables based on newly added or changed data in the fact tables.
   b. Set aggregate-schedule to the time that you want the aggregation job to start (as long as it is not currently running, such as following the initial deployment of the aggregates). The value must be expressed as a valid CRON expression—a string, which in this case uses only two fields, minute and hour, separated by whitespace.
      For example, to set the aggregation start time to 2:30 AM, enter the value 30 2. For another example, see Sample schedule. For more information, see the extended description of the option in the *Genesys Info Mart Configuration Options Reference*.
   c. Set aggregate-duration to the length of the period, in `HH:mm` format, during which the aggregation job will run after each launch. Within the time intervals defined by the **aggregate-schedule** and **aggregate-duration** options, the aggregation job runs continuously.
      For example, to have aggregation run for the twelve hours following the start time, set the value for the duration option to `12:00`. For another example, see Sample schedule.
   d. Navigate to the **[gim-etl]** configuration section and set aggregation-engine-class-name. This option specifies the class name of the aggregation package.

In order for Aggregate tables to be created and populated in the Info Mart database, you must deploy RAA.
If you do not plan to use the Info Mart Aggregate tables, keep the default value of the **run-aggregates** option (`false`). This setting ensures that the Genesys Info Mart Server does not launch **Job_AggregateGIM** in deployments where the Genesys-provided aggregation engine is not deployed.

8. Maintenance Schedule—If you plan to run the maintenance job daily, configure the maintenance job schedule:
   a. Set run-maintain to `true`. This option specifies whether the Genesys Info Mart Server launches the maintenance job, **Job_MaintainGIM**, as scheduled.
   b. Set maintain-start-time to the time of day that you want Genesys Info Mart to launch **Job_MaintainGIM**. The time of day must be outside the range that is specified by **etl-start-time** and **etl-end-time**. The Genesys Info Mart Server will not start **Job_MaintainGIM** until the **maintain-start-time** has been reached or when other jobs are running.

> **Important**
>
> You must run the maintenance job regularly if your Info Mart database is partitioned. Genesys strongly recommends that you configure a schedule for the maintenance job if your Info Mart database is partitioned, if you plan to purge eligible data from the Info Mart database, or if your deployment uses custom calendars.
>
> For information about setting the retention policy options that determine what data will be purged when **Job_MaintainGIM** executes, see the section about purging the Info Mart database in the chapter about maintenance and other activities in the *Genesys Info Mart 8.1 Deployment Guide* (link available here). See also the descriptions of the **days-to-keep-*** options on gim-etl Section in the *Genesys Info Mart Configuration Options Reference.*

9. Export Schedule—Optionally, enable the export of data from the Info Mart database into local .csv files by modifying configuration settings in the Genesys Info Mart Application object to enable the export function for your deployment:
   a. Create a new **[gim-export]** configuration section, if it does not already exist. Within this section:
      i. Configure the output-directory configuration option with a value that defines the path to the export storage folder. By default, the folder is named **output** and is created within the Genesys Info Mart installation directory.
      ii. Configure the days-to-keep-output-files configuration option with a value that defines the number of retention days for the exported data. The default value is `14 days`.
      iii. If you want **Job_ExportGIM** to use export views to export your data, set use-export-views to `true`.
   b. In the **[schedule]** configuration section, create a new **export-schedule** configuration option (if it does not already exist) and set a value that defines the schedule for **Job_ExportGIM**. The value must be a valid CRON expression. (For details on the format, see the extended export-schedule description in the *Genesys Info Mart Configuration Options Reference.*) By default, the export job runs at 00:20, 08:20, and 16:20 each day.

c. If necessary, make changes to the default settings for other configuration options that control **Job_ExportGIM**:
   - chunk-size-seconds
   - max-retries
   - output-files-encoding
   - retry-delay-seconds
   - start-date
   - thread-pool-size

d. In the **[schedule]** section of the Genesys Info Mart Application object, create a new run-export configuration option (if it does not already exist) and set it to `true`, to start running the export job according to the schedule.

Managing jobs with Genesys Info Mart Manager

> **Tip**
> Watch the Genesys Info Mart Manager "how to" videos:
>
> - Genesys Info Mart Manager: Viewing the job history
> - Genesys Info Mart Manager: Viewing ETL Status, running jobs, and more

Normally, the Genesys Info Mart Server launches scheduled jobs automatically. However, you can use the Genesys Info Mart Manager to:

- Execute a single job as needed.
- Cancel a job that is in Scheduled status. (A *scheduled* job is one that did not start immediately (for example because it cannot run while another job is running, and another job was already running), but it will start later.)
- Stop a running job.

For example, you can use this functionality in Genesys Info Mart Manager to:

- Execute one or more jobs to recover from job failures.
- Execute **Job_ExtractICON** following the update of configuration data in Interaction Database (IDB) with the Interaction Concentrator (ICON) on-demand resynchronization feature.

- Manually run the job that aggregates Info Mart data (**Job_AggregateGIM**), provided that Genesys Info Mart has not been configured to run the aggregation job on a schedule. (In other words, you can start or stop **Job_AggregateGIM** from the Genesys Info Mart Manager only if the **run-aggregates** configuration option, in the [schedule] section, has been set to `false`.)
- Manually run **Job_AggregateGIM** to re-aggregate Info Mart data.
- Run the maintenance job outside the scheduled time, provided that no instances of other jobs are running.
- Execute a single job as needed.
- Selectively shut down a running job.

> **Important**
>
> You cannot use Genesys Info Mart Manager to run **Job_UpdateStats** or **Job_ExportGIM**.

Job management procedures

The following procedures describe how to use Genesys Info Mart Manager to manage jobs:

- Running jobs one by one
- Running a job immediately
- Re-aggregating data
- Canceling a scheduled job
- Stopping a running job

Procedure: Running jobs one by one with Genesys Info Mart Manager

Purpose: This procedure describes how to run jobs manually, one by one, for testing or troubleshooting purposes.

Initially after deploying Genesys Info Mart, you may want to run the jobs one by one to test the best values for various configuration options, rather than immediately scheduling them to run routinely. Or, rarely, you may need to run jobs one by one while troubleshooting.

Steps

1. ETL Cycle Jobs—Set the **run-scheduler** configuration option (in the **[schedule]** section on the Genesys Info Mart **Options** tab) to `false`.

2. Follow the steps in Running a job immediately to run the jobs that perform ETL processing. Run the jobs in the following order:
   - **Job_ExtractICON** (see the following Note)
   - **Job_TransformGIM**

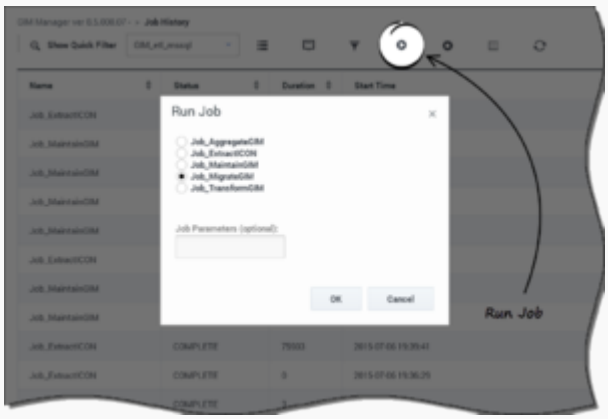
   > **Important**
   >
   > The extraction job extracts data from all available IDBs, for all extraction roles. When you have completed your trial runs or troubleshooting, restore normal running conditions by setting the **run-scheduler** configuration option to `true` to have the Genesys Info Mart Server launch jobs based on a schedule you configure in the Genesys Info Mart application. For more information, see Setting scheduling options for Genesys Info Mart Server.

3. Aggregation Job—If your deployment includes aggregation and you want to run **Job_AggregateGIM** as a non-scheduled job, set the run-aggregates configuration option (in the **[schedule]** section on the Genesys Info Mart **Options** tab) to `false`.
4. Follow the steps in Running a job immediately to start **Job_AggregateGIM**. The job will run continuously until you manually stop it, or until you reset the run-aggregates configuration option from `false` to `true` and the configured daily schedule comes into effect.
5. Maintenance Job—Set the **run-maintain** configuration option (in the **[schedule]** section on the Genesys Info Mart **Options** tab) to `false`.
6. In the job list of the Genesys Info Mart Manager, verify that no other jobs are running.
7. Follow the steps in Running a job immediately to start **Job_MaintainGIM**. After the initial run, you can set the **run-maintain** configuration option to `true`, so that the Genesys Info Mart Server launches the maintenance job based on the schedule you configured in the Genesys Info Mart application. For more information, see Setting scheduling options for Genesys Info Mart Server.

Procedure: Running a job immediately with Genesys Info Mart Manager

Purpose: This procedure describes how you can use Genesys Info Mart Manager to run a job immediately.

Steps



Genesys Info Mart Manager Run Job Dialog Box

1. In Genesys Info Mart Manager, click **Run Job**. The **Run Job** dialog box appears, as shown in the Figure **Genesys Info Mart Manager Run Job Dialog Box**.
2. From the list, select the job that you wish to execute.

> ### Important
> Only **Job_AggregateGIM** supports parameters. For all other jobs, leave the **Job Parameters** field blank. For more information, see Re-aggregating data.

3. Click **OK**.
   The job you have started appears in the job list. You can find it more easily by sorting the list (for example, by Start Time, or by Status). The job you ran will have one of the following status values:
   - Running
   - Scheduled—This indicates that the job did not start immediately (for example because it cannot run while another job is running, and another job was already running), but it will start later.
   - Failed—This indicates that an error occurred when the job tried to run.

> ### Important
> Job status is not automatically updated. To see the current status of a job (for instance, to see if a Running job has completed) click **Refresh**.

Procedure: Re-aggregating data with Genesys Info Mart Manager

Purpose: This procedure describes how you can use Genesys Info Mart Manager to re-aggregate data.

Important

Re-aggregation is possible only if aggregation is already running. If you attempt to run **Job_AggregateGIM** with the re-aggregation job parameters when aggregation is not running, Genesys Info Mart starts aggregation, ignoring the job parameters. In this case, you can re-aggregate by running the job, with the re-aggregation parameters, a second time.

A request to re-aggregate data for a specific time range first deletes aggregated data from that time range (to prevent duplicate data from being written to Info Mart). Before you issue a re-aggregation command, make sure that facts for your selected time range exist in the Info Mart database and have not been purged. Otherwise, you could be left with no aggregates at all for that time range.

Prerequisites: Job_AggregateGIM is running, either in accordance with the configured job schedule or else because you started it manually. If necessary, follow the steps in Running a job immediately to start **Job_AggregateGIM**.

Steps

1. In Genesys Info Mart Manager, click **Run Job**. The **Run Job** dialog box appears (see the Figure **Genesys Info Mart Manager Run Job Dialog Box**).
2. In the Run Job list, select **Job_AggregateGIM**.
3. In the Job Parameters field, enter:
   `-insertPendingAgg <AGR_SET>:<START>:<END>`
   where:
   - `<AGR_SET>` indicates what set to aggregate (`ALLSETS`, or an aggregate set name). Aggregate set name is formatted as follows: `<HIERARCHY_NAME>-<AGG_LEVEL>` [.Flavor]
     where:
     - `<HIERARCHY_NAME>` is a comma-separated list that contains one or more of the following RAA hierarchies, or no value at all: `H_AGENT`, `H_ID`, `H_I_STATE_RSN`, `H_QUEUE_GRP`, `H_QUEUE_ABN`, `H_AGENT_GRP`, `H_I_AGENT`, `H_QUEUE`, `H_AGENT_CAMPAIGN`, `H_AGENT_QUEUE`, `H_I_SESS_STATE`, `H_QUEUE_ACC_AGENT`, `H_CAMPAIGN`
     - `<AGG_LEVEL>` is the aggregation level (`SUBHOUR`, `HOUR`, `DAY`, `MONTH`, `QUARTER`, `YEAR`).
     - `[.Flavor]` is an optional parameter indicating whether to include only online or offline data (`Online` or `Offline`).
   - `<START>` is a value (`YYYY-MM-DD`) from the `DATE_TIME` table that indicates the beginning of the reporting interval.

- <END> is a value (YYYY-MM-DD) from the DATE_TIME table that indicates the end of the reporting interval.

Re-Aggregation Parameter Examples—For example, to re-aggregate:

- All aggregates for a one-month period:
  `-insertPendingAgg ALLSETS:2014-05-01:2014-05-31`
- A particular hierarchy for a specific day:
  `-insertPendingAgg H_QUEUE-HOUR:2014-05-01:2014-05-02`
- Only one flavor of aggregate for a specific day:
  `-insertPendingAgg H_I_AGENT-SUBHOUR.Offline:2014-05-01:2014-05-02`

4. Click **OK**.
   Use the Genesys Info Mart log to monitor the status of re-aggregation.

Procedure: Canceling a scheduled job with Genesys Info Mart Manager

Purpose: This procedure describes how to cancel the **Run Job** command for a job that has not yet begun to run (in other words, that has a status of Scheduled).

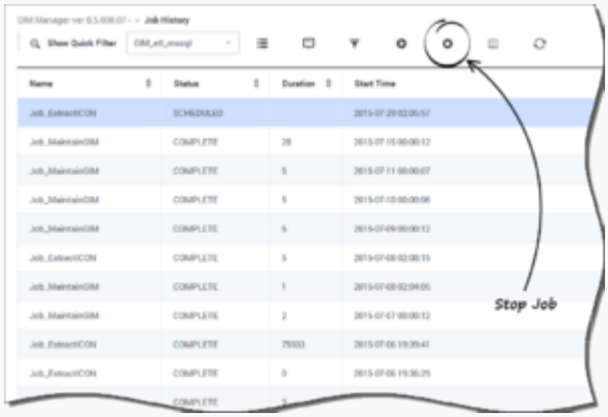
Steps

1. In Genesys Info Mart Manager, select the job (with the status *Scheduled*) that you want to cancel.
2. Click **Stop Job**. The job disappears from the list.

Procedure: Stopping a running job with Genesys Info Mart Manager

Purpose: This procedure describes how to stop a running job.

Steps



Stop job

1. To stop **Job_AggregateGIM**, first set the **run-aggregates** configuration option in the Genesys Info Mart Application to `false`.

> **Important**
>
> If **run-aggregates** is set to `true`, the scheduler ensures that **Job_AggregateGIM** runs continuously during the interval specified by the configured start time and duration. Thus, if **Job_AggregateGIM** is running under the control of the scheduler and you try to stop the job during the interval in which it has been configured to run, the scheduler automatically restarts the job almost immediately.

2. In Genesys Info Mart Manager, select the job that you want to stop. You can stop jobs that have a status of Running or Scheduled.
3. Click the **Stop Job** button, as shown in the Figure **Stop Job**.
   It may take a few moments for the job to stop.

Managing Genesys Info Mart

This page describes the various tools and methods you can use for starting, stopping, and monitoring the Genesys Info Mart Server.

Starting and stopping Genesys Info Mart Server

You can start and shut down Genesys Info Mart Server by using the Management Layer, a startup file, a manual procedure, or Services Manager.

Specifically, you can start and stop Genesys Info Mart Server:

- From the Genesys Solution Control Interface (SCI)
- Manually on Windows:
  - (For starting only) From the **Start** menu
  - From the console window
  - As a Windows Service
- Manually on UNIX:
  - From the console window
  - (For stopping only) From the command line

> **Important**
> When Genesys Info Mart is installed on the Windows platform, it is installed as a Windows service. The startup type for the Windows service is Automatic. If the machine is restarted, the Windows service automatically launches Genesys Info Mart.

The startup methods usually require command-line parameters that are common to most Genesys server applications, as well as an executable file name.

For detailed information about starting and stopping the Genesys Info Mart Server, including information about the command-line parameters that Genesys Info Mart supports, see Starting and Stopping Genesys Info Mart Server in the *Genesys Info Mart Deployment Guide*.

Viewing Software Release Information

You can determine the Genesys Info Mart release number and build, the Info Mart database schema version, and the corresponding minimum required ICON release, by entering the option `-v` with the command normally used to start or stop Genesys Info Mart Server. For detailed information about the command-line parameters that Genesys Info Mart supports, see Starting and Stopping Genesys Info

Mart Server in the *Genesys Info Mart Deployment Guide*.

Viewing Genesys Info Mart Server Status

You can use SCI to monitor the status of Genesys Info Mart Server.

- When you start Genesys Info Mart Server by using SCI, the Genesys Info Mart application status reflects the status of the Genesys Info Mart Server itself, and not the status of any jobs. In other words, the STARTED status that is reported by Solution Control Server (SCS) indicates that Genesys Info Mart Server is operational, but it does not indicate whether jobs are currently running or whether a job has failed.
- When you stop Genesys Info Mart Server by using SCI, the server shuts down all currently running jobs and terminates gracefully. The STOPPED status that is reported by SCS indicates that Genesys Info Mart Server has stopped, but it does not indicate the status of jobs.

Viewing job status

To learn the job status, you can:

- Use Genesys Info Mart Manager. For more information about using Genesys Info Mart Manager to monitor Genesys Info Mart jobs, see Managing Jobs with Genesys Info Mart Manager.
- View the job status in the ADMIN_ETL_JOB_HISTORY and ADMIN_ETL_JOB_STATUS database views.
- Check the logs (for example, in the Centralized Log Database) for the job status messages.

Connecting to Configuration Server

Genesys Info Mart Server keeps an active connection to Configuration Server. This enables it to receive notification of any configuration changes that affect its operation. The Genesys Info Mart Server adjusts to any dynamic changes to the configuration options in the corresponding Genesys Info Mart Server Application object. Configuration changes that affect the operation of a currently running job take effect the next time the job starts.

If Genesys Info Mart Server cannot connect to Configuration Server on startup, it reads the values of configuration options previously stored in a local file and re-attempts to make a connection every 30 seconds.

> **Important**
>
> When the Genesys Info Mart Server cannot connect to Configuration Server because the Genesys Info Mart application in SCI is already connected, the Genesys Info Mart Server exits immediately. This situation may occur when the Genesys Info Mart Server is currently running and an attempt is made to start it from another location.

If the Genesys Info Mart Server is able to connect to Configuration Server, it retrieves the backup Configuration Server information from the **Server Info** tab. If Genesys Info Mart Server later loses its connection to Configuration Server, Genesys Info Mart Server repeats the following process until a connection is established. Genesys Info Mart Server:

1. Attempts to connect to Configuration Server.
2. Attempts to connect to the backup Configuration Server, if configured.
3. Waits 30 seconds, the time specified for the reconnection timeout.

Changing Calendar Dimension Values

This page describes how you can safely modify the settings that control the content of existing calendar dimension tables.

After the default or custom calendar dimension tables have been populated, you can safely change the values of the options in the **[date-time]** or custom **[date-time-*]** configuration section that control when **Job_MaintainGIM** populates the table with the next batch of calendar dimensions (date-time-min-days-ahead) and how far ahead the table will be populated (date-time-max-days-ahead).

However, if you want to change the values of any of the other **date-time** options during runtime, you must perform additional steps to avoid compromising the consistency of calendar data, which can adversely affect your reporting results. For example, if you change the time zone option (date-time-tz) without performing the additional steps, your reports might mix the results for different time zones within the same reporting interval.

> **Important**
>
> Genesys Info Mart uses Java TimeZone functionality to populate calendar data. Therefore, it is important to keep your Java TimeZone information up to date, particularly if daylight saving time (DST) rules change. To maintain up-to-date Java TimeZone information, Genesys recommends that you use the latest Oracle Java SE platform JDK or JRE release. If this is not feasible, use the Java Timezone Updater Tool to update your JRE time zone data before you populate or repopulate calendars.

The following procedure describes how to change calendar dimension tables.

Procedure: Changing calendar settings during runtime

Purpose: To change the values of the options that control population of an existing calendar dimension table without introducing inconsistencies into calendar data.

Prerequisites

- If your deployment does not always use the latest Oracle Java SE platform JDK or JRE update release (which is Oracle's preferred means of delivering timezone data updates), you have run the Java Timezone Updater Tool to update your JRE time zone data.

Steps

1. If your deployment includes aggregation, stop aggregation. For information about stopping the aggregation process, see the *Reporting and Analytics Aggregates User's Guide*.
2. In Configuration Manager, change the settings for the **date-time** options in the Genesys Info Mart Application object, as required. For information about the available options and valid values, see the date-time Section in the *Genesys Info Mart Configuration Options Reference.*
3. Manually truncate the corresponding calendar table in the Info Mart database.
4. Run **Job_MaintainGIM**. For information about running the job manually, see Running a Job Immediately.
5. If your deployment includes aggregation:
    a. Restart aggregation.
    b. Re-aggregate your data. For more information about re-aggregating data over a certain time range, see the *Reporting and Analytics Aggregates User's Guide*.

Managing ICON and data sources

This page provides information about managing the Interaction Concentrator (ICON) instances and the data source applications that provide data to Genesys Info Mart. The immediate sources of data for Genesys Info Mart are Interaction Database (IDB), which are populated by ICON applications. Depending on their configured role, the ICON instances get their data from Configuration Server, T-Server, Interaction Server, or Outbound Contact Server (OCS). In this chapter, the term *data source* refers to the upstream data provider—the source of data for ICON.

For additional information about managing ICON and data sources to work around extraction or transformation problems caused by data-source unavailability, see Recovering from data-source unavailability.

Restarting ICON

This section describes data-quality considerations that relate to interrupted ICON processing.

Special considerations for Multimedia

Genesys Info Mart requires that the ICON **calls-in-the-past** and **om-force-adata** options be set to 1 (or `true`). This means that, if multimedia interactions begin while ICON is down or has no connection to Interaction Server, ICON reconstructs operational data and stores a user data snapshot for multimedia interactions that are already in progress, beginning with the next party that ICON sees being added to the interaction. The ETL process extracts the reconstructed data in the usual way, based on a comparison of the extraction high-water mark against the record-creation timestamp. However, be aware that, in these situations, information about previous parties and first values of user data keys might be missing or inaccurate.

The consequences may include:

- If Interaction Server continues to run, multimedia interactions that end while the Multimedia details ICON is down are forever reported as active. Since ICON did not see these interactions end, Info Mart cannot report them as ended.
- ICON records interaction-related data (IR, CALL, PARTY) for a never-before-seen multimedia interaction beginning when ICON sees a party being added to the interaction.
- End times are shown for a party only if the party was created and ended within the same ICON session.
- If ICON sees an interaction end, but the interaction is neither currently known nor known from a previous ICON session, then ICON does not record anything about this interaction.

Avoiding data quality issues

As noted above, some data quality issues regarding multimedia interactions can occur when the interaction data was recorded during different ICON sessions, and the high availability (HA) architecture is not in use. Some information can be lost between the sessions. However, sometimes it is necessary to stop an ICON to apply upgrades, or so that it can become aware of configuration

changes when it restarts. It is possible to avoid nearly all of these data quality issues across a planned ICON outage by using the following procedure.

Procedure: Restarting a Multimedia details ICON

Purpose: To minimize data quality issues following a planned outage and restart of a Multimedia details ICON.

Genesys recommends that you perform this procedure during a period of agent inactivity (for example, at the end of one shift and before the next shift starts) to minimize disruption to the agents. When Interaction Server is stopped, all agents are logged out of Interaction Server, and any interactions that were actively on their desktops are returned to Interaction Queues or Workbins, so it is best to follow the procedure when agents are not in the middle of handling interactions.

Steps

1. Use the Solution Control Interface (SCI) to stop Interaction Server.

Stopping Interaction Server moves active interactions to a “home” state, returning them to Interaction Queues or Workbins, and ICON will be aware of this.

1. Stop the Multimedia details ICON.
2. When you have completed the ICON maintenance, restart the Multimedia details ICON.
3. Use SCI to restart Interaction Server.

Residual Virtual Queue Considerations—Following the procedure **Restarting a Multimedia details ICON** eliminates nearly all data quality issues that can occur when a multimedia interaction spans more than one ICON session. However, there are still some issues related to reporting on virtual queues:

- It is possible that some virtual queue activity that occurs during the time frame of the procedure will be lost, for the following reason: Interactions that were in virtual queues when Interaction Server was stopped are returned to Interaction Queues. The events that Universal Routing Server (URS) sends to indicate that the interactions were cleared from virtual queues may not reach Interaction Server before Interaction Server stops its connection to URS. Therefore, ICON data may not show that the interaction left the virtual queue.
- When Interaction Server is restarted, some interactions may be placed in virtual queues before ICON has successfully re-established its connection to Interaction Server. However, ICON will have established its connection to Interaction Server by the time agents begin logging in, so no agent activity is lost, not even from agents who receive interactions from those virtual queues.

High Availability Recommendation—To avoid data quality issues if a scheduled restart of ICON cannot be performed without affecting multimedia interaction-handling, or if ICON stops unexpectedly, Genesys recommends that you use an HA architecture for multimedia. For more information about HA in Genesys Info Mart, see the chapter about HA in the *Genesys Info Mart*

Deployment Guide.

Purging IDB

The size of IDB is one of the important factors that affects ICON and Genesys Info Mart operational performance. You should periodically purge old data from the IDBs that Genesys Info Mart uses as sources of data.

This section provides recommendations and considerations relevant to Genesys Info Mart data source requirements, to prevent accidental purging of IDB data before Genesys Info Mart has an opportunity to extract it. In particular, this appendix provides guidance for selecting the smallest safe value to specify for retaining IDB data.

For detailed information about purging IDB, see Purge Procedures (in the *Interaction Concentrator User's Guide*), which describes using special stored procedures. For more information about purging the Info Mart database, see Purging the Info Mart database in the *Genesys Info Mart Operations Guide*..

Interaction Concentrator purge procedures

Genesys Info Mart does not provide automated purging of old IDB data. However, various releases of Interaction Concentrator provide stored procedures that purge old IDB data. You can use your RDBMS utility, or write your own program or stored procedure, to invoke the Interaction Concentrator functionality to purge IDB data in a way that:

- Avoids deleting data that Genesys Info Mart has not yet extracted.
- Retains enough historical data to allow for error recovery and problem determination.

IDB purge frequency

Genesys Info Mart recommends that you run the Interaction Concentrator stored procedure(s) to purge old IDB data once a day, during off-peak hours, when contact center activity is low, and when Genesys Info Mart is not accessing IDB. This means you should run the stored procedures at the same time that the Genesys Info Mart runs its daily maintenance job, Job_MaintainGIM. Interaction Concentrator stored procedures may take some time to finish, so run them as early as possible to allow them to complete before Genesys Info Mart starts the next extract, transform, and load (ETL) cycle.

IDB data retention

The amount of historical data you are able to retain in IDB depends on the database server’s hardware resources, such as memory and disk space, and disk subsystem performance. Because Genesys Info Mart initially copies almost all data from IDB into Global Interaction Database (GIDB) tables in the Info Mart schema, it is not necessary to retain IDB data for long periods. Nevertheless, for prudence, you should retain as much IDB data as possible, without impacting either ICON’s operational performance or Genesys Info Mart’s data extraction performance.

The following scenarios require special consideration when determining the number of days to retain IDB data:

- A new Genesys Info Mart deployment—In a new Genesys Info Mart deployment, where ICON stores data prior to Genesys Info Mart's first ETL cycle, there is a backlog of IDB data waiting to be processed. By default, Genesys Info Mart limits the amount of data extracted during each ETL cycle. While Genesys Info Mart works through a backlog of data, you might need to temporarily increase the IDB data retention period to take this backlog into account. You may also choose to suspend purging IDB data until Genesys Info Mart has had an opportunity to extract the backlog of data.
- ETL failure—If some network, hardware, or software outage occurs that prevents Genesys Info Mart from maintaining its regular ETL schedule, consider temporarily increasing the IDB data retention period to account for the time that Genesys Info Mart has not been able to extract IDB data. You may also choose to suspend purging IDB data until Genesys Info Mart has had an opportunity to extract the backlog of data.
- IDB data archiving—If your environment requires long-term storage of IDB data (longer than ICON's operational performance or Genesys Info Mart's data extraction performance permits), consider archiving IDB data. This allows the operational data store used by ICON and Genesys Info Mart to be small enough to allow acceptable and predictable performance, while providing an alternate data store for long-term archiving of IDB data. Work with your Database Administrator to determine an appropriate archival strategy.

Determining the retention period

The sample procedure documented below gives an estimate for the data retention threshold for IDB data. This procedure takes into account the last time that Genesys Info Mart successfully extracted all of the data for an ETL cycle, and whether Genesys Info Mart is limiting the amount of data it extracts while it processes a backlog of data. This procedure also includes a safety buffer of seven days.

In an environment where Genesys Info Mart is maintaining a regular schedule of ETL cycles that run every 60 minutes or less, Genesys recommends that the number of days to retain IDB data is:

- For Voice and Outbound Contact details, between 7 and 30 days.
- For Multimedia details, the maximum number of days for which Genesys Info Mart maintains memory of inactive interaction threads. This value is specified by the **max-thread-duration-after-inactive-in-days** configuration option, which has a default value of 31 days.

The procedure documented below will never return fewer than 7 days. If you are able to store more than 7 days of IDB data, you may choose to use a value larger than what is returned.

> **Important**
>
> If the Genesys Info Mart ETL cycles have not yet begun, this procedure returns a large value to prevent the accidental purging of data that has not yet been extracted.

Run an RDBMS-specific SQL statement against your Info Mart database to return the minimum value for the data retention threshold you will provide as an input parameter for the Interaction Concentrator purge procedure. To ensure an accurate calculation, issue the SQL statements prior to running each purge procedure. Also, make sure to log in using the Genesys Info Mart database Owner account before issuing the statements.

Example SQL Query—The following SQL query shows how to run a query against a Microsoft SQL Server–based Info Mart database. If you are using a different RDBMS, convert this query as appropriate.

> **Important**
>
> If you have performed only one ETL cycle, this query returns the result 999. However, if you have run more than one ETL cycle, it functions correctly.

```
select cast(max(x) as decimal) as MINIMUM_DAYS from (
/* number of days since 1st extract preceding last completed transformation */
/* (and following the prior completed transformation) or 999, if none */
   select coalesce((
      select round(datediff(second, min(start_time),
                  CURRENT_TIMESTAMP)/86400.0, 0) + 7
         from admin_etl_job_history
         where job_name like '%Extract%'
         and start_time <
             (select max(start_time)
                 from admin_etl_job_history
                 where job_name = 'Job_TransformGIM' and status = 'COMPLETE')
         and start_time >
             (select max(start_time)
                 from admin_etl_job_history
                 where job_name = 'Job_TransformGIM' and status = 'COMPLETE'
                 and start_time <
                     (select max(start_time)
                         from admin_etl_job_history
                         where job_name = 'Job_TransformGIM'
                          and status = 'COMPLETE'))
      ), 999) as x

) z;
```

Troubleshooting Genesys Info Mart Jobs

This page provides:

- Information about errors that Genesys Info Mart jobs encounter. Some of the errors cause jobs to fail, while others result in incorrectly processed data.
- Recommendations for situations in which the extract, transform, and load (ETL) cycle has not run for an extended period of time. These recommendations help you process the backlog of source data in a way that leads to the best ETL performance.
- Information about resources for related information, including information about a standby Genesys Info Mart.

Job failures

The jobs that Genesys Info Mart Server launches, or that you execute or schedule, may encounter errors that cause them to fail. Some job failures are caused by an error that the job encounters directly. These are called *single-job failures*. Because of job interdependencies (described in Job sequencing rules), some job failures are caused by an error that some other job encounters. These are called *job-interdependency job failures*.

When you use Genesys Info Mart Server to launch jobs, you likely will not see job-interdependency job failures, because Genesys Info Mart Server will not launch a job until all interdependent jobs have completed successfully. If the jobs are run automatically by Scheduler, jobs are recovered automatically in cases of failures that are caused by environment situations. For example, if a database shutdown or Genesys Info Mart Server failure occurs during transformation and then the database or Genesys Info Mart Server is restarted, the next instance of **Job_TransformGIM** resumes processing from the point where the interrupted instance left off.

Types of errors

Several types of errors can cause a job to fail or to produce incomplete data:

Configuration errors

If Genesys Info Mart Server reports a configuration error, refer to the log messages to identify the issue so that you can correct it.

For additional information on the configuration checking process, including information on when Genesys Info Mart performs the check, what it checks for, and how it responds when it finds errors, see the section about deployment verification in the “Data Processing” chapter of the *Genesys Info Mart 8.1 Deployment Guide*.

In addition to the items Configuration Checker reviews, other possible configuration errors include the following:

- **Job_TransformGIM** encountered errors in the configuration of either Outbound Contact Server (OCS) record fields in Configuration Database or Outbound Contact–related user data fields in the Info Mart database. In either case, the job does not process the incorrectly configured fields and/or user data. **Job_TransformGIM** depends on this configuration for Outbound Contact data transformation. Although the job does not fail when these errors are encountered, the resulting data in the Info Mart database would be missing certain information about Outbound Contact–related interactions.

  You should monitor the Genesys Info Mart local log for messages that indicate configuration errors and take action to resolve them promptly to avoid incomplete data. Genesys recommends that you use the Solution Control Interface (SCI) to set up an alarm condition. Refer to the *Framework 8.x Solution Control Interface Help* for information about how to use the Alarm Condition Wizard to create alarm conditions.

- **Job_TransformGIM** encountered missing configuration data during transformation of Configuration details or data from other domains. For more information about how **Job_TransformGIM** handles configuration data errors, see the error-handling subsection about missing configuration data in the chapter about ETL processing in the *Genesys Info Mart Deployment Guide*.

  In the case of missing configuration data during transformation of data from other domains, you can often resolve the error by forcing Interaction Concentrator (ICON) to perform a resynchronization of the configuration data between the Configuration Database and the IDB from which Genesys Info Mart extracts the configuration history. When the resynchronized configuration data is extracted, the incomplete Genesys Info Mart data that **Job_TransformGIM** created about the resources is updated.

Database connection errors

- The extraction job could not connect to a source database from which it extracts data because the database is not running or the network connection between the Genesys Info Mart Server and the database is down.
- The Genesys Info Mart job could not connect to a target database because the database is not running or the network connection between the Genesys Info Mart Server and the database is down.
- The Genesys Info Mart job or Genesys Info Mart Server could not connect to a source or target database because of a `JDBC Driver class not found:` exception. Ensure that the CLASSPATH environment variable has been updated to include the JDBC-specific jar files needed for the appropriate database type. Restart the Genesys Info Mart Server after the classpath is updated.
- In an HA configuration, **Job_ExtractICON** could not connect to one of the HA IDBs because the database is not running or the network connection between the Genesys Info Mart Server and the database is down.

At the start of each extraction job, the Genesys Info Mart Server automatically checks connectivity for each database access point (DAP) to which the Genesys Info Mart Application has a configured connection. If it determines that a configured data source or IDB is not available, Genesys Info Mart logs an error and does not proceed with the extract.

You should always check the logs to obtain additional detailed information about any possible connection errors.

SQL errors

- The job encountered a Structured Query Language (SQL) error that caused the failure. For example, there may be insufficient resources, such as memory or physical storage, on the database.
- As a special case in deployments that use 3rd Party Media, the transformation job might encounter a unique constraint violation error if you were trying to add media types to the MEDIA_TYPE dimension table at the exact moment that the transformation job was dynamically adding an unknown media type to the MEDIA_TYPE dimension.
  If the transformation job fails for this reason, no action is required. During the next ETL cycle, the transformation job will take the appropriate action with regard to the interaction and the associated media type.

  For more information, see Preparing the Info Mart Database for 3rd Party Media in the *Genesys Info Mart Deployment Guide.*
- Genesys Info Mart is not able to access a Microsoft SQL database. In order for the connection to be made, Microsoft SQL JDBC driver version 1.1 or higher must be installed.

Genesys Info Mart job error

- The job encountered a critical error that caused the failure. For example, there may be insufficient operating system resources or a software defect.
- Genesys Info Mart determined that data from an active data source is not available. Genesys Info Mart logs an error, and **Job_ExtractICON** does not proceed in this situation. For more information, see the section about determining data availability in the chapter about maintenance and other activities in the *Genesys Info Mart Deployment Guide*.
- **Job_TransformGIM** has been configured to fail when errors are encountered, and the job encountered a data inconsistency for which the applicable interaction-level error policy generated an exception. For more information about the configurable error policy options and the situations that might give rise to data inconsistency errors, see the section about error handling in the chapter about ETL processing in the *Genesys Info Mart Deployment Guide*.
- (Starting with release 8.5.010) **Job_MaintainGIM** encountered an exception while processing an input JSON file provided by a customer for General Data Protection Regulation (GDPR) "export" or "forget" requests. Log message 55-20172 (GIM_ETL_GDPR_ERROR) logs the failure. In most cases, the job failure is a result of errors in the JSON file formatting. Since compliance with GDPR requests is a legal requirement, Genesys recommends setting an alarm on message 55-20172 so that you can fix the issue timeously. You can use log message 55-31406 (GIM_ETL_GDPR_SUCCESS) to cancel the alarm.

Error recovery

This section provides several recommendations to consider when Genesys Info Mart jobs fail:

General recommendations

When the Genesys Central Logger or Genesys Info Mart Manager indicates that a job failed, the cause

of the failure dictates the recovery steps. Messages in the Genesys Info Mart local log or Genesys Central Logger will indicate the error that caused the failure. Correct the cause of the failure before attempting to restart any job.

If a job continues to fail and it takes a long time to resolve the issue, follow the suggestions provided in Recovering from a prolonged ETL outage for the time period that the ETL is not running.

Recovering from a prolonged ETL outage

If certain circumstances (such as a failure of a particular job) prevent you from running ETL for an extended period of time, no special steps are required to process the backlog when normal processing resumes. However, carefully review settings for the options that control transaction size and limit data extraction. They might be set too large for the situation in which you are running normal ETL cycles to catch up a large backlog. In all circumstances, Genesys recommends that you never set the transaction size (**extract-data-chunk-size**) to more than two hours (`7200` seconds).

Recovering from data-source unavailability

Data from a particular data source might become unavailable because of problems with the data source itself, the ICON monitoring it, the DAP that ICON uses to write to the IDB, the DAP that Genesys Info Mart uses to extract from the IDB (the *extraction DAP*), or any of the connections between these objects.

The extraction algorithm will fail the extraction job when an ICON session from a particular active data source is not available. In an HA environment, this means that the extraction algorithm will fail the extraction job when all of the IDBs from a redundant set are not available; as long as data from the active data source is available through one of the Interaction Concentrator instances in the Genesys Info Mart connections, the extraction job will not fail.

Alternatively, you might be alerted by an alarm on log message 55-20110 that data has been delayed. (For information about the conditions under which the log message is generated, see delayed-data-threshold, as well as the information about delayed data in the chapter about ETL processing in the *Genesys Info Mart 8.1 Deployment Guide*.)

If Job_ExtractICON fails or Job_TransformGIM is held up because of missing data:

1. Examine the Genesys Info Mart logs to determine the reason for the failure and identify the data source whose data is no longer available.
2. Evaluate whether it is worth continuing to extract data from remaining data sources for that data domain, under the risk of permanently losing data from the unavailable data source. For example, if the Genesys Info Mart connection to a non-HA IDB experiences frequent connectivity problems for a certain period of time, there might be little risk that the extraction window will advance past data from the intermittently available data source, if you continue to extract data from the remaining data sources.

   If you decide that you cannot risk continuing to extract data from remaining data sources, suspend the ETL schedule by setting the run-scheduler configuration option in the **[schedule]** section of the Genesys Info Mart Application to `false`. Resume the ETL schedule when the data availability problem is resolved.
3. If you make the decision to proceed with the ETL process, consider temporarily excluding the

problematic data source from extraction by doing one of the following:

- Temporarily disable the ICON and DAP by clearing the **State Enabled** check box on the **General** tab of the ICON and DAP Application objects. This approach is suitable if the delayed data is from a data source that is monitored by a dedicated ICON or if you identify that the problem is with the Genesys Info Mart connection to the ICON or IDB, so that there is no IDB data that would otherwise be available that Genesys Info Mart will skip. Alternatively, you can remove the applicable ICON and extraction DAP from the Genesys Info Mart Application connections.
  Disabling the ICON and DAP, like removing them from the Genesys Info Mart Application connections, does not interfere with their functioning. If you use a shared DAP for ICON and Genesys Info Mart to access the IDB, disabling the DAP does not prevent ICON from continuing to write to the IDB.

  Genesys recommends temporarily disabling the ICON and DAP applications, because it is easier and less error-prone than removing and then reconfiguring the connections. Remove the connections when you do not want a data source to be considered part of the deployment for the long term.
- Remove the applicable data-source application from the ICON Application connections. This approach is suitable if the associated ICON monitors more than one data source, particularly if you identify that the problem is with the data source itself, so that suspending ICON monitoring of the unavailable data source does not affect data availability from available data sources.
  Removing the connections or disabling the ICON and DAP applications means that Genesys Info Mart will no longer consider them or the applicable data source to be part of the deployment.

The configuration check will no longer identify the data source as one that is supposed to be active, so **Job_ExtractICON** will proceed to extract data from available data sources.

Job_TransformGIM will not delay transformation of data from other data sources in the same data domain.

> **Important**
>
> In earlier versions of this document, Genesys recommended disabling the data-source application, so that Genesys Info Mart would no longer consider the data source to be active and, therefore, would not wait for data from it. Genesys no longer recommends this approach, because disabling the data source can interfere with its functioning.

> **Tip**
>
> Extracting data from a limited number of data sources impacts the data quality in the Info Mart database and, therefore, undermines the accuracy of contact center reports. To ensure that the accuracy of reports is not compromised on a permanent basis, reverse the steps to suspend the ETL schedule or to exclude a data source from extraction as soon as the data-source availability issue is resolved.

High availability recommendations

In HA deployments, the IDB redundancy provides an additional layer of failure prevention for the extraction job. Nevertheless, you will experience a failure of **Job_ExtractICON** in a situation when it cannot access any IDBs in a redundant set.

You might also experience a failure of **Job_ExtractICON** in a situation when, because of environmental or non–Genesys Info Mart configuration conditions, the extraction job effectively times out. For example, if connection-opening timeouts are very long, the cumulative delay while Genesys Info Mart waits to identify available and unavailable data sources might amount to hours; in these situations, the Genesys Info Mart job scheduler terminates the instance of **Job_ExtractICON** after one hour.

In these cases, follow the guidelines in Recovering from data-source inavailability to decide whether you want the extraction job to ignore the missing data sources and, hence, compromise the completeness or accuracy of the reporting data.

Standby and disaster recovery

This section describes steps you can take to protect against downtime or data loss:

Genesys Info Mart Server Redundancy—To protect against the Genesys Info Mart Server being unavailable for an extended period of time or to enable quick substitution (for example, for server maintenance), you can deploy a second instance of the Genesys Info Mart Server to act as a standby.

If you deploy a second instance of the Genesys Info Mart Server as a standby for operation against the same Info Mart database, it is important to ensure that only one instance of Genesys Info Mart Server accesses the Info Mart database at a time. In Oracle deployments, a locking mechanism prevents a second instance from connecting to the database by mistake. In non-Oracle deployments, ensure that there is no connection to the Info Mart DAP from the standby Genesys Info Mart application.

Info Mart Database Redundancy—To protect against the Info Mart database being lost, you can also deploy a second instance of the Info Mart database. There are two types of architecture:

- *Active-active*—Two full instances of Genesys Info Mart (Genesys Info Mart Server and Info Mart database) operate in parallel, extracting data from the same IDBs and independently populating their respective Info Mart databases.
- *Active-standby*—Two full instances of Genesys Info Mart are deployed. With one instance of Genesys Info Mart active, you replicate data to the second instance of the Info Mart database.

The active-active topology can be used to provide both disaster-recovery protection and protection against the Info Mart database being unavailable for an extended period of time because of, for example, network connectivity problems between the other Genesys Info Mart Server and Info Mart database hosts; for disaster recovery, the second Genesys Info Mart, at a different site, protects against the Info Mart database being lost because of a site failure. The active-standby topology provides disaster-recovery protection. In Oracle deployments, you can use Oracle GoldenGate to replicate data to the second database instance. The replicated Info Mart database, in combination with a redundant Genesys Info Mart Server application and Info Mart DAP, protects against Genesys Info Mart being unavailable for an extended period of time and minimizes data loss in the event of catastrophic failure of the primary site.

More Information—For more information about configuring redundant Genesys Info Mart Applications and connections, see the section about a standby Genesys Info Mart Server in the chapter about supported topologies in the *Genesys Info Mart Deployment Guide*. For more information about the architecture, deployment, and operation of redundant Genesys Info Marts in the active-active and active-standby configurations, including information about GoldenGate setup and procedures for

disaster recovery, see the *Genesys Info Mart Business Continuity Deployment Guide*.

Resources to consult for additional problem-solving information

Consult the following resources for information that will help you resolve problems:

- *Genesys Info Mart Deployment Guide* —Contains information to help you tune performance parameters for your Info Mart database and correct errors in Genesys Info Mart configuration parameters. This guide also contains information that you can use to configure the ICON applications that populate the databases from which you want to extract data.
- *Genesys Info Mart Operations Guide* (this document)—Contains information that you can use to correct errors in the job configuration. This guide also contains information about how to execute or schedule jobs and job interdependencies.
- Genesys Central Logger—Contains events that are logged by jobs. The logs indicate configuration errors, when a job begins, when a job ends, and whether it ends successfully or unsuccessfully. When a job fails, use one of the following methods to obtain detailed information about the failure.
  - Use a log file in the Genesys Info Mart Server's local directory to view log messages.
  - Use SCI to view log messages that are received by Message Server, provided that the Genesys Info Mart application has been configured with a connection to the Genesys Message Server.
- Genesys Info Mart local log—Contains detailed events that are logged to the local log file on the Genesys Info Mart Server host by Genesys Info Mart Server and some of the jobs. When a job fails, view these logs to obtain detailed information about the failure.
- Voice of Process—Provides administrators with information related to the processing history of jobs. You can use this information to quickly check the state of all jobs, to track the data extraction or data transformation progress of each data extraction or data transformation job cycle, to detect new and/or updated data for subsequent aggregation or other processing, and to diagnose ETL problems. See About Voice of Process for more information.
- Publications for your database—Contain information for your specific RDBMS about database connections, SQL errors, configuration parameter settings that affect database performance, and the usage of operating system resources on the database server.

Related Documentation Resources

The following resources provide additional information that is relevant to this software. Consult these additional resources, as necessary:

Management Framework

- The *Management Layer User's Guide* provides information about the concepts, terminology, and procedures that apply to this layer of the Genesys Framework.
- The *Framework 8.5 Configuration Options Reference Manual* provides information about configuration options for Framework components.
- The *Management Framework Deployment Guide* provides information about configuring, installing, starting, and stopping Framework components.
- The *Framework Database Connectivity Guide* describes the concepts and procedures relevant to how Genesys software connects to databases.
- The *Framework Combined Log Events Help* describes log events that Genesys server applications generate and that Solution Control Interface displays. The Framework Combined Log Events Help includes descriptions of Genesys Info Mart log events.

Interaction Concentrator (ICON)

- The *Interaction Concentrator Deployment Guide* provides information about architecture, configuration requirements, and installation steps for Interaction Concentrator, and it describes how to make data from the Genesys Outbound Contact solution available in Interaction Database (IDB).
- The *Interaction Concentrator User's Guide* provides basic information about IDB architecture and detailed information about Interaction Concentrator features and functionality, including attached data processing, available stored procedures, and integration with other Genesys products.
- The *Interaction Concentrator Physical Data Model* for your relational database management system (RDBMS) provides information about the IDB schemas.

Genesys Info Mart

- The *Genesys Info Mart Deployment Guide* provides information about architecture, configuration requirements, and installation steps for Genesys Info Mart and Genesys Info Mart Manager.
- The *Genesys Info Mart User's Guide* provides information about how to use data that is stored by Genesys Info Mart for contact center historical reporting.
- The *Genesys Info Mart Physical Data Model* (formerly *Reference Manual*) for your RDBMS provides information about the Info Mart database schema. Physical Data Model documentation is available for:

  - Microsoft SQL Server
  - Oracle
  - PostgreSQL
- The *Genesys Info Mart Configuration Options Reference* provides details about all the Genesys Info Mart configuration options.
- The *Genesys Info Mart Manager Help* tells how to manage Genesys Info Mart jobs with Genesys Info Mart Manager. Also see the "How to" videos.
- The *Genesys Info Mart Log Events Help* describes log events for Genesys Info Mart releases that are part of 9.0, including log events that were added, removed, or updated in 8.5 releases.
- The *Genesys Info Mart Business Continuity Deployment Guide*, provides information and procedures that are relevant to Genesys Info Mart deployment in an environment that requires support for Business Continuity.
- The *Genesys Info Mart Database Size Estimator* helps you estimate the size of your Info Mart database when you are planning your deployment. The estimator is a Microsoft Office Excel 2007 spreadsheet.
- The *Database Compatibility Reference* includes compatibility information for database tables and fields that existed in the Genesys Info Mart database schema in release 7.6. This document provides guidelines for mapping Info Mart 7.6 database SQL queries for use with an Info Mart 8.x database.

Release Notes and Product Advisories for this product are available on the Genesys Customer Care website at http://www.genesys.com/customer-care.

Reporting and Analytics Aggregates (RAA)

- The *Reporting and Analytics Aggregates Deployment Guide* describes how to deploy the Reporting and Analytics Aggregates (RAA) package provided with Genesys Info Mart.
- The *Reporting and Analytics Aggregates Physical Data Model* (formerly *Reference Manual*) for your RDBMS describes the aggregate tables that are available to Genesys Info Mart customers with deployment of RAA. Physical Data Model documentation is available for:
  - Microsoft SQL Server
  - Oracle
  - PostgreSQL
- The *Reporting and Analytics Aggregates User's Guide* describes the aggregation process, provides the aggregation hierarchies, and explains how to enable aggregation of user data.
- The *Reporting and Analytics Aggregates Options Reference* provides details about all the RAA configuration options.

Genesys CX Insights (GCXI)

- The *Genesys CX Insights Deployment Guide* provides instructions for installation, configuration, and startup of GCXI.

- The *Genesys CX Insights User Guide* provides instructions for working with reports and objects in GCXI, including report descriptions and sample report output.
- The *Genesys CX Insights 9.0 Projects Reference Guide* describes objects that are used in Genesys CX Insights projects (and reports), focusing on metrics, attributes, and the folders that are used to organize them.
- The *Genesys CX Insights Hardware Sizing Guide* provides information about hardware sizing for typical contact center scenarios.

Genesys

- The *Genesys Technical Publications Glossary*, which is available on the Genesys Documentation website, provides a comprehensive list of the Genesys and computer-telephony integration (CTI) terminology and acronyms used in this document.
- The *Genesys Migration Guide* which ships on the Genesys Documentation Library DVD, provides documented migration strategies for Genesys product releases. The Genesys Info Mart 8.x part of the guide includes instructions on how to migrate Genesys Info Mart from release 8.0.x to release 8.5. Contact Genesys Customer Care for more information.

Information on supported hardware and third-party software is here:

- The Genesys Info Mart page in the *Supported Operating Environment Reference*
- Genesys Supported Media Interfaces Guide

Consult the following additional resources as necessary:

- The *Genesys Hardware Sizing Guide* provides information about Genesys hardware sizing guidelines for the Genesys 8.x releases.
- The *Genesys Interoperability Guide* provides information on the compatibility of Genesys products with various Configuration Layer Environments; Interoperability of Reporting Templates and Solutions; and Gplus Adapters Interoperability.
- The *Genesys Licensing Guide* introduces you to the concepts, terminology, and procedures that are relevant to the Genesys licensing system.
- The Genesys Sizing Tools page provides sizing calculators, guides, and other tools to help you estimate the solution size and component distribution, understand the overall architecture, and obtain detailed product-specific sizing for specific components.

For additional system-wide planning tools and information, see the release-specific listings of System-Level Documents on the Genesys Documentation website.

Genesys product documentation is available on the:

- Genesys Customer Care website at http://www.genesys.com/customer-care
- Genesys Documentation site at http://docs.genesys.com/
- Genesys Documentation Library DVD, which you can order by e-mail from Genesys Order Management at Genesys Order Management.