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Genesys Info Mart Deployment Guide

Genesys Info Mart Current

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Genesys Info Mart Deployment Guide

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Welcome to the Genesys Info Mart Deployment Guide. This document describes the procedures that you must complete in order to configure and install Genesys Info Mart 8.5 and Genesys Info Mart Manager. It also provides in-depth information about Genesys Info Mart functioning. In brief, you will find the following information in this guide:

- Overview of Genesys Info Mart architecture and functionality
- Pre-installation considerations
- Installation instructions

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](#).

Genesys Info Mart Overview

Review the following topics before you plan your Genesys Info Mart deployment:

- [Genesys Info Mart Terminology Conventions](#) — Find definitions for terms that have specific meanings in the Genesys Info Mart documentation.
- [Genesys Info Mart Architecture](#) — See a graphical representation of the Genesys Info Mart components, including how they interact with other Genesys components.
- [Genesys Info Mart Components](#) — Learn about the Genesys Info Mart components and their functions, including general information about the Genesys Info Mart database schema.
- [Genesys Info Mart Features and Functionality](#) — Learn about the general Genesys Info Mart features and functionality.
- [New in Release 8.5.0](#) — Find descriptions of the Genesys Info Mart features and functionality for 8.5.0 releases.

Genesys Info Mart Terminology Conventions

This page describes the usage of terms that have specific meanings in the Genesys Info Mart documentation.

Database, Database Schema, and Database Instance

The word *database* has different meanings in the Genesys Info Mart documentation, depending on the context. It may refer to Genesys components, such as “Interaction Database” or “Info Mart database.” It may also be used in reference to general RDBMS concepts and procedures, such as “database export” or “database replication.” Where it is significant to refer to a particular organization of tables, views, indexes, and other database objects, the term *database schema* is used. Where it is significant to refer to the RDBMS that manages database files, the term *database instance* is used. This terminology might not necessarily match the terminology that is used by leading RDBMS vendors.

Database Area

As described in [Info Mart Database](#), the Info Mart database consists of only one schema, which comprises several groupings of tables (GIDB tables, Merge tables, and so on). In this document, the groupings of tables might be referred to as a *database area* — for example, the Merge area.

Data Domains

The scope of Genesys Info Mart activity, in terms of the type of details that it processes, is defined by the configured role of the DAP(s) through which Genesys Info Mart accesses IDB. The data domains correspond to the type of details that each IDB stores — Configuration details, Voice details, Multimedia details, or Outbound Contact details. Genesys Info Mart processes each data domain separately.

For more information about the types of details, see [Data Domains](#).

Data Source

The immediate source of data for Genesys Info Mart is IDB, which is populated by ICON. The source of data for ICON is Configuration Server, T-Server (including SIP Server), Interaction Server, or OCS,

depending on the configured role of the ICON application.

In this guide, the term *data source* refers to the upstream data provider — the source of data for ICON.

Available Data Sources

Starting with release 8.1.1, Genesys Info Mart extracts data from all the DAPs in its connections — that is, from all the data sources that populate the IDBs from which Genesys Info Mart is configured to extract data. Starting with release 8.1.2, the ICONs and the extraction DAPs must be *enabled* in order for Genesys Info Mart to consider them and the associated data sources and IDBs to be part of the deployment.

Enabled means that the **State Enabled** check box on the **General** tab of the Application objects is selected. For information about monitoring the status of Applications, see [How to Monitor Solutions, Applications, and Hosts](#). For information about enabling or disabling Application objects, see [Applications](#).

Active Data Sources

While Genesys Info Mart will extract data from all *available* data sources, Genesys Info Mart will wait for delayed data only from *active* data sources. In a Genesys Info Mart deployment, active data sources are data sources that are:

- Currently monitored by enabled ICONs that are connected to Genesys Info Mart
- Enabled — the **State Enabled** check box on the **General** tab of the T-Server, Interaction Server, or Outbound Contact Server Application object is selected

Voice and Multimedia Interactions

Genesys Info Mart supports reporting on both voice and multimedia interactions.

Voice Interactions

The term *voice interactions* refers to traditional telephony calls.

Multimedia Interactions

The term *multimedia interactions* refers collectively to all interactions that are processed through Genesys eServices/Multimedia solution, such as:

- eServices/Multimedia interactions. E-mail and chat are two of the Genesys-provided media types that Genesys Info Mart currently supports.
- 3rd Party Media interactions (formerly referred to as Open Media). These are interactions of any custom media channel that is supported on top of Genesys eServices/Multimedia. The **Workitem** media type is an example of 3rd Party Media.

Genesys Info Mart processes data that is related to all multimedia interactions in a similar manner.

Workbin Instance and Personal Workbin

Workbin Instance

A workbin can be used to hold interactions for resources of a given type: Agent, Place, AgentGroup, or PlaceGroup. The Script object of type **Interaction Work Bin** in the Configuration Layer indicates the type of resource.

In the Genesys Info Mart documentation suite, the term *workbin instance* does not simply refer to an Interaction Work Bin object, but also to the resource that is indicated as the owner of the interaction in the workbin.

For example, if an Interaction Work Bin object that is named **Drafts** has been defined in the Configuration Layer for use by Agent resources, the expression “Agent1’s Drafts workbin” refers to a workbin instance that represents the use of the **Drafts** workbin for interactions that are assigned to Agent1.

Personal Workbin

As a special case for workbins of type Agent or Place, *personal workbin* refers to the situation in which Agent or Place resources place interactions in their own workbin instances. The concept of a personal workbin does not apply to AgentGroup and PlaceGroup workbins. To extend the previous example, Agent1 placing an interaction into the **Drafts** workbin — with Agent1 specified as the owner of this workbin interaction — is an example of a personal workbin.

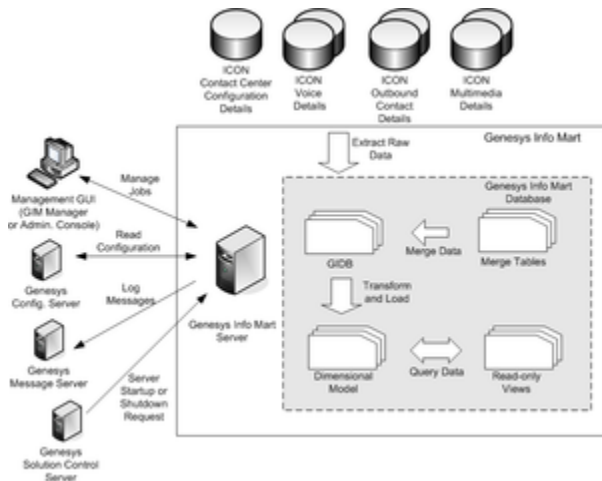
Genesys Info Mart Architecture

Architectural Overview

Genesys Info Mart 8.x extracts data from one or more Genesys Interaction Concentrator databases (Interaction Databases [IDBs]) and produces a data mart for contact center historical reporting.

Genesys Info Mart consists of a server component that extracts, transforms, and loads (ETLs) data into a data mart, based on a schedule that is configured in the Genesys Info Mart application. The Genesys Info Mart Manager provides a graphical user interface (GUI) for managing some of the Genesys Info Mart jobs. The Info Mart database stores low-level interaction data that is consolidated from any number of IDBs, as well as processed data that is suitable for end-user reports.

The following Figure illustrates 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.)



Genesys Info Mart Architecture and Data Flow Diagram

Related Information

For more information, see also:

- [Supported Topologies](#)
- [Topology Diagrams](#)
- [Standby and Disaster Recovery](#)

Genesys Info Mart Components

This page provides a high-level overview of Genesys Info Mart functioning. Configuration options enable you to customize almost every aspect of Genesys Info Mart functioning. However, the default configuration settings provide a Genesys Info Mart application that is suitable for a wide range of standard deployments.

Genesys Info Mart consists of the following components:

- [Genesys Info Mart Server](#)
- [Genesys Info Mart Manager](#)
- [Info Mart Database](#)

Genesys Info Mart Server

The Genesys Info Mart Server, a Java-based component, is the main executable process in Genesys Info Mart 8.x. Its main function is to run various functional jobs, including but not limited to ETL jobs. These jobs run according to the schedule that is configured in the Genesys Info Mart ETL application in Genesys Configuration Layer. The Genesys Info Mart Server also processes requests from applications outside of the Genesys Info Mart Server, such as requests from the management GUI to launch a specific job.

The Genesys Info Mart Server interfaces with:

- Solution Control Server (through Local Control Agent), to control when the Genesys Info Mart Server starts and stops.
- Configuration Server, to read Genesys Info Mart application configuration options, as well as other configuration objects and options that affect Genesys Info Mart functionality.
- The management GUI ([Genesys Info Mart Manager](#)), to start and stop jobs and to provide the status of ETL jobs.
- Message Server, to log messages to the Centralized Log Database.
- The log4j Java client, to log messages to the local log.

Genesys Info Mart Jobs

Genesys Info Mart jobs, which run under the Genesys Info Mart Server, perform the following tasks:

- Initialize the [Info Mart database](#) — Set up your database and modify the IDB component of Interaction Concentrator for Info Mart use.
- During each ETL cycle, extract raw configuration, interaction, and agent activity data.
 - Extract ICON details, namely:
 - Contact center configuration history details from one IDB.

-
- Voice interaction, user data (including call-based attached data and UserEvent-based KVP data), virtual queue, and agent activity details from one or more IDBs.
 - Outbound Contact details from one or more IDBs.
 - Multimedia interaction, attached data, virtual queue, and agent activity details from one or more IDBs. For more information about the types of interactions that Genesys Info Mart considers to be multimedia, see [Multimedia Interactions](#).
 - In an HA configuration, evaluate all redundant IDBs by comparing ICON-provided session information for each set of redundant IDBs (that store Configuration, Voice, Outbound Contact, or Multimedia details), prior to extracting the data in a particular extraction cycle.
 - Merge voice call segments — As part of the extraction process for Voice details, run a merge procedure to establish associations between related voice interactions that were extracted from the same or multiple IDBs; for example, to resolve intersite call linkages between related calls in a multi-site environment.
 - During each ETL cycle, transform and load available data, both data that has been extracted from IDB(s) and data from other data streams, such as Elasticsearch databases or Apache Kafka.
 - Transform the raw data so that it becomes suitable for end-user reports and is available in a set of tables that are referred to as the dimensional model.
 - Load the transformed data into the Info Mart database. (Transform and load are performed by a single job.)
 - Perform database maintenance.
 - Purge old data from the Info Mart database.
 - In partitioned databases, update partitioning as necessary.
 - Maintain calendar data by prepopulating calendar dimensions for use in reports.
 - Migrate Genesys Info Mart — Run the necessary scripts to update your Info Mart database schema and IDB schema and also perform any other steps that are necessary to move from an earlier 8.x release to the current one.
 - Aggregate Info Mart data — In deployments that include the Genesys reporting presentation layer (GCXI or the separately installed RAA package, Genesys Info Mart also hosts the aggregation process. An aggregation job, which is implemented as a plug-in, runs the aggregation engine inside the Genesys Info Mart Server process, to calculate or recalculate the historical Aggregate tables in the Info Mart database.

For a high-level description of how the aggregation job works in Genesys Info Mart release 8.x, see [Job_AggregateGIM](#) in the *Genesys Info Mart Operations Guide*. For more information about the aggregation package and running the aggregation process, see the *Reporting and Analytics Aggregates Deployment Guide* for your release.

- Export Info Mart data, so that the data is available for further import into a data warehouse for the purpose of archiving or custom reporting.

Genesys Info Mart Manager

Genesys Info Mart Manager is a GUI that enables monitoring and real-time administration of some aspects of the Genesys Info Mart processes. Genesys Info Mart Manager is included on the Genesys

Info Mart CD as a separate installation package (IP).

Genesys Info Mart Manager provides the following functionality:

- Displays the current job execution status.
- Displays a history of job execution, including start time, stop time, duration, and final status.
- Filters the job execution history that is displayed, based on time and/or status.
- Executes a single job on an ad hoc basis.
- Issues re-aggregation requests in deployments that include GCXI or the separately installed RAA package.
- Shuts down a running job.

Genesys Info Mart Manager interfaces directly with the Genesys Info Mart Server to start and stop jobs on an ad hoc basis and to obtain job status and history from the Info Mart database.

Genesys Info Mart Manager, which is implemented as a plug-in for GAX, works with any operating system and is easy to deploy. No installation or configuration is required on client hosts. For information about deploying Genesys Info Mart Manager, see [Installing Genesys Info Mart Manager](#).

Genesys Info Mart Manager can be localized. For links to information about installing language packs, see [Next Steps](#) in the procedure to install Genesys Info Mart Manager.

For more information about how to use Genesys Info Mart Manager to manage your Genesys Info Mart operations, see [Managing Jobs with Genesys Info Mart Manager](#) in the *Genesys Info Mart Operations Guide*.

Important

Genesys Info Mart Manager displays timestamps in the time zone selected in the GAX preferences for locale.

Genesys Info Mart Administration Console

In Genesys Info Mart releases earlier than 8.1.4, Genesys Info Mart provided the Genesys Info Mart Administration Console as the GUI for managing Genesys Info Mart jobs. While the Genesys Info Mart Administration Console is included in the Genesys Info Mart 8.5.x CD and you can continue to use it to manage Genesys Info Mart 8.5, Genesys recommends that you use Genesys Info Mart Manager instead of the Administration Console in Genesys Info Mart 8.5 deployments, particularly if your deployment already includes GAX. Therefore, the Genesys Info Mart 8.5 documentation does not provide information about installing and using the Genesys Info Mart Administration Console.

Tip

You can use both management GUIs in your deployment at the same time, if you want to enable additional administration resources but do not want to decommission an

existing Administration Console.

For full information about installing the Administration Console and providing an Administration Console DAP, see the [Genesys Info Mart 8.1 Deployment Guide](#). For information about using the Administration Console to manage Genesys Info Mart jobs, see the [Genesys Info Mart 8.1 Operations Guide](#).

Info Mart Database

The Info Mart database contains all of the data that is populated by the ETL jobs. Info Mart data includes the low-level interaction data that is consolidated from one or more IDBs, as well as the processed data that is suitable for end-user reports.

Info Mart Tables

The Genesys Info Mart data resides in a database schema that includes the following tables:

- Global Interaction Database (GIDB) tables — Store the low-level interaction data that is consolidated from one or more IDBs.

There are separate sets of interaction-related GIDB tables for voice and multimedia interactions, to accommodate different requirements for transformation logic, indexes, data-retention periods, and so on.

The low-level reporting data in GIDB supports the possibility of custom detailed reporting to drill down from the dimensional model.

- Merge tables — Used for merge of voice interactions. After the merge, voice interactions are moved into GIDB tables.
- Staging tables — Store information that is required in the transformation process. Staging tables contain data that has not yet been transformed or cannot be transformed because of incompleteness or inconsistency of source data and other auxiliary data that are necessary for the ETL process.
- Temporary tables — Store data that is used only during the lifetime of one instance of a job.
- Fact and dimension tables (collectively referred to as *dimensional model*) — Contain transformed data that downstream reporting applications can query and combine in meaningful reports.
- Control tables — Store information that controls ETL execution, such as the status of running jobs, job schedules, execution history, audit logs, and similar bookkeeping information.
- In deployments that use GCXI or RAA, the Info Mart database also includes aggregate tables and views that are used by GCXI. For more information, see the [Reporting and Analytics Aggregates Reference Manual](#) for your release.

Info Mart Views

In addition to the previously mentioned tables that are used by Genesys Info Mart jobs, the following

views are intended to simplify data retrieval for reports:

- Predefined views — Read-only views of certain configuration dimensions and facts that are contained in GIDB tables. These views are created in the Info Mart database schema.
- Tenant-specific, read-only views of the dimensions, facts, and predefined views in the dimensional model of the Info Mart schema. These views are created in a Genesys Info Mart schema.
- Tenant-specific sets of views, which are created in a separate database schema for each tenant, so that each tenant user can access only its own data. In addition, these views shield business users from changes to the underlying database schema and prevent users from accidentally changing the contents of the underlying database. Customers should use these views to query Genesys Info Mart data.

For an illustration of the relationship between the tenant views and the Info Mart database schema, see [Creating Genesys Info Mart Read-Only Tenant Views](#).

Genesys Info Mart provides SQL scripts that you execute to create the views that your reporting application can query. These views are created in the Genesys Info Mart and tenant user schemas.

For more information about the database schemas, see the Genesys Info Mart overview section in the [Genesys Info Mart Reference Manual](#) for your relational database management system (RDBMS).

RDBMS-Specific SQL Scripts

A set of SQL scripts is provided for each RDBMS type that is supported. The scripts perform a variety of tasks, including the following:

- Create the Info Mart database objects.
- Create the single-tenant and multi-tenant read-only views.
- Update source databases for efficient data extraction.

Genesys Info Mart Features and Functionality

Depending on configuration, Genesys Info Mart 8.5.x provides the features and functionality described on this page.

For supplementary information about additional, new functionality, see [New in Release 8.5.0](#).

Voice Data Processing

Genesys Info Mart 8.x supports extracting and transforming details data for all voice interactions completed in a Genesys-powered contact center.

In particular, Genesys Info Mart 8.x supports:

- Populating interaction resource facts and interaction resource state facts for voice interactions (traditional telephony calls).
- Reporting on agent states and state reasons, including after-call-work association and DND mode details.
- Reporting on mediation DNs, including virtual-queue and ACD-queue activity.

Multimedia Data Processing

Genesys Info Mart 8.x supports extracting and transforming all interactions that are processed through Genesys eServices solution, including 3rd Party Media interactions.

In particular, Genesys Info Mart 8.x supports:

- Populating interaction resource facts and interaction resource state facts for Genesys eServices interactions, both inbound and outbound
- Reporting on Interaction Queue and Interaction Workbin activity, in addition to mediation DNs
- Dynamically adding new media types that are encountered during transformation of multimedia interactions. For more information, including configuration considerations, see [Media Types](#)
- Dynamically adding new multimedia interaction subtypes that are encountered during transformation. For more information, including configuration considerations, see [Interaction Types and Subtypes](#)

Starting with release 8.5.011, Genesys Info Mart support for reporting on multimedia interactions has been extended to include detailed reporting on chat session activity, including chat bot activity if applicable. For links to more information, see [New in Release 8.5.011](#).

Configured Thresholds by Media Type

Genesys Info Mart 8.x supports configuration of answer and abandon thresholds separately for each media type.

You can configure the thresholds:

- Per media type
- Per tenant per media type
- Per tenant per media type per DN

Configuration sections and options in the Genesys Info Mart Application and in supporting objects enable you to customize media-specific thresholds, as required. For more information, see the **[gim-etl-media-<media type>]** sections (for example, [gim-etl-media-email Section](#)) in the *Genesys Info Mart Configuration Options Reference*.

Outbound Contact Data Processing

Outbound Contact data refers to data about outbound campaigns managed by Outbound Contact Server (OCS) and other components of the automated Outbound Contact system. Genesys Info Mart supports reporting on Outbound Contact campaigns for the following media types:

- Voice, in traditional telephony or VoIP deployments
- E-mail, in eServices deployments with Genesys E-Mail.

Genesys Info Mart 8.x processes Outbound Contact data independently from interaction data.

Support for Outbound Contact reporting includes support for agent group information, through the RESOURCE_GROUP_COMBINATION_KEY field in the CONTACT_ATTEMPT_FACT table. For details, see [Populating Outbound Contact Campaign Activity](#) in the *Genesys Info Mart User's Guide*.

Starting with release 8.5.012.15, in deployments that include CX Contact release 9.0.000.09 or higher, Genesys Info Mart supports including unattempted (in other words, suppressed) contact list records in Outbound Contact reporting.

For links to more information, see the summary about [Enabling Reporting on Outbound Contact Activity](#).

User Data Handling

In general, Genesys Info Mart 8.x provides a unified mechanism for processing user data from both EventUserEvents and call-based TEvents.

You can configure flexible data storage according to the number and types of user data that are captured in your contact center environment. A customizable database schema enables you to treat each key-value pair (KVP) field as either a fact or a dimension, and to store user-data KVPs in a configurable number of user-data dimensions and fact extension tables. Genesys Info Mart also processes the user data that arrives after call completion, and updates call records accordingly.

For more information about user-data handling in Genesys Info Mart 8.x, see [Genesys Info Mart and Attached User Data](#).

Genesys Info Mart 8.x provides predefined support for commonly used KVPs. For descriptions of these and other KVPs, see [Common Attached Data KVPs](#) and [Application-Specific Considerations](#).

Aggregation

Genesys Info Mart 8.x default functionality does not include aggregation.

Instead, Genesys provides aggregation software called Reporting and Analytics Aggregation (RAA), which you can use with the Genesys historical reporting presentation layer—Genesys CX Insights (GCXI)—or with other downstream reporting applications to generate end-user reports. The aggregation layer is installed on top of Genesys Info Mart, which hosts the aggregation process.

High Availability

Genesys Info Mart 8.x supports high availability (HA) of Configuration, Voice, Multimedia, and Outbound Contact details.

Genesys Info Mart 8.x does not require special configuration to identify primary and secondary IDB data sources. Instead, Genesys Info Mart relies on session-control information that is provided by redundant Interaction Concentrator 8.x applications in IDBs. The extraction job evaluates all redundant IDBs and extracts data from the IDB that is the best source for Configuration, Voice, Multimedia, or Outbound Contact details for a particular timespan. For more information about HA in Genesys Info Mart 8.x, see the High Availability chapter in the [Genesys Info Mart 8.1 Deployment Guide](#).

Security

Genesys Info Mart security features include support for:

-
- Transport Layer Security (TLS) to secure connections between Genesys Info Mart Server and the Configuration and Management Layers. Genesys Info Mart support for TLS includes support for client-side port definition, mutual TLS, and compliance with Federal Information Processing Standards (FIPS).
 - Secure Socket Layer (SSL) to encrypt communications between Genesys Info Mart Server and its source and target databases.
 - Encrypted data in the Info Mart database in Microsoft SQL Server and Oracle deployments.

For more information and additional links, see [Database Security](#), [Security Requirements](#), and [Enabling Secure Communications](#).

Multiple Calendars

Genesys Info Mart 8.x supports multiple, customizable calendars with flexible week-numbering rules that can be configured to conform to the ISO 8601 standard for the representation of dates and times.

Genesys Info Mart stores time facts in Coordinated Universal Time (UTC) time. Scalable support for multiple calendars means that Genesys Info Mart can be configured to express time data in any Java time zone format.

Genesys Info Mart 8.x provides one default calendar (DATE_TIME dimension). The default configuration expresses UTC time in the GMT time zone and conforms to legacy Genesys Info Mart 7.x week-numbering rules, which are not the ISO 8601 standard.

Data Lineage

Genesys Info Mart 8.x provides the capability to store the processing history of jobs and the extraction and transformation history of each piece of data.

There are two aspects of data lineage:

- Voice of Data — Special fields store service data that enables you to trace a particular reporting data item to its source system, as well as to trace data in the opposite direction (from source to target). Information that is stored as Voice of Data enables data tracking for the purpose of validating data and troubleshooting data-quality issues. For more information, see [Data Lineage: Voice of Data](#) in the *Genesys Info Mart User's Guide*.
- Voice of Process — Special fields store ETL processing history that enables you to trace which ETL process created or updated what piece of data. You can use this data in data-quality investigations — for example, when a review of a particular reporting item requires identification and review of other items that were processed by the same ETL job. For more information, see [Job History and Status](#) in the *Genesys Info Mart Operations Guide*.

Data Privacy

Starting with release 8.5.010, Genesys Info Mart supports compliance with the European Union's General Data Protection Regulation (GDPR). Genesys Info Mart reports or redacts customer-specified personally identifiable information (PII) in Info Mart fact tables, to enable customers to meet their customers' Right to Access ("export") or Right of Erasure ("forget me") requests. Starting with release 8.5.010.16, Genesys Info Mart also supports customer compliance with GDPR requests relating to employee data.

For more information, see [Genesys Info Mart Support for GDPR](#) in the *Genesys Security Deployment Guide*.

Database Model

The database model aligns the lowest level of Genesys Info Mart data details with the Interaction Concentrator model.

Global Interaction Database (GIDB) within the Genesys Info Mart database schema represents a subset of IDB tables that consolidates data from one or more IDBs. GIDB, which is a replacement of the segment model that was used in 7.x releases of Genesys Info Mart, serves as a storage of low-level interaction details, which require a less resource-consuming transformation.

For more information about the Genesys Info Mart database schema, see the *Genesys Info Mart Physical Data Model* (formerly called *Reference Manual*) for your particular RDBMS.

Support for Partitioning

Genesys Info Mart 8.x supports partitioning of the Info Mart database in Oracle (range partitioning only), Microsoft SQL Server, and PostgreSQL deployments. Genesys Info Mart provides SQL scripts to create a partitioned database schema out of the box, and Genesys Info Mart jobs automatically create and maintain the partitions.

Data Export

An export job, Job_ExportGIM, enables you to periodically copy the data that is stored in the Info Mart database into local .csv files, so that the data is available for further import into a data warehouse for the purpose of archiving or custom reporting. Data Export is supported for on-premises deployments starting with release 8.5.011.22. For more information, see the "About Data Export" page in the *Genesys Info Mart Physical Data Model* for your RDBMS.

ETL Cycle

The extract, transform, and load (ETL) cycle consists of two main jobs.

- The extraction job retrieves all data from available IDBs and, merging data for voice interactions as necessary, consolidates all low-level details data within a single GIDB.
- The transformation job processes all extracted data, populating dimensions and loading data directly into the fact tables.

When enabled, the aggregation job aggregates the transformed data in parallel with the ETL cycle, in environments that include GCXI, or in which RAA is deployed as a separate package. Within scheduled daily intervals, which are configurable, **Job_AggregateGIM** runs continuously.

For detailed information about the ETL jobs, see the chapter about ETL processing in the *Genesys Info Mart 8.1 Deployment Guide*.

Error Handling

Configuration options enable you to control Genesys Info Mart behavior when Genesys Info Mart encounters errors during transformation. For more information about the error-handling configuration options, see the *error-policy Section* in the *Genesys Info Mart Configuration Options Reference*.

Configuration Verification

A configuration-checking process verifies the validity of environment and application settings for the Genesys Info Mart and ICON applications, as well as the validity of Genesys Info Mart-related options on supporting objects (such as DNS or Media Type Business Attributes) and the availability of configured data sources.

For more information about the configuration-checking process, see the "Deployment Verification" section in the chapter about maintenance and other activities in the *Genesys Info Mart 8.1 Deployment Guide*.

Maintenance

A maintenance job, **Job_MaintainGIM**, maintains the Info Mart database. In particular, the maintenance job:

- Purges eligible data from the Info Mart database.
- In partitioned databases, maintains partitions.

- Prepopulates customizable calendar tables.
- Starting with release 8.5.010, processes "export" and "forget me" requests in compliance with General Data Protection Regulation (GDPR) requirements.

For more information about the maintenance job, see [Job_MaintainGIM](#) in the *Genesys Info Mart Operations Guide*. For information about how to schedule or run the maintenance job, see [Working with Jobs](#) in the *Genesys Info Mart Operations Guide*.

Flexible DAP Configuration

To simplify your deployment, you can reuse the non-JDBC DAPs in your deployment, and make these DAPs suitable for Genesys Info Mart to access the same databases. For more information, see [Reusing DAPs](#).

Support for a Management GUI

Genesys Info Mart provides the Genesys Info Mart Manager, a web-based GUI for managing Genesys Info Mart jobs on any platform.

Genesys Voice Platform Support

Genesys Info Mart 8.x supports reporting on the interaction aspect of Genesys Voice Platform (GVP) 7.6 or 8.x activity.

For GVP 8.x, it does not matter whether GVP has been configured for computer-telephony integration (CTI) through SIP Server or through IVR Server, provided that GVP has been configured either as a series of Voice Treatment Port DNs or as a Trunk Group DN. For information about how to configure GVP as a series of Voice Treatment Port DNs or as a Trunk Group DN, see the [Voice Platform Solution 8.1 Integration Guide](#).

Genesys Info Mart does not support configurations in which GVP 8.x is used simply to play treatments solely under the control of the GVP Media Control Platform. For example, if the call is on a Routing Point and GVP is used by the strategy to play a treatment, with no other IVR activity until the call is delivered to an agent, there will be no IRF record for the IVR (in other words, for GVP); no IVR-related metrics will be reported and, except for the route point duration, no mediation activity will be reported.

Genesys Info Mart does not support detailed reporting on voice application usage (for example, subcallflows), based on data from GVP Voice Application Reporter (VAR) 7.6 or the GVP 8.x Reporting Server. However, for GVP 7.6 deployments and for GVP 8.x deployments in which GVP is configured for CTI through IVR Server, Genesys Info Mart does report the limited voice application data that is available for any IVR through IVR Server. For information about how to obtain detailed reporting on voice application usage, see the GVP 7.6 or 8.x documentation, as applicable.

Support for Callback

Starting with release 8.5.005, Genesys Info Mart supports reporting on Genesys Callback activity. In deployments that include Genesys Mobile Services (GMS), [Genesys Callback](#) reporting is provided out-of-box.

Genesys Info Mart processes and stores Callback-related data in dedicated CALLBACK_* tables.

For additional information about historical reporting for Genesys Callback, including information about the Genesys Callback-related KVPs that Genesys Info Mart requires, see [Set up Historical Reporting](#) in the *Genesys Callback Solution Guide*.

Support for Business Edition Premise (BEP)

Genesys Info Mart provides historical reporting in Business Edition Premise (formerly Genesys One), the all-in-one on-premise Genesys contact center solution. When deployed with Business Edition Premise, Genesys Info Mart provides all functionality except support for custom user data. In Business Edition Premise deployments, Genesys Info Mart limits user-data transformation to user data that populates the INTERACTION_DESCRIPTOR and IRF_USER_DATA_GEN_1 tables (in other words, the KVPs that are identified with a single asterisk in the table of [Commonly Used Attached Data KVPs](#)).

New in 8.5.x Releases

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

The following pages highlight new or changed functionality that was introduced in Genesys Info Mart 8.5.x releases:

- [New in 8.5.1 Releases](#)
- [New in 8.5.0 Releases](#)

For related information about Info Mart database schema changes, see the "New in the Info Mart Database" and "Summary of Info Mart Schema Changes" pages in the *Genesys Info Mart Physical Data Model* (for [Microsoft SQL Server](#), [Oracle](#), or [PostgreSQL](#), respectively).

[Link to video](#)

New in Release 8.5.1

Genesys Info Mart 8.5.1 is part of 9.0.

This page highlights new or changed functionality that was introduced in Genesys Info Mart 8.5.1. See [New in Release 8.5.0](#) for information about changes introduced in earlier Genesys Info Mart 8.5.0 releases.

For related information about Info Mart database schema changes, see the "New in Release 8.5.1" and "Summary of Info Mart Schema Changes" pages in the *Genesys Info Mart Physical Data Model* (for [Microsoft SQL Server](#), [Oracle](#), or [PostgreSQL](#), respectively). See the short video on [New in 8.5.x Releases](#) to learn how to view summary information about schema changes.

New in Release 8.5.116.29

Important

Genesys Info Mart 8.5.116.29 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.47 or higher.

Release 8.5.116.29 introduces the following new features and functionality:

- **Data Export enhancements:**

- The export job now creates multiple export chunks when the amount of data to be exported exceeds the export chunk size — for example, when there is an export backlog, such as when data is re-exported. The max-chunks-per-job configuration option enables you to specify the maximum number of export chunks. This improvement can significantly reduce the time required to process large export backlogs. Previously, the export job exported only one chunk of data each time it ran.
- The export job now purges exported data based on the export creation time, as indicated by the created-ts value in the export metadata file. Previously, the export job purged exported data based on the data generation time, as indicated by the max-data-ts value in the metadata file.

- **Support for PostgreSQL 13** — See the [Genesys Info Mart](#) page in the *Genesys Supported Operating Environment Reference* for more detailed information and a list of all supported databases.

New in Release 8.5.116.26

Important

Genesys Info Mart 8.5.116.26 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.47 or higher.

Release 8.5.116.26 introduces the following new features and functionality:

- **Log4j 2 support** — The Apache Log4j library included with Genesys Info Mart has been upgraded to 2.17.1. To maintain backward compatibility, Genesys Info Mart configures Log4j 2 using the existing properties created for Log4j 1, as specified in the **log4j.properties** file in the Genesys Info Mart installation package. You can modify the Log4j 1 configuration by setting options in the **[log4j]** configuration section. For information about how you can switch to using Log4j 2 configuration, see the **Upgrade Notes** section in the *Genesys Info Mart 8.5.116.26 Release Note*.
- **Security enhancements** — Various 3rd party libraries are updated for security reasons.
- **Outbound Contact reporting enhancement** — A new configuration option, `ocs-dial-sched-time` in the **[gim-transformation]** section, enables you to specify whether Genesys Info Mart populates the `CONTACT_ATTEMPT_FACT.DIAL_SCHED_TIME` column with the first or the last value OCS records in the **dial_sched_time** field during a contact attempt. The default value, which preserves legacy behavior, is to use the last value.
- For additional schema-related changes, see "New in Release 8.5.116.26" in the *Genesys Info Mart Physical Data Model* (for **Microsoft SQL Server**, **Oracle**, or **PostgreSQL**, respectively).

New in Release 8.5.116.20

Important

Genesys Info Mart 8.5.116.20 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.47 or higher.

Release 8.5.116.20 introduces the following new features and functionality:

- **Outbound Contact enhancement** — A new configuration option, `ocs-allowed-lateness`, enables you to specify how long Genesys Info Mart waits for late-arriving outbound data. Outbound data (such as `GO_METRICS`) that arrives late but within the specified limit, is processed during transformation.
- **Data Export encryption** — Genesys Info Mart now supports encrypting the .zip files in your Data Export package. A new configuration option in the **[gim-export]** section, `encrypt-certificate`, enables you to specify the path to the certificate Genesys Info Mart uses when encrypting the exported .zip

files. If the option is not specified (the default value), Genesys Info Mart does not encrypt the exported files.

New in Release 8.5.116.12

Important

Genesys Info Mart 8.5.116.12 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.47 or higher.

Release 8.5.116.12 introduces the following new features and functionality:

- **Data Export enhancements:**

- Two SQL scripts that support use of the Data Export feature are now made available in the output folder that contains the data export:
 - **update_target_gim_db*.sql** — Enables you to create or update the target database schema into which you import the exported Info Mart data. The version of the script matches the Genesys Info Mart release in effect when the data export was performed.
 - **make_export_views<db-schema>.sql** — Enables you to restore or troubleshoot the export views used for your data export (for example, if your views get corrupted or you want to restore an earlier version).

Scripts are provided for all the RDBMSs that Genesys Info Mart supports, stored in RDBMS-specific **sql_scripts/<dbms>** folders in the Data Export output package. Previously, the scripts were available only in the **sql_scripts** folder in the installation directory.

For more information about using the **update_target** script and export views, see the "About Data Export" page in the *Genesys Info Mart Physical Data Model* for your RDBMS (for [Microsoft SQL Server](#), [Oracle](#), or [PostgreSQL](#), respectively).

- The GIDB_GC_ANNEX table, which stores information about the configuration of contact center objects such as persons and DNSs, is now included in Data Export.

- **Reporting data enhancements:**

- A new column, STEPCOUNT, in the SDR_BOTS_FACT table supports more granular tracking of bot activity.
- For reporting data that Genesys Info Mart obtains from Kafka, a new table, CTL_PRODUCER_INFO, stores information about the version of the upstream application or service that produced the Kafka data. A new column, PRODUCER_INFO_KEY, in the CTL_AUDIT_LOG table enables you to trace the Kafka data lineage and is useful for troubleshooting purposes.
- A new column, ORSSSESSIONID, is added to the INTERACTION_RESOURCE_FACT (IRF) and MEDIATION_SEGMENT_FACT (MSF) tables for internal use.

For more details about the schema-related changes, see the *Genesys Info Mart Physical Data Model* for your RDBMS (for [Microsoft SQL Server](#), [Oracle](#), or [PostgreSQL](#), respectively).

New in Release 8.5.0

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

This page highlights new or changed functionality that was introduced in Genesys Info Mart 8.5.0 since release 8.5.001. See [New in Release 8.5.1](#) for information about subsequent changes introduced in Genesys Info Mart 8.5.1 releases.

For related information about Info Mart database schema changes, see the "New in Release 8.5.0" and "Summary of Info Mart Schema Changes" pages in the *Genesys Info Mart Physical Data Model* (for [Microsoft SQL Server](#), [Oracle](#), or [PostgreSQL](#), respectively). See the short video on [New in 8.5.x Releases](#) to learn how to view summary information about schema changes.

New in Release 8.5.016.04

Important

Genesys Info Mart 8.5.016.04 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.47 or higher.

Release 8.5.016.04 introduces the following new features and functionality:

- **Enhancements for multimedia deployments with Interaction Server Cluster** — A number of processing changes support a wider range of topologies for deployments with Interaction Server Cluster, and improve agent state reporting in these deployments:
 - Genesys Info Mart requirements for the value of the ICON **role** option have been relaxed. Specifically, Genesys Info Mart no longer requires that the `gcc`, `gls`, `gud` values occur together, and Genesys Info Mart now supports scenarios where the ICON application is configured without the `gls` role. In scenarios where each Interaction Server in a cluster is connected to a separate ICON (or ICON HA pair), this change enables you to configure only one of the ICONs (or ICON HA pairs) to have the `gls` role, and thus meet Genesys Info Mart topology requirements to have only one of the ICONs (or ICON HA pairs) collect data about agent states and agent login sessions. For more information and related links, see [Interaction Concentrator Topologies](#).
 - Processing of resource state reason data in Interaction Server Cluster environments has been improved. For more details, see the [Genesys Info Mart 8.5.016.04 release note](#).
 - A new configuration option, `populate-sm-busy-from-mm-ixns`, in the **[gim-etl-populate]** section, supports a topology that offers improved agent state reporting, where each ICON connects directly to an individual Interaction Server in the cluster, instead of to the proxy, and where only one ICON (or ICON HA pair) is configured to write agent state information (in other words, only one ICON or ICON HA pair has the `gls` role).
In this scenario, the ICONs (or ICON HA pairs) that do not have the `gls` role write interaction data when the respective Interaction Server to which the ICON is connected handles an

interaction, but that ICON will not provide BUSY states. Setting **populate-sm-busy-from-mm-ixns** to true enables Genesys Info Mart to generate BUSY states for agents based on multimedia interaction data, resulting in more accurate agent state reporting. However, be aware that state durations might still not be reported accurately if time is not synchronized among the Interaction Servers in the cluster — for example, a state duration might be reported as one second less than actual.

- Support for Red Hat OpenJDK 11. See the Prerequisites section on the [Genesys Info Mart](#) page in the *Genesys Supported Operating Environment Reference Guide* for more detailed information and a list of all prerequisites.

New in Release 8.5.015.23

Important

Genesys Info Mart 8.5.015.23 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.47 or higher.

Release 8.5.015.23 introduces the following new features and functionality:

- **Mediation reporting enhancement** — A new configuration option, `fix-missing-party-links` in the **[gim-transformation]** section, enables you to reduce the number of redundant records in the `MEDIATION_SEGMENT_FACT` (MSF) table by improving Genesys Info Mart handling of scenarios in which parent party or other party information is missing when an interaction repeatedly enters the same interaction queue or virtual queue. The default value of `false` preserves the existing behavior of creating multiple MSFs in these situations.
- **Support for skills expressions up to 1024 characters** — In deployments that use ICON 8.1.514.47 or higher and where the `ICON cfg-long-vag-script` configuration option has been set to 1 (true), Genesys Info Mart now stores skills expressions up to 1024 characters in the `SCRIPT` column in the `GIDB_GC_GROUP` table. (The schema change to support this enhancement was introduced in Genesys Info Mart release 8.5.015.07.)
- **Operating environment changes:**
 - Support for Microsoft SQL Server 2019 Cluster. See the [Genesys Info Mart](#) page in the *Genesys Supported Operating Environment Reference* for more detailed information and a list of all supported databases.
 - Support for a number of operating systems and RDBMS versions has been discontinued. See the [Discontinued Support](#) summary in the *Genesys Info Mart 8.5.x Release Note* for more details.

New in Release 8.5.015.19

Important

Genesys Info Mart 8.5.015.19 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.27 or higher.

Release 8.5.015.19 introduces the following new features and functionality:

- **Reporting on bot activity in Genesys Designer applications** — Genesys Info Mart now supports reporting on voice bot and chat bot activity orchestrated with Genesys Designer. (Support for Genesys Designer is available in certain Genesys Engage cloud and on-premises deployments.) Three new tables store bot-related data for Designer analytics:
 - SDR_BOTS_FACT
 - BOT_ATTRIBUTES
 - BOT_INTENT

For more information about the new tables, as well as other schema-related changes in release 8.5.015.19, see the *Physical Data Model* for your RDBMS (for [Microsoft SQL Server](#), [Oracle](#), or [PostgreSQL](#), respectively).
- **Miscellaneous enhancements:**
 - General Data Protection Regulation (GDPR) processing now includes the TARGET_OBJECT_SELECTED column in the ROUTING_TARGET table.
 - A new configuration option, cb-virtual-queue-pattern in the **[gim-transformation]** section, enables you to fine-tune Genesys Info Mart behavior with respect to excluding callback virtual queues from mediation reporting.
 - The retention period for active multimedia facts, which is defined by the days-to-keep-active-facts configuration option, no longer affects the purge threshold for multimedia facts in GIDB, which is defined by days-to-keep-gidb-facts.
 - The behavior of the chunk-size configuration option provides improved transformation of data that comes through Elasticsearch and Kafka.
 - The scope of the max-time-deviation configuration option is extended to improve multimedia processing in certain ICON scenarios.
 - Language in the Genesys Info Mart application and documentation has been revised in accordance with a corporate initiative towards inclusive language. For example, the word *master* (as in *master [database] lock*) has been removed from log messages.
- **Support for Elasticsearch 7.6** — For data that comes to Genesys Info Mart through Elasticsearch, Genesys Info Mart supports extracting data from Elasticsearch 7.6 databases.
- **Enhanced operating environment support** — See the [Genesys Info Mart](#) page in the *Genesys Supported Operating Environment Reference* for more detailed information and a list of all supported environments and databases. This release adds support for:
 - Red Hat Enterprise Linux 8

- Oracle 19c RAC
- PostgreSQL 12.x

See also the [Discontinued Support](#) section in the *Genesys Info Mart 8.5.x Release Note* for discontinued third-party prerequisites starting with this release.

New in Release 8.5.015.14

Important

Genesys Info Mart 8.5.015.14 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.27 or higher.

Release 8.5.015.14 introduces the following new features and functionality:

- A new column, GVP_SESSION_ID, has been added to the IRF_USER_DATA_GEN_1 table for internal purposes. The [ICON attached-data specification file \(ccon_adata_spec_GIM_Example.xml\)](#) included in the 8.5.015.14 Info Mart database scripts IP has been updated to include the GVP-Session-ID KVP. ICON is required to store for this purpose.

New in Release 8.5.015.07

Important

Genesys Info Mart 8.5.015.07 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.27 or higher.

Release 8.5.015.07 introduces the following new features and functionality:

- **Outbound Contact reporting enhancement** — A new configuration option, ocs-caf-aggregates-calls in the [\[gim-transformation\]](#) section, enables you to control whether Genesys Info Mart creates separate CONTACT_ATTEMPT_FACT (CAF) records or a single, aggregated CAF record for multiple call attempts dialed in the context of the same CALL_ATTEMPT_GUID.
Contrary to usual Genesys practice, the default value of true (Genesys Info Mart creates a single, aggregated CAF record) represents a change in Genesys Info Mart behavior, so as to improve compatibility with Genesys-provided aggregation and reports (Reporting and Analytics Aggregates [RAA] and Genesys CX Insights [GCXI]).

For information about related database changes, see the *Physical Data Model* for your RDBMS

([Microsoft SQL Server](#), [Oracle](#), [PostgreSQL](#)).

- **Support for Elasticsearch 7.x** — For data that comes to Genesys Info Mart through Elasticsearch, Genesys Info Mart supports extracting data from Elasticsearch 7.x databases.
- **Database-related enhancements**
 - For Microsoft SQL Server, Genesys Info Mart now supports using a case-sensitive collation for the Info Mart database. If you want to use a case-sensitive collation in a deployment that includes Genesys-provided aggregation, you must use RAA release 8.5.011.02 or later.
 - A new configuration option, `cp-reuse-count` in the [\[gim-etl\]](#) section of extraction and transformation DAPs, enables you to control connection-pooling behavior by specifying the number of times connections can be reused. (The default is no limit.)
 - For additional schema changes in this release, see the *Physical Data Model* for your RDBMS (links above).
- **Enhanced operating environment support** — See the [Genesys Info Mart](#) and [Virtualization Platform Support](#) pages in the *Genesys Supported Operating Environment Reference* for more detailed information and a list of all supported environments and databases. This release adds support for:
 - Microsoft Windows Server 2019
 - Microsoft SQL Server 2019
 - Microsoft Hyper-V Server 2019
 - Oracle 18c RAC database

New in Release 8.5.014.34

Important

Genesys Info Mart 8.5.014.34 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.27 or higher.

Release 8.5.014.34 introduces the following new features and functionality:

- **Enhanced support for Unicode in Microsoft SQL Server** — In Microsoft SQL Server deployments with single-language databases, the data types of some columns in certain dimension tables have been changed from `varchar` to `nvarchar`, to extend support of Unicode characters in single-language databases. For consistency, the size of some existing `nvarchar` columns in multi-language databases has also been modified.
- **Data Export enhancements** — Modifications to the `update_target_*.sql` scripts for creating or updating a Microsoft SQL Server target database improve support for scenarios where data is exported from a PostgreSQL or Oracle Info Mart database and subsequently imported into a Microsoft SQL Server target database.
- Support for Oracle 19c database. See the [Genesys Info Mart page](#) in the *Supported Operating Environment Reference* for more detailed information and a list of all supported databases.

For more information about the schema changes and data export enhancements in this release, see the "New in This Release" page in the [Physical Data Model for a Microsoft SQL Server Database](#).

New in Release 8.5.014.26

Important

Genesys Info Mart 8.5.014.26 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.27 or higher.

Release 8.5.014.26 introduces the following new features and functionality:

- **Support for Asynchronous interactions in Advanced Chat deployments** — In Genesys Engage cloud deployments with Advanced Chat, Genesys Info Mart supports reporting on Asynchronous interactions that are placed into a parking queue. Two new columns, `PARKING_QUEUE_COUNT` and `PARKING_QUEUE_DURATION`, have been added to the `CHAT_SESSION_FACT` table. The **ICON attached-data specification file** (`ccon_adata_spec_GIM_Example.xml`) included in the 8.5.014.26 Info Mart database scripts IP has been updated to include the additional KVPs ICON is required to store for reporting on asynchronous Advanced Chat interactions.
- **Elasticsearch enhancement** — A new configuration option, `rest:max-content-length` in the **[elasticsearch-<data-source-id>]** section, specifies the maximum permitted size for responses to Elasticsearch REST requests.
- **Configuration verification enhancement** — During startup and at various times during runtime in high availability (HA) deployments, Genesys Info Mart now checks that connections to the data sources are correctly specified. As described on the [Enabling High Availability](#) page, the *primary* application (T-Server, Outbound Contact Server, or Interaction Server) must be specified for both ICON connections in the HA pair. If an ICON connection points to a backup application in the HA pair of data sources, Genesys Info Mart generates an error.
A new configuration option, `error-policy-cfg-check-backup-data-source` in the **[error-policy]** section enables you to define the severity level for misconfiguration of ICON connections to highly available (HA) data sources.

New in Release 8.5.014.19

Important

Genesys Info Mart 8.5.014.19 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.27 or higher.

Release 8.5.014.19 introduces the following new features and functionality:

- **Reporting on agent location** — A new dimension table, AGENT_LOCATION, and a new column, AGENT_LOCATION_KEY, in the SM_RES_SESSION_FACT table enable you to record the locations of agents for both voice and multimedia login sessions. Interaction Concentrator release 8.1.514.27 is required to provide the location data from SIP Server and Interaction Server releases that support this functionality.
- **Configuration for secure connection to Kafka** — In deployments that rely on obtaining reporting data from Kafka, you can set native Kafka configuration options in the **kafka-<cluster-name>** configuration section to enable a secure client connection from Genesys Info Mart to the Kafka instance. For more details about security options you should consider if your Kafka cluster uses SASL_SSL authentication or if you are using SSL connections with a self-signed certificate, see **kafka-<cluster-name> Section** in the *Genesys Info Mart Options Reference*.
- **Miscellaneous enhancements:**
 - A new configuration option, ixn-data-limit in the **[gim-transformation]** section, improves Genesys Info Mart handling of scenarios with excessive numbers of input records, by limiting the number of such records per INTERACTION_FACT record. If the actual number of records exceeds the configured limit, error message 55-20106 is logged, and the interaction is discarded. The option applies only to voice interactions. Previously in such scenarios, an OutOfMemory error could occur.
 - To enhance reporting on Genesys Predictive Routing, two new columns in the GPM_FACT table -- VQ_GUID and VQ_RESOURCE_KEY -- enable you to join GPM_FACT to MEDIATION_SEGMENT_FACT. Use this join to make information about virtual queues (VQs) that participate in Predictive Routing interactions available in reports.
 - Two new dimension tables, USER_DATA_GEN_DIM_1 and USER_DATA_GEN_DIM_2, have been added to the Info Mart schema to store out-of-box user data for internal use. Corresponding keys, USER_DATA_GEN_DIM_KEY_1 and USER_DATA_GEN_DIM_KEY_2, have been added to the IRF_USER_DATA_KEYS table, accordingly.
- **Enhanced operating environment support** — See the **Genesys Info Mart** page in the *Genesys Supported Operating Environment Reference Guide* for more detailed information and a list of all supported environments and databases. This release adds support for:
 - Java SE 9, including support for all updates
 - Kernel Virtual Machine (KVM), embedded as part of the Linux Kernel Package
 - Microsoft SQL Server 2017
 - PostgreSQL 9.4

New in Release 8.5.014.14

Important

Genesys Info Mart 8.5.014.14 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.014.14 introduces the following new features and functionality:

- **Outbound Contact processing improvement** — A new configuration option, `ocs-chain-history-limit` in the **[gim-transformation]** section, combined with a new log message, [55-20176](#), improves Genesys Info Mart handling of scenarios that result in excessive numbers of `GO_FIELD_HIST` and `GO_CHAINREC_HIST` records, by limiting the number of `GIDB_GO_FIELDHIST` and `GIDB_GO_CHAINREC_HIST` records that can be associated with a particular `CHAINGUID`. Previously in such scenarios, an `OutOfMemory` error could occur.
- **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.

New in Release 8.5.014.09

Important

Genesys Info Mart 8.5.014.09 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.014.09 introduces the following new features and functionality:

- **Predictive Routing enhancements** — Genesys Info Mart now supports enhanced reporting on Genesys Predictive Routing (GPR) usage, including more detailed reporting about scores, thresholds, predictors, and routing. To enable the enhanced reporting, new KVPs from Predictive Routing - URS Strategy Subroutines release 9.0.015.00 or higher populate a new Info Mart dimension table, `GPM_DIM1`, and new columns in the `GPM_FACT` table. In addition, the values provided in some existing KVPs have been modified.
For more information about:
 - The Info Mart database schema changes, see the [Physical Data Model reference](#) for your RDBMS.
 - The reporting KVPs sent by GPR, see [Genesys Predictive Routing \(GPR\)](#) in this document and [Integrate with Genesys Reporting](#) in the *GPR Deployment and Operations Guide*.
- **Support for Chat Thread reporting** — In Genesys Engage cloud deployments with Advanced Chat, Genesys Info Mart supports reporting on chat threads:
 - New tables, `CHAT_THREAD_FACT` and `MEDIA_ORIGIN`, store data for chat thread statistics. A new column in the `CHAT_SESSION_FACT` table, `THREAD_ID`, has been included for future use, to associate chat session with chat thread reporting.
 - A new Genesys CX Insights (GCXI) report, Chat Thread Report, is populated from the summarized thread data now available in Genesys Info Mart in cloud deployments. (Chat Thread reporting in GCXI requires Reporting and Analytics Aggregates [RAA] release 8.5.009.04 or higher and GCXI release 9.0.011.00 or higher.) For more information, see the [Chat Thread Report](#) in the *Reporting in the cloud* guide.
 - The [ICON attached-data specification file \(ccon_adata_spec_GIM_Example.xml\)](#) included in the 8.5.014.09 Info Mart database scripts IP has been updated to include the additional KVPs ICON is required to store for chat thread reporting.

- **Operating environment support** — Support for the following operating system and third-party prerequisites was added. See the [Genesys Info Mart page](#) in the *Supported Operating Environment Reference* for more detailed information.
 - Oracle Linux 7 operating system
 - OpenJDK 11
- **Logging Enhancements** — A new log event, 55-20175, supports improved handling of Outbound Contact scenarios where CONTACT_ATTEMPT_FACT records contain unsupported values. For more information, see [Genesys Info Mart 8.5 Log Events Help](#).

New in Release 8.5.013.06

Important

Genesys Info Mart 8.5.013.06 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.013.06 introduces the following new features and functionality:

- **Enhanced omnichannel reporting** — Two new columns in the SM_MEDIA_NEUTRAL_STATE_FACT table, END_DATE_TIME_KEY and RESOURCE_GROUP_COMBINATION_KEY, enhance support for reporting across all media channels.
- **Multimedia and Outbound Contact transformation enhancement** — A new configuration option, chunk-size in the **[gim-transformation]** section, enables you to decouple the chunk size for transformation of Multimedia and Outbound Contact details from the chunk size for data extraction. You can use this option to temporarily reduce transformation chunk size, to improve transformation performance and help avoid OutOfMemory errors in situations where there is an unusually large quantity of data to be transformed (for example, because "runaway strategy" scenarios have occurred).
- **Support for variable-sized Elasticsearch indices** — A new configuration option, g:index-interval in the **[elasticsearch-<data-source-id>]** section(s), enables you to override the default Elasticsearch index interval, so that Genesys Info Mart correctly processes Elasticsearch indices where the size of the index interval is not fixed.
- **Support for Call Detail Records (CDRs)** — In preparation for future support of CDRs for billing or other monitoring purposes, new CDR_* tables have been added to the Info Mart database schema. The **make_gim** SQL scripts have been modified to include the new table definitions and KVP mappings. Although the CDR_* tables are populated in cloud deployments, they are considered reserved for internal use.
- **Logging enhancement for Outbound Contact** — A new log event, 55-20174, supports improved handling of Outbound Contact scenarios where Campaign Group dialing modes are configured with unsupported values. For more information, see the Resolved Issue for [GIM-12305](#) in the *Release Notes* for this release.

New in Release 8.5.012.15

Important

Genesys Info Mart 8.5.012.15 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.012.15 introduces the following new features and functionality:

- **Support for reporting on Co-browse sessions** — In Genesys Engage cloud deployments with Co-browse Server 9.0.003.02 or higher, Genesys Info Mart now supports reporting on Co-browse sessions. Co-browse data is populated in the COBROWSE_* tables that were originally added to the Info Mart schema in release 8.5.011.14.
- **Outbound Contact reporting extended to unattempted records** — In Outbound Contact deployments with CX Contact release 9.0.000.09 or higher, Genesys Info Mart now supports reporting on contact list records that were suppressed from an outbound campaign. New LDR_* tables in the Info Mart database are populated with data that Genesys Info Mart obtains from CX Contact through Elasticsearch. The new tables supplement existing reporting about campaign activity and calling list usage sourced from Outbound Contact Server (OCS) through ICON.
Genesys Info Mart support for CX Contact reporting on unattempted records is defined out-of-box and cannot be customized.

For more information about:

- CX Contact support for this feature, including a definition of what constitutes an *unattempted record* in this context, see [Integrating CX Contact with Genesys Historical Reporting](#) in the *CX Contact Deployment Guide*
- The new LDR_* tables, see the [Genesys Info Mart Physical Data Model](#) for your RDBMS
- Support for Oracle 18c database. See the [Genesys Info Mart page](#) in the *Supported Operating Environment Reference* for more detailed information and a list of all supported databases.

New in Release 8.5.011.23

Important

Genesys Info Mart 8.5.011.23 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.011.23 introduces the following new features and functionality:

- **Enhancement for data extracted from Kafka**—A new configuration option, `kafka-idle-timeout` in the `[gim-transformation]` section, enables you to define the idle timeout for polling Kafka records. If polling does not return any records within the timeout, Genesys Info Mart stops polling Kafka until the next ETL cycle.
- **Support for Elasticsearch 6.x**—Genesys Info Mart now extracts data from indices created in Elasticsearch 6.x or later, without considering the mapping type assigned to the document. Genesys Info Mart continues to support indices created in Elasticsearch 5.x, potentially with multiple mapping types.

New in Release 8.5.011.22

Important

Genesys Info Mart 8.5.011.22 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.011.22 introduces the following new features and functionality:

- **Data Export supported in on-premises deployments**—Data Export functionality, introduced previously for Genesys Engage cloud customers, is now supported in on-premises deployments as well. For full information, see the "About Data Export" page in the *Genesys Info Mart Physical Data Model* for your RDBMS:
 - For Microsoft SQL Server, click [here](#).
 - For Oracle, click [here](#).
 - For PostgreSQL, click [here](#).

New in Release 8.5.011.18

Important

Genesys Info Mart 8.5.011.18 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.011.18 introduces the following new features and functionality:

- **Support for obtaining reporting data from Kafka** — As further preparation for future support of

alternative data streams, Genesys Info Mart now supports obtaining reporting data from Genesys applications via Apache Kafka. Genesys Info Mart support for reporting data from Kafka-enabled applications is predefined and cannot be customized.

- A new configuration section, `kafka-<cluster-name>`, and two new options, `bootstrap.servers` and `g:topic:<topic-name>`, provide the connection and topic information that enables Genesys Info Mart to consume data from Apache Kafka.
- The `make_gim` SQL scripts have been modified to include Avro schema definitions and `CTL_XML_CONFIG` mappings for data from the first two producer applications that plan to use Kafka, namely, Bot Gateway Server (BGS) and Genesys Co-browse (GCB). Once Kafka-enabled BGS and GCB releases are available and the Kafka-related Genesys Info Mart configuration options (above) have been set, the BGS and COBROWSE tables in the Info Mart database will be populated with data from Kafka.

Important

BGS is currently available only in restricted release, and Genesys Info Mart currently supports BGS reporting via Elasticsearch. Existing customers can continue to use Elasticsearch.

• Miscellaneous enhancements

- Genesys Info Mart now supports reporting on outbound call flows in SIP Cluster deployments where SIP Server can disable recording and monitoring.
- A new `GIM_ETL_GDPR_SUCCESS` log message, STANDARD-level message 55-20173, replaces the previous TRACE-level message, 55-31406. The message indicates that "export" and "forget" requests submitted in accordance with the European Union's General Data Protection Regulation (GDPR) were processed successfully.
- Genesys Info Mart now supports Secure Socket Layer (SSL) connections to encrypt database client/server communications on PostgreSQL deployments, as well as on Microsoft SQL Server and Oracle deployments. For more information, see [Enabling Secure Connections](#).
- For additional schema changes, see the "New in Release 8.5.011.18" section in the *Genesys Info Mart Physical Data Model* for your RDBMS.
- (Introduced in release 8.5.011.15) A new configuration option, `g:tenant-prefix` in the `[elasticsearch-<data-source-id>]` section(s), supports SDR and other reporting where Genesys Info Mart obtains the data from an Elasticsearch cluster shared across multiple tenants.

New in Release 8.5.011.14

Important

Genesys Info Mart 8.5.011.14 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.011.14 introduces the following new features and functionality:

- **Support for async chat reporting** — In eServices deployments with Chat Server release 8.5.302.03 or higher, Genesys Info Mart extends support for chat session reporting to include detailed reporting on asynchronous (async) chat sessions. New columns in the CHAT_SESSION_FACT and CHAT_SESSION_DIM tables store async chat statistics in the Info Mart dimensional model database schema.

In deployments that include Reporting and Analytics Aggregates (RAA) release 8.5.005 or higher and Genesys CX Insights (GCXI) release 9.0.007 or higher, new aggregate (AGT_CHAT_) tables in the Info Mart database provide the summarized session data required to populate out-of-box async chat dashboards. For more information, see the [RAA Release Notes](#), as well as the information about async chat dashboards in the [GCXI 9.0 User's Guide](#).

The [ICON attached-data specification file \(ccon_adata_spec_GIM_Example.xml\)](#) included in the 8.5.011.14 Info Mart database scripts IP has been updated to include the additional KVPs ICON is required to store for async chat reporting. For more information and related links about enabling chat reporting in your deployment, see [Chat Server](#) on the [User Data Sources and KVPs](#) page.

- **Support for Transport Layer Security (TLS) 1.2** — Genesys Info Mart supports TLS 1.2 to secure connections with other Genesys applications at the host, port, or application level. For full information, see the pages starting from [Secure Connections \(TLS\)](#) in the *Genesys Security Deployment Guide* and [Secure connections using TLS](#) in the *Platform SDK Developer's Guide*. For a summary of the configuration steps to secure Genesys Info Mart connections to other Genesys applications, see [Enabling Secure Connections](#) in this deployment guide.
- **Miscellaneous**
 - This release includes additional schema-related changes to improve user-data processing and to prepare support for new areas of reporting. For more information, see the "New in Release 8.5.011.14" section in the [Genesys Info Mart Physical Data Model](#) for your RDBMS.
 - In further preparation for future support (on premises deployments) for reporting on applications that do not send data to Genesys Info Mart through ICON, a new configuration option, `sources:extra` in the `elasticsearch-<data-source-id>` configuration section, enables you to configure multiple data sources in a single configuration section, for data stored in a single Elasticsearch database.
 - Recommendations on partition sizes for GIDB and fact tables in PostgreSQL deployments have been refined. For more information, see [Database Partitioning](#).

New in Release 8.5.011

Important

Genesys Info Mart 8.5.011 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.06 or higher. In multimedia deployments, Genesys recommends using Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.011 introduces the following new features and functionality:

- **Support for chat reporting** — In eServices deployments with Chat Server release 8.5.203.09 or later, Genesys Info Mart supports detailed reporting on Genesys Chat sessions. Two new tables, `CHAT_SESSION_FACT` and `CHAT_SESSION_DIM`, store session statistics in the Info Mart dimensional model database schema, and a control table, `CTL_XML_CONFIG`, is used internally to map Chat Server KVPs to the chat session tables during transformation.

In deployments that include Bot Gateway Server (BGS) release 9.0.002 or later, Genesys Info Mart also supports reporting on chat bot activity. A new fact table, `BGS_SESSION_FACT`, and three new `BGS_*` dimension tables store BGS-related data in the Info Mart dimensional model. (BGS is currently available only in restricted release. For more information about including chat bot functionality in your eServices deployment, contact your Genesys account representative.)

In deployments that include Reporting and Analytics Aggregates (RAA) release 8.5.003 or later and Genesys CX Insights (GCXI) release 9.0.005 or later, new aggregate (`AGT_*`) tables in the Info Mart database provide the summarized session data required to populate new chat session reports and a dashboard, which are available out-of-box. For more information, see the [RAA Release Notes](#), as well as the information about Chat Reports and Chat Bot reports and dashboards in the [GCXI 9.0 User's Guide](#). (GCXI is currently available only in restricted release. For more information about including GCXI reports in your deployment, contact your Genesys account representative.)

For more information and related links about enabling chat reporting in your deployment, see [Chat Server](#) on the [User Data Sources and KVPs](#) page.

- **Schema changes** — For full information about the new `CHAT_*` and `BGS_*` tables, as well as other schema changes in release 8.5.011, see the [Genesys Info Mart Physical Data Model](#) for your RDBMS.

New in Release 8.5.010.16

Important

Genesys Info Mart 8.5.010.16 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.06 or higher. In multimedia deployments, Genesys recommends using Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.010.16 introduces the following new features and functionality:

- **Enhanced support for General Data Protection Regulation (GDPR) compliance** — Support for GDPR compliance has been extended to employee requests. The scope of the `CTL_GDPR_HISTORY` history table has been similarly extended. Additionally, the `UPDATE_AUDIT_KEY` column was added to the `CALLBACK_FACT`, `GPM_FACT`, and `SDR_*` fact tables. For tables that might contain personally identifiable information (PII), the presence of the audit key enables enhanced GDPR support in deployments that include the Data Export feature.

For more information about the `CTL_GDPR_HISTORY` history table and other schema changes in release 8.5.010.16, see the “New in This Release” page in the [Genesys Info Mart Physical Data Model](#) for your RDBMS. For more information about Genesys Info Mart support for GDPR compliance, see [Genesys Info Mart Support for GDPR](#) in the [Genesys Security Deployment Guide](#).

New in Release 8.5.010

Important

Genesys Info Mart 8.5.010 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.06 or higher. In multimedia deployments, Genesys recommends using Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.010 introduces the following new features and functionality:

- **Support for General Data Protection Regulation (GDPR) compliance** -- To enable customers to comply with Right to Access ("export") or Right of Erasure ("forget") requests from their customers ("consumers"), Genesys Info Mart reports or redacts customer-specified personally identifiable information (PII) stored in Info Mart fact tables. The daily Info Mart database maintenance job, **Job_MaintainGIM**, automatically processes new GDPR requests, which customers provide in tenant-specific JSON files. To enable GDPR support:
 - The CTL_GDPR_HISTORY table and a number of other new control and temporary tables have been added to the Info Mart database schema. The CTL_GDPR_HISTORY table reports the actual PII data that was requested for export or was redacted by a "forget" request. For more details, see the "New in This Release" information in the *Physical Data Model* for your RDBMS.
 - A new configuration option in the [gim-etl] section, days-to-keep-gdpr-history, enables you to control how long data will be retained in the CTL_GDPR_HISTORY table; the maximum retention period is 30 days.
 - Two new log events, 55-20172 (GIM_ETL_GDPR_ERROR) and 55-31406 (GIM_ETL_GDPR_SUCCESS) report the status of GDPR request processing, by tenant. You can set an alarm on the GIM_ETL_GDPR_ERROR message, to alert you to problems that are preventing completion of GDPR processing.

For more information about Genesys Info Mart support for GDPR compliance, see [General Data Protection Regulation \(GDPR\)](#) and [Genesys Info Mart and GDPR](#) in the *Genesys Security Deployment Guide*. For more information about the maintenance job, see [Job_MaintainGIM](#) in the *Genesys Info Mart Operations Guide*.
- **Preparing support for alternative data streams** — In future releases, Genesys Info Mart will support obtaining data from data streams that do not go through Interaction Concentrator. Info Mart database schema changes have been made to prepare support for these alternative data channels. For full details, see the "New in This Release" information in the *Physical Data Model* for your RDBMS.
- **Support for upgraded GIM Manager** — Genesys Info Mart supports GIM Manager 8.5.010, which is the minimum release required for Genesys Administrator Extension (GAX) 8.5.270.06 and higher (see the system requirements for [GIM Manager](#)).
- **Further relaxation of database privileges for PostgreSQL** — To enable tenant views to be recreated as required by Genesys Info Mart and Reporting & Analytics Aggregates (RAA) when the Info Mart and RAA database users are not the same, the Info Mart database user now needs to be granted the Tenant User role, instead of schema owner permissions (see [Required Database Privileges](#)). The PostgreSQL `make_gim_view_for_tenant.sql` script has been modified accordingly.

New in Release 8.5.009.20

Important

Genesys Info Mart 8.5.009.20 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.06 or higher. In multimedia deployments, Genesys recommends using Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.009.20 introduces the following new features and functionality:

- **Enhanced Callback reporting** — Two new dimension tables (CALLBACK_DIAL_RESULTS and CALLBACK_DIM_4) and a number of new CALLBACK_FACT table columns extend support for Callback reporting by providing more data about dialing attempts and dial results. For detailed information about the schema changes, see the [Physical Data Model](#) for your RDBMS.

The CALLBACK_* table columns are populated with actual data when you use a Genesys Mobile Services (GMS) release that provides the required user data KVPs. GMS 8.5.200.07 or later provides the KVPs that are used to populate the new tables and columns. For more information about the Callback-related KVPs that GMS supports, see [Genesys Mobile Services \(GMS\) — for Callback](#).

- **Enhanced query performance** — The index I_GPM_FACT_SDT, on the START_DATE_TIME_KEY in the GPM_FACT table, is now defined for partitioned databases. The index improves the performance of queries that are bounded by time. Previously, the index was added to the GPM_FACT table in the schema-creation script for nonpartitioned databases (**make_gim.sql**), but not in the script for partitioned databases (**make_gim_partitioned.sql**).
- **Support for Elasticsearch version 5.0+ via RESTful API** — In preparation for future support (on premises deployments), for reporting on applications that do not send data to Genesys Info Mart through ICON, Genesys Info Mart now supports use of the Elasticsearch REST API client to retrieve data from an Elasticsearch 5.0 or later database. A new configuration section in the Info Mart application, **[elasticsearch-<data-source-id>]**, and a new configuration option, client, enable you to specify the Elasticsearch cluster that Genesys Info Mart will use to retrieve data from the data source identified by <data-source-id>.

New in Release 8.5.009

Important

Genesys Info Mart 8.5.009 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.06 or higher. In multimedia deployments, Genesys recommends using Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.009 introduces the following new features and functionality:

- **Support for Genesys Predictive Routing (GPR) reporting** — Genesys Info Mart now supports reporting on GPR usage and the impact of predictive routing on agent and interaction-handling KPIs for voice, web, and mobile channels. Genesys Info Mart support for GPR reporting is provided out-of-box, provided that GPR has been configured to send the required KVPs in UserEvents and that ICON has been configured to store those KVPs. New **GPM_*** tables in the Info Mart schema store GPR-related data:

- GPM_FACT
- GPM_RESULT
- GPM_PREDICTOR
- GPM_MODEL

For more information about:

- The new tables for GPR reporting, see the [Physical Data Model](#) for your RDBMS
 - The KVPs that Genesys Info Mart requires, see [Genesys Predictive Routing \(GPR\)](#)
 - Setting up the data flow between GPR and Genesys Info Mart, see [Deploying: Integrating with Genesys Info Mart](#) in the Genesys Predictive Routing (formerly Predictive Matching) *Deployment and Operations Guide*
- **Relaxed database permissions for PostgreSQL** — In PostgreSQL deployments that use read-only tenant views, the name of the Tenant User no longer needs to be the same as the name of the Tenant User schema. On the other hand, the Info Mart user (the user account used to run Info Mart jobs) requires access to the tenant user schemas and the tenant views. The **make_gim_view_for_tenant.sql** script has been modified so that you now separately specify the names of the Tenant User schema and the Tenant User, as well as the Info Mart user, when you create the tenant views. For information about the database permissions required for PostgreSQL, see [Required Database Privileges](#). For information about creating the tenant views, see [Creating Read-Only Views - PostgreSQL](#).
 - **Performance improvements** — Various internal enhancements improve Genesys Info Mart ETL performance. The improvements include changes to the way the extraction job handles connections to IDBs, using pooled connections that do not close until extraction is complete. As a result, your DBAs might notice a large increase in the number of open connections, many of them idle, during extraction. For more information, see [Database Connections](#).

New in Release 8.5.008.29

Important

Genesys Info Mart 8.5.008.29 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.06 or higher. In multimedia deployments, Genesys recommends using Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.008.29 introduces the following new features and functionality:

- **Genesys Designer reporting enhancements** — New SDR_SURVEY_* tables (SDR_SURVEY_FACT, SDR_SURVEY_QUESTIONS, SDR_SURVEY_ANSWERS) support reporting on post-call surveys for interaction flows that involve applications developed with Genesys Designer. (Genesys Designer is supported in certain Genesys Engage cloud deployments.) For more information, see the [Genesys Info Mart Physical Data Model](#) for your RDBMS.

New in Release 8.5.008

Important

Genesys Info Mart 8.5.008 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.06 or higher. In multimedia deployments, Genesys recommends using Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.008 introduces the following new features and functionality:

- **Genesys Designer reporting enhancements** — Additional schema changes support reporting on interaction flows that involve applications developed with Genesys Designer. (Support for Genesys Designer is available in certain Genesys Engage cloud implementations.) For more information, see the [Physical Data Model](#) for your RDBMS.
- **Logging Enhancements** — Various logging enhancements enable improved management of Genesys Info Mart.
 - Log message 20110 now identifies the ICONs that are delaying extraction. Furthermore, log message 20171 has been added as a cancel message for 20110. Previously, log message 20110 logged information about delayed data sources, but it was not easy to determine which ICONs were delayed.
 - Genesys Info Mart now logs information to link the database connection ID and the DAP name. This link can help in finding the root cause of an issue. Previously, the logs showed only the connection ID.
 - When the system property UseDbLinks=false, the extraction job no longer shows misleading database link information when logging DAPs ("-> DbLink=").
- **Miscellaneous improvements**
 - Various internal enhancements, in some cases with associated schema changes, improve Genesys Info Mart performance. For information about the schema changes, see the [Physical Data Model](#) for your RDBMS.
 - In deployments that include aggregation, the transformation job now includes media-neutral agent states in notifications sent to the aggregation engine about new or changed data.
 - A new configuration option, routing-target-regular-dn-fold-external was introduced in a hot fix (8.5.008.25) subsequent to the initial 8.5.008 release. The option controls whether Genesys Info Mart populates ROUTING_TARGET records for each distinct regular external DN, or folds them into a single record with the TARGET_OBJECT_SELECTED value set to EXTERNAL.

- **Operating system support** — Support for the Microsoft Windows Server 2016 operating system has been added. See the [Genesys Info Mart page](#) in the *Supported Operating Environment Reference* for more detailed information and a list of all supported operating systems.

New in Release 8.5.007

Important

Genesys Info Mart 8.5.007 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.514.06 or higher. In multimedia deployments, Genesys recommends using Interaction Concentrator release 8.1.514.11 or higher.

Release 8.5.007 introduces the following new features and functionality:

- **Deployment simplification and maintenance improvements** — The following enhancements reduce resource requirements and effort for deployment and maintenance.
 - The restrictions that each ICON application must populate its own IDB and that there must be separate IDBs for Voice and Multimedia has been relaxed. The topologies that Genesys Info Mart supports now include one ICON and one IDB for all data domains. For more information, see [Supported Topologies](#) and the new topology diagram, [Multiple Data Sources per ICON: Combined Data Domains](#).
 - To supplement IDB maintenance improvements introduced in release 8.5.006, **Job_InitializeGIM**, **Job_ExtractICON**, and **Job_MigrateGIM** now automatically create missing IDB views as well as indexes required for the applicable DAP role(s). In addition to streamlining and expediting execution of the initialization and migration jobs, the maintenance improvements mean that missing indexes or views will not interrupt **Job_ExtractICON** by causing Genesys Info Mart to go into the migration state until IDB is updated.

However, while it is no longer strictly necessary for users to run **update_idb_*** scripts manually, in any circumstances, there are some situations in which you might consider doing so; for more information, see [Preparing IDBs](#).
- A new configuration option, on-demand-migration in the **[schedule]** section, enables you to configure Genesys Info Mart to run **Job_MigrateGIM** automatically when required. Previously, Genesys Info Mart entered the migration state if the Info Mart database schema needed to be upgraded following Genesys Info Mart Server migration, and manual intervention was required in order to run **Job_MigrateGIM** to migrate the database, before ETL functioning would resume.
- **User data enhancement** — In deployments that use ICON 8.1.512.08 or higher, Genesys Info Mart now supports storage of e-mail subjects up to 1024 characters. You can also store up to 1024 characters in fields with character data types in custom user data fact tables, provided that you defined these fields correctly in the user-data template script (**make_gim_UDE_template.sql** or **make_gim_UDE_template_partitioned.sql**). Previously, the limit was 255 characters.

Tip

If you need to store e-mail subjects or custom user data values with a length greater than 255 characters, Genesys recommends that you use ICON 8.1.514.06 or later and set the ICON max-userdata-length option accordingly.

- **Unicode characters support on Microsoft SQL Server** — Genesys Info Mart support for data storage in multiple languages has been extended to Microsoft SQL Server. A new database-creation script (**make_gim_multilang.sql** or **make_gim_multilang_partitioned.sql**) uses nvarchar instead of varchar data types to enable you to take advantage of Unicode characters in Microsoft SQL Server deployments, provided that ICON and Genesys Configuration Layer components have been configured as required. For more information, see [Multi-Language Support](#).

Important

There is no migration path from an existing Info Mart database to a Unicode one. Contact Genesys Customer Care if you need assistance with data transfer.

- **Gapless mediation reporting improvement** — In eServices deployments, instead of adjusting the durations of Interaction Queue and virtual queue MSFs to eliminate gaps in mediation reporting, Genesys Info Mart now provides additional MSFs to cover the time that a multimedia interaction is in mediation but is not in an Interaction Queue for which there is an MSF. A new configuration option, **show-non-queue-mediation-mm**, which replaces **expand-mediation-time-for-gapless**, controls whether non-queue MSFs will be created and whether all mediation time will be reported, without gaps. For more information, see the discussion about **MEDIATION_DURATION** on the [Populating Mediation Segments](#) page in the *Genesys Info Mart User's Guide*, as well as the extended description of the **show-non-queue-mediation-mm** option.
- **Management enhancements** — The following features enhance management of Genesys Info Mart operations:
 - Genesys Info Mart now supports the **-V** command-line parameter. Use this parameter to display the software version and related information, without starting Genesys Info Mart Server. You can use either an uppercase letter (**V**) or lowercase letter (**v**). For more information, see [Command-Line Parameters](#).
 - GIM Manager now automatically refreshes the data in list views. Through **GIM Manager settings**, you can configure the way this feature operates, such as the auto-refresh frequency and idle timeout. For more information, see [Using Genesys Info Mart Manager](#) in the *Genesys Info Mart Operations Guide*.
 - If GIM Manager has no connection to the Genesys Info Mart Server, certain buttons in the interface are disabled.

New in Release 8.5.006

Important

Genesys Info Mart 8.5.006 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.509.07 or higher.

Release 8.5.006 introduces the following new features and functionality:

- **New user-data propagation rule** — A new user-data propagation rule, **IRF_ROUTE**, enhances the flexibility of user-data reporting with the capability to store the final KVP value that is present during mediation, regardless of whether the call is abandoned in mediation or delivered to a handling resource (where additional changes might be made to the key's value). For more information about the **IRF_ROUTE** propagation rule, including propagation rule examples, see [Propagation Rules](#).
- **Enhanced outbound fact reporting** — In eServices outbound scenarios where an outbound interaction is created outside the scope of eServices (for example, by OCS) and placed into an Interaction Queue, and then is handled and sent by a strategy without agent involvement, an IRF record is now created to record the strategy's handling of the interaction.
- **Enhanced dialing target reporting** — For voice interactions, if the IRF row represents a resource initiating an interaction or consultation, a new column, **TARGET_ADDRESS**, contains the target media address that received the interaction or consultation.
- **Decreased IDB maintenance effort** — Genesys Info Mart now automatically creates missing IDB indexes during extraction, without running the **update_idb_*** scripts. For more information, see [Preparing IDBs](#).

New in Release 8.5.005

Important

Genesys Info Mart 8.5.005 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.509.07 or higher.

Release 8.5.005 introduces the following new features and functionality:

- **Genesys Callback reporting** — This release introduces support for reporting on [Genesys Callback](#) activity on voice, web, or mobile channels, in deployments with Genesys Mobile Services (GMS). Genesys Info Mart support for Genesys Callback reporting is provided out-of-box.

Callback applications provide Callback-related data that Genesys Info Mart processes and stores in dedicated **CALLBACK_*** tables, which were initially introduced in an earlier Genesys Info Mart release.

Genesys Callback reporting requires Interaction Concentrator 8.1.506.07 or higher and GMS 8.5.105.12 or higher, with Genesys

Callback properly configured.

For more information about configuring GMS and ICON to enable Genesys Info Mart reporting on Callback, see [Genesys Mobile Services \(GMS\) — for Callback](#).

For information about Genesys Info Mart Callback-related tables, as well as information about changes to existing tables to support reporting on Callback, see the [Genesys Info Mart Physical Data Model](#) (formerly called *Reference Manual*) for your RDBMS.

For information about how callbacks are represented in Info Mart interaction data, see [Special handling for Genesys Callback](#) in the *User's Guide*, on the page about populating interaction resource data.

- **Data export** — A new job, **Job_ExportGIM**, enables you to incrementally export data from the Info Mart database into .csv files. The job exports data from the dimensional model fact and dimension tables, including custom user data extension tables, and creates a .zip archive containing individual .csv files for each table. This Data Export functionality is available for Genesys Engage cloud deployments; contact your Genesys representative for more information.
- **Miscellaneous:**
 - This release includes additional schema changes to support reporting on interaction flows that involve applications developed with Genesys Designer. (Support for Genesys Designer is available in certain Genesys Engage cloud implementations.) In addition to the preparatory schema and configuration changes made in various earlier releases of Genesys Info Mart, the following observable changes in the 8.5.005.09 installation package are added to support functionality in a future release:
 - Additional new SDR_* dimension tables, which are defined in the **make_gim.sql** and **make_gim_partitioned.sql** scripts.
 - A new configuration option, **link-vrp-vq-msf-to-irf**, was added to the Genesys Info Mart application template after the initial 8.5.004 release (in release 8.5.004.09). The **link-vrp-vq-msf-to-irf** option, in the **[gim-transformation]** section, enables reporting on virtual queue data in scenarios where a nonself-service IVR port uses a virtual routing point for routing operations, and the strategy includes a virtual queue.

New in Release 8.5.004

Important

Genesys Info Mart 8.5.004 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.509.07 or higher.

Release 8.5.004 introduces the following new features and functionality:

- **Focus time reporting** — Genesys Info Mart now supports reporting of agent focus time. Focus time is calculated by Genesys Workspace Desktop Edition (WDE).

Multiple interactions can be active on an agent desktop, but only one interaction has the agent's focus at any given moment. For each of an agent's active interactions, the focus time indicates the total amount of time the agent was focused on that particular interaction.

Genesys Info Mart populates two new columns in the IRF table with focus time data: **FOCUS_TIME_COUNT** and **FOCUS_TIME_DURATION**.

To enable this functionality, you require WDE release 8.5.112.08 or higher and Interaction Concentrator release 8.1.507.06 or higher.

There are no Genesys Info Mart configuration options related to reporting the time that an interaction is in focus on an agent desktop, but you must configure settings for the following two options in other Genesys applications:

 - **store-event-data** (configured in ICON)

- **reporting.case.report-case-in-focus-duration** (configured in WDE)
- **ASM engage duration reporting** — In Outbound VoIP environments, with Outbound Campaigns running in an Active Switching Matrix (ASM) dialing mode, the time that the engaged agent is waiting to be connected to the customer (ASM engage duration) is now reported separately from agent talk time, if so configured. Two new columns, `ASM_COUNT` and `ASM_ENGAGE_DURATION`, that have been added to the `INTERACTION_RESOURCE_FACT` (IRF) table, are populated based on the setting for the new configuration option, `populate-irf-asm-engage-duration`. (The default option value is `false`.) Genesys Info Mart requires that OCS attaches a special KVP, `GSW_CALL_TYPE="ENGAGING"`, to identify engaging calls. The attached data specification sample, `ccon_adata_spec_GIM_example.xml`, that is provided with Genesys Info Mart release 8.5.004 enables ICON to capture KVPs with the `GSW_CALL_TYPE` key.
- **Indicating which party ended chat** — Genesys Info Mart now stores data that enables you to determine who ended a chat session. If a customer leaves the chat session before the agent, a new flag, `CUSTOMER_LEFT_FIRST`, is set in the `ANCHOR_FLAGS` dimension. The time when the customer left the chat, or the time when the agent stopped the chat session is stored in the `IRF_IRF_ANCHOR_TS` column. (`IRF_ANCHOR_TS` is the new name for the column that was called `IRF_ANCHOR_SENT_TS` in release 8.5.003 and `IRF_ANCHOR_DATE_TIME_KEY` prior to that.)

To support this functionality, Interaction Concentrator release 8.1.507.06 is required. For other prerequisites, refer to [Chat Session Attributes that Indicate Who Ended the Session](#) in the *Interaction Concentrator User's Guide*.

- **Reporting on multiple routing attempts** — In deployments with the SIP Server configuration option `divert-on-ringing` set to `false`, Genesys Info Mart now associates multiple routing attempts with the same mediation in scenarios when multiple attempts are made to route a call from a virtual queue. The same `MEDIATION_SEGMENT_ID` value is used in the IRF records for all routing attempts. The technical result of `Redirected/RouteOnNoAnswer` is reported for all but the last routing attempt, if the attempts were unsuccessful.

To support this functionality, you require SIP Server release 8.1.102.13 and Interaction Concentrator release 8.1.509.07. While no changes are required in Genesys Info Mart configuration, you must set the following Interaction Concentrator configuration options:

- **use-server-partyuuid** to the value of 1 (configured in either ICON Application or Switch object)
- **ring-divert** to the value of 1 (configured in either Switch or the DN object for a Routing Point)
- **Miscellaneous improvements:**
 - To minimize switchovers between IDBs and improve data quality, the extraction job now waits for more reliable data to arrive from the second ICON in an HA pair, if the available data from the first ICON is determined to be not very reliable.
 - To improve processing of user data that is attached during mediation, a new column, `USERDATA_FLAG`, has been added to the `MEDIATION_SEGMENT_FACT` table (MSF). This flag facilitates an unambiguous join between the MSF and fact extension tables to retrieve correct user data that is attached during mediation.
 - The field `INTERACTION_RESOURCE_FACT.LAST_INTERACTION_RESOURCE` is now supported for all media types. Previously, this field was supported only for voice interactions.
 - A new configuration option, `populate-sip-im-facts`, is added to the **[gim-etl-populate]** section to control the transformation of SIP Instant Messaging (IM) data.
 - In scenarios where a call is abandoned while queued in multiple parallel virtual queues, Genesys Info Mart now reports only the last-entered virtual queue as **Abandoned**. Other parallel virtual queues are reported as **Cleared/Unspecified**. Previously in such scenarios, MSF records for all virtual queues were reported as **Abandoned**.
 - Genesys Info Mart now stores data to distinguish an agent from other persons in a contact center. A newly introduced value, `Person`, is set in the `RESOURCE_RESOURCE_SUBTYPE` column for any persons who are not agents. The previously existing value, `Agent`, is now used in the `RESOURCE_RESOURCE_SUBTYPE` column only to identify Agents (that is, the resources for whom the `IsAgent` flag is set in the Person configuration object). Both subtypes are associated with the

Agent resource type that is stored in the RESOURCE_.RESOURCE_TYPE column.

New in Release 8.5.003

Important

Genesys Info Mart 8.5.003 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.504.04 or higher.

Release 8.5.003 introduces the following new features and functionality:

- **Tenant metric enhancements** — This release introduces a number of enhancements that allow Tenant metrics to include active multimedia interactions that have not yet been handled:
 - Two new columns, ANCHOR_ID and ANCHOR_SDT_KEY, are added to the INTERACTION_FACT table. Values in these columns are derived as follows:
 - For interactions that have been completed or handled, Genesys Info Mart populates the value of ANCHOR_ID based on the INTERACTION_RESOURCE_ID of the INTERACTION_RESOURCE_FACT (IRF) record with IRF_ANCHOR = 1. The ANCHOR_SDT_KEY value in this case equals the START_DATE_TIME_KEY of the same IRF record.
 - For active multimedia interactions that have not yet reached a handling resource (that is, are still in mediation), Genesys Info Mart populates the value of ANCHOR_ID based on the MEDIATION_SEGMENT_ID of the MEDIATION_SEGMENT_FACT (MSF) record for the most recent mediation DN. The ANCHOR_SDT_KEY value in this case equals the START_DATE_TIME_KEY of the same MSF record.
 - Starting with this release, Genesys Info Mart creates an MSF record for the first Interaction Queue that an inbound interaction enters, even if the **populate-mm-ixnqueue-facts** configuration option is set to **false** (which is the default value). Because the MSF record for the first Interaction Queue is now always populated, Genesys Info Mart is able to specify an ANCHOR_ID for active multimedia interactions that have not yet been handled, which in turn, allows Genesys Info Mart to associate the current user data values with this active interaction while it is in mediation. Because of this change in MSF population, at least one record in either IRF or MSF table now represents an active multimedia interaction. **Note:** In deployments with **populate-mm-ixnqueue-facts = false**, custom reports might need to be modified to exclude the first Interaction Queue activity.
 - The following changes simplify configuration steps needed to take advantage of active interactions reporting in Tenant metrics:
 - Two new configuration options are added to the **[gim-etl]** section of the Genesys Info Mart Application to enable user data storage for all mediation resources. To simplify configuration, instead of configuring **link-msf-userdata** for each individual queue, it is possible to specify:
 - link-msf-userdata-voice = true to see the user data associated with all voice mediations.
 - link-msf-userdata-mm = true to see the user data associated with all multimedia mediations.

The default value for these two options is **false**.

Note: Because storing extra user data can have performance implications, Genesys recommends that you use these

options only when absolutely required. In many deployments you can instead specify **link-msf-userdata** for the desired queues.

- The default value of the **expand-mediation-time-for-gapless** option, in the **[gim-transformation]** section, has been changed from **false** to **true**. This change ensures there is no gap during user data collection for mediations of active multimedia interactions that have not yet been handled.
- **Multimedia processing improvement**—Genesys Info Mart now correctly processes scenarios that include a late reply to an e-mail interaction. When a multimedia interaction that represents the reply is created after the parent interaction has already been terminated, the transformation job now processes the child interaction as a separate interaction. In this scenario, the transformation job creates a new record in the INTERACTION_FACT table with a new INTERACTION_ID value. If the parent interaction has not been terminated, the child interaction uses the same INTERACTION_ID value as the parent interaction. Previously, the metrics related to a late reply could be lost because the transformation job might have discarded the child interactions during processing.
- **Unicode characters support**—For deployments with Oracle and PostgreSQL RDBMS, this release of Genesys Info Mart adds supports for data storage in multiple languages. To take advantage of Unicode characters, the Info Mart database must be created with UTF-8 encoding. To enable this functionality on Oracle, the fields with the varchar data types now use the explicit CHAR character length semantics.
- **Reporting on Hunt Group Call Distribution**—Genesys Info Mart now supports reporting on Genesys SIP Server calls that are distributed through Hunt Groups with parallel or sequential distribution strategy. For accurate data representation, Interaction Concentrator release 8.1.504.04 or later is required.
- **Logging enhancements:**
 - Genesys Info Mart configuration check can generate two new log messages:
 - 55-20037 Configuration check failed.
Alarm Advisory: Indicates an abnormal condition. You might consider setting an Alarm Condition for this event. Cancel event: 55-20169
 - 55-20169 Configuration check passed.
Description: Configuration check passed, no severe issues were found
- **Purging enhancement**—The maintenance job now purges configuration fact data from GIDB and relevant fact tables. A new configuration option, days-to-keep-cfg-facts, sets the retention policy for configuration fact data.
- **Visibility of Aggregation status** — For deployments that include Reporting and Analytics Aggregates (RAA), Genesys Info Mart Manager (GIM Manager) now displays Aggregation latency in the ETL status view.
Note: This feature requires the new type of data storage available in RAA release 8.1.400.23 or later (aggregate data formerly stored in tables with the prefix AG2_*, is now stored in tables with the prefix AGT_*, and presented through views with the prefix AG2_*).
- **Miscellaneous:**
 - Extraction job performance has been improved in the area of merge for voice interactions.
 - New combinations in the TECHNICAL_DESCRIPTOR table are added for multimedia online interactions that are placed into archive queues.
 - For the deployments that rely on Genesys Info Mart for reporting on Post-Call Survey user data, two new scripts are added to the Genesys Info Mart installation package:
 - make_gim_post_call_survey.sql —for use with nonpartitioned databases
 - make_gim_post_call_survey_partitioned.sql—for use with partitioned databases

Run the appropriate script manually if your deployment uses Post-Call Survey functionality.

- The Application object settings for the following configuration options can now be overridden at the level of individual supported objects:
 - **q-short-abandoned-threshold-voice**—You can now set this value at the Switch or DN (for Virtual Queues or ACD Queues) object level.
 - **q-short-abandoned-threshold**—You can now set this value at the Switch, DN (for Virtual Queues), or Script (for Interaction Queues or Workbin) object level.
- A new column, CREATE_AUDIT_KEY, has been added to the SM_MEDIA_NEUTRAL_STATE_FACT table.
- To accommodate additional custom record fields with high cardinality values, 20 new columns (RECORD_FIELD_41 through RECORD_FIELD_60) of the varchar data type are added to the CONTACT_ATTEMPT_FACT table.
- In the INTERACTION_RESOURCE_FACT table, the name of the IRF_ANCHOR_DATE_TIME_KEY column is changed to IRF_ANCHOR_SENT_TS. This field is now populated with the time when the first response left the contact center (the TERMINATED_TS value of the first successful reply). This field is populated only if IRF.IRF_ANCHOR has a value of 2; otherwise the field has a value of NULL.
- Subsequent to the changes that were originally introduced in release 8.1.402, this release includes additional schema changes to prepare for support of additional interaction flows, such as the Voice Callback feature of Genesys Mobile Services.
 - PUSH_DELIVERY_CONFIRMED_TS field has been added to the CALLBACK_FACT table.
 - CUSTOMER_READY_TO_START_I_XN_TS field has been added to the CALLBACK_FACT table.
 - DESIRED_TIME field in the CALLBACK_FACT table has been renamed to DESIRED_TIME_TS.
 - A constraint, NOT NULL, has been added for the DESIRED_TIME_TS field (with a default value of 0).
- **Supported Environments:**
 - This release adds support for Java version 8.0.
 - This release adds support for Red Hat Enterprise Linux AP 64 bit x86 7.

New in Release 8.5.002

Important

Genesys Info Mart 8.5.002 requires Interaction Concentrator (ICON) 8.1.100.36 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.500.04 or higher.

Release 8.5.002 introduces the following new features and functionality:

- **Reporting on media-neutral agent states** — Genesys Info Mart now optionally reports the summarized states for each agent across all media—referred to as media-neutral agent states. To populate media-neutral agent states, Genesys Info Mart takes already transformed summarized states for each media as the source data. The highest-priority state in effect for any of the agent's media is

reported as the media-neutral state for the agent. An existing configuration option, **sm-resource-state-priority**, controls priority of agent states relative to each other. A new configuration option, **populate-media-neutral-sm-facts** in the **[gim-etl-populate]** configuration section, which is set to `false` by default, controls reporting on media-neutral agent states. A new fact table, `SM_MEDIA_NEUTRAL_STATE_FACT`, stores the media-neutral agent states.

- **Gapless mediation reporting** — In eServices deployments in which routing activities are performed without the use of Virtual Queues, an optional capability allows you to report on routing activities without gaps in mediation time. For Genesys Info Mart to include the time at a Routing Strategy into the mediation duration of the appropriate `MEDIATION_SEGMENT_FACT` record, you must set the new `expand-mediation-time-for-gapless` option, in the **[gim-transformation]** section, and the previously available **populate-mm-ixnqueue-facts** option, in the **[gim-etl-populate]** section, to `true`.
- **Enhanced visibility of ETL status** — Genesys Info Mart now provides information about latency for each functional area. 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. Use Genesys Info Mart Manager release 8.5.0 to view these details.
- **Call Detail Record data reporting** — Genesys Info Mart now provides Call Detail Record (CDR) data. You can access CDR data using a new database view, `CDR`, which is created within the Info Mart database schema, to conveniently research the call volume or look for specific records by ID. In a multi-tenant configuration environment, you can also create tenant views on top of the `CDR` view.
- **New user-data propagation rule** — A new user-data propagation rule, **IRF_INITIAL**, enhances the flexibility of user-data reporting with the capability to store the KVP value that is associated with the interaction when the interaction enters the resource that is the subject of the IRF or MSF record.
- **Miscellaneous:**
 - New configuration options, **expand-mediation-time-for-gapless** and **populate-media-neutral-sm-facts** have been added to the Genesys Info Mart application template, in the **[gim-etl-populate]** and **[gim-transformation]** sections, respectively.
 - New `CDR` and `CDR_DATE_TIME` views have been added to the **make_gim.sql** and **make_gim_partitioned.sql** scripts.

New in Release 8.5.001

Important

Genesys Info Mart 8.5.001 requires Interaction Concentrator (ICON) 8.1.000.24 or higher. To enable all of the functionality provided in this release, Genesys Info Mart requires Interaction Concentrator release 8.1.500.04 or higher.

The initial 8.5.001 release introduces the following new features and functionality:

- Support for reporting on additional interaction scenarios:
 - **Introduced Transfer** — In voice deployments with business processes that require a transferring agent to introduce the customer to another agent before transferring the call, a new configuration option, `introduced-transfer-threshold` in the **[gim-transformation]** section, enables you to specify a time threshold for a conference. If the conference initiator's participation in the conference is less

than the threshold, while the receiving agent continues on the call, Genesys Info Mart treats this call flow as a special case of transfer. **[+] Tell me more**

The default value, which is consistent with legacy behavior, means that Genesys Info Mart will treat this call flow as a short conference, which the initiating agent happens to leave first. In this case, the IRFs for the conference part of the receiving and introducing agents' activity will have the usual technical descriptor combinations and metrics for conferences.

When the option is set and a conference qualifies as an introduced transfer, new technical descriptor combinations, using a role reason or result reason of `IntroducedTransfer`, identify IRFs for introduced transfer. The new combinations parallel the existing technical descriptors for transfers and conferences. See [Technical Descriptor Combinations](#) in the *Genesys Info Mart User's Guide* for details.

Similarly, when the option is set, IRF metrics for the agents accrue as they do for transfers — for example, there will be no `CONF_INIT` metrics for the initiating agent, while the receiving agent will have `POST_CONS_XFER` (for two-step transfer) or `base` (for single-step transfer) metrics instead of `CONF_JOIN` ones.

Genesys Info Mart supports both single-step and two-step introduced transfers, but support for single-step introduced transfers is limited to deployments in which ICON 8.1.500.04 or higher supports single-step conference (see the [Interaction Concentrator 8.1.x Release Note](#)).

- **Chat Consultation** — In eServices deployments with agent desktop applications, such as Workspace Desktop Edition (formerly Interaction Workspace [IWS]), that offer a chat consultation feature by setting a visibility mode on the conference request, Genesys Info Mart can now distinguish whether an agent is being invited into a chat interaction for a conference (visibility mode = 1) or for a consultation (visibility mode = 3). **[+] Show resulting reporting changes**

Resulting reporting changes for a chat consultation include:

- The IRF for the receiving agent now has a resource role of `ReceivedConsult`, instead of `InConference`. Previously, `ReceivedConsult` applied only for voice or offline media types.
- `CONS_INIT_TALK_COUNT` now indicates the number of chat consultations initiated by the IRF resource. Therefore, for the chat media type, `CONS_INIT_TALK_COUNT` can be greater than 1. In fact, the `CONF_INIT` and `CONS_INIT` counts for an agent can both be greater than 1, indicating that the agent initiated multiple chat conferences and consultations.
- So as not to suggest that the consultation time implies talk time away from the customer, there is no `CONS_INIT_TALK_DURATION` in the initiating agent's IRF and no `InitiatedConsult` IRF for the agent.
- To report on chat consultation, Genesys Info Mart requires a minimum ICON release of 8.1.500.04, which introduced support for visibility mode.
- **Chat Conference or Consultation through a Queue** — In eServices deployments with agent desktop applications, such as Workspace Desktop Edition, that use subordinate auxiliary interactions to implement a chat conference or consultation through a queue, Genesys Info Mart blends the main and auxiliary interactions to present a simplified reporting result. Previously, Genesys Info Mart reported fully on the internal handshaking and other subordinate interactions, which are not significant for reporting.

A new interaction subtype, `InternalConferenceInvite`, which the agent desktop application uses to identify the subordinate interactions, supports this functionality.

Support for reporting on chat consultation through a queue requires ICON 8.1.500.04 or higher.

- **Multimedia performance improvements** — To improve performance in multimedia deployments that do not need to track interaction threads, a new configuration option, `populate-thread-facts` in the **[gim-etl-populate]** section, controls whether thread-related metrics will be populated. The default value (`false`) is a change in behavior compared with releases since Genesys Info Mart 8.1.101.04.

When `populate-thread-facts = false`, the `FIRST_*_THRD` fields in the `ANCHOR_FLAG` dimension will be ignored for the purposes of populating the `IRF.ANCHOR_FLAGS_KEY` metric. In deployments that use Reporting and Analytics Aggregates (RAA) or Genesys CX Insights (GCXI), which replaces Genesys Interactive Insights [GI2]), related agent thread metrics (for example, `AG2_ID_*.ACCEPTED_THREAD`) are also not populated.

- **Operating system changes** — Support for the following operating systems has been discontinued:
 - HP-UX (all versions)

- IBM AIX 5.3
- RedHat Enterprise Linux 4
- Solaris/SPARC version 9
- Windows Server 2003

For full information about operating system and RDBMS support, see the [Genesys Supported Operating Environment Reference Guide](#).

- **Miscellaneous:**

- Schema changes — Schema changes related to user-data fact and dimension tables support improved performance by downstream reporting applications and assist in exporting and archiving data. For more information, see the “New in Release 8.5.001” information in the *Genesys Info Mart 8.5.0 Reference Manual* for your RDBMS (for example, [New in Release 8.5.001](#) in the Microsoft SQL Server document).
- This release includes schema and configuration changes to prepare Genesys Info Mart to support reporting on interaction flows that involve applications developed with Genesys Designer. In addition to the preparatory schema and configuration changes for additional interaction flows that were described in the release note for Genesys Info Mart 8.1.402.07, the following observable changes in the 8.5.001 installation package are added to support functionality in a future release:
 - New SDR_* fact and dimension tables, which are defined in the **make_gim.sql** and **make_gim_partitioned.sql** scripts.
 - A new configuration section, **[elasticsearch-sdr0]**, with a new configuration option, **client**, in the Genesys Info Mart application template.
 - A new configuration file, **EsConfiguration.xml**, to map rules for transformation.

System Requirements

Supported Operating Systems and Databases

For information about the operating systems and relational database management systems (RDBMSs) that Genesys Info Mart supports, see the [Supported Operating Environment Reference Guide](#).

Interoperability Requirements

Genesys Info Mart can operate only with the Genesys components that are listed in [Compatibility with Genesys Software](#). Other Genesys software components that you might have in an environment with Genesys Info Mart must be compatible with Interaction Concentrator 8.x.

For specific interoperability requirements, see the [Genesys Interoperability Guide](#).

Important

For Genesys Info Mart to provide accurate and reliable data, the system clocks on all hosts on which Genesys applications are running (for example, T-Servers, Interaction Servers, and Universal Routing Servers) must be synchronized.

Software and Database Requirements

This section discusses the following considerations:

- [System Resources](#)
- [Java-Related Requirements](#)
- [Security Requirements](#)
- [Microsoft SQL Server Considerations](#)

System Resources

The Genesys Info Mart Server requires approximately 20 MB of hard disk space and a sufficient amount of disk space for local log files. It requires a minimum of 1 GB of additional RAM, depending on the configuration options that are set to define the data chunk size.

Genesys Info Mart Manager, the web-based management GUI that is implemented as a plug-in for

Genesys Administrator Extension (GAX), requires negligible hard-disk space on the GAX host. Genesys Info Mart Manager requires no additional installations on client hosts and no additional RAM.

Java-Related Requirements

The following software must be installed on the Genesys Info Mart Server host to support Genesys Info Mart 8.x:

- Java Development Kit (JDK) or Server Java Runtime Environment (Server JRE) — Genesys Info Mart uses the Server Java Virtual Machine (JVM) that is part of the JDK or Server JRE packagings of Java. (The non-Server JRE packaging of Java does not include the Server JVM.) You must install the JDK or Server JRE on the server on which you plan to install the Genesys Info Mart Server. Several Genesys Info Mart software components use Java. Note that Genesys Info Mart operates with 32-bit or 64-bit versions of Java. For the Java versions that Genesys Info Mart supports, see the [Supported Operating Environment Reference Guide](#).

Important

Periodically check that the daylight saving time (DST) definitions and other time zone information for your Java version are current and correct.

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 DST rules change. 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, then rebuild your calendar data as described in [Changing calendar settings during runtime](#) in the *Genesys Info Mart Operations Guide*.

You must modify your **PATH** and **JAVA_HOME** environment variables so that Genesys Info Mart can locate the Server JVM. The **PATH** and **JAVA_HOME** environment variables that you modify depend on the operating system and user account under which the Genesys Info Mart Server runs.

For specific information about installing the JDK or Server JRE and modifying the environment variables, see [Preparing the Genesys Info Mart Server Host](#).

- Java Database Connectivity (JDBC) driver — Genesys Info Mart Server and the ETL jobs use JDBC to access all databases. For specific information about installing the appropriate JDBC driver for your environment, see [Preparing the Genesys Info Mart Server Host](#).

Security Requirements

Transport Layer Security (TLS)

Genesys Info Mart supports TLS connections and client-side port definition, to provide secured connections to the Configuration Layer and Management Layer — specifically, to Configuration Server and Message Server. Starting with release 8.5.011.14, Genesys Info Mart supports TLS 1.2. Genesys supports these security features on all the operating systems that Genesys Info Mart supports.

Genesys Info Mart also supports mutual TLS and compliance with Federal Information Processing Standards (FIPS).

On Windows platforms, support for TLS is integrated into the operating system, and there are no additional requirements to enable Genesys Info Mart to support it. On UNIX-based platforms, you must install the Genesys Security Pack on the Genesys Info Mart host (see [Security components](#)).

Secure Socket Layer (SSL)

Genesys Info Mart supports SSL connections to the Info Mart database and IDB(s) to encrypt communications between Genesys Info Mart Server and its source and target databases. Genesys recommends using the OpenSSL toolkit to implement this feature.

Antivirus Software

Antivirus software can affect system performance and response time but may be a necessary step to prevent and detect viruses. Genesys recommends that you keep antivirus software enabled on the host where Genesys Info Mart is running, and monitor performance to ensure there is no impairment to Genesys Info Mart or other applications running on the same host.

If you find that antivirus scanning has a significant performance impact, consider excluding the log folder from scanning. If you use Data Export functionality to export Info Mart data, also consider excluding the directory where Genesys Info Mart stores the output of the export job. (Use the output-directory configuration option to specify the directory; the default is output.)

To reduce the risk of disabling antivirus scanning for any folders, Genesys recommends that you do not put any executable files into those folders. Then you can prohibit execute permissions on those folders.

The recommendation to enable antivirus scanning assumes that any antivirus software is configured to enable all port connections and communication Genesys Info Mart requires. If any required port access or communication is blocked, Genesys Info Mart operations will be affected.

Microsoft SQL Server Considerations

An RDBMS limitation restricts the maximum length of index keys:

- On Microsoft SQL Server releases earlier than 2016, to 900 bytes
- On Microsoft SQL Server 2016+, to 1700 bytes

Because of data type changes that were made in Genesys Info Mart release 8.5.010.14 to prepare support for data from alternative data streams, the index length for some tables in both single-language and multi-language databases might be exceeded. Therefore, Genesys strongly recommends that Microsoft SQL Server deployments for Genesys Info Mart 8.5.010.14 and later use Microsoft SQL Server 2016 or later supported version. For related information, see [RDBMS Considerations for User Data Mapping](#). For the supported versions of Microsoft SQL Server, see the [Supported Operating Environment Reference](#).

Compatibility with Genesys Software

For general requirements on interoperability with the Genesys Configuration Layer, see the [Genesys Interoperability Guide](#).

The following table provides release requirements for the Genesys software components with which Genesys Info Mart operates directly or for which Genesys Info Mart requirements are different from the minimum requirements for Interaction Concentrator 8.x. For requirements for various other Genesys software components that you may have in an environment with Genesys Info Mart, refer to the [Interaction Concentrator 8.x documentation](#).

For each component, the table provides the minimum release number with which Genesys Info Mart release 8.5 is compatible in a non-SIP Cluster deployment.

Genesys Info Mart compatibility (minimum releases)

Component/Product Release	Comments
Configuration Layer: <ul style="list-style-type: none"> Configuration Server release 7.6 	<ul style="list-style-type: none"> Configuration Server release 7.6 or higher provides improved support for the configuration history log. Genesys Info Mart supports: <ul style="list-style-type: none"> Advanced Disconnect Detection Protocol (ADDP) for the connection from Genesys Info Mart to Configuration Server Transport Layer Security (TLS) protocol for the connection from Genesys Info Mart to Configuration Server Mutual TLS Compliance with Federal Information Processing Standards (FIPS)
Management Layer: <ul style="list-style-type: none"> Local Control Agent (LCA) release 7.6 Message Server release 7.6 Solution Control Interface (SCI) release 7.6 Solution Control Server (SCS) release 7.6 	Genesys Info Mart supports: <ul style="list-style-type: none"> TLS protocol for the connection from Genesys Info Mart to Message Server Mutual TLS Compliance with FIPS
User Interaction Layer: <ul style="list-style-type: none"> Genesys Administrator Extension (GAX) release 8.5.0 	Genesys Info Mart requires this component only if you want to use the Genesys Info Mart Manager management GUI. <ul style="list-style-type: none"> Genesys Info Mart Manager 8.5 releases earlier than 8.5.010 require GAX 8.5 releases earlier than GAX 8.5.270.06, and vice versa. Genesys Info Mart Manager release 8.5.010.02 is the minimum Genesys Info Mart Manager release that operates with GAX releases 8.5.270.06 through 9.0.100.72. Genesys Info Mart Manager release 8.5.014.02 is the minimum Genesys Info Mart Manager release that operates with GAX release 9.0.101.29 and higher.

Component/Product Release	Comments
<p>Interaction Concentrator</p> <ul style="list-style-type: none"> Starting with Genesys Info Mart 8.5.002, the minimum required Interaction Concentrator release is 8.1.100.36. In all Genesys Info Mart 8.5.001 deployments, the minimum required Interaction Concentrator release is 8.1.000.24. 	<p>The minimum Interaction Concentrator release is not sufficient to prevent significant data-quality or transformation issues. Genesys strongly recommends that you observe the following additional requirements:</p> <ul style="list-style-type: none"> In deployments that rely on extensive use of user data, if you use Interaction Concentrator 8.1.000.37 or higher, ensure that the ICON option cseq-adjustment is set to 2. In multimedia deployments, Genesys recommends using Interaction Concentrator 8.1.514.11 or higher. Whenever you install or upgrade Interaction Concentrator, refer to this <i>Genesys Info Mart Deployment Guide</i> for information about mandatory and recommended settings for selected ICON configuration options. <p>There are additional minimum requirements for specific functionality. For recommendations for each Genesys Info Mart release, see the ICON version recommendations in the Genesys Info Mart 8.5 Release Note.</p>
<p>T-Server release 7.6</p>	<ul style="list-style-type: none"> There are additional requirements for the feature to identify the party that released a call. For information about the T-Servers that support this functionality and the minimum release of T-Server that is required, see the Interaction Concentrator 8.0.x Release Note. Support for SIP Server hunt groups was introduced in SIP Server release 8.1.1. Support for reporting on multiple routing attempts, in deployments with the SIP Server configuration option divert-on-ringing set to false, requires SIP Server release 8.1.102.13.
<p>eServices/Multimedia Interaction Server release 7.5 or higher</p>	<p>For Genesys intelligent Workload Distribution (iWD) and other deployments that have routing strategies that repeatedly move a multimedia interaction into and out of the same interaction queue or workbin, Genesys recommends that you use Interaction Server release 8.1.200.21 or higher and that you configure your deployment to suppress Interaction Server reporting events and notifications for this kind of routing strategy activity. However, be aware that suppressing Interaction Server reporting events for a strategy means that there will be no user data from that strategy to use for reporting, so some expected user data metrics might be missing. For more information about selectively suppressing reporting on strategy activity, see the Interaction Server 8.1.x Release Note and the Universal Routing 8.1 Business Process User's Guide.</p> <p>In order for Genesys Info Mart to collect data from the Outbound Contact Server (OCS) Push Preview mode, you must be using OCS release 8.1.502.17 or higher, and Interaction Server release 8.5.104.05 or higher.</p>
<p>Outbound Contact Server (OCS) release</p>	<p>For information about how to configure Genesys Info Mart and</p>

Component/Product Release	Comments
7.6	<p>other contact center objects to store reporting data for Outbound Contact campaign activity, see Enabling Reporting on Outbound Contact Activity.</p> <p>In order for Genesys Info Mart to collect data from the Outbound Contact Server (OCS) Push Preview mode, you must be using OCS release 8.1.502.17 or higher, and Interaction Server release 8.5.104.05 or higher.</p>
<p>Routing components:</p> <ul style="list-style-type: none"> For deployments that use virtual queues, Universal Routing Server (URS) release 8.0 For deployments that do not use virtual queues, URS release 7.2 To support the Genesys Info Mart feature that links MSF records to the parent IRF, URS release 8.1.100.08 or higher 	<ul style="list-style-type: none"> URS 8.0 is required for processing missing virtual-queue configuration objects. For information about the minimum release of URS that is required to support this functionality, see the Interaction Concentrator 8.0.x Release Note. For iWD and other deployments that have routing strategies that repeatedly move a multimedia interaction into and out of the same interaction queue or workbin, Genesys recommends that you use Interaction Routing Designer (IRD) release 8.1.3 or higher, to enable you to mark strategies for which redundant activity should not be distributed by Interaction Server. For more information, see the Universal Routing 8.1 Business Process User's Guide.
Genesys Voice Platform (GVP) release 7.6	For more information, see Genesys Voice Platform Support .
Orchestration Server (ORS) release 8.1.400.26	ORS is required to enable Callback. For more information, see the Callback Solution Guide .
Genesys Security Pack 8.0	This component is required for UNIX platforms only, for deployments in which you want to use the TLS protocol to secure the connections among Genesys Info Mart, Configuration Server, and Message Server. For more information, see Installing Genesys Security Pack in the Genesys Security Deployment Guide .

Important

Genesys recommends that you install the most recent generally available release of Genesys products. Refer to the corresponding product [Release Notes](#) for information about new or improved functionality.

Supported Topologies

Genesys Info Mart supports a number of data-source and Genesys Info Mart topologies. This page discusses various topology considerations.

Provided that the [requirements for storage of ICON details](#) are observed, the Genesys Info Mart architecture is flexible and scalable. The topology that you choose for each data source depends on several deployment-specific factors, including the number of sites, the data network capacity between sites, the interaction volume, and the required level of data-source redundancy or high availability (HA). For example, supported topologies can include:

- Single- or multi-site deployments, with one T-Server per site or several T-Servers per site.
- For the deployment as a whole or on each site, a single media type or data domain (for example, voice only) or a combination (for example, voice and multimedia; voice and Outbound Contact; or voice and Outbound Contact and multimedia).
- Common components located at one of the data-source sites or at some other, central location. Common components include the Configuration Server and the Genesys Info Mart application and Info Mart database.

Review [Interaction Concentrator Topologies](#) and the topologies illustrated on the [Topology Diagrams page](#) to determine which ones meet your contact center's needs for performance and HA.

Data Domains

The Interaction Concentrator server (ICON) monitors data sources and stores data about data-source activity in the Interaction Database (IDB). Genesys Info Mart extracts data from one or more IDBs, according to configuration. Genesys Info Mart extracts each of the following data domains separately:

- **ICON Configuration details** — The data source for Configuration details is Configuration Server. **[+] Tell me more**

ICON Configuration details include:

- Configuration objects (such as a DN, Person, Skill, or Place)
- Configuration object relationships (that is, associations between configuration objects, such as a Person assignment to a Group)

- **ICON Voice details** — The data source for Voice details is T-Server. **[+] Tell me more**

ICON Voice details include:

- Voice interaction data
- User data, which includes:
 - Call-related user data. Call-related user data is KVP data that is attached to TEvents or sent in UserEvents, with UserEvent-based data typically being communicated post-call event.

- Other KVP data that is communicated through UserEvents. UserEvent data originating from Genesys Callback is an example.
- Agent login data
- Agent state and agent state reason details, including the ability to associate after-call-work with voice interactions
- DND mode details
- Virtual-queue data

Important

In this document, the term *T-Server* is used generically to refer to all T-Server types (premise and network TDM Voice, SIP Server, IVR Server, and Virtual T-Server).

- **ICON Multimedia details** — The data source for Multimedia details is Interaction Server. **[+] Tell me more**

ICON Multimedia details include:

- Multimedia interaction data
- Multimedia attached data, including EventCustomReporting user data for Focus Time.
- Multimedia agent login data
- Multimedia agent state and agent state reason details
- Virtual-queue data

- **ICON Outbound Contact details** — The data source for Outbound Contact details is Outbound Contact Server (OCS). **[+] Tell me more**

Outbound Contact details include:

- History and results of campaigns, chains, and contact attempts
- Associations between Outbound Contact objects (such as campaigns) and contact center objects (such as agent groups or place groups)
- Precalculated Outbound Contact metrics

Genesys Info Mart has specific minimum requirements for the types of ICON details that must be included in the deployment. For more information, see [Genesys Info Mart Requirements for ICON Details Storage](#).

Interaction Concentrator Topologies

In a contact center that has a large Genesys configuration environment or that processes high call volumes — possibly, with large amounts of KVP user data — you can improve performance of both ICON and Genesys Info Mart by deploying multiple ICON instances to collect data for a particular data domain. When data is stored in multiple IDBs, Genesys Info Mart extracts data from these IDBs in

parallel, thus decreasing the extraction time.

Genesys Info Mart Requirements for ICON Details Storage

The Interaction Concentrator topologies that Genesys Info Mart supports are similar for all types of ICON details, except for the following special requirements:

- Your deployment must include only one IDB (or one HA set of redundant IDBs) that stores Configuration details.
- Your deployment must include at least one IDB (or one HA set of redundant IDBs) that stores either Voice or Multimedia details.
- You can mix partitioned and non-partitioned IDBs for Voice details or Outbound Contact details within the same deployment.
- Each ICON application must populate its own IDB. In other words, consider each ICON-IDB pair (*Interaction Concentrator instance*) a unit.
- You can have one instance or multiple Interaction Concentrator instances (or HA sets) that store Voice, Multimedia, or Outbound Contact details.
- Each Interaction Concentrator instance can store data from one or multiple instances (or HA pairs) of T-Server, Interaction Server, or OCS, as applicable. In other words, the relationship between the data source(s) and Interaction Concentrator can be one-to-one, many-to-one, or many-to-many.
If your deployment includes multiple Interaction Servers, see [Login Session Consideration](#) in the *ICON Deployment Guide* for additional information.

In Genesys Info Mart releases earlier than 8.5.007, the following additional requirements apply to all supported topologies:

- Genesys recommends that each Interaction Concentrator instance (or HA set) process and store data for only one data domain.
 - You must use separate Interaction Concentrator instances (or HA sets) for Voice details and Multimedia details.
 - You can combine storage of Outbound Contact details with Voice details. However, Genesys recommends that you use separate Interaction Concentrator instances (or HA sets) to store Voice and Outbound Contact details.
 - You can combine storage of Configuration details with any of the other types of ICON details. However, Genesys recommends that you use a separate Interaction Concentrator instance to store Configuration details.
To minimize the possibility of missing configuration data, Genesys further recommends that you co-locate the Configuration details IDB on the same host as the Configuration Database (see [Recommendations on Hosting](#)).

ICON Roles

The **role** option in the ICON application specifies the type of data that each ICON instance processes; similarly, the **role** option in the Interaction Concentrator DAP specifies the type of data that the ICON instance stores in IDB. For a thorough discussion of ICON roles, see the [Interaction Concentrator Deployment Guide](#) for your release. For more information about setting the roles that are required for

Genesys Info Mart, see [Configuring the ICON application](#).

When you plan your deployment, consider the following requirements for the various data domains.

ICON Configuration details

You cannot have more than one ICON instance (or HA set) monitoring the same Configuration Server (or HA pair) and storing configuration data in the same IDB. To store Configuration details, the **role** option of the ICON application must contain the value `cfg`. Be aware that the default value of the ICON role option is `all`. If you have more than one ICON application in your deployment, ensure that you specifically exclude `cfg` from the value of the **role** option in the ICON applications that will not be storing Configuration details.

ICON Voice or Multimedia details

- The ICON application(s) must be configured to store interaction activity, attached data, virtual queue, resource login, and agent state and work mode details.
 - In releases earlier than 8.5.016.04, the **role** option of the ICON application must contain the values `gcc`, `gud`, and `gls`.
 - Starting with release 8.5.016.04, Genesys Info Mart does not require the `gcc`, `gud`, and `gls` values to occur together. In multimedia deployments with Interaction Server Cluster, Genesys Info Mart release 8.5.016.04 and later supports scenarios where each Interaction Server in the cluster is connected to a separate ICON (or ICON HA pair) and, to meet the [Login Session Consideration](#) requirement noted above, only one of the ICONs (or ICON HA pairs) has the `gls` role. To improve agent state reporting in these scenarios, Genesys recommends setting the `populate-sm-busy-from-mm-ixns` configuration option to `true`.
- Optionally, the ICON application may also be configured to store UserEvent-based and, starting with ICON release 8.1.507.06, CustomReporting-based KVP data, in which case you must also configure options in the **[custom-states]** section of the ICON application (**EventData** or **store-event-data**) as required.
- A single ICON application (or a single HA set of redundant ICON applications) must record all activity for a particular agent. If, for example, a particular agent in your contact center logs in to two switches, the same ICON application (or the same HA set of redundant ICON applications) must monitor both switches.

Important

It is very important to configure the DN objects for virtual queues under the Switch object(s) for the respective media types: virtual queues for voice interactions under your traditional telephony switch, and virtual queues for multimedia interactions under your multimedia switch. Otherwise, if your deployment includes both voice and multimedia but you configure all the virtual queues under only one of the switches, Genesys Info Mart will not process virtual-queue data for the other data domain.

ICON Outbound Contact details

In all Genesys Info Mart topologies for ICON Outbound Contact details, the **role** option of the ICON application must contain the value `gos`. For a dedicated ICON, the **role** option must contain only `gos`.

All ICON details

In all Genesys Info Mart topologies, each ICON must use only one DAP to access its IDB. For example, to store data for a Voice or Multimedia details ICON configured with **role=gcc,gud,gls**, do not use separate DAPs for the gcc, gud, and gls ICON providers. Ensure that the **role** configured in the **[callconcentrator]** section of the DAP matches the ICON **role**.

Topology Diagrams

This page provides diagrams that illustrate the data-source topologies that Genesys Info Mart supports. The supported topologies implement the rules that are described in [Genesys Info Mart Requirements for ICON Details Storage](#).

About the Topology Diagrams

Given the range of potential combinations, the diagrams on this page are not intended to represent specific deployment architectures. Instead, the diagrams illustrate generic building blocks for topologies that Genesys Info Mart supports. This page includes the following diagrams:

- [Conceptual Architecture](#) — Illustrates the data-source architecture at the highest level.
- [One Data Source per ICON](#) — Illustrates topology building blocks based on a one-to-one relationship between the data source and ICON.
- [Multiple Data Sources per ICON: Separate Data Domains](#) — Illustrates topology building blocks based on a many-to-one relationship between the data sources for a particular data domain and ICON.
- [Multiple Data Sources per ICON: Combined Data Domains](#) — Illustrates topology building blocks based on a many-to-one relationship between the data sources for any data domain and ICON. (This topology is not supported in releases earlier than 8.5.007.)
- [Mixed Example \(Multi-Site, All Details\)](#) — Depicts a specific multi-site topology for all details, as an example of how you can mix and match architectural approaches.

For related information about distributing the applications among hosts, see [Recommendations on Hosting](#).

Diagram Conventions

The topology diagrams use the following conventions:

- The diagrams do not show the DAP that each ICON requires in order to access the IDB it populates. In all cases, the role that is configured for the DAP matches the role that is configured for the ICON application.

Tip

You can reuse the Interaction Concentrator DAP to enable Genesys Info Mart to access the same IDB. For more information, see [Reusing DAPs](#).

- Square brackets ([]) indicate optional, additional data sources and Interaction Concentrator instances that you can include to scale your deployment.
- The diagrams show only one instance of the Genesys Info Mart application and Info Mart database.

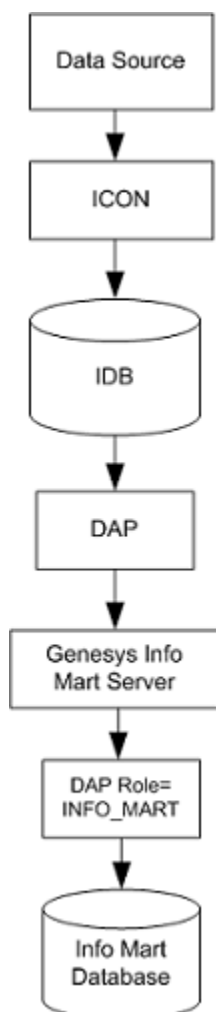
However, you can deploy a second, parallel instance of the Genesys Info Mart Server to act as a standby. For more information, see [Standby and Disaster Recovery](#).

Conceptual Architecture

The figures under [Basic Architecture](#) and [Basic High-Availability Architecture](#) illustrate the data-source architecture at the highest level. You can extrapolate from the basic architectural concepts to scale or customize your deployment topology as required.

Basic Architecture

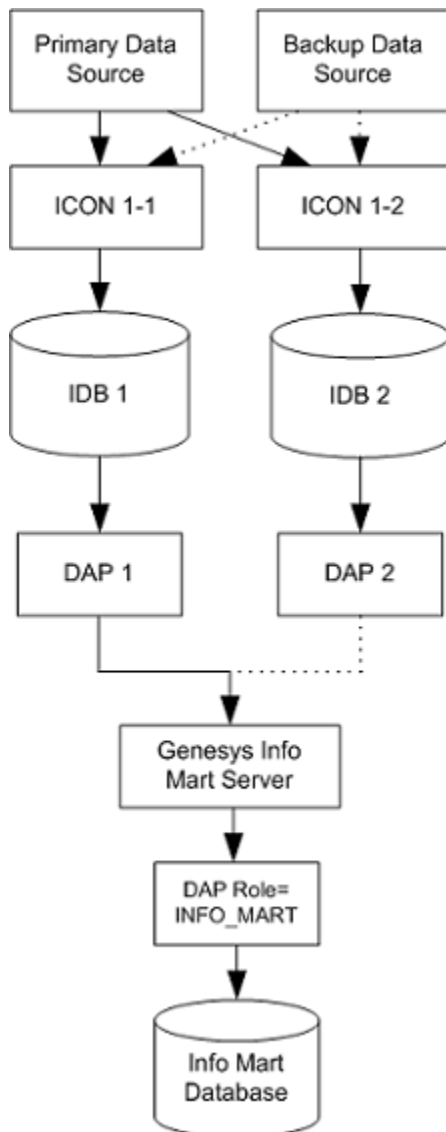
The following figure illustrates the basic architecture for each data domain.



Conceptual Data-source Architecture

Basic High-Availability Architecture

The following Figure illustrates the basic architecture for HA.



Conceptual HA Architecture

Important

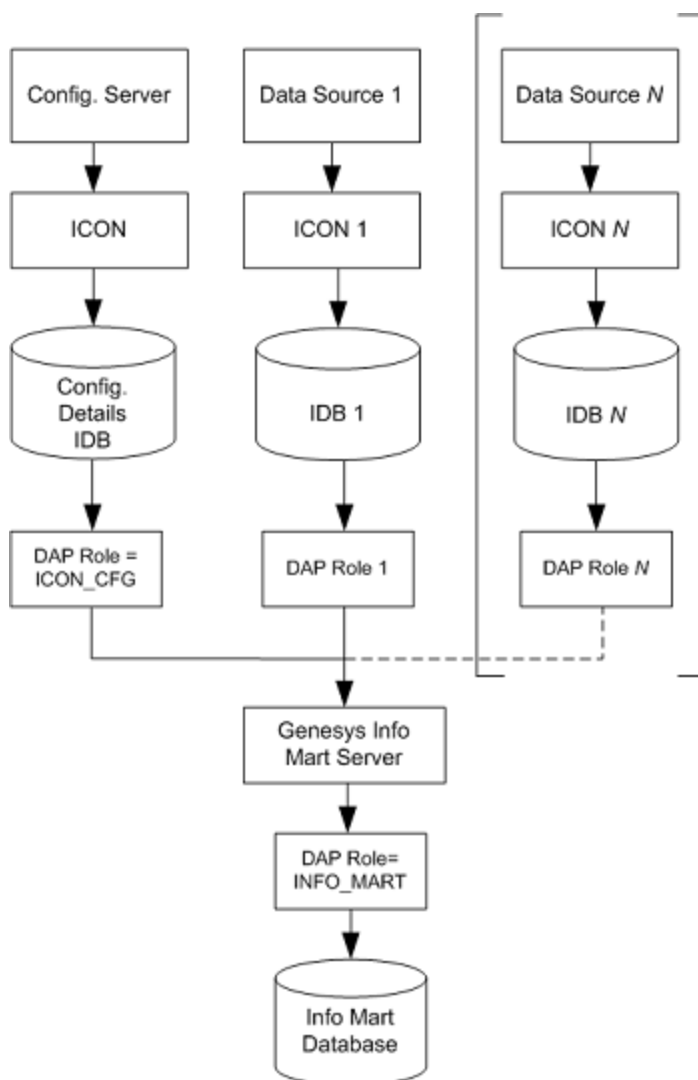
Genesys Info Mart provides HA of reporting data by supporting HA at the Interaction Concentrator level. Genesys Info Mart itself cannot be configured to operate in HA mode.

In each HA set of redundant ICONs and IDBs, the ICON applications must be configured to perform the same role, and they must have configured connections to all the primary data sources in the HA set.

The Genesys Info Mart extraction job uses session information in the IDBs to identify which instance of IDB from the HA set of IDBs contains the most complete and accurate set of data from each data source. For more information about Genesys Info Mart support for HA, see the High Availability chapter in the *Genesys Info Mart 8.1 Deployment Guide*.

One Data Source per ICON

The following Figure illustrates a topology in which each ICON monitors a single data source. This topology “building block” is supported for all data domains.



One Data Source per ICON

In this topology, the deployment consists of:

- A single Interaction Concentrator instance to store Configuration details. You can co-locate the Configuration details IDB in the same RDBMS instance with Configuration Database (see [Recommendations on Hosting](#)).
- At least one Interaction Concentrator instance to store data from either a T-Server (for Voice details) or an Interaction Server (for Multimedia details).
- Any number of additional Interaction Concentrator instances for the Voice, Multimedia, or Outbound Contact data domains, with each ICON storing data from a single data source.

For HA support, provide redundant sets of Interaction Concentrator instances, as shown in [Basic High-Availability Architecture](#), for each Interaction Concentrator depicted in the non-HA deployment.

Legend:

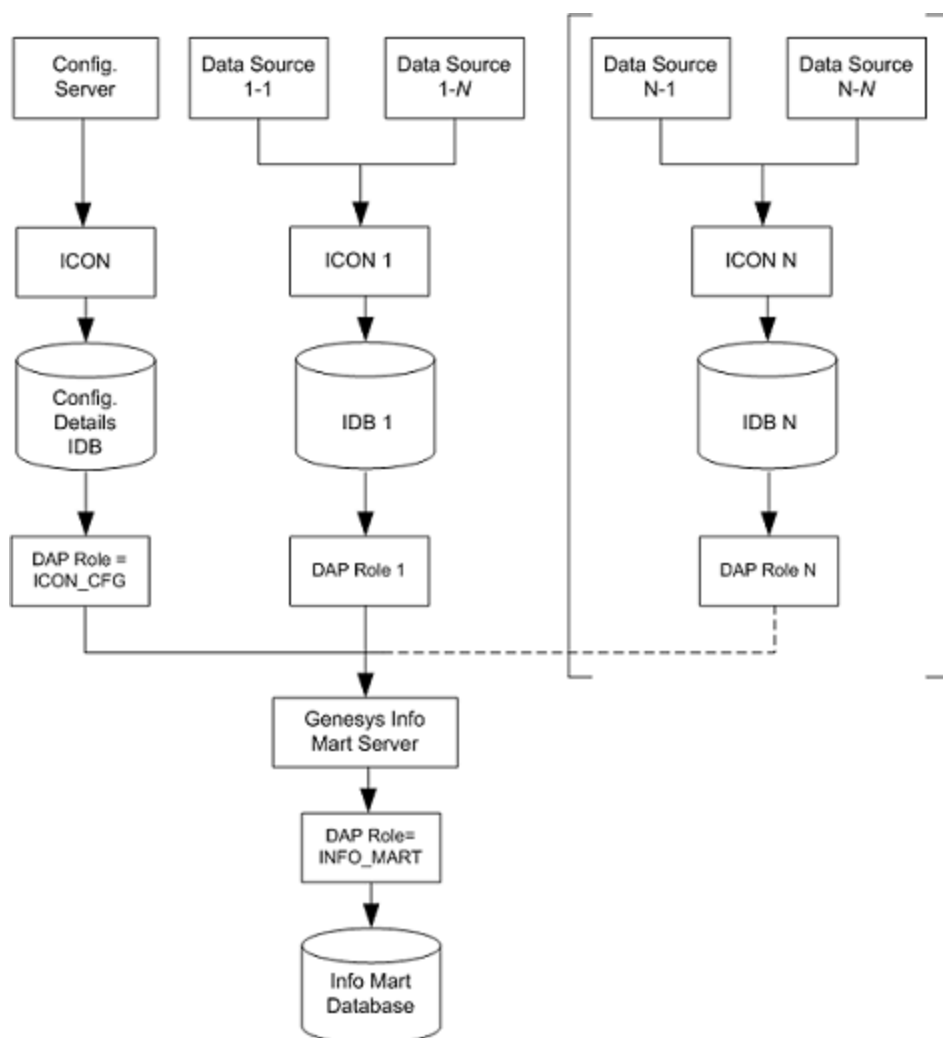
-
- Data Source 1 represents either a T-Server (for Voice details) or an Interaction Server (for Multimedia details).
 - Data Source N represents any number of additional, optional data sources (T-Server, Interaction Server, or OCS).
 - DAP roles for the IDBs depend on the data domain:
 - DAP Role 1 is either ICON_CORE or ICON_MM.
 - DAP Role N is ICON_CORE, ICON_MM, or ICON_OCS.

Important

When this topology is deployed in a multi-site environment, temporary outages in network connectivity are less likely to result in a loss of data as long as the ICON application resides on the same site as its data source.

Multiple Data Sources per ICON: Separate Data Domains

The following Figure illustrates a topology in which each ICON monitors multiple data sources for a data domain. This topology “building block” is supported for the Voice, Multimedia, and Outbound Contact data domains.



Multiple Data Sources per ICON: Separate Data Domains

In this topology, the deployment consists of:

- A single Interaction Concentrator instance to store Configuration details. You can co-locate the Configuration details IDB in the same RDBMS instance with Configuration Database (see [Recommendations on Hosting](#)).
- At least one Interaction Concentrator instance to store data from multiple T-Servers (for Voice details) or Interaction Servers (for Multimedia details).
- Any number of additional Interaction Concentrator instances for the Voice, Multimedia, or Outbound Contact data domains, with each ICON storing data from multiple data sources of the same type.

For HA support, provide redundant sets of Interaction Concentrator instances, as shown in [Basic High-Availability Architecture](#), for each Interaction Concentrator in the non-HA deployment.

Legend:

- Data Sources 1-1 through 1-N represent a set of N T-Servers (for Voice details) or Interaction Servers

(for Multimedia details).

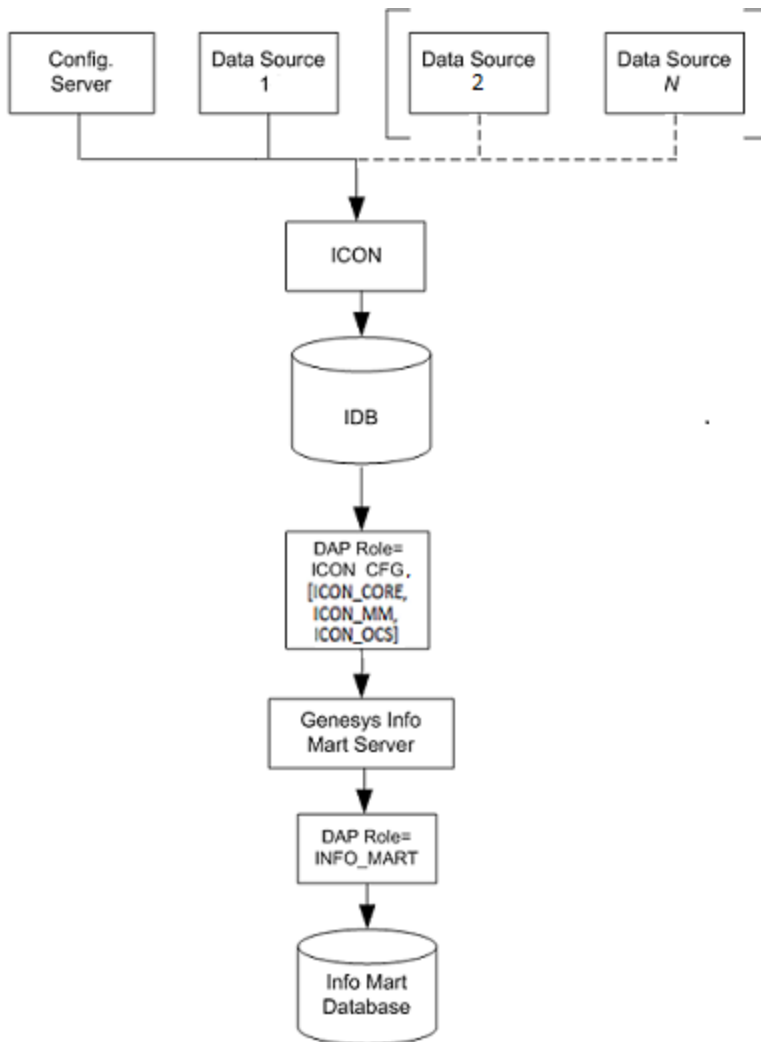
- Data Sources N-1 through N-N represent any number of additional, optional sets of data sources, provided that each set consists of data sources of the same type (T-Server, Interaction Server, or OCS).
- DAP roles for the IDBs depend on the data domain:
 - DAP Role 1 is either ICON_CORE or ICON_MM.
 - DAP Role N is ICON_CORE, ICON_MM, or ICON_OCS.

Important

In a multi-site environment, this topology is susceptible to data delays when temporary outages in network connectivity affect connections between sites. If the ICON instance is not on the same site as one or more of the data sources, this topology might also be susceptible to data loss in a non-HA deployment, if temporary outages in network connectivity affect the connection between a data source and ICON.

Multiple Data Sources per ICON: Combined Data Domains

The following Figure illustrates a topology in which a single ICON monitors multiple data sources of any type. Starting with release 8.5.007, this topology “building block” is supported for any combination of the Voice, Multimedia, and Outbound Contact data domains. In releases earlier than 8.5.007, Genesys Info Mart does not support extracting Voice and Multimedia details from the same IDB.



Multiple Data Sources per ICON: Combined Data Domains

In this topology, the deployment consists of:

- A single Interaction Concentrator instance to store Configuration details as well as data from any number of data sources for the Voice, Multimedia, or Outbound Contact data domains.

To simplify initial deployment and maintenance, you can use a single ICON to monitor all data sources in the deployment, provided a single ICON is able to handle the workload in your contact center.

For HA support, provide a redundant Interaction Concentrator instance, as shown in [Basic High-Availability Architecture](#).

Legend:

- Data Source 1 represents a T-Server (for Voice details) or Interaction Server (for Multimedia details).
- Data Sources 2 through *N* represent any number of additional, optional sets of data sources of any type (T-Server, Interaction Server, or OCS).

- The Info Mart DAP role for the IDB depends on the data domains represented in the deployment. At a minimum, the DAP role will include ICON_CFG and either ICON_CORE or ICON_MM.

Important

In a multi-site environment, this topology is susceptible to data delays when temporary outages in network connectivity affect connections between sites. If the ICON instance is not on the same site as one or more of the data sources, this topology might also be susceptible to data loss in a non-HA deployment, if temporary outages in network connectivity affect the connection between a data source and ICON.

Mixed Example — Multi-Site, All Details

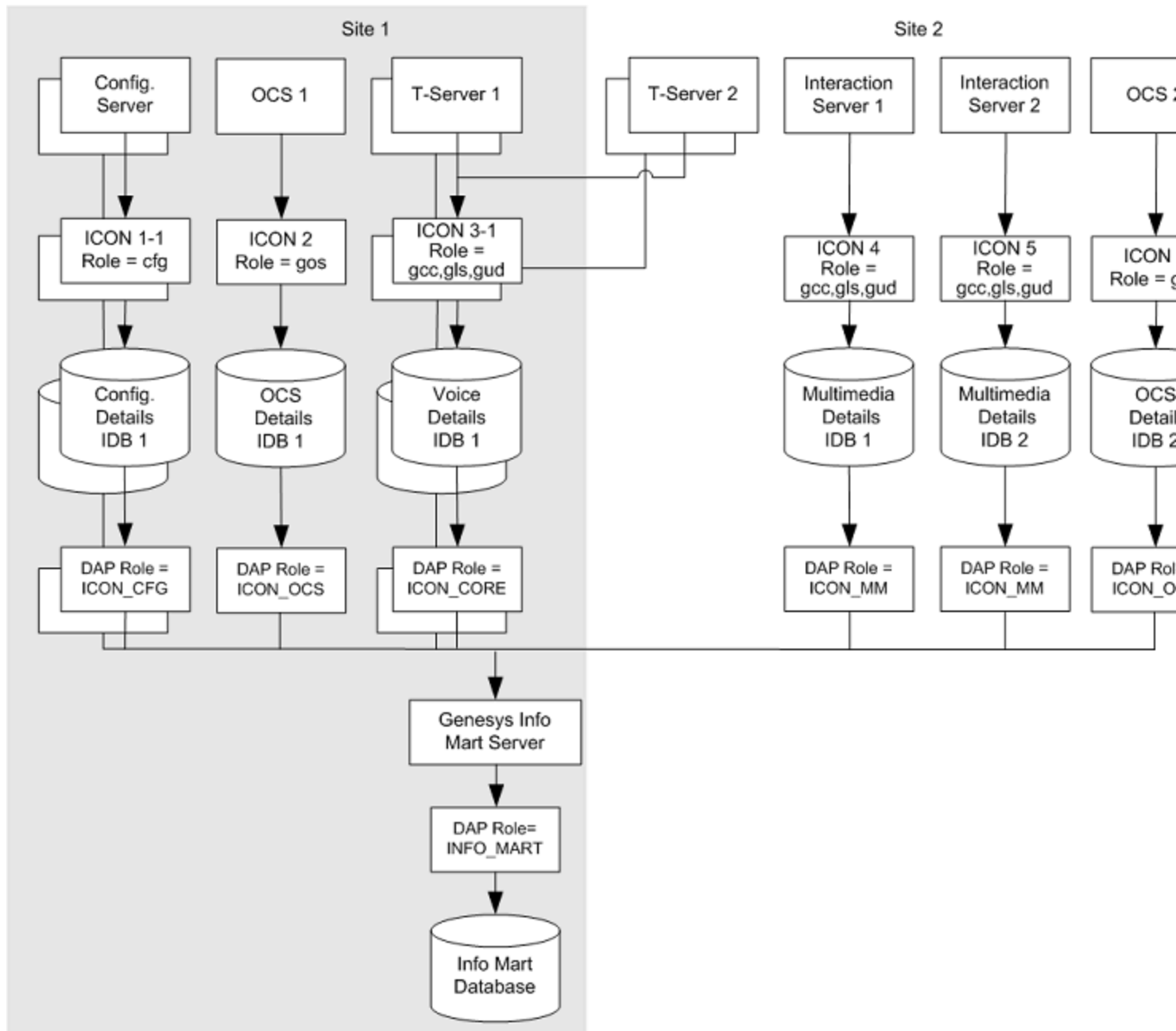
The following Figure illustrates a specific multi-site deployment, as an example of how you can combine the various approaches that are described in the preceding diagrams.

In this example:

- HA is provided for Configuration details and Voice details, but not for the other data domains.
- The T-Server on Site 1 and the T-Server on Site 2 are monitored by a single Interaction Concentrator instance (on Site 1).
- Two Interaction Servers, both on Site 2, are each monitored by a separate Interaction Concentrator instance (on Site 2).
- Two OCS data sources, one on Site 1 and one on Site 2, are each monitored by a separate Interaction Concentrator instance.

Important

There is nothing special about the Multimedia or Outbound Contact topology requirements. The following Figure shows one Interaction Server and one OCS per ICON simply to illustrate the possible topology “building blocks” in a multi-site context. However, multiple Interaction Server or OCS data sources can be monitored by a single ICON, as shown for T-Server.



Mixed Topologies Example — Multi-Site, All Details

The example illustrates the following features:

- The deployment complies with the minimum requirements for supported topologies, including the **additional requirements** in releases earlier than 8.5.007.
- Both sites host a combination of media types.
- In some cases, multiple data sources of the same type populate a single IDB; in other cases, multiple data sources of the same type each populate their own IDB.

Because the example complies with pre-8.5.007 restrictions on IDB storage, the example does not illustrate Voice and Multimedia details in the same IDB, which occurs when one ICON monitors both T-Server and Interaction Server (see [Multiple Data Sources per ICON: Combined Data Domains](#)).

Standby and Disaster Recovery

Genesys Info Mart relies on sets of redundant Interaction Concentrator instances to prevent data loss. If the Genesys Info Mart Server is down for a period of time and then becomes available again, it will just resume processing data from where it left off. If the Info Mart database is down for a period of time and then becomes available again, there will be a delay in data available for reporting, but no 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 Genesys Info Mart Server to act as a standby. (*Standby* refers to an instance that can be brought online quickly and easily.) For a description of the topology where there are two instances of the Genesys Info Mart Server with a single instance of the Info Mart database, see [Standby Genesys Info Mart Server Instance](#).

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:

- Two full instances of Genesys Info Mart (Genesys Info Mart Server and Info Mart database) in an active-active configuration, as described in [Active-Active Info Marts](#).
- Two full instances of Genesys Info Mart (Genesys Info Mart Server and Info Mart database) in an active-standby configuration, as described in [Active-Standby Info Marts](#).

Standby Genesys Info Mart Server Instance

If you deploy a second instance of the Genesys Info Mart Server as a standby for operation against the same Info Mart database, the second instance must be configured in exactly the same way as the first instance, with one exception: To ensure that only one instance of Genesys Info Mart Server accesses the Info Mart database at the same time, do not add a connection to the DAP that enables access to the Info Mart database (the *Info Mart DAP*) on the **Connections** tab of the second Genesys Info Mart Application object. If the first instance of Genesys Info Mart Server is unavailable, you must move the connection to the Info Mart DAP from the first Genesys Info Mart Server instance to the second instance, then start the second instance.

Important

In Oracle deployments, you can configure the connection to the Info Mart DAP in both instances of the Genesys Info Mart Server. A safeguard mechanism prevents more

than one instance of Genesys Info Mart Server from accidentally accessing a single Info Mart database.

To further ensure that only one instance of Genesys Info Mart Server is active at any one time, do not select the **Auto-Restart** check box on the **Start Info** tab of both Genesys Info Mart Application objects.

Active-Active Info Marts

You can deploy two full instances of Genesys Info Mart to operate in parallel. Both instances of the Genesys Info Mart Server extract data from the same IDBs and independently populate their respective Info Mart databases.

This 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.

For details about the architecture, deployment, and operation of Genesys Info Mart in the active-active configuration, see the [Genesys Info Mart Business Continuity Deployment Guide](#).

Important

Although the *Genesys Info Mart Business Continuity Deployment Guide* provides information in the context of Business Continuity and disaster recovery, the active-active configuration is suitable for any deployment in which you want to provide database redundancy (for example, to simplify maintenance or migration), not only for disaster recovery.

Active-Standby Info Marts

With one instance of Genesys Info Mart active, you can deploy a second instance of the Genesys Info Mart Server as well as a second instance of the Info Mart database, to which you replicate data.

In a Business Continuity environment, you can use Oracle GoldenGate to replicate the active Info Mart database (the source) to the second Info Mart database (the target) in a separate data center, to enable disaster recovery in the event of a site failure.

For full information about the minimum version of Oracle GoldenGate that is required, the Info Mart tables that you should exclude from replication, and the procedures for setting up replication and for

disaster recovery, see the [Genesys Info Mart Business Continuity Deployment Guide](#).

Info Mart Database Backup

Whether or not you implement database redundancy, Genesys recommends that you observe usual best practices for database backup and recovery, as applicable for your RDBMS.

Because of the wide range of vendor-specific implementations Genesys Info Mart customers might deploy, it is not possible for Genesys to provide specific recommendations or requirements for backup policies.

As a general consideration to minimize the risk of data loss, co-ordinate your Info Mart database backup policy with the data-retention policy for IDB. In particular, ensure that your Info Mart backup occurs regularly within the retention time for IDB data. For example, if ICON purges IDB data within two weeks, set Info Mart backups to occur weekly. This means that, if you need to restore the Info Mart database from backup, data for the intervening period will still be available in IDB for Genesys Info Mart to reprocess.

Recommendations on Hosting

The distribution of the server applications and databases among the hosts in your network can affect data availability and data quality in your Genesys Info Mart deployment. This page discusses considerations for your hardware architecture.

Genesys Info Mart has a strong dependency on the availability of the contact center configuration information that is stored in the Configuration details IDB. (For a description of *Configuration details*, see [Data Domains](#).) To maximize the availability of the data, Genesys strongly recommends that you:

- Use a separate ICON application instance to store the contact center configuration history.
- Install this ICON application on the same host as the Genesys Configuration Server that provides the source event stream.
- Create the IDB in the same database server instance as the Configuration Server database.
- Use the ICON feature to resynchronize configuration data as soon as data inconsistency is suspected between the Configuration Database and IDB.

Genesys also recommends that you consider HA architecture for configuration data.

To achieve a high level of data availability, Genesys recommends that you co-locate certain components on the same host computers. For information about identifying and mitigating data availability issues in your deployment, see the section about "Data-Source Availability" in the [Genesys Info Mart 8.1 Deployment Guide](#).

The following table summarizes the hosting recommendations for a sample single-site deployment that provides HA reporting of Configuration details and Voice or Multimedia details, as well as non-HA reporting of Outbound Contact details. Extrapolate from these hosting recommendations to scale the topology for a multi-site deployment or for additional data sources and data domains.

Hosting Recommendations — Configuration and Voice/Multimedia Details (HA) and Outbound Contact Details (Non-HA)

Host	Applications and Databases	Comment
A	<ul style="list-style-type: none"> • Primary Configuration Server • ICON-1A 	
B	<ul style="list-style-type: none"> • Backup Configuration Server • ICON-1B 	Host B provides backup support, in case Host A fails.
C	<ul style="list-style-type: none"> • Configuration Database • DB Server that provides access to Configuration Database 	<p>Genesys recommends that you co-locate the Configuration details IDB and its data source.</p> <p>A failure of Host C results in Configuration Server being unable to write to Configuration Database.</p>

Host	Applications and Databases	Comment
	<ul style="list-style-type: none"> IDB-1A (the IDB that is populated by ICON-1A) 	<p>Genesys recommends that the DB Server that provides access to IDB be located on the same host as IDB.</p> <p>Note: You can deploy an HA pair of DB Servers to access Configuration Database. If you do, Genesys recommends that you install the primary DB Server on Host C. You can install the backup DB Server either in a separate directory on Host C or on a different computer, such as Host B.</p>
D	<ul style="list-style-type: none"> DB Server that provides access to IDB-1B IDB-1B (the IDB that is populated by ICON-1B) 	<p>Host D provides backup support in case the IDB on Host C is no longer being populated.</p>
E	<ul style="list-style-type: none"> Primary T-Server or Interaction Server ICON-2A 	<p>As a general recommendation, select a network location for an ICON server to be the same host or to be close to the T-Server or Interaction Server host.</p> <p>If ICON is located away from its data source, the connection between the two servers is more likely to break. A loss of connection results in missing notifications about interaction or agent activity; this data cannot be restored.</p>
F	<ul style="list-style-type: none"> Backup T-Server or Interaction Server ICON-2B 	<p>Host F provides backup support, in case Host E fails.</p>
G	<ul style="list-style-type: none"> DB Server that provides access to IDB-2A IDB-2A (the IDB that is populated by ICON-2A) 	<p>Genesys recommends that the DB Server that provides access to IDB be located on the same host as IDB.</p> <p>If ICON is located away from IDB, your configuration must account for data latency.</p> <p>A loss of connection between ICON and its IDB does not necessarily result in a loss of data, because ICON continues to write data to the persistent storage until the database connection is restored.</p>
H	<ul style="list-style-type: none"> DB Server that provides access to IDB-2B IDB-2B (the IDB that is populated by ICON-2B) 	<p>Host H provides backup support, in case the IDB on Host G is no longer being populated.</p>

Host	Applications and Databases	Comment
I	<ul style="list-style-type: none"> • OCS • ICON-3 	<p>As a general recommendation, select a network location for an ICON server to be the same host or to be close to the OCS host.</p> <p>If ICON is located away from its data source, the connection between the two servers is more likely to break. A loss of connection results in missing notifications about Outbound Contact activity; this data cannot be restored.</p>
J	<ul style="list-style-type: none"> • DB Server that provides access to IDB-3 • IDB-3 (the IDB populated by ICON-3) 	<p>Genesys recommends that the DB Server that provides access to IDB be located on the same host as IDB.</p> <p>If ICON is located away from IDB, your configuration must account for data latency.</p> <p>A loss of connection between ICON and its IDB does not necessarily result in a loss of data, because ICON continues to write data to the persistent storage until the database connection is restored.</p>
K	<ul style="list-style-type: none"> • Genesys Info Mart Server application 	<p>Host K presents a single point of failure.</p> <p>Failure of the Genesys Info Mart Server does not necessarily result in data loss, because the data might still be in the IDB(s); however, failure of the Genesys Info Mart Server might delay data availability.</p>
L	<ul style="list-style-type: none"> • Info Mart database 	<p>Host L presents a single point of failure.</p> <p>Failure of the Info Mart database might result in data delays, but it does not usually result in data loss, provided that you have implemented adequate database management strategies to protect data. Genesys recommends that you perform frequent database backups or use failover strategies, such as clustering or mirroring to minimize delays and data loss. For example, if the Info Mart database fails, but the information in IDBs remains intact, Genesys Info Mart will process the IDB data later, when the Info Mart database is restored from backup. See also Standby and Disaster Recovery.</p>

Database Considerations

This page describes database issues that you must consider before you deploy Genesys Info Mart.

Databases in Your Genesys Info Mart Deployment

Genesys Info Mart has predefined jobs that process data in extract, transform, and load (ETL) cycles. These ETL jobs access several databases, as described in [Genesys Info Mart Jobs](#). There are also several supported database schemas (Genesys Info Mart and tenant user schemas), as described in [Info Mart Database](#).

In addition to the topics that are discussed on this page, there are several deployment-specific Genesys Info Mart database design considerations that are outside the scope of this *Deployment Guide*, including partitioning, indexing and storage. To develop a suitable physical database design and implementation for your environment, consult your database administrator or data warehousing specialist.

Important

- When you install Genesys Info Mart, you select a single RDBMS type: Microsoft SQL Server, Oracle, or PostgreSQL. All source IDBs and the target Info Mart database must reside in databases of this same RDBMS type. The only possible exception is the IDB from which Genesys Info Mart extracts configuration history.
- Genesys Info Mart does not support database compression, except for compression that RAA may implement. Do not remove any compression that has been defined by RAA.
- Be sure to consult the [Genesys Info Mart Product Alerts](#) for important information about known RDBMS issues and potential solutions to those issues.

Database Capacity

As described in [Genesys Info Mart Jobs](#), Genesys Info Mart reads from and writes to the Info Mart database. To determine the database capacity requirements for the Info Mart database in your environment, answer the following questions:

- How much space does the database require?
- How much space is needed for future growth?
- How powerful should the database server be?
- How do you plan to use the Genesys Info Mart database?

- How do you plan to manage the Genesys Info Mart indexes?
- What will your purging strategy be?

Use the following information to help answer these questions.

Storage Capacity

The Genesys Info Mart database must have the capacity to store the row data extracted from the required number of IDBs, as well as the facts and dimensions that the ETL jobs load. The Genesys Info Mart database grows over time, because the ETL jobs load new facts and dimension values each day.

If your deployment includes the Genesys historical reporting presentation layer (GCXI) or the RAA package, you will also need to provide storage for the aggregate tables and indexes that you create in order to improve query performance, and to provide storage for an extended period of time that suits your requirements. See the [RAA documentation set](#) for more information.

Genesys Info Mart provides a maintenance job that purges data in the Info Mart database. The maintenance job automatically purges data in accordance with configurable data-retention policies. For a list of the tables the maintenance job purges, see [Info Mart Tables Purged by the Maintenance Job](#) in the *Genesys Info Mart Operations Guide*. For information about the configuration options that control data retention, see the **days-to-keep-*** option descriptions on the [gim-etl Section](#) page in the *Genesys Info Mart Configuration Options Reference*.

In PostgreSQL deployments, a job to update statistics (**Job_UpdateStats**) performs important aspects of database maintenance that improve query performance.

Genesys provides an interactive tool, the [Genesys Info Mart 8.5 Database Size Estimator](#), to help you estimate the size of your Info Mart database.

Important

Note for Oracle deployments

Genesys Info Mart 8.5 makes extensive use of temporary tables during data collection and processing, executing frequent CREATE/DROP TABLE statements. As a result, the SYSTEM tablespace increases over time. Ensure that you allocate sufficient space for the SYSTEM tablespace to accommodate long-term operations. Monitor the growth of the SYSTEM tablespace, and extend it as required.

Processing Capacity

The ETL jobs perform many intensive SQL operations against extracted data in the Info Mart database, including SELECT, INSERT, and UPDATE. These operations require significant resources, such as disk (for tables, indexes, and logs), memory, and CPU capacity.

The ETL jobs load data in the Info Mart database at the end of each ETL cycle. The amount of time that the ETL jobs run varies, depending on how often you schedule them and on the volume of data that they process. The ETL jobs do not create or update statistics on the Genesys Info Mart fact tables.

If you intend to use the Genesys Info Mart database as the database that your business applications query, provide additional capacity so that many users can query the data.

If you intend to upload Genesys Info Mart data to a data warehouse, instead of having users query the data directly, you do not need to have the capacity to support many users who query the data. You will probably require fewer indexes, and will probably store the data for less than a year.

Important

Adding multiple indexes to those fact tables in the Info Mart database that contain data relating to interactions or resources can have a significant negative effect on the performance of **Job_TransformGIM**. Genesys recommends that you first test the impact of additional indexes in a non-production environment.

Database Partitioning

Genesys Info Mart supports the use of partitioning in the Info Mart database in Oracle (range partitioning only), Microsoft SQL Server, and PostgreSQL deployments. In general, if partitioning is used, fact tables and associated indexes in GIDB and the dimensional model are partitioned, as well as certain Control tables. Configuration object tables and configuration relationship fact tables are not partitioned, and all dimension tables are also not partitioned.

If your contact center is large and operates at high volumes, Genesys strongly recommends that you implement partitioning. Otherwise, maintenance of a nonpartitioned database can significantly affect performance.

For each applicable RDBMS, Genesys Info Mart provides a separate script to create the partitioned database schema. The purpose of the script is to identify the tables that are partitioned. The script creates the partitions in the primary filegroup or tablespace. The script creates a single, throwaway partition for each partitioned database object; these partitions are purged during the first run of **Job_MaintainGIM**. During initialization, **Job_InitializeGIM** creates the first set of partitions to be populated during the first ETL cycle, and **Job_MaintainGIM** subsequently creates additional partitions as required.

Configuration options enable you to specify the size of the partitions in GIDB (see `partitioning-interval-size-gidb`, `partitioning-interval-size-gidb-mm`, and `partitioning-interval-size-gidb-ocs`) as well as in the dimensional model and Control tables (see `partitioning-interval-size-gim`). Another configuration option (`partitioning-ahead-range`) enables you to control how far ahead the Genesys Info Mart jobs will create partitions, in preparation for future ETL cycles. (**Job_InitializeGIM** creates the partitions in the first instance, then **Job_MaintainGIM** creates them on an ongoing basis.)

Important

Maintenance job scheduling — By default, Genesys Info Mart runs the maintenance job daily. If your database is partitioned, ensure that you do not jeopardize routine maintenance of the partitions by inappropriately changing the configuration options that control scheduling of the ETL cycle and the maintenance job. For more information about the scheduling-related configuration options, see [schedule Section](#) in the *Genesys Info Mart Options Reference*.

PostgreSQL partitioning recommendations — For PostgreSQL, Genesys recommends that you review and modify the values of the **partitioning-interval-size*** options to increase partition sizes, as described in the option descriptions (see links above).

Multi-Language Support

Genesys Info Mart supports using Unicode characters to store data in multiple languages, starting with release 8.5.003 in Oracle and PostgreSQL deployments and starting with release 8.5.007 in Microsoft SQL Server deployments.

To support Unicode characters in the Info Mart database:

- In Oracle and PostgreSQL deployments, the Info Mart database must be created with UTF-8 encoding. No other special configuration is required. Genesys Info Mart does not support the NVARCHAR2 data type on Oracle. The Oracle schema-creation scripts use explicit CHAR character length semantics in fields with VARCHAR2 data types, to enable consistent storage of Unicode characters.
For more information about National Language Support (NLS) in Oracle, see the *Database Globalization Support Guide* for your Oracle release, available from the [Oracle Help site](#).
- In Microsoft SQL Server deployments, you must use the multi-language versions of the database-creation scripts (**make_gim_multilang.sql** or **make_gim_multilang_partitioned.sql**) to create the Info Mart schema. These scripts use nvarchar instead of varchar data types for fields that store Unicode characters.

For information about creating the Info Mart database schema, see [Info Mart Database Scripts](#).

In addition, there are important requirements for Configuration Layer components and Interaction Concentrator. For full information, see:

- [Configuring for Multi-Language Support](#) in the *Interaction Concentrator Deployment Guide*
- [Framework Database Connectivity Reference Guide](#)
- [Deploying Genesys for Key Mixed Language Scenarios](#)

After the Info Mart database schema has been initialized in Microsoft SQL Server deployments, a flag in the CTL_SCHEMA_INFO table (CTL_SCHEMA_INFO.ML_FLAG=1) identifies whether the database supports multiple languages.

Database Connections

Genesys Info Mart processing is highly multi-threaded. The Genesys Info Mart jobs open multiple connections to the Info Mart database and, for extraction, to IDBs to enable the jobs to process data from multiple tables concurrently.

For example, the extraction job extracts concurrently from multiple IDBs and from multiple tables from each IDB. The execution plan for extracting data from a particular IDB is not executed in strict sequence. Instead, worker threads open connections as required to process execution plan items concurrently. The connection for extracting from a table with a lot of data may still be active after the work item for a table with very little data has been executed and the second connection is no longer active, even if it was opened later than the first one.

Starting with release 8.5.009.14, Genesys Info Mart uses connection pooling to improve extraction performance, by reusing idle connections from the pool to extract from additional tables in the same IDB. Paradoxically, the use of a connection pool might appear to increase the number of connections used during extraction, because connections are not closed when extraction from a particular IDB is finished. Instead, all connections opened during a run of the extraction or transformation job remain available in the connection pool for the life of the Genesys Info Mart instance. Subsequent runs of the extraction job can reuse pooled connections to IDB, and the extraction and transformation jobs can both reuse connections to the Info Mart database.

Note, however, that a large connection pool does not usually imply significantly increased demand on RDBMS resources, because many of the connections will be idle for much of the time the job takes to execute. Starting with release 8.5.015.07, you can use the `cp-reuse-count` option to limit the number of times each connection can be reused if you find that Genesys Info Mart connection-pooling behavior results in issues such as excessive memory growth on the DBMS side.

To enable Genesys Info Mart to open sufficient connections during job execution, it is important that you tune your RDBMS instance(s) for both the Info Mart database and your IDBs (see [Optimizing Database Performance: Database Tuning](#)). In addition, ensure that the Genesys Info Mart configuration options that control numbers of connections and threads (see [Performance tuning](#) for a summary list) are suitable for your deployment.

Database Security

Genesys Info Mart supports the following database security features:

- Secure Socket Layer (SSL) connections to the Info Mart database and IDB(s) to encrypt communications between Genesys Info Mart Server and its source and target databases. (PostgreSQL deployments require Genesys Info Mart release 8.5.011.18 to support SSL.) For a summary of the steps to enable this feature, see [Enabling Secure Communications](#).
- Encryption of data in the Info Mart database in Microsoft SQL Server and Oracle deployments. For more information, see [Encrypted Data in Databases](#) in the *Genesys Security Deployment Guide*.

Source Data Retention and Purging

Genesys Info Mart does not automatically purge source data in IDB. However, Genesys does provide stored procedures that are recommended for source database purging. When you use these procedures, be sure to:

- Avoid deleting data that has not yet been extracted.
- Retain enough data to allow for error recovery and problem determination.

The amount of data that you should retain in your source databases depends on both the database server's hardware resources — such as memory and disk space — and the performance of its disk subsystems.

Generally, you should aim to achieve a balance that enables you to retain enough data in your Interaction Concentrator databases without affecting either the operating performance of your source database or the extraction process of Genesys Info Mart.

For Voice details and Outbound Contact details, Genesys recommends that you consider using IDB partitioning, which is supported for Oracle deployments starting with Interaction Concentrator release 8.1.1. Partitioning improves overall IDB performance and streamlines maintenance. However, given the way that partitioning support has been implemented, with only a limited number of partitions expected to be used, and given the long-living nature of multimedia interactions, Genesys recommends that you not use partitioned IDBs for Multimedia details. For more information about IDB partitioning, see the [Interaction Concentrator Deployment Guide](#).

Genesys provides specific recommendations regarding source data retention and purging frequency. For more information, see [Managing Interaction Concentrator and Data Sources](#) in the *Genesys Info Mart Operations Guide*.

Database User Authentication

The ETL jobs make many database connections as they extract, transform, and load data. To ensure that connections are authenticated quickly, review the authentication policy that is configured in your database software. Authentication timeouts can greatly increase the amount of time that it takes for the ETL jobs to run to completion.

For more information about database users, see [Database Privileges](#).

Database Privileges

Genesys Info Mart requires access to source and target databases to perform a variety of operations. This page describes the types of database users and privileges Genesys Info Mart requires.

Database Object Owners and User IDs

Logically, there are four types of users for which you must provision user accounts:

- **Info Mart** — The user's account that is used by Genesys Info Mart jobs to access the Info Mart database schema for the purposes of:
 - Creating and modifying the Info Mart database schema
 - Extracting data from IDB — Applicable only to Microsoft SQL Server when the Info Mart and IDB databases are on the same server or when IDB is on a linked server (db link).
 - Processing the extracted data and storing it in the Info Mart database schema
 - Maintaining the Info Mart database schema
- **ICON** — The user's account that is used by Genesys Info Mart jobs to access the IDB schemas for the purposes of:
 - Modifying the IDB schemas to work with Genesys Info Mart
 - Extracting data from IDB
- **Tenant Admin** — The user's account that is used by a Tenant Administrator to access the Info Mart database schema and Tenant User schema(s) for the purposes of:
 - Creating and dropping the Tenant User schema(s) and views
 - Granting privileges to the read-only tenant users to access tenant-specific views in the Info Mart database schema through the Tenant User schema(s)
- **Tenant User** — The user's account that is used by a read-only tenant user to view tenant-specific data in the Info Mart database schema through views in the Tenant User schema.

Each User ID must have the necessary privileges to perform the required operations against the applicable database. For information about the required privileges, see [Required Database Privileges](#).

In principle, the User ID that you specify to connect to each database does not need to be the same as the Owner ID. You can create the database objects in a schema that is different from the User ID that accesses them, provided that the User ID has the required privileges, with the following exceptions:

- In PostgreSQL deployments using Genesys Info Mart releases earlier than 8.5.009, the name of the Tenant User schema must be the same as the name of the corresponding tenant User ID.
- In PostgreSQL deployments that include Reporting and Analytics Aggregates (RAA), the Info Mart

schema name must either be public or else be the same as the User ID.

Limitation

For new deployments, Genesys strongly recommends that you follow the [Recommendations for User Accounts](#) shown in the table below. Given the range of possible account setups, Genesys does not guarantee that Genesys Info Mart will function with all other user/owner account configurations that might be employed. Furthermore, internal changes in Genesys Info Mart processing over time might mean that, after migration, other user accounts that used to work no longer enable Genesys Info Mart jobs to access IDB or the Info Mart schema for certain purposes.

Refer to the [Database User Account Recommendations](#) in the *Genesys Info Mart 8.5.x Release Note* for information about possible workarounds if you encounter permissions-related issues after deployment.

Important

In Microsoft SQL Server, all database objects are contained in schemas, instead of being owned by a database owner. The SQL Server logins are mapped to database users, who can own objects in the various schemas. In addition, a default schema is configured for each database user, to contain unqualified database objects. In this document, for Microsoft SQL Server, the term *Owner ID* refers to the database user who owns the object — for example, the database user who created a view.

Recommendations for User Accounts

RDBMS	For Database	Recommendations
Microsoft SQL Server	Info Mart and IDB	<ul style="list-style-type: none"> The Info Mart database should have one Info Mart schema. IDB should have one ICON database schema. If the Info Mart schema is not dbo, contact Genesys Customer Care before executing any SQL scripts and before migration.
Oracle	Info Mart and IDB	<ul style="list-style-type: none"> User Name: <i><Database schema owner></i> default-schema (DAP option): <i><Database schema owner></i>
PostgreSQL	Info Mart and IDB	<ul style="list-style-type: none"> The Info Mart database should have one Info Mart schema. IDB should have one ICON

RDBMS	For Database	Recommendations
		database schema. <ul style="list-style-type: none"> See above for specific requirements for the Info Mart schema name in deployments that include RAA.

Identifying the owner and user accounts that you will use in your Genesys deployment is an important step in your deployment and installation planning. After you have identified the accounts that you will use, record the IDs and passwords on the applicable worksheet that is provided on the [Database Worksheets](#) page. You will need this information to create the database schemas and to specify connection parameters when you configure the DAP(s).

Required Database Privileges

The following table summarizes the user account privileges that are required for the respective source and target database schemas.

Important

Genesys recommends that you explicitly grant the required privileges to the respective users. Do not assume that granting DBA privileges will be sufficient to enable the user account to perform all required operations.

Required User Account Privileges

User Account	Database	Required Privileges ^a
Info Mart	IDB	<ul style="list-style-type: none"> SELECT on all tables and views (for example, include this user in the db_datareader role in IDB) <p>Note: This user account on IDB is required only for Microsoft SQL Server when Info Mart and IDB databases are on the same server or IDB is on a linked server (db link).</p>
	Info Mart schema	<ul style="list-style-type: none"> CREATE, DROP, and ALTER tables, views, indexes, procedures, and, if applicable, partitions

User Account	Database	Required Privileges ^a
		<ul style="list-style-type: none"> • SELECT on all tables and views • INSERT, UPDATE, and DELETE on all tables • RDBMS-specific privileges that are required to truncate tables • CREATE and EXECUTE on all stored procedures • (For Oracle only) EXECUTE on DBMS_LOCK • (For databases that implement partitioning) RDBMS-specific privileges that are required to CREATE, DROP, and ALTER tables, indexes, and partitions • (For PostgreSQL only, if tenant views are used) Tenant view owner permissions
	Tenant User schema(s)	<p>(For PostgreSQL only, if tenant views are used)</p> <ul style="list-style-type: none"> • In releases earlier than 8.5.010, Schema owner permissions • Starting with release 8.5.010, Tenant User role
ICON	IDB	<ul style="list-style-type: none"> • SELECT on all tables and views • CREATE and DROP tables, views, and indexes • INSERT, UPDATE, and DELETE on all IDB tables
Tenant Admin	Info Mart schema	<ul style="list-style-type: none"> • EXECUTE on all stored procedures • CREATE, SELECT, and INSERT on all tables • CREATE, DROP, and SELECT on all views and sequences

User Account	Database	Required Privileges ^a
		<ul style="list-style-type: none"> GRANT access to views for Tenant users
	Tenant User schema(s)	<ul style="list-style-type: none"> CREATE and DROP views
Tenant User ^b	Info Mart schema	<ul style="list-style-type: none"> SELECT on the tenant-specific view in the applicable Tenant User schema Note: Privileges for the Tenant User to access views in the Info Mart schema are granted by the Tenant Admin when the make_gim_view_for_tenant.sql script is run.
	Tenant User schema	<ul style="list-style-type: none"> SELECT on all views

a. Privileges are called *permissions* in Microsoft SQL Server.

b. Applicable only for read-only views, which are strictly required only for multi-tenant deployments.

Database Worksheets

This page provides worksheets that you can use to note RDBMS-specific database-connection parameters for each database that Genesys Info Mart accesses. Keep this information, so that you can refer to it during deployment and when you need to re-install or upgrade Genesys Info Mart.

For information about the privileges required for the respective database users, see [Database Privileges](#). See also [Recommendations for User Accounts](#).

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Microsoft SQL Server=

Worksheet for Microsoft SQL Server Databases

For Microsoft SQL Server databases, the Database Name is the name of the Microsoft SQL Server database. The Owner ID and Owner Password specify the owner of the tables in the database. (The Owner ID is either the login that created the database tables or dbo, if the login that created the tables created the database that contains the tables or if it is a member of the System Administrators server role.) When in doubt, use the SQL Server Enterprise Manager to verify the owner of the tables. The User ID and User Password are used to connect to the database server.

Interaction Concentrator Database		
Use to run SQL scripts manually to modify the Interaction Database (IDB), and to configure a DAP for Genesys Info Mart jobs to extract Interaction Concentrator data or to modify IDB. If you have multiple IDBs, note the connection information for each database.		
Database Name		
Host Name		
Communication Port		
Owner ID		
Owner Password		
User ID		
User Password		
Genesys Info Mart Database		
Use to run SQL scripts during deployment of the Info Mart database, and to configure a DAP to connect to the Genesys Info Mart database.		
Database Name		
Host Name		
Communication Port		
Owner ID		
Owner Password		

Interaction Concentrator Database		
User ID		
User Password		
Tenant Admin		
Use to run SQL scripts during deployment of the Info Mart database to create read-only views of Genesys Info Mart tables.		
Database Name		
Owner ID		
Owner Password		
Tenant User		
The read-only user for the tenant view. If you have multiple tenants, note the connection information separately for each tenant.		
Database Name		
Owner ID		
Owner Password		

| - | Oracle =

Worksheet for Oracle Databases

For Oracle, the Database Name is the name that the database client software uses to connect to the database — for example, TNS name or Oracle Name Server name. The Owner ID and Owner Password specify the schema in which the database tables reside. The User ID and User Password are used to connect to the database.

Interaction Concentrator Database		
Use to run SQL scripts manually to modify the Interaction Database (IDB), and to configure a DAP for Genesys Info Mart jobs to extract Interaction Concentrator data or to modify IDB. Genesys recommends that you use the IDB schema owner name as the database user ID that Genesys Info Mart uses to connect to IDB. Genesys does not recommend using another user ID on the extraction DAP(s). If you have multiple IDBs, note the connection information for each database.		
Database Name		
System ID (SID)		
Service Name		
Host Name		
Communication Port		
Owner ID		
Owner Password		
User ID		
User Password		
Genesys Info Mart Database		

Interaction Concentrator Database		
Use to run SQL scripts during deployment of the Info Mart database, and to configure a DAP to connect to the Genesys Info Mart database.		
Database Name		
System ID (SID)		
Service Name		
Host Name		
Communication Port		
Owner ID		
Owner Password		
User ID		
User Password		
Tenant Admin		
Use to run SQL scripts during deployment of the Info Mart database to create read-only views of Genesys Info Mart tables.		
Database Name		
Owner ID		
Owner Password		
Tenant User		
The read-only user for the tenant view. If you have multiple tenants, note the connection information separately for each tenant.		
Database Name		
Owner ID		
Owner Password		

| PostgreSQL=

Worksheet for PostgreSQL Databases

For PostgreSQL databases, the Database Name is the name of the PostgreSQL database. The Owner ID and Owner Password specify the owner of the tables in the database. The Owner ID is the login that created the database tables. The User ID and User Password are used to connect to the database server. The Schema is a separate database object in PostgreSQL; it is used to logically group database objects. If a new schema is not created for the Info Mart database or Interaction Database (IDB), the default schema named public will be used. In deployments that include Reporting and Analytics Aggregates (RAA), the Info Mart schema name must either be public or else be the same as the User ID.

Interaction Concentrator Database		
Use to run SQL scripts manually to modify the Interaction Database (IDB), and to configure a DAP for Genesys Info Mart jobs to extract Interaction Concentrator data or to modify IDB. If you have multiple IDBs, note the connection information for each database.		

Interaction Concentrator Database		
Database Name		
Host Name		
Communication Port		
Owner ID		
Owner Password		
User ID		
User Password		
Schema		
Genesys Info Mart Database		
Use to run SQL scripts during deployment of the Info Mart database, and to configure a DAP to connect to the Genesys Info Mart database.		
Database Name		
Host Name		
Communication Port		
Owner ID		
Owner Password		
User ID		
User Password		
Schema		
Tenant Admin		
Use to run SQL scripts during deployment of the Info Mart database to create read-only views of Genesys Info Mart tables.		
Database Name		
Owner ID		
Owner Password		
Tenant User		
The read-only user for the tenant view. If you have multiple tenants, note the connection information separately for each tenant. In releases earlier than 8.5.009, the name of the Tenant User schema must be the same as the name of the corresponding tenant user.		
Database Name		
Owner ID		
Owner Password		

Multimedia Interactions

About Multimedia Interactions

In this document, *multimedia interactions* refers to all interactions for which the data source for Genesys Info Mart is Interaction Server. Multimedia interactions include Genesys eServices/Multimedia e-mail and chat interactions, as well as 3rd Party Media interactions (formerly referred to as Open Media). For a more detailed definition of the term, see [Multimedia Interactions](#).

The most important difference between voice and multimedia interactions is that voice interactions are short-lived and multimedia interactions can be long-lived. Therefore, multimedia interactions might be transformed while they are still active.

Genesys Info Mart processes data that is related to all multimedia interactions in a similar manner. However, from the point of view of internal processing, 3rd Party Media interactions require separate handling. This page describes special considerations for 3rd Party Media interactions, as well as other considerations for configuring your Genesys Info Mart deployment to process multimedia interactions.

Media Types

Genesys Info Mart can support any media type that is properly configured as a Media Type Business Attribute in the Configuration Layer.

Genesys Info Mart stores the media types that are available to describe interaction facts in the MEDIA_TYPE dimension table in the Info Mart database. By default, the MEDIA_TYPE table includes the Genesys eServices/Multimedia e-mail and chat media types. It can be extended to include any number of deployment-specific 3rd Party Media media types.

Dynamic Addition of Unknown Media Types

When Genesys Info Mart is transforming agent activity data or any interaction data — including 3rd Party Media interaction data — and a media type arrives that is new to Genesys Info Mart, the transformation job automatically adds the new media type to the MEDIA_TYPE dimension table and includes it when transforming data. Genesys Info Mart generates a log event to alert you about the addition.

Important

The new media type must have been configured already in the Configuration Layer. If not, Interaction Server rejects the media type before it reaches Genesys Info Mart.

Online and Offline Interactions

Genesys Info Mart distinguishes between two types of interactions:

- Online — The interaction involves an online session with a customer in real time (for example, chat).
- Offline — The interaction does not involve an online session with a customer in real time (for example, email).

Genesys Info Mart uses the `IS_ONLINE` column in the `MEDIA_TYPE` table to indicate whether a particular media type is associated with online interactions (`IS_ONLINE=1`) or with offline interactions (`IS_ONLINE=0`).

Downstream reporting applications can use the `IS_ONLINE` flag to produce reports that distinguish between online and offline interactions.

For internal processing, Genesys Info Mart uses the `IS_ONLINE` flag to determine whether to process the interaction as online or offline. The distinction affects:

- Detection of when an interaction is abandoned — An offline interaction cannot be abandoned by the customer.
- Detection of when an interaction is serviced — An online interaction is serviced by an agent when the agent joins the interaction (and the session). An offline interaction has some level of service when an agent accepts and begins to work on the interaction, but it is not fully serviced until the agent sends a reply back to the customer.
- The setting of the Technical Descriptor for transfers to a queue.
- Determination of `ONLINE_DURATION`.

Configuration Considerations for 3rd Party Media

When Genesys Info Mart dynamically adds an unknown media type to the `MEDIA_TYPE` table (see [Dynamic Addition of Unknown Media Types](#)), the new media type is added as an offline media type (`IS_ONLINE=0`). If you want Genesys Info Mart to identify interactions that are associated with this media type as online interactions, you must manually change the setting of the `IS_ONLINE` flag in the `MEDIA_TYPE` table. You can change the setting at any time. The change takes effect as soon as it is committed in the database, but it does not apply to data that has already been processed.

Genesys recommends that you set an alarm on the log event that Genesys Info Mart generates when the media type is added (message number 55-20150), to prompt you to verify this flag and, if required, change the setting to suit your deployment and reporting requirements.

To ensure that online interactions that are associated with 3rd Party Media are processed consistently, Genesys recommends that you manually add the online media types to the `MEDIA_TYPE` table before Genesys Info Mart starts processing, so that you can set `IS_ONLINE=1` from the start.

For more information about manually adding online media types or changing the `IS_ONLINE` flag, see [Setting up media types for online interactions](#).

Interaction Types and Subtypes

Genesys Info Mart can support any multimedia interaction subtype that is properly configured in the Configuration Layer.

When a multimedia interaction subtype arrives that is new to Genesys Info Mart, the transformation job adds the new interaction subtype automatically to the `INTERACTION_TYPE` dimension table and includes it when transforming data. Genesys Info Mart generates a log event to alert you about the addition.

Important

The new interaction subtype must have been configured already in the Configuration Layer. If not, Interaction Server rejects the interaction type before it reaches Genesys Info Mart.

Genesys Info Mart uses the `IGNORE` column in the `INTERACTION_TYPE` table to determine whether to include interactions of a particular subtype in transformation processing:

- 0 (false) — Genesys Info Mart transforms all interactions with this interaction type.
- 1 (true) — Genesys Info Mart does not transform any interactions with this interaction type. No records are generated in fact tables for interactions of this type.

By default, all newly added multimedia interaction subtypes are set to be transformed. You can disable transformation of multimedia interactions of a specified subtype by setting a value of 1 (true) for the `IGNORE` field in the `INTERACTION_TYPE` table.

Important

If you disable a subtype, both the parent interactions of that subtype and any child interactions of such parent interactions are disabled, even if the child interactions themselves are of a different subtype, one that is configured to be transformed.

Genesys recommends that you set an alarm on the log event that Genesys Info Mart generates when the interaction subtype is added (message number 55-20151), to prompt you to verify the `IGNORE` flag and, if required, change the setting to suit your deployment and reporting requirements.

You can change the setting at any time. The change takes effect as soon as it is committed in the database, but it does not apply to data that has already been processed.

Multi-Tenant Considerations

The `IGNORE` setting for an interaction type or subtype and the `IS_ONLINE` setting for a media type apply across the deployment, without regard to tenant. In other words, Genesys Info Mart does not

support ignoring a particular interaction type for one tenant, but processing it for another. Similarly, Genesys Info Mart does not support transforming interactions that are associated with a particular media type as online for one tenant and offline for another.

Archive and Stop-Interaction (Stop-Ixn) Queues

Your multimedia deployment might include business processes that archive completed interactions in queues before eventually terminating the interactions in Interaction Server. For example, the Genesys intelligent Workload Distribution (iWD) solution employs this approach. Alternatively, when an agent wants to stop an interaction, your business processes might require the agent to place the interaction in a stop-ixn queue, after which a strategy stops the interaction and performs common post-processing.

Archive and stop-ixn queues create data-quality issues in regular reporting. Without special handling, placement of an interaction in an archive or stop-ixn queue is treated like a transfer to any other queue. This results in misleading queue- and interaction-duration metrics. For archive queues, there are also significant performance penalties in transformation and, if applicable, aggregation when extremely long-living interactions are eventually removed from the archive queue or terminated in Genesys Info Mart in accordance with the days-to-keep-active-facts configuration option.

Configuring Genesys Info Mart for iWD and Special Queues

Genesys Info Mart enables you to specify which Script objects of type Interaction Queue are archive or stop-ixn queues that require special handling. Genesys Info Mart considers interactions that are placed into these queues to be completed and terminates the interactions, with appropriate technical descriptors in the INTERACTION_RESOURCE_FACT (IRF) record of the handling resource that placed the interaction in the queue.

- Archive queues — By default, Genesys Info Mart identifies the queues named **iWD_Completed** and **iWD_Canceled** as archive queues for completed and canceled interactions, respectively. If you want to identify additional or alternative queues as archive queues for special handling, adjust the settings of the completed-queues or canceled-queues options, respectively, as applicable.
- Stop-ixn queues — Genesys Info Mart does not identify any queues as stop-ixn queues by default. If you want to identify any queues as stop-ixn queues for special handling, set the value of the stop-ixn-queues option, as applicable.

Limitation

Genesys Info Mart permanently terminates an interaction that is placed in one of the archive or stop-ixn queues identified for special handling. If an agent or other strategy subsequently restarts the interaction from the queue or updates the interaction in the queue (for example, by adding or updating user data), Genesys Info Mart ignores the new activity.

Genesys Info Mart and Attached User Data

Genesys Info Mart uses attached data key-value pairs (KVPs) to populate several of its fact and dimension tables, including any number of custom-created tables. This page provides a summary of the planning activities required to ensure you use attached user data effectively in your Genesys Info Mart deployment.

IVR applications, Enterprise Routing Solution, Network Routing Solution, Outbound Contact Solution, Genesys eServices/Multimedia solution, and Agent Desktop applications all attach KVPs to interactions. The KVPs that these applications attach depend on the following factors:

- Your deployment's interaction flows
- The information that is required by the resources that handle the interactions
- The information that you want to report

Genesys recommends that you configure upstream applications to attach KVPs as early in the interaction flow as possible. In this way, key interaction attributes are captured, even if the interaction is abandoned.

Tip

To ensure that applications use certain attributes consistently (for example, `CustomerSegment`, `ServiceType`, and `ServiceObjective`), configure values for them in the interface you use to configure your Genesys objects. For more information about how to configure these attributes, see the Help for the configuration interface you are using — [Configuration Manager Help \(8.1\)](#), [Genesys Administrator Help](#), or [Genesys Administrator Extension Help](#).

Planning for User Data Reporting

Business analysts, report developers, and database administrators (DBAs) need to collaborate to plan user-data reporting. As part of deployment planning:

1. Review the high-level algorithm for processing user data in Genesys Info Mart. See [Processing User Data](#).
2. Have your Business Analyst evaluate what business attributes need to be stored for your contact center reporting purposes.
3. Have your Report Developer:
 - a. Research how to enable respective applications to attach required KVPs. See [User Data Sources and KVPs](#) and [Using UserEvent-Based KVP Data](#) for information. Refer to the documentation for Genesys

solutions, if necessary. Ensure that the respective KVPs have been defined for the required business attributes and that the respective applications have been configured to attach the required KVPs.

- b. Research how to enable ICON to store required KVPs in IDB. Refer to [Customizing Attached Data Storage](#) and the [Interaction Concentrator documentation](#), as necessary.
 - c. Based on expected degrees of cardinality, decide which custom KVPs to store as facts and which to store as dimensions. For more information, see the discussion of cardinality under [Storing User Data](#).
 - d. Based on business rules and reporting requirements for the values of KVPs at different stages of the interaction, decide which propagation rule to use for each KVP. For more information, see [Propagation Rules](#).
 - e. Decide what default values to use for custom user-data facts. For information about when Genesys Info Mart uses the default values, see [Processing User Data](#).
4. Have your DBA:
- a. Decide what custom fact and dimension tables, if any, you require to store user data values. See [Storing User Data](#).
 - b. For custom user-data facts, decide what KVP values, if any, you want to store as numeric or as date/time data (as supported by your RDBMS). Interaction Concentrator stores user data as character data, but Genesys Info Mart stores KVP values in custom user-data fact tables as character, numeric, or date/time data types, depending on the way that you define the column in the Info Mart schema (see [Step 4\(d\)](#)).
 - c. Map the KVPs to custom user-data tables and columns in the Info Mart database. You can use the [User Data Assistant](#) to help you perform the mapping and prepare the required SQL script.

To map the KVPs manually, fill out a User Data Mapping worksheet, to use with your user data template script at the time of deployment. See [Mapping Call-Based Attached Key-Value Pairs](#) for information and [Mapping User Data Worksheet](#) for a sample worksheet.
 - d. Prepare your copy of the **make_gim_UDE_template.sql** or **make_gim_UDE_template_partitioned.sql** template script to use to create custom user-data tables and columns when you deploy the database. See [Preparing Custom User-Data Storage](#).

User Data Processing and Storage

This page describes how Genesys Info Mart processes and stores attached user data.

Processing User Data

There are two types of KVP data (referred to as *user data*, when discussed collectively elsewhere in this document):

- *Call-based* attached data
- *UserEvent-based* KVP data, which allows the agent to associate KVP data with a voice interaction after the voice interaction has ended (that is, after the call is released)

Genesys Info Mart uses the same, unified mechanism to process these two data types.

By content, user data can also be divided as follows:

- **High-cardinality user data**
- **Low-cardinality user data**

How Genesys Info Mart Processes User Data

The following high-level algorithms help you understand how Genesys Info Mart processes user data.

1. Genesys Info Mart Server extracts user data along with other interaction data from one or more IDBs.
2. Global Interaction Database (GIDB), which is a set of tables within the Info Mart database schema, stores the extracted user data for future processing.
3. Genesys Info Mart processes the user data and creates records in relevant user-data tables (predefined or custom). Genesys Info Mart uses customer-configured mapping rules to identify in which user-data tables to store certain KVP values. Typically, low-cardinality data is expected to be stored in dimension tables, while high-cardinality data is expected to be stored in fact extension tables.

The value that is stored — for example, whether it is the ending value or the first changed value of the KVP during the timespan of the interaction resource fact — depends on the propagation rule specified in the mapping. For more information, see [Propagation Rules](#).

If no value is received for a customer-mapped KVP that has been included in the schema, Genesys Info Mart uses the default value that you specify in the user-data script (see [Step 4\(d\)](#) in [Planning for User Data Reporting](#)).

4. In the case of user data that you have configured Genesys Info Mart to store as date/time, Genesys Info Mart converts the KVP value to a date/time using the Genesys Info Mart default format for date/time (yyyy-mm-ddThh24:mi:ss.ff), unless you have specified an alternative conversion expression. For more information about customizing the date conversion, see [Preparing Custom User-Data Storage](#).
5. If the attempt to convert a KVP value or to store it in a user-data table column fails, the transformation job itself does not fail. Instead, Genesys Info Mart logs a message about the failure and, for each invalid KVP value, inserts a record into the STG_TRANSFORM_DISCARDS table and uses the default value that you specified in the user-data script. This exception-handling behavior applies both to user-data facts and to

user-data dimensions.

6. During data transformation, Genesys Info Mart Server identifies whether the newly extracted user data should be associated with any INTERACTION_RESOURCE_FACT (IRF) records. Provided that the **link-msf-userdata** configuration option has been enabled on the applicable DN or Script objects or, starting with release 8.5.003, the equivalent media-specific options (link-msf-userdata-voice or link-msf-userdata-mm) have been enabled on the Genesys Info Mart application object, the Genesys Info Mart Server also identifies whether the newly extracted user data should be associated with any MEDIATION_SEGMENT_FACT (MSF) records.
 - If the interaction data is processed in the same cycle with the user data, Genesys Info Mart creates an association between a user data record and a newly created IRF or MSF record.
 - If the interaction data was processed in a previous cycle (for example, the user data arrived after call completion), Genesys Info Mart updates records in user-data tables that are associated with the IRF or MSF records.

Limitations for User Data in MSFs

When Genesys Info Mart is configured to store user data for interactions that are in mediation, user data is reported for mediation segment facts in exactly the same way as for interaction resource facts, except for the following limitations:

- If more than one change in user data is reported for a multimedia interaction that exited one queue and entered another queue in the same second, Genesys Info Mart cannot distinguish which change relates to which mediation segment fact. In all the MSF records for that interaction, Genesys Info Mart reports the value of the last change that occurred in that second. This value might not be correct for all the queues.
- The PARTY propagation rule is not suitable for certain situations, as described in the [notes about the PARTY propagation rule](#).

Related Information

For additional discussion of topics related to user-data processing in Genesys Info Mart, see [User Data Sources and KVPs](#), [User Data Mapping](#), and [Propagation Rules](#).

Storing User Data

User data can be stored as facts or dimensions. Genesys Info Mart provides you with the flexibility to store the same key as a fact and as a dimension. Genesys Info Mart also provides the flexibility to store KVP values in user-data fact tables as a character data type, a numeric data type, or a date/time data type.

High-Cardinality User Data

High-cardinality user data (data for which there can be a very large number of possible values) is stored as facts. Although there are no absolute limits on the quantity of high-cardinality user data that you can store, be mindful of database storage space and database performance. The following fact extension tables are used for storage of predefined high-cardinality user data:

- IRF_USER_DATA_GEN_1.
- Custom fact extension tables. (Use the sample script that is provided for the IRF_USER_DATA_CUST_1 table to add these tables.)

Each interaction has no more than one value for each user-data type. A Customer ID number is an example of high-cardinality user data.

Low-Cardinality User Data

Low-cardinality user data (data that has a limited range of possible values) is most efficiently stored as dimensions. The following dimension tables are used for storage of predefined low-cardinality user data:

- INTERACTION_DESCRIPTOR.
- Custom dimension tables. (Use the sample script that is provided for the USER_DATA_CUST_DIM_1 table to add these tables.)

There might be multiple values of a specific type for a single interaction. A “new customer” flag, which has only two values — Y and N — in a respective database column is an example of a low-cardinality user data. Service type is another example of data that has a limited number of possible values.

When you add custom tables to the Info Mart database, keep in mind the following limitation: The upper limit for low-cardinality user data is 800 custom dimension tables.

There is no simple rule about where the cutoff is between low-cardinality data and high-cardinality data, in terms of numbers of possible values for a KVP. For any given set of KVPs that will be stored in the same table, the number of combinations is a more important consideration than the number of possible values for each KVP. Genesys recommends that the number of rows in any dimension table not exceed 50,000.

User Data Sources and KVPs

As described in [Processing User Data](#), Genesys Info Mart obtains user-data KVPs from T-Server TEvents, Interaction Server events, or UserEvents. This page provides information you need to consider when you configure your deployment to send and store user data.

Source Attributes in Events

For call-based attached data, KVPs can be reported in the **UserData**, **Reasons**, or **Extensions** attributes of TEvents and Interaction Server events. The source that is specified in the ICON attached-data specification file controls which event attribute ICON will store (for example, `source="userdata"`). The **filterUserData** startup parameter enables you to control whether Genesys Info Mart will extract KVPs from only the **UserData** attribute of TEvents and Interaction Server events (`filterUserData=true`, the default behavior) or whether it will also consider KVPs from the **Reasons** and **Extensions** attributes of TEvents (`filterUserData=false`).

Turning off filtering of user data has performance implications, because it increases the amount of user data that Genesys Info Mart will have to process.

For information about setting the **filterUserData** startup parameter, see [Modifying JVM Startup Parameters](#).

Using UserEvent-Based KVP Data

Some agent desktop applications issue UserEvents to set KVP data after the agent's participation in the voice interaction has completed (that is, after the call is released). Other components or applications, such as Genesys Mobile Services (GMS), also send data in UserEvents to enable integration with Genesys Info Mart for historical reporting on application usage or performance. You can configure an ICON application that captures Voice details to store UserEvent-based KVP data in its IDB. When you configure the ICON application, you use ICON application configuration options — instead of the attached-data specification XML file — to specify which KVPs ICON should store. Then you can configure Genesys Info Mart to extract this data from the IDB `G_CUSTOM_DATA_S` table.

Note the following about Genesys Info Mart processing of UserEvent-based KVP data:

- This functionality is supported for user data in the Voice details data domain only. All UserEvent data that ICON receives from T-Server or SIP Server is supported, even if the user data relates to non-voice interactions — for example, callbacks originating from the web or mobile channel.
- This functionality is supported for logged-in agents and IVR applications that emulate logged-in agents.
- Data from only the `G_CUSTOM_DATA_S` table in IDB is extracted. UserEvent-based KVP data is not extracted from `G_CUSTOM_DATA_P`, nor are custom agent states extracted from the `G_CUSTOM_STATES` table in IDB.
- Applications that issue UserEvents must be sure to set the fields inside the UserEvent properly. Unlike

with call-based attached data, T-Server does not validate the contents of the UserEvents, nor does it propagate their KVP data values among related calls, such as consultations, transfers, or conferences.

- Callback KVP data is available for reporting purposes if Genesys Callback is configured using the GMS component in your environment. For more information, see [Genesys Mobile Services \(GMS\) — for Callback](#), below.

For directly call-related data, such as the after-call work (ACW) UserEvents sent by agent desktop applications, Genesys Info Mart stores the extracted UserEvent data in the same fact and dimension tables as the data that is sourced from call-based attached data. During deployment planning, you decide which Info Mart fact or dimension column should receive data from each UserEvent-based KVP that is of interest for reporting. During deployment configuration, you must configure ICON application options to specify which KVPs should be stored in G_CUSTOM_DATA_S. Also, you must configure Genesys Info Mart mapping between those KVPs and the Info Mart facts and dimensions (see [User Data Mapping Tables](#)).

Important

If you report on Outbound Contact details, you must configure ICON to store UserEvent-based KVP data for the **GSW_CALL_ATTEMPT_GUID** KVP.

For more information about how Genesys Info Mart populates its facts and dimensions from UserEvent-based KVP data and call-based attached data, see the section about populating Genesys Info Mart data in the [Genesys Info Mart User's Guide](#).

Application-Specific Considerations

The remainder of this page provides some guidelines about the KVPs that contact centers typically use for reporting purposes. KVPs are discussed by the Genesys application that attaches them:

- [IVR Applications](#)
- [Universal Routing](#)
- [eServices/Multimedia](#)
- [Outbound Contact Solution](#)
- [Agent Desktop Applications](#)
- [Genesys Mobile Services \(GMS\) — for Callback](#)
- [Genesys Predictive Routing \(GPR\)](#)
- [Chat Server](#)

IVR Applications

You must configure your IVR applications to send the **IAApplication** KVP — and you must configure ICON to store it — even if you do not want to store the **IAApplication** KVP in Info Mart user-data tables

for your reporting purposes. Genesys Info Mart uses the **IAApplication** KVP value internally during transformation.

Other KVPs that your IVR applications attach depend on the following factors:

- The technologies that your IVR application supports
- Whether the applications are self-service-oriented
- Whether the applications work in conjunction with Enterprise Routing Solution

Based on these factors, you might choose to modify your IVR applications so that they attach additional KVPs:

[+] Show additional IVR KVPs

- IPurpose (for more information, see [IPurpose KVP](#))
- IResult
- IResultReason
- ITextToSpeech
- ISpeechRecognition
- CustomerID
- CaseID
- Revenue
- Satisfaction
- CustomerSegment
- ServiceType
- ServiceSubType
- Business Result

You might also decide to attach user-defined KVPs.

Important

If the IVR DNs act as agents by logging into a queue, IVR applications can associate KVP data with a voice interaction by sending UserEvents after the voice interaction has ended (that is, after the call is released). The UserEvent has to be sent within the timeout that is specified in the Genesys Info Mart application configuration (see [user-event-data-timeout](#)). **IPurpose** cannot be sent in UserEvents.

IPurpose KVP

Genesys Info Mart uses the **IPurpose** KVP to determine whether an IVR application represents a self-

service application or only a part of the mediation process:

- For a self-service IVR, Genesys Info Mart creates a separate row in the INTERACTION_RESOURCE_FACT (IRF) table, representing the IVR activity as interaction handling (not as mediation). In other words, the IRF table is populated with facts for this self-service IVR in the same manner as for an agent.
- For a nonself-service IVR, no separate IRF row is created; the IVR activity is represented as mediation (not as interaction handling) as part of another row in the IRF table.

The presence of the **IPurpose** key with the value of 1 (Self Service) forces Genesys Info Mart to treat an IVR as a handling resource. Otherwise, Genesys Info Mart treats the IVR as a mediation resource.

Important

- In an environment in which IVR applications rely on Universal Routing to select a target, you can modify your Universal Routing Server (URS) routing strategies to attach the **IPurpose** KVP on behalf of the self-service IVR application. For more information, see [Routing and Attached Data for Self-Service IVRs](#).
- If you do not modify your self-service IVR applications or routing strategies to attach the **IPurpose** KVP, you will see a high number of customer-abandoned interactions. To mitigate this, configure Genesys Info Mart to treat all IVR applications as self-service.

Do this by setting the default-ivr-to-self-service configuration option to true in the **[gim-transformation]** section; in this way, you can configure Genesys Info Mart to treat all IVR resources as self-service IVRs.

- If a self-service IVR uses a Two-Step or Mute transfer to transfer calls to an agent, configure the IVR application to set the value of the **IPurpose** key to 1 for consultation calls as well. Alternatively, set the T-Server option **consult-user-data** to inherited or joint, so that T-Server will propagate all user data, including the **IPurpose** KVP, from the original call to the consultation call.

In the following deployments, an IVR application can attach the **IPurpose** key with the value of 1 (Self Service) to indicate to the reporting system that the corresponding IVR is a self-service resource:

- IVR In Front of the Switch — An IVR and IVR ports exist as configuration objects in the Configuration Database, and IVR ports are associated with DN objects that are configured under the IVR Server's virtual switch.
- IVR Behind the Switch — An IVR and IVR ports exist as configuration objects in the Configuration Database, and IVR ports are associated with DN objects that are configured under the premise switch.

When it arrives at your IVR port, the call is associated with a corresponding DN object in the Genesys environment. This association clearly indicates to Genesys Info Mart that the call is at an IVR.

The IVR application can set the **IPurpose** key to the Self Service value and attach this data to the original call while the call is at the IVR port. As a result, Genesys Info Mart creates a record in the IRF table to represent the self-service IVR application that is handling the customer interaction.

Universal Routing

The KVPs that Universal Routing attaches depend on:

- The type of routing strategies that you deploy
- Whether routing strategies work in conjunction with IVR applications

You can configure Universal Routing Server (URS) to attach the following strategy name and routing target KVPs automatically, by setting the URS **report_targets** configuration option to `true`:

- RTenant
- RStrategyName
- RTargetTypeSelected
- RTargetObjectSelected
- RTargetAgentSelected
- RTargetPlaceSelected

Important

By default, ICON stores values for these keys in the IDB G_ROUTE_RESULT table.

Your routing strategies can use the MultiAttach object and **FindServiceObjective** function in IRD to attach the following KVPs that represent requested skills, business attributes, and service objectives:

- RRequestedSkillCombination (see [Notes about Skill Combinations](#))
- CustomerSegment
- ServiceType
- ServiceObjective

You might also decide to attach the following KVPs or user-defined KVPs:

- CustomerID
- CaseID
- Revenue
- Satisfaction
- ServiceSubType

Notes about Skill Combinations

If you do not use the IRD MultiAttach object to define the requested skill combination, ensure that you represent the skill combination as a list of comma-separated skill names, each with an optional minimum proficiency. Wordspacing between the list items is not significant.

[+] Show examples

For example, the formats of the following skill combinations are valid:

skill1	skill1=1, skill2
skill1=1	skill1,skill2=1
skill1,skill2	skill1=1, skill2=2
skill1, skill2	skill1=1,skill2=2

A skill combination is not the same as a skill expression. Logical operators and comparitors (such as <, >, |, and &) are not valid.

Routing and Attached Data for Self-Service IVRs

When used in conjunction with self-service IVR applications, your routing strategies might also attach the **IPurpose** KVP on behalf of the IVR application. (The **IPurpose** KVP that is attached by the IVR application takes priority.) The Self Service value (1) for the **IPurpose** key indicates to the reporting system that the corresponding IVR is a self-service resource in the following deployments:

- IVR In Front of the Switch (as defined [here](#)) — In this deployment, a call also involves a routing point, which is configured as a DN of the Routing Point type under the IVR Server's virtual switch.

Either the IVR application or the routing strategy that is associated with the routing point (or both) can set the **IPurpose** key to the Self Service value. As a result, Genesys Info Mart creates a record in the IRF table to represent the self-service IVR.

- IVR Behind the Switch (as defined [here](#)) — In this deployment, a call might involve a routing point, which is configured as a DN object of the Routing Point type under the premise switch. The **IPurpose** key with the Self Service value is set as follows, in any combination:
 - The routing strategy that is associated with the routing point at the premise switch attaches the KVP before the strategy routes the call to the IVR DN.
 - The IVR application attaches the KVP while the call is at the IVR port.

As a result, Genesys Info Mart creates a record in the IRF table to represent the self-service IVR.

eServices/Multimedia-Specific Attached Data

Events from the eServices/Multimedia solution include a number of attributes that are specific to multimedia interactions.

If they are attached to an interaction, ICON stores these attributes in the GM_F_USERDATA and GM_L_USERDATA tables in IDB. By default, ICON stores the KVPs and event attributes that Genesys Info Mart requires, even if you do not explicitly specify them in the ICON attached-data specification file. Genesys Info Mart does not process custom KVPs that you configure ICON to store in the GM_F_USERDATA or GM_L_USERDATA tables.

The following table describes important multimedia-specific KVPs that Genesys Info Mart processes and that ICON stores by default.

Multimedia-Specific Interaction Attributes

Attribute	Description
Subject	The subject of the multimedia interaction.
FromAddress	The “from” address of the multimedia interaction.
InteractionSubType	The interaction subtype of the multimedia interaction. This subtype is a component of the value for the INTERACTION_TYPE_KEY. The INTERACTION_TYPE dimension includes both interaction type and subtype.
StopReason	eServices/Multimedia allows a reason name to be provided for each action. ICON records this reason name for the action that stops the interaction, identifying the reason the interaction was stopped. Genesys Info Mart uses this stop reason for internal purposes — for example, when setting the TECHNICAL_DESCRIPTOR_KEY in the IRF record.

For user data originating from EventCustomReporting events — for example, for Focus Time reporting — you must configure ICON to store the required attributes in the G_CUSTOM_DATA_S table in IDB, as described in [Configuring UserEvent Data Storage](#). For full details about configuring ICON to support Focus Time reporting, see [Processing Data from EventCustomReporting](#).

For information about detailed chat session reporting, see [Chat Server](#), below.

Outbound Contact Solution

Outbound Contact Server (OCS) automatically attaches the **GSW_CALL_ATTEMPT_GUID** call attempt ID for progressive and predictive dialing modes. For preview dialing mode, OCS provides the **GSW_CALL_ATTEMPT_GUID** KVP in the UserEvent with record information.

You must ensure that your desktop application attaches the **GSW_CALL_ATTEMPT_GUID** KVP. Genesys Info Mart uses it for internal processing. Downstream reporting applications can also use it to integrate contact attempt details with call details.

In Outbound-VoIP environments, when Outbound Contact campaigns are running in an ASM (that is, Active Switching Matrix) dialing mode, OCS automatically attaches the **GSW_CALL_TYPE=“ENGAGING”** KVP to identify an engaging call. An ASM dialing mode engages an agent, establishes a connection with the customer, and then transfers the agent to the customer. That is, the agent waits to be connected to the customer. The time that the agent spends waiting to be connected to the customer is the *engaged duration*.

Starting with release 8.5.004, Genesys Info Mart processes the call as an *engaging* call when this KVP is present, and records the amount of time that the agent was engaged and waiting for the call to connect to a customer. The time that the agent was engaged and waiting is excluded from regular talk time.

To capture the engaged duration associated with an ASM dialing mode, you must set the populate-irf-asm-engage-duration configuration option to true.

Agent Desktop Applications

Agent desktop applications might attach various KVPs, depending on your configuration of business attributes in the Configuration Layer.

[+] Show sample KVPs

For example, desktop applications can attach the following KVPs if they have not already been attached by some other application (such as IVR applications or Enterprise Routing Solution):

- CaseID
- CustomerID
- Revenue
- Satisfaction
- Business Result

You might also decide to attach some of the user-defined KVPs.

Tip

Agent desktop applications can associate KVP data with a voice interaction by sending UserEvents after the voice interaction has ended (that is, after the call is released). The UserEvent has to be sent within the timeout that is specified in the Genesys Info Mart application configuration (see user-event-data-timeout).

If you want to track the reasons for agents being in NotReady states, ensure that relevant KVPs are available to your agents through their desktop applications.

OCS automatically attaches the **GSW_CALL_ATTEMPT_GUID** call attempt ID for progressive and predictive dialing modes. For preview dialing mode, you must ensure that your desktop application attaches the **GSW_CALL_ATTEMPT_GUID** KVP to the actual interaction. The **GSW_CALL_ATTEMPT_GUID** KVP is provided by OCS in the UserEvent with record information. For voice interactions, the KVP must be attached before the voice call is released.

For eServices/Multimedia, ICON automatically stores information about the reason that processing of an interaction stopped. If you want to track the reasons for agents stopping multimedia interactions, ensure that the **Stop Reason** key with relevant values is available to your agents through their desktop applications. ICON also stores information about the party that issued the request to stop processing an interaction, when the party is known.

Genesys Mobile Services (GMS) — for Callback

Starting with release 8.5.005, Genesys Info Mart supports reporting on Genesys Callback activity, provided that GMS has been configured to send the required user data and that ICON (release 8.1.506.07 or higher) has been configured to store it. For full information about configuring Genesys Callback services, see the [Callback Solution Guide](#).

Genesys Info Mart stores callback-related data in CALLBACK_* tables in the Info Mart database. The user-data mapping is predefined and cannot be customized. No additional configuration or mapping is required. For information about Genesys Info Mart callback-related tables, see the *Genesys Info Mart Physical Data Model* for your RDBMS. For information about how callbacks are represented in Info Mart interaction data, see *Special handling for Genesys Callback* in the *User's Guide*, on the page about populating interaction resource data.

At a minimum, Genesys Info Mart requires GMS to send the following KVPs in every callback-related event. Genesys Info Mart will not insert a row for a callback event in the CALLBACK_FACT table if any of the following KVPs are missing.

- _CB_SERVICE_ID
- _CB_T_SERVICE_START
- _CB_D_CALLBACK_OFFER
- _CB_N_CALLBACK_OFFERED
- _CB_T_CALLBACK_OFFERED

For meaningful callback reporting, Genesys Info Mart requires GMS to send a number of additional KVPs, as applicable for the event. The following table, which is reproduced for your convenience from the *Set up Historical Reporting* page in the *Callback Solution Guide*, describes the KVPs that Genesys Info Mart requires GMS to send in UserEvents, to enable meaningful Callback reporting. An asterisk indicates that the KVP must be sent twice -- as call-based attached data in a TEvent and as UserEvent-based user data. Release numbers mentioned in the table (for example, indicating when a particular KVP was introduced) refer to the GMS release.

Important

To ensure that ICON stores the KVP data required for Genesys Info Mart to report on Callback, set the **store-event-data** option to all on the ICON application object (default is none).

Four of the KVPs — **_CB_SERVICE_ID**, **_CB_T_SERVICE_START**, **_CB_T_CALLBACK_ACCEPTED** and **_CB_T_CUSTOMER_CONNECTED** — must also be sent as call-based attached data. The sample attached-data specification file in the Genesys Info Mart IP includes these four KVPs by default.

KVP	Description	Info Mart Database Target
VQ_CFG_TYPE	The configuration type of the virtual queue used to find the target agent. Genesys Info Mart uses this value in combination to identify the RESOURCE_KEY to use.	CALLBACK_FACT.RESOURCE_KEY
VQ_CFG_TYPE_ID	The configuration type ID of the virtual queue used to find the target agent. Genesys Info Mart uses this value in combination to	CALLBACK_FACT.RESOURCE_KEY
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
	identify the RESOURCE_KEY to use.	
_CB_CUSTOMER_ANI Introduced: 8.5.111.04	ANI of the customer for in-queue scenarios. This value can match _CB_CUSTOMER_PHONE_NUMBER if the same number is confirmed or entered. Could also be empty if the ANI is not detected.	CALLBACK_FACT.CUSTOMER_ANI
_CB_DIAL_1_RESULT Introduced: 8.5.200.07	The result of the first callback dialing attempt. One of the following values: <ul style="list-style-type: none"> • CREATE_CALL_ERROR • BUSY • NO_ANSWER • ANSWERING_MACHINE • ERROR_TONE • FAX • PERSON • CONNECTED • FAILED_TO_ESTABLISH_CUSTOMER_ORIGINATED_MEDIA • PUSH_DELIVERY_CONFIRMED • PUSH_SEND_ERROR • PUSH_DELIVERY_NOT_CONFIRMED • USERORIGINATED_CONNECTED <p>Notes: FAILED_TO_ESTABLISH_CUSTOMER_ORIGINATED_MEDIA is a result that must be reported by the user application; otherwise, there is no CTI data that will enable Genesys Callback to identify this result.</p>	CALLBACK_DIAL_RESULTS.DIAL_1_RESULT (referenced through CALLBACK_FACT.CALLBACK_DIAL_RESULTS_KEY)
_CB_DIAL_2_RESULT Introduced: 8.5.200.07	The result of the second callback dialing attempt. See _CB_DIAL_1_RESULT for possible values.	CALLBACK_DIAL_RESULTS.DIAL_2_RESULT (referenced through CALLBACK_FACT.CALLBACK_DIAL_RESULTS_KEY)
_CB_DIAL_3_RESULT Introduced: 8.5.200.07	The result of the third callback dialing attempt. See _CB_DIAL_1_RESULT for possible values.	CALLBACK_DIAL_RESULTS.DIAL_3_RESULT (referenced through CALLBACK_FACT.CALLBACK_DIAL_RESULTS_KEY)
_CB_DIAL_4_RESULT Introduced: 8.5.200.07	The result of the fourth callback dialing attempt. See _CB_DIAL_1_RESULT for possible values.	CALLBACK_DIAL_RESULTS.DIAL_4_RESULT (referenced through CALLBACK_FACT.CALLBACK_DIAL_RESULTS_KEY)
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
<p>_CB_DIAL_5_RESULT</p> <p>Introduced: 8.5.200.07</p>	<p>The result of the fifth callback dialing attempt. See _CB_DIAL_1_RESULT for possible values.</p>	<p>CALLBACK_DIAL_RESULTS.DIAL_5_RESULT (referenced through CALLBACK_FACT.CALLBACK_DIAL_RESULTS_KEY)</p>
<p>_CB_DIM_CALLBACK_OFFER_TYPE</p>	<p>The type of callback offer that was presented to the customer. For example, after business hours, SCHEDULED is the only available option; during business hours, business rules might allow only the WAIT_FOR_AGENT option or a combination of SCHEDULED and WAIT_FOR_AGENT. One of the following values:</p> <ul style="list-style-type: none"> • SCHEDULED • WAIT_FOR_AGENT • COMBINED_SCHEDULED_AND_WAIT_FOR_AGENT • IMMEDIATE 	<p>CALLBACK_DIM_1.CALLBACK_OFFER_TYPE (referenced through CALLBACK_FACT.CALLBACK_DIM_1_KEY)</p>
<p>_CB_DIM_CALL_DIRECTION</p>	<p>The direction of the final callback interaction. One of the following values:</p> <ul style="list-style-type: none"> • CUSTOMER_TERMINATED - Outbound Callback scenarios in which the contact center is dialing out to the customer's number. • CUSTOMER_ORIGINATED - Inbound Callback scenarios in which the contact center notifies the customer-facing application that it is time for the callback interaction, after which the application creates the interaction (such as a call or chat), obtaining the phone number if necessary. In this scenario, a customer call comes into the contact center as a regular inbound call, but it is recognized as the callback interaction. 	<p>CALLBACK_DIM_2.CALL_DIRECTION (referenced through CALLBACK_FACT.CALLBACK_DIM_2_KEY)</p>
<p>_CB_DIM_CHANNEL</p>	<p>The interaction channel from which the callback originated. One of the following values:</p> <ul style="list-style-type: none"> • IVR 	<p>CALLBACK_DIM_1.CHANNEL (referenced through CALLBACK_FACT.CALLBACK_DIM_1_KEY)</p>
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
	<ul style="list-style-type: none"> • WEB • MOBILE 	
_CB_DIM_CONNECT_ORDER	<p>The order in which the final callback interaction was connected. One of the following values:</p> <ul style="list-style-type: none"> • CUSTOMER_FIRST • AGENT_FIRST_PREVIEW • AGENT_FIRST_NO_PREVIEW 	CALLBACK_DIM_1.CONNECT_ORDER (referenced through CALLBACK_FACT.CALLBACK_DIM_1_KEY)
_CB_DIM_DIAL_DIALOG_RESULT	<p>The result of the final dialog for the callback. One of the following values:</p> <ul style="list-style-type: none"> • RIGHT_PERSON • RESCHEDULED • CANCELLED • TRANSFERRED_TO_RP 	CALLBACK_DIM_2.DIAL_DIALOG_RESULT (referenced through CALLBACK_FACT.CALLBACK_DIM_2_KEY)
_CB_DIM_FINAL_DIAL_RESULT	<p>The result of the final callback dialing attempt. One of the following values:</p> <ul style="list-style-type: none"> • CREATE_CALL_ERROR • BUSY • NO_ANSWER • ANSWERING_MACHINE • ERROR_TONE • FAX • PERSON • CANCEL • CONNECTED • FAILED_TO_ESTABLISH_CUSTOMER_ORIGINATED_MEDIA • PUSH_DELIVERY_CONFIRMED • PUSH_SEND_ERROR • PUSH_DELIVERY_NOT_CONFIRMED 	CALLBACK_DIM_2.FINAL_DIAL_RESULT (referenced through CALLBACK_FACT.CALLBACK_DIM_2_KEY)
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
	<ul style="list-style-type: none"> USERORIGINATED_CONNECTED <p>Notes:</p> <ol style="list-style-type: none"> FAILED_TO_ESTABLISH_CUSTOMER_ORIGINATED_MEDIA is a result that must be reported by the user application; otherwise, there is no CTI data that will enable Genesys Callback to identify this result. CANCEL is set when the on_dial plugin returned action=CANCEL. 	
_CB_DIM_FINAL_TARGET	The routing target that was used to find the agent.	CALLBACK_DIM_3.FINAL_TARGET (referenced through CALLBACK_FACT.CALLBACK_DIM_3_KEY)
_CB_DIM_OFFER_TIMING	<p>Specifies whether the callback offer was made during operational (business) or non-operational hours. One of the following values:</p> <ul style="list-style-type: none"> ON-HOURS OFF-HOURS 	CALLBACK_DIM_2.OFFER_TIMING (referenced through CALLBACK_FACT.CALLBACK_DIM_2_KEY)
_CB_DIM_TYPE	<p>The type of callback the customer requested. One of the following values:</p> <ul style="list-style-type: none"> IMMEDIATE - The interaction is created right away while the customer is waiting for the agent (in an online chat session or waiting for a voice call). WAIT_FOR_AGENT - The interaction is delayed until the agent is about to become available or actually becomes available (as in an agent first scenario). SCHEDULED - The time for the callback interaction is negotiated with the customer. 	CALLBACK_DIM_1.CALLBACK_TYPE (referenced through CALLBACK_FACT.CALLBACK_DIM_1_KEY)
_CB_DIM_VQ	The virtual queue used to find the target agent. Genesys Info Mart uses this value in combination to identify the RESOURCE_KEY to use.	CALLBACK_FACT.RESOURCE_KEY
_CB_DIM_VQ_DBID	The DBID of the virtual queue used to find the target agent.	CALLBACK_FACT.RESOURCE_KEY
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
	Genesys Info Mart uses this value in combination to identify the RESOURCE_KEY to use.	
_CB_DISPOSITION	<p>Callback state using the format <state>.<sub state> where:</p> <ul style="list-style-type: none"> <state> can be set to: SCHEDULED, QUEUED, ROUTING, PROCESSING, COMPLETED. <sub state> can be set: REDIAL_LIMIT_REACHED, CANCELLED, AGENT, ABANDONED_IN_QUEUE, REJECTED, PUSH_SEND, PUSH_DELIVERY_CONFIRMED, PUSH_SEND_ERROR, FAILED, CONNECTED, TRANSFERRED_TO_RP. 	CALLBACK_DIM_3.DISPOSITION (referenced through CALLBACK_FACT.CALLBACK_DIM_3_KEY)
_CB_D_CALLBACK_OFFER	<p>The duration of the callback offer, in seconds.</p> <p>Note: This KVP is mandatory for Genesys Info Mart reporting.</p>	CALLBACK_FACT.CALLBACK_OFFER_TIME
_CB_D_CUSTOMER_CONNECTED_WAITING_FOR_AGENT	The amount of time, in seconds, the customer was waiting to be connected to an agent after the callback interaction was established.	CALLBACK_FACT.CONN_WAITING_AGENT_TIME
_CB_D_CUSTOMER_WAITED_BEFORE_OFFER	<p>The amount of time, in seconds, the customer waited in the queue before a callback was offered.</p> <p>Introduced: 8.5.106.14</p>	CALLBACK_FACT.WAITED_BEFORE_OFFER_TIME
_CB_D_ESTABLISH_MEDIA_I_XN	The amount of time, in seconds, it took to establish the callback interaction, such as an outbound call.	CALLBACK_FACT.ESTABLISH_MEDIA_I_XN_TIME
_CB_D_WAITING_FOR_AGENT_OFFLINE	The amount of time, in seconds, the customer was waiting offline for an agent to become available.	CALLBACK_FACT.WAIT_AGENT_OFFLINE_TIME
_CB_EWT_THRESHOLD_WHEN_OFFERED	<p>Value of the EWT threshold used to decide whether the callback offer should be made or not. Pass this value as an argument of the application that is responsible for making the callback offer.</p> <p>Introduced: 8.5.200.07</p>	CALLBACK_FACT.EWT_THRESHOLD_WHEN_OFFERED
_CB_EWT_WHEN_CALLBACK_WAS_OFFERED	The value of EWT, in seconds, at the time the callback was offered.	CALLBACK_FACT.EWT_WHEN_OFFERED
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
_CB_EWT_WHEN_READY_TO_START_LAST_MEDIA_I_XN Introduced: 8.5.200.07	Estimated Wait Time in seconds when the last dial attempt was made or the last push notification sent.	CALLBACK_FACT.EWT_WHEN_LAST_DIAL
_CB_EWT_WHEN_READY_TO_START_MEDIA_I_XN	The value of Expected Wait Time (EWT), in seconds, for the service request when the contact center was ready to start the first callback interaction, such as an outbound dialing attempt.	CALLBACK_FACT.EWT_READY_TO_START_I_XN
_CB_FINAL_RECORD	Indicates whether this is a final record about this callback service: 0 = No, 1 = Yes.	CALLBACK_FACT.FINAL_RECORD
_CB_FIRST_OUT_I_XN_ID Introduced: 8.5.200.07	The call ID of the first outbound call that the callback service created.	CALLBACK_FACT.FIRST_OUT_I_XN_ID
_CB_I_XN_START_IGNOREING_AVAILABILITY Introduced: 8.5.200.07	For premise callback, _CB_I_XN_START_IGNOREING_AVAILABILITY will always be 0.	CALLBACK_DIM_4.DIAL_IGNOREING_AVAILABILITY
_CB_LAST_OUT_I_XN_ID Introduced: 8.5.200.07	The call ID of the last outbound call that the callback service created.	CALLBACK_FACT.LAST_OUT_I_XN_ID
_CB_N_ABANDONED_DURING_CALLBACK_OFFER Introduced: 8.5.111.04	Indicates whether the caller accepted the call without explicitly accepting or rejecting the callback offer: 0 = No, 1 = Yes.	CALLBACK_DIM_4.ABANDONED_DURING_CB_OFFER (referenced through CALLBACK_FACT.CALLBACK_DIM_4_KEY)
_CB_N_AGENT_ADDED_TO_I_XN	Indicates whether the agent was successfully added to the callback interaction: 0 = No, 1 = Yes.	CALLBACK_FACT.AGENT_ADDED_TO_I_XN
_CB_N_CALLBACK_ACCEPTED	Indicates whether a callback offer was accepted: 0 = No, 1 = Yes.	CALLBACK_FACT.CALLBACK_ACCEPTED
_CB_N_CALLBACK_MEDIA_ATTEMPTS	The total number of callback attempts or notifications, both successful and unsuccessful.	CALLBACK_FACT.CALLBACK_ATTEMPTS
_CB_N_CALLBACK_OFFERED	Indicates whether callback was offered, at least once, during the session: 0 = No, 1 = Yes. Note: This KVP is mandatory for Genesys Info Mart reporting.	CALLBACK_FACT.CALLBACK_OFFERED
_CB_N_CUSTOMER_ABANDONED_WHILE_WAITING_FOR_AGENT	Indicates whether the customer abandoned the callback while waiting for an agent to be connected to an agent: 0 = No, 1 = Yes.	CALLBACK_FACT.ABANDONED_WAITING
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
_CB_N_I_XN_REQ_AGENT	Indicates whether the interaction required agent assistance: 0 = No, 1 = Yes.	CALLBACK_FACT.I_XN_REQ_AGENT
_CB_N_TIMEOUT_WHILE_WAITING_FOR_AGENT	Indicates whether the customer was disconnected because the timeout for waiting for an agent was reached: 0 = No, 1 = Yes.	CALLBACK_FACT.TIMEOUT_WAITING
_CB_N_TRANSFER_TO_AGENT_FAILED	Number of times the callback interaction failed to transfer to the agent.	CALLBACK_FACT.XFER_TO_AGENT_FAILED
_CB_OFFER_EWT_INBOUND_VQ Introduced: 8.5.111.04	Estimated Wait Time for the queue where rejected calls and not offered callbacks are being placed. This value is identical to _CB_EWT_WHEN_CALLBACK_WAS_OFFERED if the same Virtual Queue is used to place accepted callbacks.	CALLBACK_FACT.EWT_WHEN_REJECTED
_CB_ORIGINATION_I_XN_ID Introduced: 8.5.200.07	The ID of the inbound call where the callback was originally offered and accepted. You must pass the _cb_origination_ixn_id parameter in your Start Callback query when creating a callback request. If you do not pass the _cb_origination_ixn_id parameter, the value of _CB_ORIGINATION_I_XN_ID will be undefined. For chat scenarios, this ID should be the chat interaction ID.	CALLBACK_FACT.ORIGINATION_I_XN_ID
_CB_ORSESSION_ID Introduced: 8.5.114.09	The Orchestration Server (ORS) session ID used to manage the callback. If multiple sessions were used (for example, because an ORS session terminated unexpectedly during the callback), the last session ID is reported.	CALLBACK_FACT.ORS_SESSION_ID
_CB_POS_WHEN_CALLBACK_WAS_OFFERED	The customer position in the queue when callback was offered.	CALLBACK_FACT.POS_WHEN_OFFERED
_CB_POS_WHEN_READY_TO_START_MEDIA_I_XN Introduced: 8.5.200.07	LAST_MEDIA_I_XN when the last dial attempt was made or the last push notification sent.	CALLBACK_FACT.POS_WHEN_LAST_DIAL
_CB_POS_WHEN_READY_TO_START_MEDIA_I_XN	The customer position in the queue when the contact center MEDIA_I_XN to start the first callback interaction, such as an outbound dialing attempt.	CALLBACK_FACT.POS_READY_TO_START_I_XN
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
_CB_PRIORITY_AT_THE_END_OF_ONLINE_WAIT Introduced: 8.5.200.07	Priority of the virtual interaction when the customer was connected to the agent. If the customer abandoned while waiting in queue, then this value is the priority of the call when the customer disconnected.	CALLBACK_FACT.PRIORITY_WHEN_A_CONNECTED
_CB_PRIORITY_WHEN_CALLBACK_ACCEPTED Introduced: 8.5.200.07	Priority of the interaction (real or virtual) when the callback offer was accepted.	CALLBACK_FACT.PRIORITY_WHEN_CB_ACCEPTED
_CB_PRIORITY_WHEN_CUSTOMER_CONNECTED Introduced: 8.5.200.07	Priority of the virtual interaction when the customer was connected.	CALLBACK_FACT.PRIORITY_WHEN_C_CONNECTED
_CB_SERVICE_ID*	The ID of the callback service request. Depending on the scenario, the value equals the ID of the GMS service instance or ID of the ORS session. Note: This KVP is mandatory for Genesys Info Mart reporting.	CALLBACK_FACT.SERVICE_ID
_CB_TENANT_DBID	The Tenant DBID.	CALLBACK_FACT.TENANT_KEY
_CB_T_CALLBACK_ACCEPTED*	The UTC timestamp when the callback offer was accepted.	CALLBACK_FACT.CALLBACK_ACCEPTED_TS
_CB_T_CALLBACK_OFFERED	The UTC timestamp when the callback was offered. Note: This KVP is mandatory for Genesys Info Mart reporting.	CALLBACK_FACT.CALLBACK_OFFERED_TS
_CB_T_CUSTOMER_CONNECTED*	The UTC timestamp when the customer was reconnected to the contact center and started waiting for an agent to be connected.	CALLBACK_FACT.CUSTOMER_CONNECTED_TS
_CB_T_DIAL_1 Introduced: 8.5.200.07	UTC Timestamp of the first dialing attempt.	CALLBACK_FACT.DIAL_1_TS
_CB_T_DIAL_2 Introduced: 8.5.200.07	UTC Timestamp of the second dialing attempt.	CALLBACK_FACT.DIAL_2_TS
_CB_T_DIAL_3 Introduced: 8.5.200.07	UTC Timestamp of the third dialing attempt.	CALLBACK_FACT.DIAL_3_TS
_CB_T_DIAL_4 Introduced: 8.5.200.07	UTC Timestamp of the fourth dialing attempt.	CALLBACK_FACT.DIAL_4_TS
_CB_T_DIAL_5 Introduced: 8.5.200.07	UTC Timestamp of the fifth dialing attempt.	CALLBACK_FACT.DIAL_5_TS
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
Introduced: 8.5.200.07		
_CB_T_READY_TO_START_MEDIA_I_XN	The UTC timestamp when the contact center was ready to start the callback interaction. The value matches the time of either an outbound dialing attempt or a push notification prompting the customer to start a call or chat session. Note: Set this value only once, before the first dial attempt.	CALLBACK_FACT.READY_START_MEDIA_I_XN_TS
_CB_T_SERVICE_END Introduced: 8.5.111.04	UTC timestamp for when service was completed or terminated.	CALLBACK_FACT.SERVICE_END_TS
_CB_T_SERVICE_START*	The UTC timestamp when the callback service started. This value represents either the time of the callback request or the time that the callback offer was played, depending on deployment. Note: This KVP is mandatory for Genesys Info Mart reporting.	CALLBACK_FACT.SERVICE_START_TS, CALLBACK_FACT.START_DATE_TIME_KEY
KVP	Description	Info Mart Database Target

Genesys Predictive Routing (GPR)

Starting with release 8.5.009, Genesys Info Mart supports reporting on GPR usage and performance, provided that GPR has been configured to send the required user data and that ICON has been configured to store it. For full information about configuring GPR for historical reporting, see [Deploying: Integrating with Genesys Reporting](#) in the Genesys Predictive Routing (formerly Predictive Matching) *Deployment and Operations Guide*.

Genesys Info Mart stores GPR-related data in GPM_* tables in the Info Mart database. The user-data mapping is predefined and cannot be customized. No additional configuration or mapping is required. For more information about the GPR-related tables, see the [Genesys Info Mart Physical Data Model](#) for your RDBMS.

The following table describes the KVPs that Genesys Info Mart requires GPR to send in UserEvents. The information is reproduced for your convenience from the [Integrating with Genesys Reporting](#) page cited above. Release numbers mentioned in the table (for example, indicating when a particular KVP was introduced) refer to the GPR release. The *gpm* and *GPM_* prefixes shown in the table are correct.

KVP	Description	KVP Type	Info Mart Database Target
ADDED_TS	<p>UTC timestamp, indicating the date and time when the record was added as inherited from the T-Server TEvent.</p> <p>Default value: no default value</p> <p>Valid values: any valid UTC timestamp</p> <p>Note: This KVP is mandatory for Genesys Info Mart reporting.</p>	INT	GPM_FACT.ADDED_TS
CALLID	<p>Value of AttributeCallUUID for the interaction.</p> <p>Default value: a valid CALLID</p> <p>Note: This KVP is mandatory for Genesys Info Mart reporting.</p>	CHAR(32)	GPM_FACT.MEDIA_SERVER_IXN_GUID
<p>CustomerID</p> <p>Introduced: 9.0.016.00</p>	<p>The GPRInCleanup subroutine takes this KVP from user data attached to the interaction, and passes it to the Genesys Historical Reporting solution in the EventUserEvent event. GPR does not generate this KVP.</p>	<p>Postgres: varchar(255);</p> <p>Oracle: VARCHAR2(255 CHAR);</p> <p>Microsoft SQL: varchar(255)/nvarchar(255)</p>	IRF_USER_DATA_GEN_1.CUSTOMER_ID
<p>gpmAdjustedAgentScore</p> <p>Introduced: 9.0.015.00</p>	<p>The final agent score used to route the associated interaction to the selected agent. This score is calculated from the gpmAgentScore combined with any agent occupancy factor.</p> <p>Default value: 0</p> <p>Valid values: any non-negative float value</p>	FLOAT	GPM_FACT.ADJUSTED_SCORE
gpmAgentDBID	Optional. The DBID of the agent to whom the	INT	RESOURCE_.RESOURCE_CFG_DBID (referenced through
KVP	Description	KVP Type	Info Mart Database Target

KVP	Description	KVP Type	Info Mart Database Target
	interaction was routed. Default value: no default value		GPM_FACT.RESOURCE_KEY)
gpmAgentRank	The rank of the agents in the target group, based on agent scores sorted in descending order. Default value: 0 Valid values: 0, any positive integer	SHORT	GPM_FACT.AGENT_RANK
gpmAgentScore	The score of the agent to whom the interaction was routed. Default value: 0 Valid values: any non-negative float value	FLOAT	GPM_FACT.AGENT_SCORE
gpmCustomerFound	Indicates whether features from the customer record specified in the routing strategy were successfully retrieved from the Customer Profile schema uploaded to the AI Core Services and used to calculate agent scores. Default value: unknown Valid values: 0 (= No), 1 (= Yes), unknown	Enum	GPM_RESULT.CUSTOMER_FOUND (referenced through GPM_FACT.GPM_RESULT_KEY)
gpmDefaultAgentScore Introduced: 9.0.015.00	This default agent score for the associated interaction. The value is the outcome, for this interaction, of the setting specified in the default-agent-score configuration option. Default value: 0 Valid values: any non-negative float value	FLOAT	GPM_FACT.DEFAULT_SCORE
gpmDefaultScoredAgents Introduced: 9.0.015.00	The number of agents assigned the default score for the associated interaction. Default value: 0 Valid values: 0, any positive integer	INT	GPM_FACT.DEFAULT_SCORES_COUNT
KVP	Description	KVP Type	Info Mart Database Target

KVP	Description	KVP Type	Info Mart Database Target
gpmDefaultScoreUsed Introduced: 9.0.015.00	<ul style="list-style-type: none"> 0 - The agent score for the associated interaction is taken from the scoring response returned by GPR. 1 - The agent score for the associated interaction is calculated based on the value set for the default-agent-score configuration option. <p>Default value: 0 Valid values: 0, 1</p>	INT	GPM_FACT.DEFAULT_SCORE_USED
gpmFinalScoreThreshold Introduced: 9.0.015.00	The final threshold value used to route the associated interaction to the selected agent. The routing strategy calculates the value from the configured score threshold combined with values resulting from any agent holdout options . Default value: 0 Valid values: any integer	INT	GPM_FACT.FINAL_SCORE_THRESHOLD
gpmGlobalScore	The mean score calculated for an interaction using the Global Model. Default value: 0 Valid values: any non-negative float value	FLOAT	GPM_FACT.GLOBAL_SCORE
gpmGlobalScoreCount Introduced: 9.0.015.00	Describes the number of agent scores returned for an interaction using a GLOBAL model. Default value: 0 Valid values: 0, any positive integer	INT	GPM_FACT.GLOBAL_SCORES_COUNT
gpmInitialScoreThreshold Introduced: 9.0.015.00	The initial threshold value used for the interaction, taken from	INT	GPM_FACT.INITIAL_SCORE_THRESHOLD
KVP	Description	KVP Type	Info Mart Database Target

KVP	Description	KVP Type	Info Mart Database Target
	the value set in the score-base-threshold configuration option. Default value: 0 Valid values: any integer		
gpmMaxScore	The score of the best-matching agent in the target group. Default value: 0 Valid values: any non-negative float value	FLOAT	GPM_FACT.MAX_SCORE
gpmMedianScore	The median score for the target group of agents to which the agent who received the interaction belongs. Default value: 0 Valid values: any non-negative float value	FLOAT	GPM_FACT.MEDIAN_SCORE
gpmMessage	The message that displays when the Predictive Routing result reported in the gpmResult KVP is an error. Default value: no default value	CHAR(255)	GPM_FACT.MESSAGE
gpmMinScore	The score of the worst-matching agent in the target group. Default value: 0 Valid values: any non-negative float value	FLOAT	GPM_FACT.MIN_SCORE
gpmMode Modified: 9.0.015.00 - The value of f was added.	The mode in which Predictive Routing is operating, as specified by the pr-r-mode configuration option. For information about turning predictive routing off, see Turn Off Predictive Routing . Default value: unknown Valid values: prod, off, dry-run, ab-test-time-sliced, unknown	Enum	GPM_RESULT.GPM_MODE (referenced through GPM_FACT.GPM_RESULT_KEY)
gpmModel	The name of the Model	CHAR(255)	GPM_MODEL.MODEL
KVP	Description	KVP Type	Info Mart Database Target

KVP	Description	KVP Type	Info Mart Database Target
	used to calculate agent scores for the interaction. Default value: unknown Valid values: the name of any Model in your environment		(referenced through GPM_FACT.GPM_MODEL_KEY)
gpmModelId	The UUID of the Model used to calculate agent scores for the interaction. Default value: unknown Valid values: the ID for any Model in your environment	CHAR(24)	GPM_MODEL.MODEL_ID (referenced through GPM_FACT.GPM_MODEL_KEY)
gpmPredictor	The name of the Predictor in the AI Core Services (AICS). If an error is encountered, the section name specified in the Predictive Route DataCfg Transaction List object is used as the Predictor name. Default value: unknown Valid values: the name of any Predictor in your environment	CHAR(255)	GPM_PREDICTOR.PREDICTOR (referenced through GPM_FACT.GPM_PREDICTOR_KEY)
gpmPredictorId	The UUID of the Predictor used for scoring. Default value: unknown Valid values: the ID for any Predictor in your environment	CHAR(24)	GPM_PREDICTOR.PREDICTOR_ID (referenced through GPM_FACT.GPM_PREDICTOR_KEY)
gpmPredictorType	Reserved for future use. Default value: unknown Valid values: Sales, Service Introduced: 9.0.015.00	CHAR[32]	GPM_DIM1.PREDICTOR_TYPE
gpmPriorityIncrement	If the value is 0, the priority of the interaction did not increase above the configured base_priority Introduced: 9.0.016.00	N/A	N/A
KVP	Description	KVP Type	Info Mart Database Target

KVP	Description	KVP Type	Info Mart Database Target
	<p>value. If the value is 1, the priority of the interaction did increase above the configured base_priority and, as a result, the selected agent was not verified for the expected threshold score.</p> <p>Note: This KVP is not currently stored as a separate column in the Genesys Info Mart database. It can be accessed from the score_log file using the GPR API.</p> <p>Default value: 0 Valid values: 0,1</p>		
<p>gpmResult</p> <p>Modified: 9.0.015.00 - The values 12, 13, 14, and 15 were added.</p>	<p>The result of Predictive Routing processing. If there is an error, the gpmMessage KVP contains the error message.</p> <ul style="list-style-type: none"> • 1 - Ok • 2 - Authentication to scoring engine failed • 3 - Scoring request failed • 4 - Agent list is empty • 5 - URS overload, interaction skipped • 6 - Predictor not found • 7 - Failed to build scoring request • 8 - SetIdealAgent or SetReadyCondition execution error • 9 - Interaction log not found in global map 	<p>Enum</p>	<p>GPM_RESULT.GPM_RESULT (referenced through GPM_FACT.GPM_RESULT_KEY)</p>
KVP	Description	KVP Type	Info Mart Database Target

KVP	Description	KVP Type	Info Mart Database Target
	<ul style="list-style-type: none"> 10 - Unknown error 11 - Channel is not supported 12 - Reserved for future use 13 - Call Abandoned 14 - Call Routing Failed 15 - Predictive Routing is turned off or not used for this interaction <p>Default value: no default value Valid values: 1-15</p> <p>Note: This KVP is mandatory for Genesys Info Mart reporting.</p>		
gpmRouteAttemptId	<p>The sequence number of the attempt to route an interaction using Predictive Routing. The value of this KVP is incremented each time the ActivatePredictiveRouting subroutine is called by the strategy, starting from 1.</p> <p>Default value: 0 Valid values: integers starting from 1</p>	INT	GPM_FACT.ROUTE_ATTEMPT_ID
gpmRoutingMethod	<p>Reserved for future use.</p> <p>Default value: unknown</p> <p>Introduced: 9.0.015.00</p>	CHAR[32]	GPM_DIM1.ROUTING_CRITERIA
gpmScoreAboveMedian	<p>Indicates whether the score for the selected agent was better than the median score for the target group.</p> <p>Default value: unknown Valid values: 0 (no), 1 (yes), unknown</p>	Enum	GPM_FACT.SCORE_ABOVE_MEDIAN
KVP	Description	KVP Type	Info Mart Database Target

KVP	Description	KVP Type	Info Mart Database Target
gpmStatus	Indicates the scenario under which the interaction was processed. For more information about the scenarios, see Routing Scenarios Using Predictive Routing . Default value: unknown Valid values: agent-surplus, call-surplus, unknown	Enum	GPM_RESULT.GPM_STATUS (referenced through GPM_FACT.GPM_RESULT_KEY)
gpmSuitableAgentsCount Introduced: 9.0.015.00	The number of agents who had scores greater than or equal to the initial threshold value when the scoring response was received. Default value: 0 Valid values: 0, any positive integer	INT	GPM_FACT.SUITABLE_AGENTS_COUNT
gpmTargetSize	The size of the scored target group (in other words, the length of the list of agents received from the scoring engine). Default value: 0 Valid values: 0, any positive integer	SHORT	GPM_FACT.TARGET_SIZE
gpmUse	The meaning depends on the mode in which Predictive Routing is operating (see the description of the gpmMode KVP). This field is set to one of the following values: <ul style="list-style-type: none">1 - When the mode is ab-test-time-sliced, indicates that the interaction was selected for Predictive Routing. When the mode is prod, indicates the normal case, when Predictive Routing	Enum	GPM_RESULT.GPM_USE (referenced through GPM_FACT.GPM_RESULT_KEY)
KVP	Description	KVP Type	Info Mart Database Target

KVP	Description	KVP Type	Info Mart Database Target
	<p>occurred without error.</p> <ul style="list-style-type: none"> • 0 - When the mode is <code>ab-test-time-sliced</code>, indicates the interaction was processed with skill-based routing. When the mode is <code>dry-run</code>, indicates that the interaction completed without error. • unknown - For any mode, indicates that an error occurred in one of the Predictive Routing subroutines, and the solution defaulted to skill-based routing. <p>Default value: unknown Valid values: 1, 0, unknown</p>		
<p>gpmVQDBID</p> <p>Introduced: 9.0.016.00</p>	<p>The DBID of the virtual queue or DN configured in the <code>vq-for-reporting</code> configuration option (configured on the <code>Predictive_Route_DataCfgTransactionList</code> object).</p> <ul style="list-style-type: none"> • Requires Genesys Info Mart release 8.5.014.19 or higher. • This KVP is sent only to Genesys Info Mart. It does not appear in the <code>score_log</code> file. <p>Default value: No default value Valid values: Any valid DBID</p>	<p>INT</p>	<p>RESOURCE_.RESOURCE_CFG_DBID (referenced through GPM_FACT.VQ_RESOURCE_KEY)</p>
KVP	Description	KVP Type	Info Mart Database Target

KVP	Description	KVP Type	Info Mart Database Target
<p>gpmVQGUID</p> <p>Introduced: 9.0.016.00</p>	<p>Value of the Virtual Queue ID (RPVQID) stored in the interaction user data. This is a special GUID value that uniquely identifies the entrance of the interaction into certain virtual queues. The RPVQID is created by URS when the interaction enters into the virtual queue and is present in all VirtualQueue events that URS distributes.</p> <ul style="list-style-type: none"> Requires Genesys Info Mart release 8.5.014.19 or higher. This KVP is sent only to Genesys Info Mart. It does not appear in the score_log file. <p>Default value: No default value Valid values: Any valid Virtual Queue GUID</p>	CHAR[32]	GPM_FACT.VQ_GUID
gpmWaitTime	<p>The amount of time, in seconds, the interaction spent in the queue used for Predictive Routing decision-making, starting from when the strategy started to process the interaction until it was routed to the agent. Note that the point when processing starts might depend on how you have configured your strategy.</p> <p>Default value: 0 Valid values: 0, any positive integer</p>	INT	GPM_FACT.WAIT_TIME
ServiceType	The GPRlXnCleanup subroutine takes this	Oracle: VARCHAR2(255 CHAR); Postgres:	INTERACTION_DESCRIPTOR.SERVICE_TY
KVP	Description	KVP Type	Info Mart Database Target

KVP	Description	KVP Type	Info Mart Database Target
<p>Introduced: 9.0.016.00</p>	<p>KVP from user data attached to the interaction, and passes it to the Genesys Historical Reporting solution in the EventUserEvent event. GPR does not generate this KVP.</p>	<p>varchar(255); Microsoft SQL: nvarchar(170)</p>	
<p>START_TS</p>	<p>UTC timestamp, indicating the time when the interaction arrived at the contact center.</p> <p>Note that this value is different from gpm-ixn-timestamp (previously called prr-ixn-timestamp), which, in release 9.0.014.04 and earlier, indicates the time when the strategy started processing the interaction. gpm-ixn-timestamp is configured in the default_skill_data object, from which it is passed to the ActivatePredictiveRouting_v3 subroutine.</p> <p>In URS Strategy Subroutines 9.0.015.00 and higher, gpm-ixn-timestamp is not used, and START_TS must be passed in the default_skill_data parameter. gpmWaitTime (the actual wait time of the interaction in the queue before an agent is selected) is calculated based on the difference between the UTC time when agent is selected minus the START_TS value.</p> <p>Default value: no default value Valid values: a valid UTC timestamp</p> <p>Note: This KVP is mandatory for Genesys Info Mart reporting.</p>	<p>INT</p>	<p>GPM_FACT.START_DATE_TIME_KEY</p>
KVP	Description	KVP Type	Info Mart Database Target

Chat Server

Starting with release 8.5.011, in eServices deployments that include Chat Server 8.5.203.09 or higher, Genesys Info Mart supports detailed reporting on Genesys Chat session activity, provided that Chat Server has been configured to send the required user data and that ICON has been configured to store it. Starting with release 8.5.011.14, in eServices deployments that include Chat Server 8.5.302.03 or higher, Genesys Info Mart support for chat session reporting has been extended to include support for asynchronous (async) chat sessions. For full information about enabling chat session reporting for both regular and async chat, see [Integrating Chat Server with Genesys Historical Reporting](#) in the *eServices Administrator's Guide*. For additional links to more information, including information about aggregation and available out-of-box Genesys CX Insights reports, see [New in Release 8.5.011](#) and [New in Release 8.5.011.14](#) in this document.

Genesys Info Mart stores chat session data in the CHAT_SESSION_FACT and CHAT_SESSION_DIM tables in the Info Mart database. The user-data mapping is predefined and cannot be customized. No additional configuration or mapping is required. For more information about the chat session tables, see the [Genesys Info Mart Physical Data Model](#) for your RDBMS.

At a minimum, Genesys Info Mart requires Chat Server to send the **ChatServerSessionStartedAt** and **ChatServerSessionClosedAt** KVPs in the chat session-related reporting event. Genesys Info Mart will not insert a row for a chat session in the CHAT_SESSION_FACT table if either of these KVPs is missing.

The following table describes the KVPs that Genesys Info Mart requires Chat Server to send in Interaction Server reporting events. The information is reproduced for your convenience from information on the [Integrating Chat Server with Genesys Historical Reporting](#) page cited above. Release numbers mentioned in the table (for example, indicating when a particular KVP was introduced) refer to the Chat Server release.

Tip

When you configure ICON, Genesys recommends that you use the ICON attached-data specification file ([ccon_adata_spec_GIM_Example.xml](#)) included in a Genesys Info Mart IP that supports the required functionality, to ensure that ICON has been configured to capture the required KVPs.

KVP	Description	Info Mart Database Target
ChatServerSessionClosedAt	Timestamp of chat session closure. Always attached. Note: This KVP is mandatory for Genesys Info Mart reporting.	CHAT_SESSION_FACT.END_DATE_TIME_KEY
ChatServerSessionStartedAt	Timestamp of chat session creation. Always attached. Note: This KVP is mandatory for Genesys Info Mart reporting.	CHAT_SESSION_FACT.START_DATE_TIME_KEY
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
cse_ActiveIdleMaxTime Introduced: 8.5.301.06	The maximum time (in seconds) a chat session has been inactive while at least one agent was connected and a configured inactivity threshold was exceeded.	Not mapped
cse_ActiveIdleTotalCount Introduced: 8.5.301.06	The total number of times when an inactivity period exceeded a configured threshold while at least one agent was connected to the chat session (in other words, while the chat session was technically in an active state).	CHAT_SESSION_FACT.ACTIVE_IDLE_COUNT
cse_ActiveIdleTotalTime Introduced: 8.5.301.06	The total amount of time (in seconds), exceeding configured threshold, without any activity when the chat session was in the active state (at least one Agent participated).	CHAT_SESSION_FACT.ACTIVE_IDLE_DURATION
cse_AgentReplyMaxTime	The maximum time (in seconds) an agent spent on replying to a customer. Note: For async chat sessions, if a chat session was in a dormant state while a customer message was received, the time until the agent rejoins the session is excluded.	CHAT_SESSION_FACT.AGENT_REPLY_MAX_DURATION
cse_AgentReplyTotalCount	The number of times an agent replied to a customer.	CHAT_SESSION_FACT.AGENT_REPLY_COUNT
cse_AgentReplyTotalTime	The total time (in seconds) an agent spent on replying to a customer. Note: For async chat sessions, if a chat session was in a dormant state while a customer message was received, the time until the agent rejoins the session is excluded.	CHAT_SESSION_FACT.AGENT_REPLY_DURATION
cse_AgentWaitMaxTime	The maximum time (in seconds) an agent spent on waiting the reply from a customer. Note: For async chat sessions, cumulative dormant time until a customer's reply is received is excluded.	CHAT_SESSION_FACT.AGENT_WAIT_MAX_DURATION
cse_AgentWaitTotalCount	The number of times an agent waited for replies from a customer.	CHAT_SESSION_FACT.AGENT_WAIT_COUNT
cse_AgentWaitTotalTime	The total time (in seconds) an	CHAT_SESSION_FACT.AGENT_WAIT_DURATION
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
	agent spent on waiting the reply from a customer. Note: For async chat sessions, cumulative dormant time until a customer's reply is received is excluded.	
cse_AsyncDormantMaxTime Introduced: 8.5.301.06	The maximum time (in seconds) a chat session was staying in dormant state.	Not mapped
cse_AsyncDormantTotalCount Introduced: 8.5.301.06	The total number of times session entered dormant state	CHAT_SESSION_FACT.ASYNC_DORMANT_COUNT
cse_AsyncDormantTotalTime Introduced: 8.5.301.06	The total amount of time (in seconds), customer chat session was in the dormant state (with no Agent participant). Routing time is excluded from dormant time.	CHAT_SESSION_FACT.ASYNC_DORMANT_DURATION
cse_AsyncIdleMaxTime Introduced: 8.5.301.06	The maximum time (in seconds) an async chat session was staying in idle state.	Not mapped
cse_AsyncIdleTotalCount Introduced: 8.5.301.06	Total number of times an async session entered idle state.	CHAT_SESSION_FACT.ASYNC_IDLE_COUNT
cse_AsyncIdleTotalTime Introduced: 8.5.301.06	The total amount of time (in seconds), exceeding configured threshold, without any activity when the chat session was in the dormant state (with no Agent participant).	CHAT_SESSION_FACT.ASYNC_IDLE_DURATION
cse_CustomerReplyMaxTime	The maximum time (in seconds) a customer spent on replying to an agent.	CHAT_SESSION_FACT.CUSTOMER_REPLY_MAX_DURATION
cse_CustomerReplyTotalCount	The number of times a customer replied to an agent.	CHAT_SESSION_FACT.CUSTOMER_REPLY_COUNT
cse_CustomerReplyTotalTime	The total time (in seconds) a customer spent on replying to an agent.	CHAT_SESSION_FACT.CUSTOMER_REPLY_DURATION
cse_CustomerWaitMaxTime	The maximum time (in seconds) a customer spent on waiting the reply from an agent.	CHAT_SESSION_FACT.CUSTOMER_WAIT_MAX_DURATION
cse_CustomerWaitTotalCount	The number of times a customer waited for the reply from an agent.	CHAT_SESSION_FACT.CUSTOMER_WAIT_COUNT
cse_CustomerWaitTotalTime	The total time (in seconds) a customer spent on waiting the reply from an agent.	CHAT_SESSION_FACT.CUSTOMER_WAIT_DURATION
cse_SessionHandleMaxTime	The maximum time (in seconds)	Not mapped
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
Introduced: 8.5.301.06	that at least one agent was connected to a chat session.	
cse_SessionHandleTotalCount Introduced: 8.5.301.06	The total number of times a session was in an active state, that at least one agent was connected to a chat session.	CHAT_SESSION_FACT.HANDLE_COUNT
cse_SessionHandleTotalTime Introduced: 8.5.301.06	The total time (in seconds) that at least one agent was connected to a chat session.	CHAT_SESSION_FACT.HANDLE_DURATION
csg_ChatAsyncMode Introduced: 8.5.301.06	Denotes async session. Equals "1" for async chat session or "0" for regular chat session.	CHAT_SESSION_DIM.ASYNC_MODE (referenced through CHAT_SESSION_FACT.CHAT_SESSION_DIM_KEY)
csg_ChatSessionID	The ID (identifier) of chat session. Could be different from Interaction ID. Attached only if the value of attach-session-statistics is not none.	Not mapped
csg_LanguageName	The value identifies the language specified for the chat session. Might be absent. Attached only if the initial UserData for the chat session includes the GCTI_LanguageName KVP, and the value of attach-session-statistics is not none.	CHAT_SESSION_DIM.LANGUAGE_NAME (referenced through CHAT_SESSION_FACT.CHAT_SESSION_DIM_KEY)
csg_MediaOrigin	The value identifies the origination of the chat session (web chat, social media channels, sms, and so on). Might be absent. Attached only if the initial UserData for the chat session includes the MediaOrigin KVP, and the value of attach-session-statistics is not none.	CHAT_SESSION_DIM.MEDIA_ORIGIN (referenced through CHAT_SESSION_FACT.CHAT_SESSION_DIM_KEY)
csg_MediaType Introduced: 8.5.203.09 (restricted release)	The MediaType for chat interaction. Always attached.	CHAT_SESSION_FACT.MEDIA_NAME_CODE
csg_MessagesFromAgentsCount	The total number of all messages sent by all agents (messages which are visible to customer). Note: There can be several agents in a chat session, for example, conferences, transfers, and others.	CHAT_SESSION_FACT.MSG_FROM_AGENTS_COUNT
csg_MessagesFromAgentsSize	The total character count (including spaces) of all messages sent by agents.	CHAT_SESSION_FACT.MSG_FROM_AGENTS_SIZE
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
csg_MessagesFromCustomersCount	The total number of messages sent by customers.	CHAT_SESSION_FACT.MSG_FROM_CUSTOMERS_C
csg_MessagesFromCustomersSize	The total character count (including spaces) of all messages sent by customers.	CHAT_SESSION_FACT.MSG_FROM_CUSTOMERS_S
csg_PartiesAsAgentCount	The number of parties that participated in a session as agents. Note: Only unique parties are counted. For example, if the same party joins the session several times, it only counts as one for the purpose of this statistic.	CHAT_SESSION_FACT.AGENTS_COUNT
csg_PartiesAsCoachCount	The number of parties that participated in a session in the coaching mode (for example, an agent joins with the VIP visibility). Note: Only unique parties are counted. For example, if the same party joins the session several times, it only counts as one for the purpose of this statistic.	Not mapped
csg_PartiesAsMonitorCount	The number of parties that participated in a session in the monitoring mode (for example, a supervisor join with the INT visibility). Note: Only unique parties are counted. For example, if the same party joins the session several times, it only counts as one for the purpose of this statistic.	Not mapped
csg_SessionEndedAgent Introduced: 8.5.109	The indication of agent presence in chat session. Please note that in this reason code, only human (in other words, non-bot) agents who are visible to a customer are taken into account. Valid values: * ABSENT — Session considered as abandoned. No agent (in other words, not-bot participant visible to client) ever joins chat session. <ul style="list-style-type: none"> PRESENT — Session considered as not abandoned. At least one agent is still participating in chat session during the moment of chat session closure. VISITED — Session could be 	Not mapped
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
	<p>considered either as abandoned or not abandoned - depending on business requirements. At least one agent participated in chat session, but no agents were present at the moment of chat session closure.</p> <p>Note: In the very specific condition of a session restoration having occurred where an agent joins the session before restoration and does not re-join after restoration, and no messages are sent by any chat party before restoration, the value of <code>csg_SessionEndedAgent</code> will be ABSENT.</p>	
<p><code>csg_SessionEndedBy</code></p> <p>Introduced: 8.5.105</p>	<p>The type of participant that triggered the chat session closure.</p> <p>Valid values: * CLIENT — Denotes a customer. This value is provided whenever a client leaves the chat session first. For example, this value will be set when a client leaves while the session continues due to the presence of an agent and ended later by an agent.</p> <ul style="list-style-type: none"> • AGENT, SUPERVISOR, BOT — Denotes either agent, supervisor or chat bot participant. This type is provided only when: <ul style="list-style-type: none"> • A session is closed because the actor (agent/supervisor/bot) sent the Release request with the close if no more agents, or force close after-action; or • A session without a customer during the course of this chat session is closed because the actor sent a Release request. • SYSTEM — Denotes a server/system. See the 	<p>CHAT_SESSION_DIM.ENDED_BY (referenced through CHAT_SESSION_FACT.CHAT_SESSION_DIM_KEY)</p>
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
<p>csg_SessionEndedReason</p> <p>Introduced: 8.5.105</p>	<p>csg_SessionEndedReason table for possible reasons.</p> <p>The description of how a chat session was closed.</p> <p>Valid values: * DISCONNECT — The participant left due to a disconnect (basic protocol) or a flex timeout expiration (denotes disconnect in flex protocol).</p> <ul style="list-style-type: none"> <p>Possible values for the associated csg_SessionEndedBy: CLIENT, AGENT, SUPERVISOR, BOT</p> <p>QUIT — The participant left a chat session in a normal way (flex logout or basic self-release request, that is with the keep_alive after-action).</p> <p>Possible values for the associated csg_SessionEndedBy: CLIENT, AGENT, SUPERVISOR, BOT</p> <p>FORCE — The participant left a chat session in a normal way and requested the session to be closed (either close if no more agents or force_closure after-action).</p> <p>Possible values for the associated csg_SessionEndedBy: AGENT, SUPERVISOR, BOT</p> <p>INACTIVE — Chat Server closed a chat session due to activated inactivity control monitoring.</p> <p>Possible values for the associated csg_SessionEndedBy: SYSTEM</p> <p>DB_ERROR — Chat Server closed a chat session because it received the non-</p> 	<p>CHAT_SESSION_DIM.ENDED_REASON (referenced through CHAT_SESSION_FACT.CHAT_SESSION_DIM_KEY)</p>
KVP	Description	Info Mart Database Target

KVP	Description	Info Mart Database Target
	<p>recoverable error from UCS while attempting to save the intermediate chat transcript (only possible when the transcript-save-on-error option is set to close).</p> <p>Possible values for the associated csg_SessionEndedBy: SYSTEM</p>	
csg_SessionTotalTime	<p>The total duration of a chat session from the time it was created until it was completely finished/closed in Chat Server.</p> <p>Note: This does not include the time between Chat Session End and Mark Done, as the interaction can still be handled by an agent.</p>	CHAT_SESSION_FACT.SESSION_DURATION
csg_SessionUntilFirstAgentTime	<p>The duration of the waiting period, or the period of time a customer waits until the first agent (visible to a customer) joined the session.</p> <p>Note: The 0 (zero) value has two alternative interpretations: no agents ever joined the session (if csg_PartiesAsAgentCount=0) or an agent joined immediately when the session was started (if csg_PartiesAsAgentCount > 0).</p>	CHAT_SESSION_FACT.UNTIL_FIRST_AGENT_DURATION
csg_SessionUntilFirstReplyTime	<p>The period of time until the first agent submits the first visible to a customer greeting/message into a chat session.</p>	CHAT_SESSION_FACT.UNTIL_FIRST_REPLY_DURATION
csg_SessionWithCustomerTime	<p>The period of time a customer is in a chat session.</p>	Not mapped
csg_TenantId	<p>The tenant ID for the chat session. Always attached.</p>	CHAT_SESSION_FACT.TENANT_KEY
KVP	Description	Info Mart Database Target

Related Information

For additional discussion of topics related to user-data processing in Genesys Info Mart, see [User Data](#)

[Processing and Storage](#), [User Data Mapping](#), and [Propagation Rules](#). For a list of the KVPs that contact centers most commonly use for reporting purposes, see [Common Attached Data KVPs](#).

User Data Mapping

Genesys Info Mart provides a flexible storage mechanism for a potentially very large number of KVPs that are attached by Genesys solutions.

User Data Mapping Tables

The Info Mart database schema contains two mapping tables that are required to process and store user data:

- CTL_UD_TO_UDE_MAPPING
- CTL_UDE_KEYS_TO_DIM_MAPPING

The mapping tables instruct Genesys Info Mart on how to populate the user-data KVPs and where in the Info Mart database to store them.

[+] Show sample mapping table

The following Figure is a snapshot of a sample populated mapping table. For detailed descriptions of the table columns, refer to the [Genesys Info Mart Reference Manual](#) for your particular RDMBS type.

KEY_NAME	TABLE_NAME	COLUMN_NAME	PROPAGATION_RULE	DEFAULT_V
CUSTOMER_SEGMENT	INTERACTION_DESCRIPTOR	CUSTOMER_SEGMENT	CALL	
SERVICE_TYPE	INTERACTION_DESCRIPTOR	SERVICE_TYPE	CALL	
SERVICE_SUBTYPE	INTERACTION_DESCRIPTOR	SERVICE_SUBTYPE	CALL	
BUSINESS_RESULT	INTERACTION_DESCRIPTOR	BUSINESS_RESULT	CALL	
CASE_ID	IRF_USER_DATA_GEN_1	CASE_ID	CALL	
CUSTOMER_ID	IRF_USER_DATA_GEN_1	CUSTOMER_ID	CALL	
CUSTOM_DATA_1..16	IRF_USER_DATA_CUST_1	CUSTOM_DATA_1_1..16	PARTY	
DIM_ATTRIBUTE_1_1..5	USER_DATA_CUST_DIM_1	DIM_ATTRIBUTE_1_1..5	PARTY	

Example of Populated Mapping Table

To use user data in your reports, you must:

1. Ensure that the upstream data sources (for example, T-Server) are configured to propagate user data as required.
2. Configure ICON to store this data in IDB.
3. Modify a Genesys-provided user-data script to work for your preferred KVP names.
4. Adjust the Info Mart database to be able to store this data.
5. Specify mapping rules for Genesys Info Mart to extract and process this data.

For information about how to customize the Genesys-provided user-data script for the initial deployment of Genesys Info Mart, see [Customizing the User Data Template](#). Later, as your reporting needs evolve, you can similarly add more custom tables to the Info Mart database to store new user data KVPs.

Warning

GCXI **customers please note:** Some queries for out-of-box GCXI reports rely on inner joins to the IRF_USER_DATA_KEYS and IRF_USER_DATA_GEN_1 tables; if there are no KVPs mapped to these tables, out-of-box GCXI reports might yield inaccurate or unexpected results. To avoid the risk of missing records in tables that GCXI uses, Genesys strongly recommends that you not remove or disable the predefined user-data configuration.

[+] Show example

For example, even if your deployment does not report **CustomerSegment**, **ServiceType**, **ServiceSubType**, and **Business Result**, do not set ACTIVE_FLAG=0 in the fields for all of these KVPs in the CTL_UD_TO_UDE_MAPPING table, which maps them to the INTERACTION_DESCRIPTOR table. If you remove all mappings to the INTERACTION_DESCRIPTOR table and do not have any custom user-data dimensions, there will be no data in IRF_USER_DATA_KEYS for the inner join that GCXI expects to make. As a result, some reports might be empty or interactions might be missing.

Viewing Current KVP Mappings

To view the current mapping of user-data KVPs to Info Mart tables and columns, execute the following SQL command against the Info Mart database:

```
SELECT * FROM CTL_UD_TO_UDE_MAPPING
```

The result will show both predefined and custom mappings in your deployment.

Mapping Call-Based Attached Key-Value Pairs

Genesys Info Mart extracts attached data KVPs from the ICON Voice details and ICON Multimedia details data sources — specifically, from the following IDB tables:

- G_CUSTOM_DATA_S
- G_USERDATA_HISTORY
- G_SECURE_USERDATA_HISTORY
- GM_F_USERDATA and GM_L_USERDATA

ICON automatically stores predefined router-specific KVPs in the G_ROUTE_RESULT table, provided that you configure URS to attach the KVPs to interactions. For more information, see [Universal Routing](#).

ICON stores voice and multimedia attached KVPs in the G_USERDATA_HISTORY and G_SECURE_USERDATA_HISTORY tables, based on the options that you configure in the ICON application and in the ICON attached data specification (**adata_spec**) XML file. For multimedia interactions, ICON automatically stores predefined KVPs, including workbin usage details, in the G_USERDATA_HISTORY table.

ICON stores multimedia-specific attached data in the GM_F_USERDATA and GM_L_USERDATA tables. The storage and mapping of the attributes that Genesys Info Mart uses for multimedia-specific attached data is predefined, and Genesys Info Mart does not process any custom KVPs in the GM_F_USERDATA and GM_L_USERDATA tables.

By default, Genesys Info Mart stores the values of the KVPs that are listed in the “KVPs that are mapped by default” section of the table, [Commonly Used Attached Data KVPs](#). If you want to store additional, custom user data, you must define mapping and propagation rules and store them in Control tables in the Info Mart database. Genesys Info Mart then extracts the user data details on the basis of the KVP name and stores the value in the table and column that you designate in the mapping tables (CTL_UD_TO_UDE_MAPPING and CTL_UDE_KEYS_TO_DIM_MAPPING).

As part of the mapping, you specify the propagation rule that Genesys Info Mart will use to determine what value to store if more than one value is extracted for the same key in the same interaction. For more information, see [Propagation Rules](#).

You can also specify what value is stored as a default if a particular KVP is missing for an interaction.

Special Requirements

Be aware that your downstream reporting application might have specific requirements for user data that Genesys Info Mart does not store by default. For example, if you want to include reporting on social media metrics — such as Sentiment, Actionability, or Influence — in a deployment with the Genesys historical reporting presentation layer, GCXI has specific requirements for the user-data tables and columns that you must use to store the required KVPs.

For the convenience of GCXI customers, the sample ICON attached-data specification file that Genesys Info Mart provides includes commented-out lines that specify the social media-related KVPs that GCXI requires. For GCXI customers, more information about configuring Genesys Info Mart to store the user data that GCXI requires for social media metrics is available in the [Using Attached Data](#) in the *Genesys CX Insights User's Guide*, and in the [Customizing reports](#) section.

RDBMS Considerations

Depending on the RDBMS, you might have to consider RDBMS limitations when you specify customized mapping of KVPs to user-data dimension tables.

Microsoft SQL Server and PostgreSQL

An RDBMS limitation restricts the maximum length of index keys:

- On Microsoft SQL Server releases earlier than 2016, to 900 bytes
- On Microsoft SQL Server 2016+, to 1700 bytes
- On PostgreSQL, to 2730 bytes

To avoid failures of the transformation job, the total length of values for KVPs that are configured to populate any one of the user-data dimension tables must not exceed the RDBMS limit.

For the KVPs that are mapped to any one of the user-data dimension tables by default, in releases earlier than 8.5.010.14 Genesys Info Mart restricts the length of individual user-data KVP values to 170 bytes (89 characters in multi-language Microsoft SQL Server databases), to ensure that combinations of KVPs do not exceed the limit.

Starting with release 8.5.010.14, in both single-language and multi-language Microsoft SQL Server databases the data types of certain user-data KVP columns was changed from varchar to nvarchar, without reducing the length of the values. As a result, the potential length of the indexes for some tables (for example, INTERACTION_DESCRIPTOR, various SDR_* dimensions) might exceed the RDBMS limit in deployments with Microsoft SQL Server versions earlier than 2016. For this reason, Genesys strongly recommends that Microsoft SQL Server deployments for Genesys Info Mart 8.5.010.14 and later use Microsoft SQL Server 2016 or later supported version.

This limitation does not apply to KVPs that are configured to populate user-data fact tables.

Oracle

There are no RDBMS limitations that you have to consider.

Propagation Rules

When you configure the user data mapping for Genesys Info Mart, also specify the propagation rule that Genesys Info Mart will use to determine what value to store if more than one value is extracted for the same key in the same interaction.

For user-data keys that might have multiple values over the life of an interaction, the propagation rules enable you to specify which KVP value will be stored for a particular INTERACTION_RESOURCE_FACT (IRF) or MEDIATION_SEGMENT_FACT (MSF) record, based on who changed (added, updated, or deleted) the KVP value or when it was changed.

Valid values for the propagation rules are the following:

- **CALL** — Genesys Info Mart stores the latest KVP value that is associated with the interaction when the interaction leaves the resource that is the subject of the IRF or MSF record, regardless of who changed the KVP value.

The CALL propagation rule is suitable for most business requirements for most KVPs.

- **PARTY** — Genesys Info Mart stores the latest KVP value as changed by that party to the interaction, regardless of when it was changed.

Use the PARTY propagation rule to capture KVP values that are set after the interaction leaves the agent (for example, during after call work [ACW]) or for user data that should be associated only with the subject of the IRF or MSF record and not propagated to other resources.

Important

- **PARTY** is the only propagation rule that enables you to capture KVP values that are set after the interaction leaves the handling resource that is the subject of the IRF record.
- Do not use the PARTY rule for user data that is associated with virtual queues for multimedia interactions. User-data transformation for the PARTY rule relies on party information from the target IRF that is not available at mediation time.
- The PARTY rule does not work for user data in MSFs for voice or multimedia interactions that are cleared or abandoned in a virtual queue. In these cases, Genesys Info Mart cannot find user data for the MSF, and it will appear as if no user data was changed. Genesys Info Mart will store the default value for the KVP, if defined.

- **IRF** — For a KVP value that was changed during the timespan of the IRF (specifically, between the time that the interaction started mediation to the handling resource and the time that the interaction leaves the handling resource), Genesys Info Mart stores the latest KVP value that is associated with the interaction, regardless of who changed the KVP value.

The initial state of user data for the applicable IRF record is empty.

For user data in MSFs, the IRF to which the MSF belongs provides the context in which the KVP value is set. For example, if MSF1 represents the mediation that occurs before the interaction is distributed to the resource that is the subject of IRF1, Genesys Info Mart will store the latest change, if any, that occurred during the MSF1 mediation interval, which is calculated from the mediation start time of IRF1 and the end time that is reported in MSF1.

- **IRF_FIRST_UPDATE** — For a KVP value that was changed during the extended timespan of the IRF for a handling resource, Genesys Info Mart stores the first update to the KVP value that is associated with the IRF, regardless of who changed the KVP value. The extended

timespan starts from the time that the interaction started mediation to any handling resource (in other words, not necessarily to the resource that is the subject of the IRF) up to the time that the interaction leaves the handling resource in question. In a scenario with call redirection, the timespan of the IRF for the handling resource to which the interaction is eventually routed includes the durations of all preceding IRFs that have a technical result of `Redirected/RoutedOnNoAnswer` or `Redirected/Unspecified`.

For user data in MSFs, the IRF to which the MSF belongs provides the context in which the KVP value is set. For example, if `MSFn` represents the mediation that occurs immediately before the interaction is distributed to `IRFn`, Genesys Info Mart will store the first change that was made during the extended timespan of `IRFn`, up to and including `MSFn`.

- **IRF_INITIAL** — Genesys Info Mart stores the KVP value that is associated with the interaction when the interaction enters the resource that is the subject of the IRF or MSF record.

Use the `IRF_INITIAL` propagation rule to capture KVP values at the time that the call first rings at `Agent1`. For example, when an agent answers a call and updates a KVP value during the call, the value stored in the agent's IRF record is the initial value that the agent received with the call.

The `IRF_INITIAL` propagation rule was introduced in release 8.5.002.

- **IRF_ROUTE** — Genesys Info Mart stores the final KVP value that is present during mediation of an interaction:
 - If the call is delivered to a handling resource, Genesys Info Mart stores the KVP value that is associated with the interaction when the interaction enters the handling resource.
 - If the call is abandoned during mediation, Genesys Info Mart stores the last value that was in effect during mediation.

For example, a call enters a routing point and the KVP value is initially set to `Value1`, and later updated to `Value2`. The caller either hangs up during mediation, or the call is routed to an agent, who updates the value to `Value3`. In either case, the `IRF_ROUTE` propagation rule records `Value2`.

The `IRF_ROUTE` propagation rule was introduced in release 8.5.006.

Propagation Rule Examples

To illustrate the effect of the propagation rules, the following two tables provide the reporting results for the various propagation rules in typical sample scenarios:

- [Reporting Results for Propagation Rules — Sample Scenarios for IRF](#) provides examples for user data in IRF records.
- [Reporting Results for Propagation Rules — Sample Scenarios for MSF](#) provides examples for user data in MSF records, provided that Genesys Info Mart has been configured to record the association.

Reporting Results for Propagation Rules — Sample Scenarios for IRF

Scenario*	User Data Result for Associated IRF Record, by Propagation Rule					
	CALL	PARTY	IRF	IRF_FIRST_UPDATE	IRF_INITIAL	IRF_ROUTE
1. A strategy attaches a KVP with <code>Value0</code> and	Agent1: <code>Value1</code> Agent2: <code>Value1</code>	Agent1: <code>Value1</code> Agent2: Empty	Agent1: <code>Value1</code> Agent2: Empty	Agent1: <code>Value0</code> Agent2: Empty	Agent1: <code>Value0</code> Agent2: <code>Value1</code>	Agent1: <code>Value0</code> Agent2: <code>Value1</code>

Scenario*	User Data Result for Associated IRF Record, by Propagation Rule					
<p>routes the call to Agent1, who updates the KVP to Value1 and then transfers the call to Agent2.</p>						
<p>2. Same as Scenario 1, except that Agent2 subsequently updates the KVP to Value2 after the call is released.</p>	<p>Agent1: Value1 Agent2: Value1</p>	<p>Agent1: Value1 Agent2: Value2</p>	<p>Agent1: Value1 Agent2: Empty</p>	<p>Agent1: Value0 Agent2: Empty</p>	<p>Agent1: Value0 Agent2: Value1</p>	<p>Agent1: Value0 Agent2: Value1</p>
<p>3. Same as Scenario 1, except that Agent 2 subsequently transfers the call to a routing point where the routing strategy updates the KVP to Value2 prior to the call being</p>	<p>Agent1: Value1 Agent2: Value1 RP: Value2</p>	<p>Agent1: Value1 Agent2: Empty RP: Value2</p>	<p>Agent1: Value1 Agent2: Empty RP: Value2</p>	<p>Agent1: Value1 Agent2: Empty RP: Value2</p>	<p>Agent1: Value0 Agent2: Value1 RP: Value1</p>	<p>Agent1: Value0 Agent2: Value1 RP: Value2</p>

Scenario*	User Data Result for Associated IRF Record, by Propagation Rule					
abandoned in the routing point.						
4. Strategy1 attaches a KVP with Value0 and routes the call to Agent1, who updates the KVP to Value1 and then initiates a two-step conference to Agent2, using Strategy2, which updates the KVP to Value2.	Agent1: Value2 Agent1 (Initiated Consult): Value2 Agent2: Value2	Agent1: Value1 Agent1 (Initiated Consult): Empty Agent2: Empty	Agent1: Value2 Agent1 (Initiated Consult): Value2 Agent2: Value2	Agent1: Value0 Agent1 (Initiated Consult): Value2 Agent2: Value2	Agent1: Value0 Agent1 (Initiated Consult): Value1 Agent2: Value2	Agent1: Value0 Agent1 (Initiated Consult): Value1 Agent2: Value2
5. A route-on-no-answer (RONA) variant of Scenario 3: Strategy1 attaches a KVP with Value0 and attempts to route	Agent0: Value0 Agent1: Value2 Agent1 (Initiated Consult): Value2 Agent2: Value2	Agent0: Empty Agent1: Value1 Agent1 (Initiated Consult): Empty Agent2: Empty	Agent0: Value0 Agent1: Value1 Agent1 (Initiated Consult): Value2 Agent2: Value2	Agent0: Value0 Agent1: Value0 Agent1 (Initiated Consult): Value2 Agent2: Value2	Agent0: Value0 Agent1: Value0 Agent1 (Initiated Consult): Value1 Agent2: Value2	Agent0: Value0 Agent1: Value0 Agent1 (Initiated Consult): Value1 Agent2: Value2

Scenario*	User Data Result for Associated IRF Record, by Propagation Rule					
the call to Agent0. When Agent0 does not answer, Strategy1 routes the call to Agent1, who updates the KVP to Value1 and then initiates a two-step conference to Agent2, using Strategy2, which updates the KVP to Value2.						

* T-Server settings: **merged-user-data**=merged-over-main, **consult-user-data**=inherited

Reporting Results for Propagation Rules — Sample Scenarios for MSF

Scenario*	User Data Result for Associated MSF Record, by Propagation Rule					
CALL	PARTY	IRF	IRF_FIRST_UPDATE	IRF_INITIAL	IRF_ROUTE	
Note: The MSFs for Queue1 and Queue2 happen before the resulting IRFs for Agent1 and Agent2, respectively.						
1. A strategy attaches a KVP with Value0 and	Queue1: Value0 Queue2: Value1	Queue1: Empty Queue2: Empty	Queue1: Value0 Queue2: Empty	Queue1: Value0 Queue2: Empty	Queue1: Value0 Queue2: Value1	Queue1: Value0 Queue2: Value1

Scenario*	User Data Result for Associated MSF Record, by Propagation Rule					
<p>places a call in Queue1. The call stays in the queue for a few days, before it is distributed to Agent1, who updates the KVP to Value1 and then transfers the call to Agent2 via Queue2.</p>						
<p>2. Same as Scenario 1, except that a strategy updates the KVP to Value2 when it places the interaction in Queue2.</p>	<p>Queue1: Value0 Queue2: Value2</p>	<p>Queue1: Empty Queue2: Empty</p>	<p>Queue1: Value0 Queue2: Value2</p>	<p>Queue1: Value0 Queue2: Value2</p>	<p>Queue1: Value0 Queue2: Value2</p>	<p>Queue1: Value0 Queue2: Value2</p>

* T-Server settings: **merged-user-data**=merged-over-main, **consult-user-data**=inherited

Common Attached Data KVPs

This page describes the attached data key-value pairs (KVPs) that contact centers most commonly use for reporting purposes.

Some KVPs have numeric values, as specified in the table. The values of all of the other KVPs in the table are strings, for which the maximum length in IDB is 255 characters. However, depending on the RDBMS, Genesys Info Mart further restricts the maximum length of certain KVP values, and you might similarly need to restrict the length of KVP values for customized user-data dimension tables. For more information, see [RDBMS Considerations](#).

Some of the KVPs are Genesys-defined, while others are user-defined. Both types of KVPs can populate predefined as well as custom, deployment-specific facts and dimensions, according to the user-defined mapping rules.

Important

Your applications do not need to attach all of the KVPs that are listed in the table.

Use the [Mapping User Data Worksheet](#) or the [User Data Assistant](#) to map the KVP names in your contact center to the target Info Mart tables and column names.

Commonly Used Attached Data KVPs

KVP Name	KVP Description
KVPs that are mapped by default	
Business Result *	The business result of the interaction.
CaseID *	The case identifier in an external case management application.
CustomerID *	The customer identifier in an external customer relationship management (CRM) application.
CustomerSegment *	Identifies a segment of the customer base to which the customer has been assigned. Customer segments are typically based on criteria such as revenue potential, service plan, or demographic attributes.
GSW_CALL_ATTEMPT_GUID *	In Outbound Contact deployments, stores the GSW_CALL_ATTEMPT_GUID call attempt ID that is assigned by OCS.
IPurpose *	<p>The presence and value of this KVP affects how the ETL populates the IRF table.</p> <ul style="list-style-type: none"> 0 = Not self-service. The IVR application is considered to be a mediation resource. 1 = Self-service. The IVR application is considered to be a handling resource. Genesys Info Mart creates a record in the IRF table. <p>For more information, see IPurpose KVP.</p>

KVP Name	KVP Description
Revenue *	The amount of revenue that was generated for the customer interaction. Note: In deployments that use RAA aggregation (including GCXI deployments), ensure that the resources that set the value of this KVP have been configured or trained, as applicable, to use only integer-type values. Any non-numeric values will cause aggregation to fail. For more information about the problems that result from non-numeric KVP values, as well as information about recovering from the job failure, see the information about checking for incorrect data type in the troubleshooting chapter in the <i>Reporting and Analytics Aggregates User's Guide</i> .
Satisfaction *	The numerical customer-satisfaction score for the customer interaction. Note: In deployments that use RAA aggregation (including GCXI deployments), ensure that the resources that set the value of this KVP have been configured or trained, as applicable, to use only integer-type values. Any non-numeric values will cause aggregation to fail. For more information about the problems that result from non-numeric KVP values, as well as information about recovering from the job failure, see the information about checking for incorrect data type in the troubleshooting chapter in the <i>Reporting and Analytics Aggregates User's Guide</i> .
ServiceObjective *	The time objective (in seconds) to service the interaction, based on the customer segment, service type, and media type.
ServiceSubType *	The detailed type of service that the customer is requesting.
ServiceType *	The type of service that the customer is requesting.
Routing KVPs	
RRequestedSkillCombination *	The agent skills that are required to service the interaction.
RStrategyName *	The name of the routing strategy that is servicing the interaction.
RTargetObjectSelected *	The name of the target object that the router selects.
RTargetTypeSelected *	The type of routing target that the router selects — for example, 0 = Agent, 1 = Place, 2 = Agent Group, 3 = Place Group, 100 = Default Route. Valid values are defined by ICON. For more information, see the list of Route Target Type dictionary values in the <i>Interaction Concentrator Physical Data Model</i> for your RDBMS.
KVPs that can be mapped to custom user-data tables	
IApplication **	The IVR application that is servicing the interaction. Note: Genesys Info Mart uses this KVP during processing. You must configure ICON to store this KVP in IDB even if you do not require IApplication for your reporting and do not configure it to be stored in user-data tables in the Info Mart database.
IResult **	The technical result of the IVR application. <ul style="list-style-type: none"> 1 = Completed 2 = Abandoned 3 = Transferred
IResultReason **	The reason for the IVR technical result. Values should be of low cardinality.
ISpeechRecognition **	Indicates whether IVR speech recognition was used.

KVP Name	KVP Description
	<ul style="list-style-type: none">• 0 = No• 1 = Yes
ITextToSpeech **	Indicates whether IVR text-to-speech was used. <ul style="list-style-type: none">• 0 = No• 1 = Yes

* The mapping of the KVP to fact or dimension tables is predefined, as shown in the [mapping worksheet](#).

** The mapping of the KVP to fact or dimension tables is user-defined. Configure the mapping in the Control tables, as described in [User Data Mapping](#).

Sample ICON Attached Data Specification

As described in the *Interaction Concentrator Deployment Guide* (see [Configuring for Attached Data](#)), ICON requires you to specify the attached-data keys that you want ICON to store. (*Attached-data keys* refers to the keys that are sent in TEvent or Interaction Server reporting event attributes.) Genesys Info Mart provides a sample attached-data specification file, **ccon_adata_spec_GIM_example.xml**, which has been modified to meet typical requirements for Genesys Info Mart.

This page provides an example of the **ccon_adata_spec_GIM_example.xml** file, which is included in the **sql_scripts** folder in your Genesys Info Mart installation package (IP). This file is also available in the **sql_scripts** folder on the Genesys Info Mart product CD. The **ccon_adata_spec_GIM_example.xml** file is updated as necessary to include additional KVPs required to support new features. The example reproduced below is from the latest Genesys Info Mart release.

For the convenience of GCXI customers who might want to include social media metrics — for example, Sentiment, Actionability, and Influence — the script includes commented-out lines for specifying the key names that GCXI requires.

You can use the User Data Assistant, which is briefly described in [Enabling Reporting on User Data](#), to help you customize the attached-data specification file.

Important

Genesys Info Mart requires that you specify a value of all for the **history** attribute. A value of all means that ICON will record every change in value for the specified key. Be aware that your reporting results might be affected if you specify a different value for the **history** attribute.

```
<?xml version="1.0" encoding="utf-8" ?>
<!--
```

```
    Use this xml file instead of the default adata_spec that ICON provides to identify the
Attached
    User Data to store in IDB. Genesys Info Mart has modified the default ICON adata_spec to
include
    all the KVPs used by Genesys Info Mart 8.x for out-of-box reporting, as well as
placeholders for
    additional custom KVPs you want to include.
    The only sections that Genesys Info Mart uses are "public" and "secure". A "key name" can
be
    specified only once, in either the "public" section or the "secure" section; if the "key
name"
    is duplicated, ICON will ignore the second and subsequent entries.
    For all the noncustom KVPs, Genesys Info Mart has predefined the mappings to fact tables
(for
    high-cardinality data) and dimensions (for low-cardinality data) in the Info Mart
database. As
    described in the Genesys Info Mart Deployment Guide, you must provide the mappings for any
custom
```


KVPs you add, and modify the Info Mart database schema accordingly.

```
-->
<adata_spec>
  <public>
    <!--
      Predefined IApplication key, which is used internally by Genesys Info Mart to
      create resources of the IVR Application type.
    -->
    <key name="IApplication"          source="userdata" history="all"/>
    <!--
      Predefined IPurpose key, which is used internally by Genesys Info Mart to process
      self-service IVRs.
    -->
    <key name="IPurpose"                source="userdata" history="all"/>
    <!--
      Predefined GSW_CALL_ATTEMPT_GUID and GSW_CALL_TYPE keys, which are used
internally
      by Genesys Info Mart to process OCS data.
    -->
    <key name="GSW_CALL_ATTEMPT_GUID" source="userdata" history="all"/>
    <key name="GSW_CALL_TYPE"        source="userdata" history="all"/>

    <!-- Predefined GMS keys
    -->
    <key name="_CB_SERVICE_ID"        source="userdata" history="all"/>
    <key name="_CB_T_SERVICE_START"   source="userdata" history="all"/>
    <key name="_CB_T_CALLBACK_ACCEPTED" source="userdata" history="all"/>
    <key name="_CB_T_CUSTOMER_CONNECTED" source="userdata" history="all"/>

    <!-- For internal use only
    -->
    <key name="GSYS_IVR"             source="userdata" history="all"/>

    <!--
      Keys mapped to INTERACTION_DESCRIPTOR
    -->
    <key name="CustomerSegment"      source="userdata" history="all"/>
    <key name="ServiceType"          source="userdata" history="all"/>
    <key name="ServiceSubType"       source="userdata" history="all"/>
    <key name="Business Result"      source="userdata" history="all"/>

    <!--
      Keys mapped to USER_DATA_GEN_DIM_1
    -->
    <key name="GSW_CALL_TYPE"        source="userdata" history="all"/>

    <!--
      Keys mapped to IRF_USER_DATA_GEN_1
    -->
    <key name="CaseID"               source="userdata" history="all"/>
    <key name="CustomerID"           source="userdata" history="all"/>
    <key name="ServiceObjective"     source="userdata" history="all"/>
    <key name="IPurpose"               source="userdata" history="all"/>
    <key name="GSW_CALL_ATTEMPT_GUID" source="userdata" history="all"/>
    <key name="Revenue"              source="userdata" history="all"/>
    <key name="Satisfaction"         source="userdata" history="all"/>
    <key name="_CB_SERVICE_ID"       source="userdata" history="all"/>
    <key name="_CB_T_SERVICE_START"   source="userdata" history="all"/>
    <key name="GVP-Session-ID"      source="userdata" history="all"/>

    <!--
```

```

    Keys mapped to CHAT_SESSION_DIM
-->
<key name="csg_ChatAsyncMode" source="userdata" history="all"/>
<key name="csg_SessionEndedBy" source="userdata" history="all"/>
<key name="csg_SessionEndedReason" source="userdata" history="all"/>
<key name="csg_LanguageName" source="userdata" history="all"/>
<key name="csg_MediaOrigin" source="userdata" history="all"/>

<!--
    Keys mapped to MEDIA_TYPE
-->
<key name="csg_MediaType" source="userdata" history="all"/>

<!--
    Keys mapped to CHAT_SESSION_FACT
-->
<key name="ChatServerSessionStartedAt" source="userdata" history="all"/>
<key name="CALLID" source="userdata" history="all"/>
<key name="ADDED_TS" source="userdata" history="all"/>
<key name="ChatServerSessionClosedAt" source="userdata" history="all"/>
<key name="thread_Id" source="userdata" history="all"/>
<key name="csg_TenantId" source="userdata" history="all"/>
<key name="csg_SessionTotalTime" source="userdata" history="all"/>
<key name="csg_MessagesFromAgentsCount" source="userdata" history="all"/>
<key name="csg_MessagesFromAgentsSize" source="userdata" history="all"/>
<key name="csg_MessagesFromCustomersCount" source="userdata" history="all"/>
<key name="csg_MessagesFromCustomersSize" source="userdata" history="all"/>
<key name="cse_AgentReplyTotalCount" source="userdata" history="all"/>
<key name="cse_AgentReplyMaxTime" source="userdata" history="all"/>
<key name="cse_AgentReplyTotalTime" source="userdata" history="all"/>
<key name="cse_AgentWaitTotalCount" source="userdata" history="all"/>
<key name="cse_AgentWaitMaxTime" source="userdata" history="all"/>
<key name="cse_AgentWaitTotalTime" source="userdata" history="all"/>
<key name="cse_CustomerReplyTotalCount" source="userdata" history="all"/>
<key name="cse_CustomerReplyMaxTime" source="userdata" history="all"/>
<key name="cse_CustomerReplyTotalTime" source="userdata" history="all"/>
<key name="cse_CustomerWaitTotalCount" source="userdata" history="all"/>
<key name="cse_CustomerWaitMaxTime" source="userdata" history="all"/>
<key name="cse_CustomerWaitTotalTime" source="userdata" history="all"/>
<key name="csg_SessionUntilFirstAgentTime" source="userdata" history="all"/>
<key name="csg_SessionUntilFirstReplyTime" source="userdata" history="all"/>
<key name="csg_PartiesAsAgentCount" source="userdata" history="all"/>
<key name="csg_MessagesFromBotsCount" source="userdata" history="all"/>
<key name="csg_MessagesFromBotsSize" source="userdata" history="all"/>
<key name="csg_SessionUntilFirstBotTime" source="userdata" history="all"/>
<key name="csg_PartiesAsBotCount" source="userdata" history="all"/>
<key name="cse_AsyncDormantTotalCount" source="userdata" history="all"/>
<key name="cse_AsyncDormantTotalTime" source="userdata" history="all"/>
<key name="cse_AsyncIdleTotalCount" source="userdata" history="all"/>
<key name="cse_AsyncIdleTotalTime" source="userdata" history="all"/>
<key name="cse_ActiveIdleTotalCount" source="userdata" history="all"/>
<key name="cse_ActiveIdleTotalTime" source="userdata" history="all"/>
<key name="cse_SessionHandleTotalCount" source="userdata" history="all"/>
<key name="cse_SessionHandleTotalTime" source="userdata" history="all"/>
<key name="cse_ParkingQueueCount" source="userdata" history="all"/>
<key name="cse_ParkingQueueTime" source="userdata" history="all"/>

<!--
    Keys mapped to CHAT_THREAD_FACT
-->
<key name="cse_ChatThreadStartedAt" source="userdata" history="all"/>
<key name="thrd_SessionsCount" source="userdata" history="all"/>
<key name="thrd_HandleTime" source="userdata" history="all"/>

```

```

<key name="thrd_PartiesAsAgentCount" source="userdata" history="all"/>
<key name="thrd_EngagementsCount" source="userdata" history="all"/>
<key name="thrd_AgentReplyTotalTime" source="userdata" history="all"/>
<key name="thrd_MessagesFromAgentsCount" source="userdata" history="all"/>
<key name="thrd_MessagesFromAgentsSize" source="userdata" history="all"/>
<key name="thrd_MessagesFromCustomersCount" source="userdata" history="all"/>
<key name="thrd_MessagesFromCustomersSize" source="userdata" history="all"/>

```

```

<!--

```

```

    Keys mapped to USER_DATA_CUST_DIM_1

```

```

-->

```

```

<key name="CustomAttribute1" source="userdata" history="all"/>
<key name="CustomAttribute2" source="userdata" history="all"/>
<key name="CustomAttribute3" source="userdata" history="all"/>
<key name="CustomAttribute4" source="userdata" history="all"/>
<key name="CustomAttribute5" source="userdata" history="all"/>

```

```

<!--

```

```

    Keys mapped to USER_DATA_CUST_DIM_2

```

```

-->

```

```

<key name="CustomAttribute6" source="userdata" history="all"/>
<key name="CustomAttribute7" source="userdata" history="all"/>
<key name="CustomAttribute8" source="userdata" history="all"/>
<key name="CustomAttribute9" source="userdata" history="all"/>
<key name="CustomAttribute10" source="userdata" history="all"/>

```

```

<!--

```

```

    Keys mapped to IRF_USER_DATA_CUST_1

```

```

-->

```

```

<key name="CustomData1" source="userdata" history="all"/>
<key name="CustomData2" source="userdata" history="all"/>
<key name="CustomData3" source="userdata" history="all"/>
<key name="CustomData4" source="userdata" history="all"/>
<key name="CustomData5" source="userdata" history="all"/>
<key name="CustomData6" source="userdata" history="all"/>
<key name="CustomData7" source="userdata" history="all"/>
<key name="CustomData8" source="userdata" history="all"/>
<key name="CustomData9" source="userdata" history="all"/>
<key name="CustomData10" source="userdata" history="all"/>
<key name="CustomData11" source="userdata" history="all"/>
<key name="CustomData12" source="userdata" history="all"/>
<key name="CustomData13" source="userdata" history="all"/>
<key name="CustomData14" source="userdata" history="all"/>
<key name="CustomData15" source="userdata" history="all"/>
<key name="CustomData16" source="userdata" history="all"/>

```

```

<!--

```

```

    The keys that are commented out in this section are required
    for support of eServices/Social Media metrics and dimensions.

```

Media. Include (uncomment) these keys if you require reporting on eServices/Social

```

    <key name="Classify_Actionability_CtgRelevancy" source="userdata"
history="all"/>
    <key name="Classify_Sentiment_CtgRelevancy" source="userdata" history="all"/>
    <key name="KloutScore" source="userdata" history="all"/>
    <key name="CtgName" source="userdata" history="all"/>
    <key name="Screen_Sentiment_CtgName" source="userdata" history="all"/>
    <key name="Screen_Actionability_CtgName" source="userdata" history="all"/>
    <key name="Classify_Actionability_CtgName" source="userdata" history="all"/>
    <key name="Classify_Sentiment_CtgName" source="userdata" history="all"/>
    <key name="desktop_influence" source="userdata" history="all"/>

```

```

-->
</public>
<secure>
</secure>
<call>
</call>
<call-cust>
</call-cust>
<call-cust1>
</call-cust1>
<call-cust2>
</call-cust2>

<!--
ICON db,      The following are only required by ICON to record multi media userdata in the
these may    and are included here for completeness only. If multi media is not required,
              be removed. For detail please refer to the ICON documentation.
-->
<mcr-l>
  <key name = "ContactId"           source="userdata" history ="last" field="mcr-
ucs-contact-id"/>
  <key name = "SuggestedResponseID" source="userdata" history ="last" field="mcr-
suggested-response"/>
  <key name = "AutoResponseID"     source="userdata" history ="last" field="mcr-
auto-response"/>
  <key name = "AutoACKID"          source="userdata" history ="last" field="mcr-
auto-ack"/>
</mcr-l>

<mcr-f>
  <key name = "FromAddress"         source="userdata" history ="first" field="mcr-
from-address"/>
  <key name = "FromPersonal"       source="userdata" history ="first" field="mcr-
from-name"/>
  <key name = "IsCalledBack"       source="userdata" history ="first" field="mcr-
called-back"/>
  <key name = "Subject"            source="userdata" history ="first" field="mcr-
subject"/>
  <key name = "Origination_Source" source="userdata" history ="first" field="mcr-
origin-source"/>
</mcr-f>
</adata_spec>

```

Mapping User Data Worksheet

Use the following worksheet to map KVPs to predefined or custom user-data fact or dimension tables in the Info Mart schema. Keep this information, so that you can refer to it during deployment and when you need to re-install or upgrade Genesys Info Mart.

In the following worksheet:

- All the KVP names that are identified as Genesys-defined are predefined names for data that is attached by Genesys solutions — such as Enterprise Routing and Outbound Contact — and should not be changed.
- For the KVPs that are listed in the **Genesys-defined KVPs that are mapped by default** table below, the mapping to Genesys Info Mart user-data tables is specified by default.
- For the KVPs that are listed in the **Genesys-defined KVPs that are not mapped by default** table below, you must specify the mapping to user-data fact or dimension tables if you want Genesys Info Mart to store these KVPs for your reporting.
- You can add other KVPs that are generated in your contact center environment if you require them for your reports — either instead of, or in addition to, the listed KVPs. The **Other KVPs that are not mapped by default** table provides room for you to record custom mappings. The placeholder entries in this section have been provided to help you to match information to equivalent placeholders in the user-data template script, which you use to customize the Info Mart database schema (see [Customizing the User Data Template](#)). In multi-language databases, do not use non-Latin Unicode characters for custom table and column names.
- Genesys Info Mart does not require the mapping of KVPs to user-data tables to be one-to-one. You can supplement default mappings or further customize custom mappings by mapping a particular KVP to more than one user-data fact or dimension table.
- Because Genesys Info Mart uses special logic to process certain KVPs that are attached by URS, a separate table groups the relevant keys (**Genesys-defined Routing KVPs**).

Important

- If you provide customized mapping of KVPs to user-data dimension tables, be aware of possible RDBMS-related limitations regarding the length of KVP values. For more information, see [RDBMS Considerations](#).
- You must configure Interaction Concentrator to store the **IApplication** KVP, even if you do not choose to map **IApplication** to a user-data table for your reporting purposes.
- In your deployment, if the value of the **Business Result** KVP can be changed after the interaction is completed, change the Business Result propagation rule that is stored in the Info Mart database to **PARTY**. Otherwise, Genesys Info Mart will ignore Business Result values that are defined during after call work (ACW).

For more information about the propagation rules, see [Propagation Rules](#).

KVP Name	Propagation Rule	Info Mart Database Target			
Genesys-defined KVPs that are mapped by default					
Table Name	Column Name	Data Type	Default Value		
CaseID	CALL	IRF_USER_DATA_GEN_1	CASE_ID	Character	DEFAULT_CASE_ID
CustomerID	CALL		CUSTOMER_ID	Character	DEFAULT_CUSTOMER_ID
GSW_CALL_ATTEMPT_GUID	CALL		GSW_CALL_ATTEMPT_GUID	Character	Null
(Starting with release 8.5.011.18) GSW_CALL_TYPE	CALL		GSW_CALL_TYPE	Character	Null
IPurpose	IRF		IPURPOSE	Character	Null
Revenue	CALL		REVENUE	Character	Null
Satisfaction	CALL		SATISFACTION	Character	Null
ServiceObjective	CALL		SERVICE_OBJECTIVE	Character	Null
(Starting with release 8.5.015.14) GVP-Session-ID	IRF_FIRST_UPDATE		GVP_SESSION_ID	Character	Null
Business Result	CALL		INTERACTION_DESCRIPTOR	BUSINESS_RESULT	Character
CustomerSegment	CALL	CUSTOMER_SEGMENT		Character	DEFAULT_CUSTOMER_SEGMENT
ServiceType	CALL	SERVICE_TYPE		Character	DEFAULT_SERVICE_TYPE
ServiceSubType	CALL	SERVICE_SUBTYPE		Character	DEFAULT_SERVICE_SUBTYPE
_CB_SERVICE_ID	CALL	IRF_USER_DATA_GEN_1	SERVICE_ID	Character	0
_CB_T_SERVICE_START	CALL		SERVICE_START_TIME	Integer	0

KVP Name	Propagation Rule	Info Mart Database Target			
Genesys-defined Routing KVPs					

KVP Name	Propagation Rule	Info Mart Database Target			
Table Name	Column Name	Data Type	Default Value		
RRequestedSkillCombination		REQUESTED_SKILL (all columns), REQUESTED_SKILL_ COMBINATION	SKILL_COMBINATION_ STRING	Character	Unspecified
RStrategyName		STRATEGY	STRATEGY_NAME	Character	Unknown
RTargetObjectSelected		ROUTING_TARGET	AGENT_GROUP_NAME	Character	UNSPECIFIED
RTargetObjectSelected			PLACE_GROUP_NAME	Character	UNKNOWN
RTargetObjectSelected			SKILL_EXPRESSION	Character	UNSPECIFIED
RTargetObjectSelected			TARGET_OBJECT_ SELECTED	Character	UNSPECIFIED
RTargetTypeSelected			ROUTING_TARGET_ TYPE	Character	Unspecified

KVP Name	Propagation Rule	Info Mart Database Target			
Genesys-defined KVPs that are not mapped by default					
Table Name	Column Name	Data Type	Default Value		
(Before release 8.5.011.18) GSW_CALL_TYPE				Character	
IApplication				Character	
IResult				Character	
IResultReason				Character	
ISpeechRecognition				Character	
ITextToSpeech				Character	

KVP Name	Propagation Rule	Info Mart Database Target			
Other KVPs that are not mapped by default					
Table Name	Column Name	Data Type	Default Value		
Custom User Data Fact Table (for high-cardinality KVPs): <IRF_USER_DATA_CUST_1>					
User Data Columns: <CUSTOM_DATA_N>					
Note: Data types can be character, numeric, or date/time.					

KVP Name	Propagation Rule	Info Mart Database Target			
<CustomDataN>					
Custom User Data Dimension Table (for low-cardinality KVPs): <USER_DATA_CUST_DIM_1>					
User Data Columns: <DIM_ATTRIBUTE_N> Primary Key: <ID> Foreign Key: <CUSTOM_KEY_1>					
<DIM_ATTRIBUTE_N>				Character	
				Character	
				Character	
				Character	
				Character	

Outbound Contact Data

This page describes how Genesys Info Mart processes Outbound Contact data. It also describes certain Genesys Info Mart requirements for Outbound Contact-related configuration.

Genesys Info Mart and OCS Record Field Data

When support for Outbound Contact details is configured in your deployment, Genesys Info Mart writes data about every outbound contact attempt. Outbound Contact Server (OCS) may attach a number of custom attributes (record fields) to each contact attempt. ICON then stores Record Field data in the GO_FIELDHIST and GO_SEC_FIELDHIST tables in IDB — these IDB tables become the source of the Record Field data for Genesys Info Mart.

For a complete list of the Outbound Contact extension tables in IDB that Genesys Info Mart uses, see [IDB Tables Accessed by Genesys Info Mart](#).

Genesys Info Mart stores Record Field data that is defined in OCS calling lists in several places in the Info Mart database:

- Predefined dimensions, such as Record Type, Record Status, and Contact Info Type. These are mandatory record fields.
- Predefined facts, such as Record ID, Chain ID, Chain N, Dialing From, Dialing Until, and Contact Info. These are mandatory record fields.
- User-defined dimensions, such as the columns in the RECORD_FIELD_GROUP_1 and RECORD_FIELD_GROUP_2 tables. These are nonmandatory record fields.
- User-defined facts, such as RECORD_FIELD_1 through RECORD_FIELD_60 in the CONTACT_ATTEMPT_FACT table. These are nonmandatory record fields.

Predefined and Custom Fields

Some Field objects are populated in the Configuration Database at the time the Configuration Database is created, to represent record fields that are typical in most campaign environments; these fields are referred to as *predefined* record fields. To reflect the record fields that are typical in campaigns in your specific contact center, you may have to create other Field objects in the Configuration Database; these fields are referred to as *user-defined* or *custom* fields.

This division between predefined and custom fields applies to both mandatory and nonmandatory record fields. In other words, some fields that are mandatory from the perspective of Genesys Info Mart are not predefined in the Configuration Database.

Mandatory Record Field Data

The following table shows how Genesys Info Mart uses the data from each mandatory Field object. Some fields map directly to Info Mart table columns, whereas others are used indirectly in calculations.

All the Field objects that are listed in the table require the **icon_attribute** option in their configuration. You must configure each predefined field and each user-defined field that is expected in the Info Mart database. Proper configuration of the Field objects ensures that ICON stores the field value in a specified table in IDB. For more information about how to configure Field objects so that ICON will store the required Record Field data, see [Configuring Field Objects](#).

Genesys Info Mart requires the ICON application to store mandatory field data in its database, regardless of whether the field maps directly to an Info Mart table column. Genesys Info Mart Server retrieves the field value from IDB and stores the value in a specified field of a specified Info Mart table or uses the value in calculations of other fields. Note that some predefined fields that are used in calculations also require a value that indicates a positive result.

Mandatory Record Field Data

OCS Mandatory Field Name	Column Name in Info Mart CONTACT_ATTEMPT_FACT Table
agent_id	No direct mapping
app_id	No direct mapping
attempt	ATTEMPT_ORDINAL
call_result	No direct mapping
call_time	No direct mapping
campaign_id	No direct mapping
chain_id	CHAIN_ID
chain_n	CHAIN_N
contact_info	CONTACT_INFO
contact_info_type	CONTACT_INFO_TYPE_KEY
daily_from	DAILY_FROM_SECONDS DAILY_FROM_TIME CONTACT_DAILY_FROM_TIME
daily_till	DAILY_UNTIL_SECONDS DAILY_UNTIL_TIME CONTACT_DAILY_UNTIL_TIME
dial_sched_time	DIAL_SCHED_TIME CONTACT_DIAL_SCHED_TIME
group_id	No direct mapping
record_id	RECORD_ID
record_status	RECORD_STATUS_KEY
record_type	RECORD_TYPE_KEY
switch_id	No direct mapping
treatments	No direct mapping

OCS Mandatory Field Name	Column Name in Info Mart CONTACT_ATTEMPT_FACT Table
tz_dbid	TIME_ZONE_KEY CONTACT_DAILY_FROM_TIME CONTACT_DAILY_UNTIL_TIME CONTACT_DIAL_SCHED_TIME

For more information about how Genesys Info Mart stores Outbound Contact data, see the *Physical Data Model* for your RDBMS, as well as *Populating Outbound Contact Campaign Activity* in the *User's Guide*.

Important

The following columns in the CONTACT_ATTEMPT_FACT table are no longer populated, although they remain in the schema:

- IXN_START_TIME
- IXN_START_TIME_KEY
- CONTACT_I_XN_START_TIME
- CONTACT_WITHIN_DAILY_RANGE

Nonmandatory (Custom) Record Field Data

Genesys Info Mart can optionally store a limited number of nonmandatory record fields in the following tables:

- CONTACT_ATTEMPT_FACT
- RECORD_FIELD_GROUP_1
- RECORD_FIELD_GROUP_2

The CONTACT_ATTEMPT_FACT table can store up to 60 nonmandatory fields in the following formats:

- 20 integers: NUMBER(10)
- 10 floating-point numbers: NUMBER(14,4)
- 30 strings: VARCHAR(255)

RECORD_FIELD_GROUP_1 and RECORD_FIELD_GROUP_2 each store up to 10 nonmandatory fields (strings).

If you want to report on nonmandatory record fields, you must configure each nonmandatory field properly so that OCS attaches the value of the field, and you must configure ICON to store this field in a designated table. (For more information, see *Configuring Field Objects*.) In addition to configuring

each field similarly to mandatory field configuration, configure options in each Field object to indicate the Genesys Info Mart table and column into which the data should be loaded.

You can use any field that you choose. The data type of the Field object must match the data type of the target Info Mart database table and column. Interaction Concentrator stores all custom field data as strings. The Genesys Info Mart ETL performs all necessary data conversions between strings and other target data types. Each Field object maps to one and only one table and column in the Info Mart database. Nulls are loaded for any unmapped columns in the Info Mart CONTACT_ATTEMPT_FACT table. The Unspecified value is loaded for any unmapped columns in the Info Mart RECORD_FIELD_GROUP_1 and RECORD_FIELD_GROUP_2 tables.

RECORD_FIELD_GROUP_1 and RECORD_FIELD_GROUP_2 column values should be of low cardinality. Storing record fields with high-cardinality values will cause a decrease in the performance for both the ETL and your report queries.

For information about nonmandatory fields that have special meaning for Genesys Info Mart, see [Right Person Contacted Record Field](#) and [Conversion Record Field](#). You can also use the [Mapping OCS Record Fields Worksheet](#) to plan your mapping of OCS Record Fields to the Info Mart table columns.

Right Person Contacted Record Field

Although **Right Person Contacted** is not a mandatory field, it has significance to Genesys Info Mart. It can be any Field object that you designate by adding the **right_person** option to the **[default]** section of the **Annex** tab on the Field object. The option value specifies the value of the field when the right person is contacted — for example, TRUE, YES, or 1. If the value of this field matches the configured option value (which is case-insensitive), Genesys Info Mart sets the RPC_FLAG in the CONTACT_ATTEMPT_FACT table to 1. For more information, see [Configuring Field Objects](#).

If you want to report on right person contacted, you must configure ICON to store nonmandatory field data in its database. For information about how to configure ICON to store field data, see [Configuring Field Objects](#).

Conversion Record Field

Although **Conversion** is not a mandatory field, it has significance to Genesys Info Mart. It can be any Field object that you designate by adding the **conversion** option to the **[default]** section of the **Annex** tab on the Field object. The option value specifies the value of the field when the purpose of the Outbound Contact attempt has been achieved — for example, TRUE, YES, or 1. If the value of this field matches the configured option value (which is case-insensitive), Genesys Info Mart sets the CONVERSION_FLAG in the CONTACT_ATTEMPT_FACT table to 1.

If you want to report on conversion, you must configure ICON to store nonmandatory field data in its database. For information about how to store field data, see [Configuring Field Objects](#).

Mapping OCS Record Fields Worksheet

Use the three worksheets on this page to plan how to map OCS record fields to the following Info Mart database tables:

- CONTACT_ATTEMPT_FACT
- RECORD_FIELD_GROUP_1
- RECORD_FIELD_GROUP_2

CONTACT_ATTEMPT_FACT Table

Genesys Info Mart stores nonmandatory record field data that is defined in OCS calling lists in the RECORD_FIELD_1 through RECORD_FIELD_60 columns of the CONTACT_ATTEMPT_FACT (CAF) table.

Use the following rows to list the nonmandatory fields that you need to map from OCS to the CAF table. The first row contains an example for RECORD_FIELD_1. In the OCS calling list, the name of the record field is **Region**. This field maps to a column that is named RECORD_FIELD_1 in the CAF table.

For fields that you identify as required to be secure, ensure that you set the **icon_attribute** option on the **Field** object to 2.

Important

Make sure that the data type of the field matches the data type of the target CAF column. Unless otherwise indicated, the data type of the columns is *string* (varchar).

Mapping OCS Record Fields to the CONTACT_ATTEMPT_FACT Table

Genesys Info Mart Column Name	Field Object Name	Tenant Name (if applicable)	Is Secure
Example: RECORD_FIELD_1 (numeric)	Region	HQ	✓
RECORD_FIELD_1 (numeric)			
RECORD_FIELD_2 (numeric)			
RECORD_FIELD_3 (numeric)			
RECORD_FIELD_4 (numeric)			

Genesys Info Mart Column Name	Field Object Name	Tenant Name (if applicable)	Is Secure
RECORD_FIELD_5 (numeric)			
RECORD_FIELD_6 (numeric)			
RECORD_FIELD_7 (numeric)			
RECORD_FIELD_8 (numeric)			
RECORD_FIELD_9 (numeric)			
RECORD_FIELD_10 (numeric)			
RECORD_FIELD_11 (int)			
RECORD_FIELD_12 (int)			
RECORD_FIELD_13 (int)			
RECORD_FIELD_14 (int)			
RECORD_FIELD_15 (int)			
RECORD_FIELD_16 (int)			
RECORD_FIELD_17 (int)			
RECORD_FIELD_18 (int)			
RECORD_FIELD_19 (int)			
RECORD_FIELD_20 (int)			
RECORD_FIELD_21 (int)			
RECORD_FIELD_22 (int)			
RECORD_FIELD_23 (int)			
RECORD_FIELD_24 (int)			
RECORD_FIELD_25 (int)			
RECORD_FIELD_26 (int)			

Genesys Info Mart Column Name	Field Object Name	Tenant Name (if applicable)	Is Secure
RECORD_FIELD_27 (int)			
RECORD_FIELD_28 (int)			
RECORD_FIELD_29 (int)			
RECORD_FIELD_30 (int)			
RECORD_FIELD_31 (string)			
RECORD_FIELD_32 (string)			
RECORD_FIELD_33 (string)			
RECORD_FIELD_34 (string)			
RECORD_FIELD_35 (string)			
RECORD_FIELD_36 (string)			
RECORD_FIELD_37 (string)			
RECORD_FIELD_38 (string)			
RECORD_FIELD_39 (string)			
RECORD_FIELD_40 (string)			
RECORD_FIELD_41 (string)			
RECORD_FIELD_42 (string)			
RECORD_FIELD_43 (string)			
RECORD_FIELD_44 (string)			
RECORD_FIELD_45 (string)			
RECORD_FIELD_46 (string)			
RECORD_FIELD_47 (string)			
RECORD_FIELD_48 (string)			

Genesys Info Mart Column Name	Field Object Name	Tenant Name (if applicable)	Is Secure
RECORD_FIELD_49 (string)			
RECORD_FIELD_50 (string)			
RECORD_FIELD_51 (string)			
RECORD_FIELD_52 (string)			
RECORD_FIELD_53 (string)			
RECORD_FIELD_54 (string)			
RECORD_FIELD_55 (string)			
RECORD_FIELD_56 (string)			
RECORD_FIELD_57 (string)			
RECORD_FIELD_58 (string)			
RECORD_FIELD_59 (string)			
RECORD_FIELD_60 (string)			

RECORD_FIELD_GROUP_1 Table

Genesys Info Mart stores nonmandatory record field data that is defined in OCS calling lists in the RECORD_FIELD_1_STRING_1 through RECORD_FIELD_1_STRING_10 columns of the RECORD_FIELD_GROUP_1 table.

Use the following rows to list the nonmandatory fields that you need to map from OCS to the RECORD_FIELD_GROUP_1 table.

Important

Make sure that the data type of the field matches the data type of the target RECORD_FIELD_GROUP_1 column.

Mapping OCS Record Fields to the RECORD_FIELD_GROUP_1 Table

Genesys Info Mart Column Name	Field Object Name
RECORD_FIELD_1_STRING_1	
RECORD_FIELD_1_STRING_2	
RECORD_FIELD_1_STRING_3	
RECORD_FIELD_1_STRING_4	
RECORD_FIELD_1_STRING_5	
RECORD_FIELD_1_STRING_6	
RECORD_FIELD_1_STRING_7	
RECORD_FIELD_1_STRING_8	
RECORD_FIELD_1_STRING_9	
RECORD_FIELD_1_STRING_10	

RECORD_FIELD_GROUP_2 Table

Genesys Info Mart stores nonmandatory record field data that is defined in OCS calling lists in the RECORD_FIELD_2_STRING_1 through RECORD_FIELD_2_STRING_10 columns of the RECORD_FIELD_GROUP_2 table.

Use the following rows to list the nonmandatory fields that you need to map from OCS to the RECORD_FIELD_GROUP_2 table.

Important

Make sure that the data type of the field matches the data type of the target RECORD_FIELD_GROUP_2 column.

Mapping OCS Record Fields to the RECORD_FIELD_GROUP_2 Table

Genesys Info Mart Column Name	Field Object Name
RECORD_FIELD_2_STRING_1	
RECORD_FIELD_2_STRING_2	
RECORD_FIELD_2_STRING_3	
RECORD_FIELD_2_STRING_4	
RECORD_FIELD_2_STRING_5	
RECORD_FIELD_2_STRING_6	
RECORD_FIELD_2_STRING_7	
RECORD_FIELD_2_STRING_8	
RECORD_FIELD_2_STRING_9	
RECORD_FIELD_2_STRING_10	

Keep this information, so that you can refer to it during deployment and when you need to re-install or upgrade Genesys Info Mart.

Overview: Deploying Genesys Info Mart

Deploying Genesys Info Mart is a complex task because it involves a number of components, such as Interaction Concentrator, the Genesys Info Mart Server, the Genesys Info Mart Manager, and databases. It also involves components in the Genesys Configuration Layer, Management Layer, and Media Layer. Before you start the deployment, review the following high-level task flow carefully, and make sure that you understand all of the activities that are involved in planning and executing the Genesys Info Mart deployment.

Similar high-level summaries linked to under [Enabling Specific Functionality](#) provide faceted overviews for specific functionality.

1. Plan the deployment.

Review the general, planning-related information in this guide to familiarize yourself with Genesys Info Mart architecture, requirements, and functionality, and to plan the implementation of Genesys Info Mart features in your deployment.

[+] Show general overview and planning pages

The following pages in the *Genesys Info Mart Deployment Guide* provide general information that is relevant for planning purposes:

- [Architecture](#)
- [Components](#)
- [Features and Functionality](#)
- [System Requirements](#)
- [Supported Topologies](#)
- [Recommendations on Hosting](#)
- [Database Considerations](#)
- [Database Privileges](#)
- [Multimedia Interactions](#)
- [Genesys Info Mart and Attached User Data](#) and related links
- [Outbound Contact Data](#)

If you want to include secure connection features, review the information about Transport Layer Security (TLS) and client-side port definition in the [Genesys Security Deployment Guide](#), to identify deployment requirements. See also [Enabling Secure Connections](#).

This guide provides the following worksheets to assist you in identifying and recording the required configuration information for your environment:

- [Database Worksheets](#)
- [Mapping User Data Worksheet](#)
- [Mapping OCS Record Fields Worksheet](#)

2. Prepare Interaction Concentrator to provide source data for Genesys Info Mart.

- a. Prepare the Interaction Concentrator server (ICON) application(s), which capture and store data from data sources such as Configuration Server and T-Server. For detailed information, see [Preparing the ICON Application](#).

Important

You might have to configure additional, ICON-related settings on supporting objects to enable specific functionality. For more information, see [step 6, below](#).

- b. Prepare the Interaction Database (IDB) instance(s) from which Genesys Info Mart will obtain data. For detailed information, see [Preparing IDBs](#).
- c. Prepare the database access point (DAP) application(s) that enable ICON to access the IDB(s) it populates. For more information, see the [Interaction Concentrator Deployment Guide](#) for your release.
- d. Ensure that the ICON applications and all required data sources have been enabled, to identify them to Genesys Info Mart as available.

To enable specific functionality, such as support for Outbound Contact details or high availability (HA), see also the task summaries under [Enabling Specific Functionality](#).

3. Prepare the target Genesys Info Mart database and views.

Create and configure database schemas to process and store detailed reporting data. For detailed information, see:

- [Preparing the Info Mart Database](#)
- [Optimizing Database Performance: Database Links](#)
- [Optimizing Database Performance: Database Tuning](#)

4. Configure the database access points (DAPs) that Genesys Info Mart uses to access source and target databases.

Create DAPs, or modify the configuration of existing DAPs, to enable:

- Genesys Info Mart Server to access the IDBs.
- Genesys Info Mart Server to access the Info Mart database.

For detailed information, see [Enabling Database Access](#) and [Configuring Required DAPs](#).

5. Configure the Genesys Info Mart Server application.

- a. Import the required Application Template for the Genesys Info Mart application.
- b. Create and configure an Application object for Genesys Info Mart Server.

The required configuration settings depend directly on the Genesys Info Mart features that you want to implement and on your choice of an end-user reporting tool, such as Genesys CX Insights (GCXI).

For more information, see [Configuring the Genesys Info Mart Application](#).

To enable specific functionality, such as support for Outbound Contact details or high availability (HA), see the task summaries on [Enabling Specific Functionality](#).

6. Configure necessary options in other configuration objects that are required by ICON and

Genesys Info Mart.

Depending on the characteristics of your deployment and your reporting needs, you might need to configure options in the following objects:

- Switch (for Voice and Multimedia details) — see [Procedure: Configuring the switch for ICON and Genesys Info Mart reporting](#).
- Media Type Business Attribute (for Multimedia details) — see [Procedure: Setting Media Type Business Attribute object options for Genesys Info Mart reporting](#).
- DN (for Voice and Multimedia details) — see [Procedure: Configuring a DN for ICON and Genesys Info Mart reporting](#).
- Script (for Multimedia details) — see [Procedure: Setting Script object options for Genesys Info Mart reporting](#).
- Field (for Outbound Contact details) — see [Configuring Field Objects](#).

7. Prepare the Genesys Info Mart Server host. See [Preparing the Genesys Info Mart Server Host](#).**8. Install the Genesys Info Mart components.**

- a. Install the Genesys Info Mart application on its host. For more information, see [Installing the Genesys Info Mart application \(Windows\)](#) or [Installing the Genesys Info Mart application \(UNIX\)](#).
- b. Verify the host setup. See [Verifying Host Requirements](#).
- c. Install the Genesys Info Mart Manager management GUI. See [Installing Genesys Info Mart Manager](#).

9. Complete the basic deployment.

Perform post-installation activities:

- a. Start Genesys Info Mart. For more information, see [Starting and Stopping Genesys Info Mart Server](#).
- b. Review Genesys Info Mart logs to verify that the deployment is complete and configuration is correct.
- c. In Genesys Info Mart Manager, review the status of **Job_InitializeGIM** to verify successful initialization of the database and successful update of the IDBs. To access Genesys Info Mart Manager, see [Accessing Genesys Info Mart Manager](#).
- d. Review [Completing Database Preparation](#), particularly [Creating Read-Only Tenant Views](#). Tenant-specific, read-only views on the Info Mart database are required for multi-tenant deployments (optional for single-tenant deployments).
- e. Continue managing Genesys Info Mart jobs through Genesys Info Mart Manager. For more information about using Genesys Info Mart Manager and managing jobs, see [Managing and Scheduling Jobs](#) in the *Genesys Info Mart Operations Guide*.

10. (Optional) Enable aggregation. For more information, see [Enabling Aggregation](#).

Important

If GCXI is your end-user reporting tool, you must enable aggregation.

Enabling Specific Functionality

The following pages, which partially replicate the above information, provide high-level summaries of targeted task flows to enable Genesys Info Mart to support various specific functions:

- [Enabling Reporting on Configuration Details](#)
- [Enabling Reporting on Voice Activity](#)
- [Enabling Reporting on Multimedia Activity](#)
- [Enabling Reporting on Outbound Contact Activity](#)
- [Enabling Reporting on User Data](#)
- [Enabling Reporting on Callback Activity](#)
- [Enabling High Availability](#)
- [Enabling Secure Connections](#)
- [Enabling Aggregation](#)

Enabling Reporting on Configuration Details

This page provides a high-level summary of the targeted task flow to enable Genesys Info Mart to support Configuration details reporting. For a more general, comprehensive overview of deployment tasks, see [Overview: Deploying Genesys Info Mart](#).

1. Prepare the ICON application to capture and store Configuration details.

When you configure the ICON application, ensure that:

- At a minimum, you set the following option values:
 - **role** includes the value `cfg`. If you follow the Genesys recommendation to provide a dedicated Configuration details ICON (and IDB), ensure that the role option specifies *only* `cfg`.
 - **use-dss-monitor** = 1 (or `true`)
 - **partition-type** = 2
- You configure an ADDP connection to Configuration Server (or to an HA pair of Configuration Servers).

For more information about how to configure the ICON application for Genesys Info Mart, see [Configuring ICON](#).

For more information about all of the ICON configuration options that affect ICON processing and data storage, see the [Interaction Concentrator Deployment Guide](#) for your release.

2. Prepare the Interaction Database (IDB) instance(s) from which Genesys Info Mart will obtain Configuration details.

(Optional) After you have run the ICON-provided scripts to create the IDB(s), execute one of the following SQL scripts, which Genesys Info Mart provides:

- **update_idb_for_gim.sql**
- **update_idb_for_gim_mm.sql**

For more information, see [Preparing IDBs to work with Genesys Info Mart](#).

3. Enable ICON to access the Configuration details IDB.

When you create and configure the DAP application that enables the Configuration details ICON to access IDB, ensure that you add the DAP to the **Connections** tab of the ICON Application object.

4. Configure and install the Genesys Info Mart application.

When you configure the Genesys Info Mart application, ensure that:

- The values of Genesys Info Mart configuration options are suitable for your deployment. For summaries of the available Genesys Info Mart options, see [Data-Processing Options for Genesys Info Mart](#), [Operations-Related Options for Genesys Info Mart](#), and [Genesys Info Mart Aggregation-Related Options for GCXI and RAA](#).
- You configure a connection to the ICON application (or HA set) that stores Configuration details.

For more information about how to configure the Genesys Info Mart application, see [Configuring the Genesys Info Mart Application](#).

5. Enable Genesys Info Mart to access the Configuration details IDB.

- When you configure the DAP application that enables Genesys Info Mart to access the Configuration

details IDB, ensure that the **role** option includes the value `ICON_CFG`. For more information, see [Preparing Extraction DAPs](#).

- On the **Connections** tab of the Genesys Info Mart Application object, add a connection to this DAP.

Enabling Reporting on Voice Activity

This page provides a high-level summary of the targeted task flow to enable Genesys Info Mart to support Voice details reporting. For a more general, comprehensive overview of deployment tasks, see [Overview: Deploying Genesys Info Mart](#).

1. Prepare the ICON application to capture and store Voice details.

When you configure the ICON application, ensure that:

- At a minimum, you set the following option values:
 - The **role** option includes the values `gcc`, `gls`, `gud`.
 - **use-dss-monitor** = 1 (or `true`)
 - **partition-type** = 2
 - **gls-active-reason-codes** = 1 (or `true`)
 - **vq-write-mode** = 0
 - Other voice-related options that are described under [Data-Processing Options for Genesys Info Mart](#) are set as specified.
- You configure ADDP connections to all of the T-Servers (or HA pairs of T-Servers) in the deployment that ICON might be required to monitor.

For more information about how to configure the ICON application for Genesys Info Mart, see [Configuring ICON](#).

For more information about all of the ICON configuration options that affect ICON processing and data storage, see the [Interaction Concentrator Deployment Guide](#) for your release.

2. Prepare the IDB instance(s) from which Genesys Info Mart will obtain Voice details.

(Optional) After you have run the ICON-provided scripts to create the IDB(s), execute the **update_idb_for_gim.sql** script, which Genesys Info Mart provides. For more information, see [Preparing IDBs to work with Genesys Info Mart](#).

3. Enable ICON to access the Voice details IDB(s).

When you create and configure the DAP application that enables the Voice details ICON to access IDB, ensure that you add the DAP to the **Connections** tab of the ICON Application object.

4. Configure and install the Genesys Info Mart application.

When you configure the Genesys Info Mart application, ensure that:

- The values of Genesys Info Mart configuration options are suitable for your deployment. For summaries of the available Genesys Info Mart options, see [Data-Processing Options for Genesys Info Mart](#), [Operations-Related Options for Genesys Info Mart](#), and [Genesys Info Mart Aggregation-Related Options for GCXI and RAA](#).
- You configure a connection to all of the ICON applications (or HA sets) that store Voice details.

For more information about how to configure the Genesys Info Mart application, see [Configuring the Genesys Info Mart Application](#).

5. Prepare other objects as required to enable ICON and Genesys Info Mart reporting for Voice details.

- Configure the required ICON-related and Genesys Info Mart-related options on the **Annex** of:

- The Switch object that handles voice interactions, as described in [Procedure: Configuring the switch for ICON and Genesys Info Mart reporting](#).
- DN objects for IVRs or virtual queues for voice interactions, as described in Step 1 in [Procedure: Configuring a DN for ICON and Genesys Info Mart reporting](#).
- (Optional, for DN-specific queue thresholds) DN objects for ACD queues or virtual queues for voice interactions, as described in Step 2 in [Procedure: Configuring a DN for ICON and Genesys Info Mart reporting](#).
- Verify that all of the T-Servers that ICON is required to monitor for Voice details are enabled.

6. Enable Genesys Info Mart to access the Voice details IDB(s).

- When you configure the DAP application that enables Genesys Info Mart to access a Voice details IDB, ensure that the **role** option includes the value `ICON_CORE`. For more information, see [Preparing Extraction DAPs](#).
- On the **Connections** tab of the Genesys Info Mart Application object, add a connection to this DAP.

7. Optimize the extraction job.

After you have created the Info Mart database schema, modify the `GSYS_DNPREMOTELOCATION` table in the Info Mart database, as required, to optimize performance of the merge procedure during the extraction job. For more information, see [Configuring the Info Mart database for merge](#).

Enabling Reporting on Multimedia Activity

This page provides a high-level summary of the targeted task flow to enable Genesys Info Mart to support Multimedia details reporting. For a more general, comprehensive overview of deployment tasks, see [Overview: Deploying Genesys Info Mart](#).

1. Prepare the ICON application to capture and store Multimedia details.

When you configure the ICON application, ensure that:

- At a minimum, you set the following option values:
 - The **role** option includes the values `gcc`, `gls`, `gud`.
Note: Starting with release 8.5.016.04, Genesys Info Mart does not require the `gcc`, `gud`, and `gls` values to occur together. See the discussion of [ICON Roles](#) for more information about setting the **role** option in deployments with Interaction Server Cluster.
 - **use-dss-monitor** = 1 (or true)
 - **partition-type** = 2
 - **calls-in-the-past** = 1 (or true)
 - **om-force-adata** = 1 (or true)
 - **gls-active-reason-codes** = 1 (or true)
 - **vq-write-mode** = 1
- Other Multimedia-related options that are described under [Data-Processing Options for Genesys Info Mart](#) are set as specified.
- You configure ADDP connections to all of the Interaction Servers (or HA pairs of Interaction Servers) in the deployment that ICON might be required to monitor.

For more information about how to configure the ICON application for Genesys Info Mart, see [Configuring ICON](#).

For more information about all of the ICON configuration options that affect ICON processing and data storage, see the [Interaction Concentrator Deployment Guide](#) for your release.

2. Prepare the IDB instance(s) from which Genesys Info Mart will obtain Multimedia details.

(Optional) After you have run the ICON-provided scripts to create the IDB, execute the **update_idb_for_gim_mm.sql** script, which Genesys Info Mart provides. For more information, see [Preparing IDBs to work with Genesys Info Mart](#).

3. Enable ICON to access the Multimedia details IDB(s).

When you create and configure the DAP application that enables the Multimedia details ICON to access IDB, ensure that you add the DAP to the **Connections** tab of the ICON Application object.

4. Configure and install the Genesys Info Mart application.

When you configure the Genesys Info Mart application, ensure that:

- The values of Genesys Info Mart configuration options are suitable for your deployment. For summaries of the available Genesys Info Mart options, see [Data-Processing Options for Genesys Info Mart](#), [Operations-Related Options for Genesys Info Mart](#), and [Genesys Info Mart Aggregation-Related Options for GCXI and RAA](#).
- You configure a connection to all of the ICON applications (or HA sets) that store Multimedia details.

For more information about how to configure the Genesys Info Mart application, see [Configuring the Genesys Info Mart Application](#).

5. Configure other objects, as required, to enable ICON and Genesys Info Mart reporting for Multimedia details.

- (For reporting on virtual-queue activity) Verify that the required ICON-related options are set correctly on the switch and DNS. In the **[gts]** section on the **Annex** of:
 - The Switch object that handles multimedia interactions, **support-dn-type-5** = 1
 - DN objects for virtual queues for multimedia interactions, **monitor** = 1

For more information about these options, see [ICON-Related Switch Options](#) and [DN Options: ICON-related options](#).

- In the **[jim-etl]** section on the **Annex** of the Switch object that handles multimedia interactions, configure the Genesys Info Mart-related options, as described in [Genesys Info Mart-Related Switch Options](#).
- (Optional) To override Genesys Info Mart Application settings for configured thresholds by media type at the tenant, switch, DN, or script level, set the supported Genesys Info Mart-related options on the applicable objects.

For summaries of the media-specific thresholds that you can configure at various levels, see [Data-Processing Options for Genesys Info Mart](#).

For more information about how to configure the applicable objects, see:

- [Procedure: Configuring the switch for ICON and Genesys Info Mart reporting](#)
- [Procedure: Setting Media Type Business Attribute object options for Genesys Info Mart reporting](#)
- [Procedure: Configuring a DN for ICON and Genesys Info Mart reporting](#)
- [Procedure: Setting Script object options for Genesys Info Mart reporting](#)
- Verify that all of the Interaction Servers that ICON is required to monitor for Multimedia details are enabled.

6. Enable Genesys Info Mart to access the Multimedia details IDB(s).

- When you configure the DAP application that enables Genesys Info Mart to access a Multimedia details IDB, ensure that the **role** option includes the value **ICON_MM**. For more information, see [Preparing Extraction DAPs](#).
- On the **Connections** tab of the Genesys Info Mart Application object, add a connection to this DAP.

7. Customize the processing and storage of 3rd Party Media interaction data, if applicable.

- (Recommended) Before you start ETL processing, add to the **MEDIA_TYPE** dimension table any new or missing online media types that might be associated with 3rd Party Media interactions in your deployment. Ensure that the **IS_ONLINE** flag in the **MEDIA_TYPE** record is set to 1. (You do not have to add offline media types in advance.)

For more information about how to add online media types to the Info Mart database schema, see [Setting up media types for online interactions](#). For more information about why Genesys recommends predefining expected online media types for 3rd Party Media interactions, see [Online and Offline Interactions](#).

- During runtime, if you want to change whether Genesys Info Mart processes a particular interaction subtype, alter the record for that interaction type in the **INTERACTION_TYPE** dimension table, to set the value of the **IGNORE** field appropriately.

For more information about disabling transformation of interaction subtypes, see [Interaction Types and Subtypes](#).

8. **(Optional, in Genesys Chat deployments with Chat Server 8.5.203.09 or later and Genesys Info Mart 8.5.011 or later) Enable detailed reporting on chat session activity.**
See [Integrating Chat Server with Genesys Historical Reporting](#) in the *Chat Server Administration Guide*.

Enabling Reporting on Outbound Contact Activity

The following deployment summary assumes that you will also configure Genesys Info Mart to report on voice activity, as described in [Enabling Reporting on Voice Activity](#).

1. Prepare the ICON application to store Outbound Contact details.

When you configure the ICON application, ensure that:

- At a minimum, you set the following option values:
 - **role** includes the value `gos`.
 - **use-dss-monitor** = 1 (or `true`)
 - **partition-type** = 2
 - **gos-write-duplicate-metrics** = 1
- You configure ADDP connections to all of the Outbound Contact Servers (or HA pairs of OCS instances) in the deployment that ICON might be required to monitor.

For more information about how to configure the ICON application for Genesys Info Mart, see [Configuring ICON](#).

For more information about all of the ICON configuration options that affect ICON processing and data storage, see the [Interaction Concentrator Deployment Guide](#) for your release.

2. Prepare the IDB instance(s) from which Genesys Info Mart will obtain Outbound Contact details.

(Optional) After you have run the ICON-provided scripts to create the IDB(s), execute one of the following SQL scripts, which Genesys Info Mart provides:

- **update_idb_for_gim.sql**
- **update_idb_for_gim_mm.sql**

For more information, see [Preparing IDBs to work with Genesys Info Mart](#).

3. Enable ICON to access the Outbound Contact details IDB(s).

When you create and configure the DAP application that enables the Outbound Contact details ICON to access IDB, ensure that you add the DAP to the **Connections** tab of the ICON Application object.

4. Configure Outbound Contact-related objects so that OCS will send the required data and ICON will store it.

- On the **Annex** of each Field configuration object that describes a single field within a record, in the **[default]** section, configure the **icon_attribute** option, to control ICON storage of the data.

For more information, see [Procedure: Configuring the storage of OCS record field data](#).

- Verify that all of the Outbound Contact Servers that ICON is required to monitor for Outbound Contact details are enabled.

5. Map Outbound Contact-related objects to columns in the Genesys Info Mart database.

For every nonmandatory field:

- In the **[gim-etl-mapping]** section, configure the **table-name** and **column-name** options.
- In the **[default]** section, configure the **right_person** and **conversion** options, if applicable.

For more information, see [Procedure: Configuring the mapping of OCS record fields](#).

6. **Configure and install the Genesys Info Mart application.**

When you configure the Genesys Info Mart application, ensure that:

- The values of Genesys Info Mart configuration options are suitable for your deployment. For summaries of the available Genesys Info Mart options, see [Data-Processing Options for Genesys Info Mart](#), [Operations-Related Options for Genesys Info Mart](#), and [Genesys Info Mart Aggregation-Related Options for GCXI and RAA](#).
- You configure a connection to the ICON application (or HA set) that store Outbound Contact details.

For more information about how to configure the Genesys Info Mart application, see [Configuring the Genesys Info Mart Application](#).

7. **Enable Genesys Info Mart to access the Outbound Contact details IDB(s).**

- When you configure the DAP application that enables Genesys Info Mart to access an Outbound Contact details IDB, ensure that the **role** option includes the value `ICON_OCS`. For more information, see [Preparing Extraction DAPs](#).
- On the **Connections** tab of the Genesys Info Mart Application object, add a connection to this DAP.

8. **Enable supplementary reporting on non-dialed records on campaigns managed through CX Contact.**

Starting with release 8.5.012, Genesys Info Mart supports reporting on contact list records that are suppressed when campaigns managed by CX Contact release 9.0.000.09 or higher are activated. To enable this functionality:

- See [Integrating CX Contact with Genesys Historical Reporting](#) in the *CX Contact Deployment Guide* for deployment instructions on the CX Contact side.
- On the Genesys Info Mart application object, create a new configuration section, **elasticsearch-Idr0**, and specify the client option.

Enabling Reporting on User Data

The following steps summarize the task flow to enable Genesys Info Mart to capture and store user data (interaction-based attached data or UserEvent-based data) that is attached to voice or multimedia interactions.

Tip

The Genesys Info Mart installation package (IP) includes the User Data Assistant, a tool to automate preparation of the user-data configuration files. The User Data Assistant is a Microsoft Excel file, **User_Data_Assistant.xlsm**, located in the **sql_scripts** folder in your Genesys Info Mart IP. The User Data Assistant requires Microsoft Excel 2007 or later, with macros enabled. Full instructions on using the tool are within the tool itself.

The tool is intended to be used only for fresh deployments and not to modify existing user-data extension tables or an existing ICON attached-data specification file.

1. Configure the ICON application to store user data.

When you prepare the ICON application, ensure that you set the following option values:

- **role** includes the value `gud`
- **adata-extensions-history** = `none` (for Voice details)
- **adata-reasons-history** = `none` (for Voice details)
- **adata-userdata-history** = `none` (for Voice or Multimedia details)

2. Specify the user data that ICON will store in IDB.

a. Identify the key-value pairs (KVPs) from various applications that Genesys Info Mart requires for data processing. For more information about the KVPs that contact centers typically use for reporting purposes, see [User Data Sources and KVPs](#).

b. For call-based attached data, modify the ICON attached data specification file to capture the KVPs that you require and to control in which IDB table(s) ICON will store the data. By default, ICON expects that the name of the attached data specification is **ccon_adata_spec.xml**.

Genesys Info Mart provides an example of a customized attached data specification. The sample specification file, **ccon_adata_spec_GIM_example.xml**, is included in the **sql_scripts** folder in your Genesys Info Mart IP. The sample is reproduced [here](#). You can use the User Data Assistant to prepare the customized attached data specification file.

For more information about how to customize the attached data specification file, see [Customizing Attached Data Storage](#). See also the information about storing attached data in the [Interaction Concentrator Deployment Guide](#) for your release.

c. For UserEvent-based user data, set ICON configuration options, as required, to store user data in the `G_CUSTOM_DATA_S` table in IDB. For more information, see [Using UserEvent-Based KVP Data](#) and [Configuring UserEvent Data Storage](#).

For more information about the required ICON configuration settings, see the descriptions of the options in the **[custom-states]** section in the [Interaction Concentrator Deployment Guide](#) for your release.

3. Plan the Info Mart tables in which you want to store user data.

- a. Identify the Info Mart fact or dimension tables in which you want user data to be stored. For more information, see [Storing User Data](#).

Some target tables and columns are predefined. You can also store user data in custom-defined tables and columns, which you create later when you modify and execute SQL scripts.

- b. Map the user-data KVPs to the Info Mart tables and columns that you have identified. Genesys provides a [worksheet](#) to assist you in completing the mapping. You can also use the User Data Assistant to map the KVPs.

For more information about how to map attached data and specify the propagation rules, see [User Data Mapping](#) and [Propagation Rules](#).

4. Modify the Info Mart database schema, as required, to store custom user data.

- a. Prepare the user-data SQL script to:
 - Specify creation of the target user-data fact and dimension tables and columns, in accordance with your mapping worksheet.
 - Map the user-data key names to the target tables and columns (in the CTL_UD_TO_UDE_MAPPING table), and the key names in the user-data dimension table(s) to the IRF_USER_DATA_KEYS table (in the CTL_UDE_KEYS_TO_DIM_MAPPING table).

For information about manually preparing the script, see [Preparing the User Data Script](#). Alternatively, you can use the User Data Assistant to generate the required script, based on the mapping you provide in the tool. Sample template scripts ([make_gim_UDE_template.sql](#) and [make_gim_UDE_template_partitioned.sql](#)) are available in the RDBMS-specific scripts folder in your Genesys Info Mart installation package.

- b. Execute the modified script when you create the rest of the Info Mart database schema, or when you complete the deployment after installing Genesys Info Mart.

Important

If you are modifying an existing Info Mart database schema, Genesys recommends that you back up the Info Mart database before you execute the script.

5. (Optional) Enable storage of user data for interactions that are in mediation.

Configure the **link-msf-userdata** configuration option in the **[gim-etl]** section of ACD Queue and Virtual Queue DNs and Interaction Queue or Interaction Workbin Script objects or, starting with release 8.5.003, the link-msf-userdata-voice or link-msf-userdata-mm options on the Genesys Info Mart Application object. For more information, see [Procedure: Configuring a DN for ICON and Genesys Info Mart reporting](#) and [Procedure: Setting Script object options for Genesys Info Mart reporting](#).

6. (Optional) Enable Genesys Info Mart to extract KVPs that are sourced from the Reasons or Extensions attributes, in addition to the UserData attribute, in data-source events.

Turn off filtering of user data in IDB by setting the filterUserData startup parameter in the **gim_etl_server** file to false. For more information, see [Modifying JVM Startup Parameters](#).

7. (Optional) Streamline Genesys Info Mart processing of user data.

If your historical reporting involves the use of large quantities of user data, consider increasing the value of the ud-io-parallelism option, to enhance performance of the transformation job.

Enabling Reporting on Callback Activity

Genesys Callback offers callers the opportunity to receive a return call, instead of waiting for an available agent; so your customers spend less time on hold, reducing customer frustration and freeing up valuable system resources.

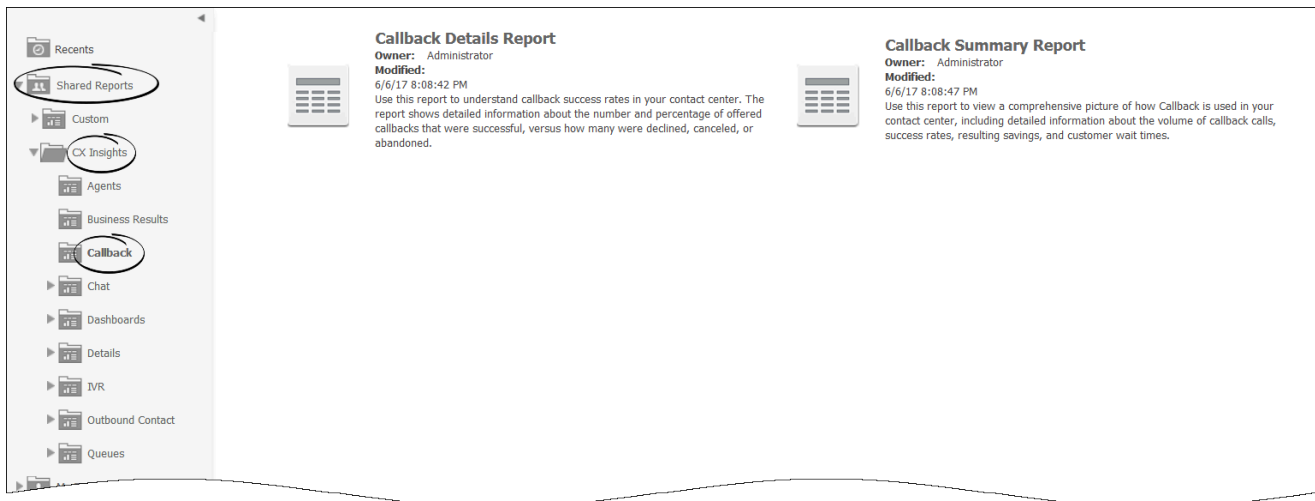
Genesys Callback provides a single platform across the IVR, Web and Mobile touchpoints, seamlessly consolidating callback functionality previously available through other Genesys products (Web Callback, Genesys Mobile Engagement (GME) Callback and Voice Callback). Genesys Callback features are based on the callback services provided by the Genesys Mobile Services (GMS) component.

This page provides a high-level summary of the targeted task flow to enable Genesys Info Mart to support callback reporting. For detailed information about configuring Callback reporting, see the [Callback Solution Guide](#).

- 1. Configure the environment to support callback reporting.**
Using Genesys Administrator or Configuration Manager, configure a Reporting DN, enable and configure callback reporting, and configure connections on the Orchestration Server.
- 2. Configure callback reporting on Interaction Concentrator (ICON).**
Configure the ICON **[custom-states]** configuration options and, if necessary, modify the attached-data specification file, so that ICON stores the KVPs that Genesys Info Mart requires. For more information, see [Genesys Mobile Services \(GMS\) — for Callback](#) and the [Sample Attached Data Specification File](#).
- 3. (Optional, starting with release 8.5.015.19) Configure Genesys Info Mart behavior with respect to mediation reporting of callback virtual queues.**
The `cb-virtual-queue-pattern` configuration option enables you to fine-tune Genesys Info Mart behavior with respect to excluding callback virtual queues from mediation reporting. Configure the option value as required to specify which, if any, callback virtual queues you want to exclude from mediation reporting. The default is to exclude them all.
- 4. Configure callback reporting on Reporting and Analytics Aggregates (RAA).**
On the Genesys Info Mart Server application object, configure the **enable-callback** option in the **[agg-feature]** section, so that RAA collects and organizes callback data in the Info Mart database.

When Callback reports in Genesys CX Insights (GCXI) are run, they are now populated with appropriate data.

About Callback reports



GCXI present two out-of-the-box callback reports that enable you to understand callback utilization and rates of success in your contact center:

- **Callback Summary Report** — shows overall callback success rates in your contact center, including the number and percentage of offered callbacks that were successful, versus how many were declined, canceled, or abandoned.
- **Callback Details Report** — shows detailed information about what happened with each callback scheduled in your contact center, including the time at which each state in the call began and ended, and the duration of each state.

For more information about the reports, see [Callback reports](#).

Additional resources

For detailed information about Genesys Callback, and the products that are required to support callback reporting, see the following resources:

- [Callback Solution Guide](#)
- [Genesys Mobile Engagement documentation](#)
- [Interaction Concentrator documentation](#)
- [Reporting and Analytics Aggregates documentation](#)
- [Genesys CX Insights documentation](#)

Enabling High Availability

The following steps summarize the task flow to enable Genesys Info Mart to provide high availability (HA) of reporting data in a new or existing deployment.

1. Provide redundancy for monitoring the data sources and storing source data.

Create and configure identical redundant ICON Applications for the type of details you require. For more information, see [Configuring ICON](#).

Except for identical configuration, there are no special requirements for HA ICON applications. However, especially ensure the following:

- On the **Connections** tab of every ICON Application object, an ADDP connection has been configured to every data source that the ICON instance might be required to monitor. The connection list can include HA pairs of Configuration Servers, T-Servers, Interaction Servers, or Outbound Contact Servers.

Important

Remember that you configure an overt connection only to the primary data source.

For example, say the deployment consists of:

- An HA pair of Configuration Servers (primary Configuration Server 1 and backup Configuration Server 1a)
- Two HA pairs of T-Servers (primary T-Server 1, backup T-Server 1a, primary T-Server 2, and backup T-Server 2a)
- A single set of redundant ICONs for Configuration and Voice details (ICON-1 and ICON-2, storing data in IDB-1 and IDB2, respectively)

Then both ICON-1 and ICON-2 must have connections to Configuration Server 1, T-Server 1, and T-Server 2.

- On the **General** tab of every data-source application whose availability and activity Genesys Info Mart must monitor, the **State Enabled** check box is selected.
- On the **General** tab of every ICON in the Genesys Info Mart Application connections that Genesys Info Mart must monitor, the **State Enabled** check box is selected.
- The value of the **dss-no-data-tout** option (see [Important \[callconcentrator\] ICON Configuration Options](#)) is suitable for your HA deployment; the default value is 5 minutes.

Tip

If you need to restart existing ICON application(s) for configuration information to take effect, Genesys recommends that you do not restart ICON at this time; see [step 5](#).

2. Provide redundancy for the Genesys Info Mart database sources (the IDBs).

Create and initialize identical redundant IDBs, together with their associated DAPs, to store the type of ICON details that you require.

For more information about how to prepare an IDB, see [Preparing IDBs to work with Genesys Info Mart](#).

For more information about how to configure a DAP for Interaction Concentrator, see the [Interaction Concentrator Deployment Guide](#) for your release.

3. Provide redundancy for Genesys Info Mart to access the redundant IDBs.

Configure identical redundant DAPs to enable the Genesys Info Mart Server to access the redundant IDBs. Create a separate DAP to enable access to each redundant IDB.

Ensure that all these extraction DAPs are enabled (the **State Enabled** check box on the **General** tab of the DAP application object is selected).

For more information about how to configure the required DAPs, see [Preparing Extraction DAPs](#).

4. Configure the Genesys Info Mart Server application.

Configure the Genesys Info Mart Application object in the usual way. For more information, see [Configuring the Genesys Info Mart Application](#).

There are no special requirements for the Genesys Info Mart Server application in an HA environment. However, especially ensure the following:

- On the **Connections** tab of the Genesys Info Mart Application object, a connection has been configured to every redundant ICON Application in the deployment.
- On the **Connections** tab of the Genesys Info Mart Application object, a connection has been configured to every DAP that provides access to a redundant IDB in the deployment.
- The values of the following options are suitable for your HA deployment:
 - extract-data-stuck-threshold
 - max-time-deviation

5. Start or, if necessary, restart the ICON applications.

For more information about how to start ICON, see the [Interaction Concentrator Deployment Guide](#) for your release. Also see the ICON documentation for information about when you might need to restart an existing ICON.

6. In a new deployment, start the Genesys Info Mart Server.

For more information about how to start Genesys Info Mart, including information about modifying startup parameters, see [Starting and Stopping Genesys Info Mart Server](#).

Tip

The Genesys Info Mart Server supports dynamic changes. If you are adding HA to an existing deployment, it is not necessary to interrupt the Genesys Info Mart job schedule or to stop Genesys Info Mart for new connection information or other configuration option changes to take effect.

7. Verify the deployment.

Review logs to confirm the results of the configuration check, to verify connections to all redundant Interaction Concentrator instances and data sources, and to verify correct configuration.

Enabling Secure Connections

The following steps summarize the task flow to enable Genesys Info Mart to implement the features that Genesys provides to secure connections in the deployment. All of the security features are optional.

1. **Enable the Transport Layer Security (TLS) protocol on the connections from Genesys Info Mart Server to Configuration Server and Message Server.**

- a. (For UNIX-based deployments only) Install the Genesys Security Pack on the Genesys Info Mart Server host, and set the applicable environment variable to specify the path to the Security Pack libraries. For more details, see the information about [Installing Genesys Security Pack](#) in the *Genesys Security Deployment Guide*.

- b. If certificates do not already exist, create and install certificates on the Genesys Info Mart Server host, as well as on the Configuration Server and Message Server hosts. Genesys Info Mart supports mutual TLS, which requires exchange of certificates from both the TLS Server and the TLS Client. For more details, see the information about [installing and generating certificates](#) and about [Securing Connections Using TLS](#) in the *Genesys Security Deployment Guide*.

To enable TLS 1.2, ensure that you use versions of the applications that support the protocol (see [TLS Protocol Support](#)) and that you modify the transport protocol parameters to specify the **sec-protocol** option (sec-protocol=TLSv12).

- c. If necessary, modify the configurations of the Configuration Server and Message Server applications to:
 - i. Add a new port for secure connections. On the Configuration Server and Message Server Application objects, select the **Secured** mode.
 - ii. Use a host certificate.

For full details, see [Securing Core Framework Connections](#) and other pages about TLS configuration in the *Genesys Security Deployment Guide*.

- d. On the Genesys Info Mart Application object, add connections to Configuration Server and Message Server (as described for the [Connections tab](#) in [Creating the Genesys Info Mart application](#)). When you add the connection(s), ensure that you specify the port that you created for secure connections.

2. **Enable compliance with Federal Information Processing Standards (FIPS).**

Genesys Info Mart support for TLS complies with FIPS, but there are additional steps to enable FIPS mode. For details about setting up your Java environment to be compliant with FIPS, see the information about [enabling FIPS in a Genesys Java environment](#) in the *Genesys Security Deployment Guide*.

3. **Enable client-side port definition for the connection from Genesys Info Mart Server to Configuration Server.**

- a. When you install Genesys Info Mart, specify the connection parameters that Genesys Info Mart will use for the initial connection to Configuration Server.
- b. In the Genesys Info Mart Application object, add or modify the connection to Configuration Server, to specify the connection parameters (port number and, optionally, IP address) that Genesys Info Mart will use to reconnect to Configuration Server after a switchover or disconnection. You configure the parameters in the **Transport Parameters** text box on the **Advanced** tab of the connection properties.

For full details, see the information about [client-side port definition](#) in the *Genesys Security Deployment Guide*.

4. **Enable client-side port definition for the connection from Genesys Info Mart Server to Message Server.**

In the Genesys Info Mart Application object, add or modify the connection to Message Server, to specify the connection parameters (port number and, optionally, IP address) that Genesys Info Mart will use. You configure the parameters in the **Transport Parameters** text box on the **Advanced** tab of the connection properties.

For full details, see the information about [client-side port definition](#) in the *Genesys Security Deployment Guide*.

5. **Enable use of the Secure Socket Layer (SSL) protocol on the JDBC connections between Genesys Info Mart Server and its source and target databases.**

Create the certificates and configure the RDBMS server and client as described in your RDBMS vendor documentation for Java clients, including JVM startup parameters. See also the [Environment Settings](#) information in the *Framework Database Connectivity Reference Guide*.

When you configure the extraction DAP(s) and the Info Mart DAP, use the `jdbc-url` option to specify the URL information as required by your RDBMS to implement JDBC over SSL. See the extended description of the [jdbc-url](#) option for examples of the syntax to use.

For more information about configuring the [jdbc-url](#) option, see [Configuring a JDBC extraction DAP](#) or [Configuring a non-JDBC extraction DAP](#). For more information about the parameters that you must specify, see your RDBMS vendor documentation.

6. **In deployments that rely on obtaining reporting data from Kafka, enable a secure client connection from Genesys Info Mart to the Kafka instance.**

Starting with release 8.5.014.19, you can set native Kafka configuration options in the `kafka-<cluster-name>` configuration section to enable secure client connections. In particular, see [kafka-<cluster-name> Section](#) in the *Genesys Info Mart Options Reference* for security options you should consider for a Kafka cluster that uses SASL_SSL authentication or if you are using SSL connections with a self-signed certificate.

Enabling Aggregation

The following steps summarize the task flow to enable Genesys Info Mart to support the aggregation process and to populate aggregate tables in the Info Mart database.

Important

If you plan to use Genesys CX Insights (GCXI) you must enable aggregation.

1. Install the aggregation engine software.

Install Reporting and Analytics Aggregates (RAA).

For information about how to install GCXI, see the [Genesys CX Insights Deployment Guide](#). For information about how to install the RAA package, see the [Reporting and Analytics Aggregates Deployment Guide](#) for your release.

2. Configure the Genesys Info Mart Application object and other applications and objects in your Genesys environment, as required, to support aggregation.

Settings on the Genesys Info Mart Application object — as well as settings for ICON filtering options, switch and DN options, and other applications — affect aggregation. Be aware that GCXI has specific requirements for certain settings.

- For full information about how to configure Genesys Info Mart for aggregation, see the [Reporting and Analytics Aggregates Deployment Guide](#) for your release.

Tip

You must restart the Genesys Info Mart Server if you modify the following settings during runtime:

- jdbc-url option in the Info Mart DAP
- agg-jdbc-url option in the Info Mart DAP (optional, in Oracle RAC deployments only, if you want aggregation to use a separate node)
- aggregation-engine-class-name in the Genesys Info Mart Application
- User name for the Info Mart database
- Password for the Info Mart database

Genesys Info Mart generates a log event (message 55-20153) when these settings are changed. Genesys recommends that you set an alarm on the log message, to prompt you to restart the Genesys Info Mart Server.

- For information about how to configure MicroStrategy and GCXI, see the [Genesys CX Insights Deployment Guide](#).

3. (Optional) Configure custom calendars.

See [Creating Custom Calendars](#).

Important

If your reports use custom calendar dimensions, create the custom calendars before you start aggregation.

4. Start the aggregation engine.

If you have configured the Genesys Info Mart scheduler to control the aggregation process (`run-aggregates = true`), the aggregation job will start automatically at the scheduled time, as specified by `aggregate-schedule`, and will run continuously for the amount of time specified by `aggregate-duration`.

For full information about how to start the aggregation engine, see the [Reporting and Analytics Aggregates Deployment Guide](#) for your release. For more information about how to schedule and manage the aggregation job in Genesys Info Mart, see [Managing and Scheduling Jobs](#) in the *Genesys Info Mart Operations Guide*.

Preparing Interaction Concentrator

This page provides a high-level overview of the steps to prepare the Interaction Concentrator applications (ICONS) and Interaction Databases (IDBs) to capture and store reporting data for Genesys Info Mart. Before you install your Genesys Info Mart application, refer to this page and the links it provides.

Overview: Preparing Interaction Concentrator for Genesys Info Mart

- 1. Set up ICON(s) to capture information to support detailed reporting about contact center configuration, interactions of any type, and related agent activity.**

Set up the ICON applications to capture and store data from instances or high availability (HA) pairs of data sources:

- Configuration Server, for Configuration details
- T-Server, for Voice details
- Interaction Server, for Multimedia details
- Outbound Contact Server (OCS), for Outbound Contact details

For information about how to configure the ICON application as required for Genesys Info Mart, see [Configuring the ICON application](#). For full details about creating and configuring an ICON Application object, see the [Interaction Concentrator Deployment Guide](#) for your release.

- 2. (Optional) Provide support for high availability (HA) of reporting data.**

Set up redundant ICON applications to store ICON details in an HA set of redundant IDBs. For more information, see [Enabling High Availability](#).

- 3. (Optional) Minimize the required database storage space, while supporting detailed reporting of interactions of any type and of related agent activity.**

Set up the ICON application to exclude extra details from being stored in IDB. For more information, see [Controlling IDB storage](#).

- 4. (Optional) Set up ICON to capture attached user data to support detailed reporting of interactions of any type.**

Indicate what user data ICON should store in IDB. You must include all key-value pairs (KVPs) that Genesys Info Mart requires for data processing, as described in [Genesys Info Mart and Attached User Data](#). Optionally, include any additional KVPs that you require for end reports. For more information, see [Enabling Reporting on User Data](#) and [Customizing Attached Data Storage](#).

- 5. Enable extraction of ICON details from the IDBs for reporting purposes.**

- a. Create the IDB instances that are required for your deployment. For more information about the SQL scripts that Interaction Concentrator provides, as well as information about how to execute the scripts to create the IDB schema, see the [Interaction Concentrator Deployment Guide](#) for your release.
- b. Ensure that the database access account that the ETL jobs will use to access IDB data is available and has the required user account privileges (see [Database Privileges](#)).

- c. Genesys Info Mart jobs automatically execute the scripts to modify IDB so that the jobs that extract, transform, and load data extract relevant reporting data. However, if you are adding IDBs to an existing deployment, you might still choose to perform this step manually, for reasons that are described in [Preparing IDBs](#). See the instructions on that page for more information about executing the scripts to update IDB.

6. **Verify correct configuration for database connectivity between ICON and IDB.**

- Verify configuration settings on the DAPs that enable ICON(s) to access IDB(s). For more information, see the [Interaction Concentrator Deployment Guide](#) for your release.
- Verify that all required DAPs have been added to the **Connections** tab of the applicable ICON Application objects.

7. **Prepare other objects, as required, to support detailed reporting about interactions of various media types.**

Configure ICON-related settings on other objects:

- Switch (for Voice or Multimedia details) — For more information, see [Configuring the switch for ICON and Genesys Info Mart reporting](#).
- DN (for Voice or Multimedia details) — For more information, see [Configuring a DN for ICON and Genesys Info Mart reporting](#).
- Field (for Outbound Contact details) — For more information, see [Configuring the storage of OCS record field data](#).

8. **Verify correct configuration for connectivity between ICON and its data sources.**

Verify that all data sources from which information is required to be captured have been configured to be available. Specifically:

- The data sources are included in the connections of the applicable ICON applications. Interaction Concentrator [Configuration and Installation](#) explains the configuration of the ICON Application object in the Genesys Configuration Layer, including the connections to configure for data sources on the **Connections** tab of the Application.
- All data-source applications that you want Genesys Info Mart to consider to be active are enabled.

Preparing the ICON Application

This page provides detailed instructions for preparing the ICON applications that capture and store information from the upstream data sources in your deployment.

Preparing ICON

Your Genesys Info Mart deployment requires at least one ICON application and one IDB. However, depending on your chosen topology, you may have additional ICON applications or additional IDBs for separate storage of Configuration details, Voice details, Multimedia details, and Outbound Contact details. For more information about the various data-source topologies that Genesys Info Mart supports, see [Interaction Concentrator Topologies](#).

In the interface you use to configure your Genesys applications, you must configure each ICON Application object and related objects in the deployment, in accordance with the Genesys Info Mart deployment requirements that are described in this section.

The type of data that Genesys Info Mart will extract from a particular ICON and IDB depends on your topology and reporting requirements. The required configuration settings, therefore, also depend on your topology and reporting requirements.

In some cases, you must configure settings on other configuration objects (DN, Field, Switch, Script), as well as on the ICON Application object. For links to more information about ICON-related settings on other configuration objects, see [Configuring Supporting Objects](#).

Important

- The valid values that are listed for ICON application options on this page do not necessarily represent the entire set of values that are available in ICON; instead, these are the values that make sense in a reporting environment that is based on Genesys Info Mart.
- The values that Genesys Info Mart requires for certain ICON options (“mandatory options”) are not the default values.
- Changes to the values of certain ICON options — including mandatory options — require a restart of ICON. When you restart an existing ICON application in a non-HA deployment, active calls are lost.
- All the IDBs from which Genesys Info Mart extracts data must have been populated only by ICONs that conform to Genesys Info Mart requirements. If you are adding Genesys Info Mart to an existing ICON deployment and you upgrade ICON or change ICON settings to meet Genesys Info Mart requirements, you must create new IDBs as part of the upgrade and start populating them only after all of the mandatory settings have been updated. Otherwise, Genesys Info Mart will not be able to process data from IDB. Any data that was collected in IDB before the upgrade or change in the ICON settings

will not be processed by Genesys Info Mart.

Recommendations for ICON Deployment and Upgrade

- If you are deploying Interaction Concentrator at the same time as Genesys Info Mart, follow the installation and configuration instructions in the [Interaction Concentrator Deployment Guide](#) for your release, while observing the Genesys Info Mart deployment requirements that are documented on this page.
- You can deploy Genesys Info Mart in an environment in which Interaction Concentrator 8.x has been deployed already, provided that ICON was configured in accordance with Genesys Info Mart requirements when Interaction Concentrator was originally deployed. If there is a large amount of data in IDB by the time Genesys Info Mart is added to the deployment, be aware that this approach might result in significant data latency while the Genesys Info Mart ETL jobs process the backlog.

Configuring the ICON Application

Procedure: Configuring ICON

Purpose: To enable ICON to capture Configuration details, Voice details, Multimedia details, or Outbound Contact details for Genesys Info Mart.

Steps

1. Create and configure an Interaction Concentrator Application object, as described in the [Interaction Concentrator Deployment Guide](#) for your release.
Ensure that the **State Enabled** check box on the **General** tab is selected.
2. Review the options from the **[callconcentrator]** section, and modify settings as required for Genesys Info Mart. [Important \[callconcentrator\] ICON Configuration Options](#) describes the required ICON options, as well as other ICON options and recommended settings that are important for Genesys Info Mart. At a minimum, you must set the following option values for all types of ICON details:
 - **use-dss-monitor** = 1 (or true)
 - **partition-type** = 2
 - **role** (the value depends on the type of ICON details that you require that ICON application to store)

There are additional minimum requirements for Voice details and Multimedia details ICONs.

See the options identified as mandatory (with a single asterisk) in the table below.

3. Configure a connection to every data source that will supply data for Genesys Info Mart. Ensure that all connections between ICON and its data sources use ADDP.

Next Steps

- (Optional) [Controlling IDB storage](#)
- (Optional, for Voice or Multimedia details) [Customizing Attached Data Storage](#)
- (Optional, for Voice or Multimedia details) [Configuring UserEvent Data Storage](#)
- [Preparing IDBs](#)

Important [callconcentrator] ICON Configuration Options

The following table describes required or recommended settings for options that you set on the ICON Application object, in the **[callconcentrator]** section.

For more information about all of the ICON configuration options, see the [Interaction Concentrator Options Reference](#).

In the context of this section, the term *interaction* is used generically to refer to voice calls and multimedia interactions.

ICON Application Options — [callconcentrator] Section, by Area of Functionality

Area of Functionality	Option Name	Recommended Value	Applies to ICONs For		
Voice Details	Multimedia Details	Outbound Contact Details			
Legend:					
* Mandatory option — Genesys Info Mart will not function if the option value is not set as specified.					
** Recommended option — Data quality might be compromised if you do not use the recommended value. For more information about data-quality considerations, see the Genesys Info Mart User's Guide .					
Click the option name to see a brief description of the option.					
ICON role	role*	<ul style="list-style-type: none"> • cfg — For Configuration details • gcc, gud, gls — For Voice or Multimedia details 	✓	✓	✓

Area of Functionality	Option Name	Recommended Value	Applies to ICONs For		
		<ul style="list-style-type: none"> • gos — For Outbound Contact details 			
	ClusterRole**	I-Proxy, T-Controller (default)	✓	✓	✓
Configuration information	cfg-annex	1 (meaning true)	✓	✓	✓
	cfg-auto-resync**	1 (meaning true)	✓	✓	✓
	cfg-long-vag-script	1 (meaning true)	✓	✓	✓
Session monitoring	dss-no-data-tout**	60 (seconds)	✓	✓	✓
	use-dss-monitor*	1 (or true)	✓	✓	✓
Interaction processing	calls-in-the-past*	1 (or true)		✓	
	om-force-adata*	1 (or true)		✓	
IDB	partition-type*	2 Note: For Genesys Info Mart purposes, this option effectively applies only to processing of multimedia interactions. However, Genesys Info Mart requires that you set the value of this option to 2 for all types of ICON details.	✓	✓	✓
Agent state and login session	gls-active-reason-codes*	1 (or true)	✓	✓	
	gls-enforce-reason-code	No recommended value, but the setting might affect reporting results.	✓	✓	
	gls-acw-first	No recommended value, but the setting might	✓		

Area of Functionality	Option Name	Recommended Value	Applies to ICONs For		
		affect reporting results: <ul style="list-style-type: none"> • 0 (or false) (default) — ICON associates after call work (ACW) metrics with the voice interaction that immediately precedes the completion of the ACW (the last voice interaction). • 1 (or true) — ICON associates ACW metrics with the voice interaction that immediately precedes the start of the ACW (the first voice interaction). Subsequent voice interactions are considered to be related to ACW processing and should not interrupt measurement of ACW- 			

Area of Functionality	Option Name	Recommended Value	Applies to ICONs For		
		related metrics.			
	timestamp-processing	2 (rounding enabled)	✓		
Virtual queue	route-res-vqid-hist-enabled*	1 (or true)	✓	✓	
	vq-write-mode*	<ul style="list-style-type: none"> • 0 — For Voice details • 1 — For Multimedia details If your deployment uses the same ICON to monitor both voice and multimedia interaction activity (a supported topology starting with release 8.5.007), set vq-write-mode=1.	✓	✓	
	extended-route-result**	1 (or true) — ICON stores extended routing results. (Required if detailed dispositions on routing from virtual queues is required for reporting.)	✓	✓	
Attached data	adata-userdata-history**	none	✓	✓	
	adata-extensions-history**	none	✓		
	adata-reasons-history**	none	✓		
	cseq-adjustment*	2	✓	✓	
	max-userdata-length	<ul style="list-style-type: none"> • For ICON releases 8.1.512.08 	✓	✓	

Area of Functionality	Option Name	Recommended Value	Applies to ICONs For		
		through 8.1.514.05: 255 • For ICON release 8.1.514.06 and later: No recommended value if you are using Genesys Info Mart release 8.5.007 or later; otherwise, 255			
Scenario recognition	dest-busy-processing**	1 (or true)	✓	✓	
	ssc-processing**	1 (default, meaning true)	✓		
	store-releasing-party	No recommended value	✓		
3rd Party Media	mcr-om-processing	1 (default, meaning true) — This is the recommended setting because it enables recording of 3rd Party Media agent states and interaction data in IDB.		✓	
Outbound Contact metrics	gos-write-duplicate-metrics**	1 (meaning true)			✓

Controlling IDB Storage

By default, ICON stores full details about voice and multimedia interactions, as well as associated agent-related data. To customize IDB as a source of data for Genesys Info Mart, you can enable

certain filtering through ICON configuration options. If you do not store in IDB the details that Genesys Info Mart does not extract, you can minimize the required storage space for IDB and improve ETL data extraction performance.

For a list of the IDB tables from which Genesys Info Mart extracts data, see [IDB Tables Accessed by Genesys Info Mart](#).

The following procedure describes how you can set up the ICON application to exclude storage of details that Genesys Info Mart does not use.

Procedure: Controlling IDB storage

Purpose: To exclude the data that is not required for Genesys Info Mart from being stored in IDB.

This procedure is optional.

Prerequisites

- [Configuring the ICON application](#)

Steps

1. Review the options from the **[filter-data]** section, described in [step 5](#), for configuring ICON storage.
2. Open the ICON Application object.
3. Create a new section, named **[filter-data]**, if it does not already exist on the **Options** tab.
4. Open the **[filter-data]** section.
5. Configure any or all of the following ICON filtering options, to control data storage. To turn a filter on, so that certain details are excluded from storage in IDB, set the value of the option to 1 (meaning true).

Important

The list below includes only those **[filter-data]** options that you can set to safely exclude data from IDB. To avoid compromising Genesys Info Mart data quality, do not set any other filtering options to 1 (meaning true). By default, ICON does not exclude any data from storage (all of the **[filter-data]** option values are set to 0). For more information, see [filter-data Section](#) in the *Interaction Concentrator Deployment Guide*.

- **acd-party-metrics** [\[+\] Tell me more](#)

When the filter is set, ICON does not store party metrics for distribution devices — such as ACD queues, routing points, virtual routing points, and external routing points — in the G_PARTY_STAT table in IDB.

Genesys Info Mart does not extract data from the G_PARTY_STAT table.

Tip

The **acd-party-metrics** option applies to SIP and voice interactions only.

- **call-history** [\[+\] Tell me more](#)

When the filter is set, ICON does not store information about the call history in the G_CALL_HISTORY table in IDB.

- **gls-ivr** [\[+\] Tell me more](#)

When the filter is set, ICON verifies whether the DN at which an agent logs in is an IVR device. If it is, ICON does not store information about this agent's activity in the following IDB tables:

- G_LOGIN_SESSION
- GX_SESSION_ENDPOINT
- G_AGENT_STATE_HISTORY
- G_AGENT_STATE_RC
- G_DND_HISTORY
- GS_AGENT_STAT
- GS_AGENT_STAT_WM

Furthermore, for parties that are associated with an IVR device, ICON does not record the agent's ID in the G_PARTY table.

Tip

See the description of the **ivr option** for more information about how to configure a DN as an IVR resource. For more information about how ICON identifies an IVR, see the [Interaction Concentrator Deployment Guide](#) for your release.

- **gls-metrics** [\[+\] Tell me more](#)

When the filter is set, ICON does not store information about agent states in the following IDB tables:

- GS_AGENT_STAT
- GS_AGENT_STAT_WM

- **ir-history** [\[+\] Tell me more](#)

When the filter is set, ICON does not store information about the interaction record history in

the G_IR_HISTORY table in IDB.

- **observer-party** [\[+\] Tell me more](#)

When the filter is set, ICON does not store data about a party that has the role of Observer in an interaction. ICON collects data about every other party that is involved with the interaction and stores this information in the following IDB tables:

- G_PARTY
- G_PARTY_HISTORY
- G_PARTY_STAT

Tip

Genesys Info Mart does not process observer parties. Genesys Info Mart ignores **observer-party** data if it is present in IDB.

- **udata-history-terminated** [\[+\] Tell me more](#)

When the filter is set, ICON does not insert new records in the following IDB tables, at interaction termination time:

- G_USERDATA_HISTORY
- G_SECURE_USERDATA_HISTORY

However, ICON does continue to write information about the creation, addition, and removal of KVPs to these tables.

6. Repeat this procedure for every IDB in your environment that stores either Voice details or Multimedia details.

Next Steps

- (Optional, for Voice or Multimedia details) [Customizing Attached Data Storage](#)
- (Optional, for Voice or Multimedia details) [Configuring UserEvent Data Storage](#)
- [Preparing IDBs](#)

Customizing Attached Data Storage

When applications attach call-based KVPs to interactions, ICON records them in the appropriate IDB table. When you deploy the ICON application, you configure certain ICON options and you also create an XML-based specification file, to indicate which KVPs ICON should store and in which IDB tables and columns they should be stored.

Genesys Info Mart ships an attached data specification file ([ccon_adata_spec_GIM_example.xml](#)),

which specifies the call-based KVPs that are related to Genesys Info Mart functionality. You modify the file to specify additional custom KVPs that you want ICON to store. You can use the [User Data Assistant, User_Data_Assistant.xlsm](#), to help prepare the customized attached data specification.

When you install Genesys Info Mart, the **ccon_adata_spec_GIM_example.xml** and **User_Data_Assistant.xlsm** files are copied to the **sql_scripts** folder in the installation directory. They overwrite any files that have the same name.

The **ccon_adata_spec_GIM_example.xml** and the **User_Data_Assistant.xlsm** files are also available in the **sql_scripts** folder on the Genesys Info Mart CD.

Use the general procedure below, [Customizing your ICON attached data specification file](#), to customize the attached data specification for your deployment.

Important

There is a separate mechanism for configuring ICON to store UserEvent-based KVPs. For more information, see [Configuring UserEvent Data Storage](#).

Procedure: Customizing your ICON attached data specification file

Purpose: To customize your ICON attached data specification file to indicate the KVPs that you want ICON to store and in which IDB tables and columns they should be stored.

For descriptions of commonly used attached data KVPs that Genesys Info Mart recognizes, see [Common Attached Data KVPs](#).

Prerequisites

- The **ccon_adata_spec_GIM_example.xml** file or the **User_Data_Assistant.xlsm** file is available. To obtain the files, do one of the following:
 - Install Genesys Info Mart, and locate the required file(s) in the **sql_scripts** folder in the installation directory.
 - Locate the required file(s) in the **sql_scripts** folder on the Genesys Info Mart CD.
- If you plan to use the User Data Assistant, you have Microsoft Excel 2007 or later, with macros enabled.

Steps

1. Modify the ICON attached-data specification file to include the predefined and custom KVPs that

are required for your deployment. Do one of the following:

- Use the User Data Assistant to automatically generate the customized attached-data specification file. For more information, see the instructions in the tool.
- Prepare the attached-data specification file manually:
 1. Edit the **ccon_adata_spec_GIM_example.xml** file to include KVP names for the additional, custom attached data elements that you want the ETL jobs to extract.
 2. Comment out the attached data elements that you do not want the ETL jobs to extract.
- 2. Copy the modified file to your ICON installation directory on the ICON host that stores attached data (that is, where the ICON role contains gud).
- 3. If you did not name the file **ccon_adata_spec.xml**, update the **adata-spec-name** option in the ICON Application object to point to this file.
- 4. If you use Interaction Concentrator release 8.1.4 or earlier, you must restart the ICON application so that the configuration changes take effect. Starting with Interaction Concentrator release 8.1.5, a restart is no longer required for the updates to the attached data specification file to take effect.
- 5. Repeat these steps for each ICON application from which Genesys Info Mart will extract Voice or Multimedia details (that is, where the ICON role contains gud).

Next Steps

- (Optional, for Voice or Multimedia details) [Configuring UserEvent Data Storage](#)
- To continue preparing Interaction Concentrator, see [Preparing IDBs to work with Genesys Info Mart](#).
- To continue preparing Genesys Info Mart to store user data, see [Preparing Custom User-Data Storage](#). For more information, see also [Enabling Reporting on User Data](#).

Configuring UserEvent Data Storage

When applications use `EventUserEvent` or `EventCustomReporting` to attach KVPs (referred to as *UserEvent-based KVPs*) to interactions, ICON configuration determines whether ICON records the KVPs in IDB tables that Genesys Info Mart processes. To enable historical reporting on features such as Callback and Focus Time, or on custom UserEvent-based KVPs, you must configure ICON to store the required KVPs in the `G_CUSTOM_DATA_S` table, as described in [Important custom-states ICON Configuration Options](#) and [Configuration Considerations](#).

For custom UserEvent-based KVPs, you must also prepare custom user-data storage in the Info Mart database, as described in [Preparing Custom User-Data Storage](#).

For information about the UserEvent-based KVPs that are used for reporting, see [Using UserEvent-Based KVP Data](#).

Important [custom-states] ICON Configuration Options

The following table describes recommended settings for options that you set on the ICON Application object, in the **[custom-states]** section.

For more information about all of the ICON configuration options, see [Configuration Options](#) in the *Interaction Concentrator Deployment Guide*.

ICON Application Options — [custom-states] Section, by Area of Functionality

Area of Functionality	Option Name	Recommended Value	Applies to ICONs For		
Voice Details	Multimedia Details	Outbound Contact Details			
Click the option name to see a brief description of the option.					
UserEvent-based user data	store-event-data	<ul style="list-style-type: none"> all — ICON stores the values of all keys. This is the recommended setting in deployments where Genesys Callback, Focus Time, or Genesys Predictive Routing (GPR) data is extracted for reporting. conf — ICON stores only the values of the keys that are configured in the EventData option. 	✓	✓	
	EventData	No recommended setting. Enter a comma-separated list of the data	✓	✓	

Area of Functionality	Option Name	Recommended Value	Applies to ICONs For		
		types and key names in the format Type,KeyName.			

Configuration Considerations

To simplify configuration in deployments where Callback, Focus Time, or GPR data is extracted for reporting, Genesys recommends setting the **[custom-states].store-event-data** configuration option to all, to ensure that ICON stores all the UserEvent-based KVPs that Genesys Info Mart requires. However, be aware that setting store-event-data=all has performance and security implications:

- Performance — Processing and storing a large number of UserEvent-based KVPs increases database resource requirements and can impact performance.
- Security — Sensitive data (for example, credit card information) might be sent in UserEvents that are not used for reporting. Unlike the situation for call-based attached data, where the G_SECURE_USERDATA_HISTORY table is available to provide secure IDB storage, there is no secure IDB table parallel to G_CUSTOM_DATA_S that provides separate, secure storage for sensitive data.

Genesys recommends that you review your overall deployment to ensure that applications or strategies do not expose you to unnecessary performance or security risks by attaching large quantities of UserEvent-based KVPs and sensitive data that are not used for reporting. If your deployment does not make extensive use of UserEvents for reporting, Genesys recommends that you filter the bulk of UserEvent-based KVPs from storage in IDB. To do so, set [custom-states].store-event-data=conf and explicitly specify the required reporting KVPs in the **[custom-states].EventData** option.

Preparing IDBs

This page provides detailed instructions for preparing the IDBs from which Genesys Info Mart will extract reporting data.

Important

This page assumes that connection-related settings for the RDBMS server(s) hosting the IDBs are suitable for Genesys Info Mart. If your IDBs and Info Mart database are not hosted by the same RDBMS instance, ensure that you set connection-related parameters for your IDB RDBMS server(s) as described on [Database Tuning](#).

For each IDB in the deployment, you must run the ICON-provided SQL scripts to create the IDB after you have configured and installed ICON. However, before an IDB is used by Genesys Info Mart, the IDB schema must be modified to create indexes and views that enable the ETL jobs to work with it. During subsequent Genesys Info Mart migrations, the IDB schema might need to be updated further to work with the new Genesys Info Mart release.

In releases earlier than 8.5.006, the required modifications are performed by executing **update_idb_*.sql** scripts, which are run automatically by Genesys Info Mart jobs. Starting with release 8.5.006, without running the **update_idb_*.sql** scripts, Genesys Info Mart automatically creates any indexes the jobs need if the indexes are missing from the IDB. Starting with release 8.5.007, without running the **update_idb_*.sql** scripts, Genesys Info Mart also automatically creates views the jobs need when database links are used, if the views are missing from the IDB. However, in all releases, there are some circumstances in which you should consider [running the update_idb_*.sql script\(s\) manually](#):

- **On initial deployment**

Job_InitializeGIM automatically modifies the IDB schema(s) when Genesys Info Mart is first deployed. The job modifies all the IDBs for which there are DAPs in the Genesys Info Mart application's connections.

Consider running the scripts manually, in advance, to speed up the initialization process if Genesys Info Mart is being deployed long after ICON, and there is a significant amount of data in IDB.

- **On migration**

If the IDB schema needs to be updated further when you subsequently migrate to a later release, **Job_MigrateGIM** automatically performs the required modifications.

Consider running the scripts manually before you start **Job_MigrateGIM**, to reduce the risks of contention between Genesys Info Mart and ICON activity on IDB during migration. For more information, see "Preventing Deadlocks on IDB During Genesys Info Mart Migration" in the Genesys Info Mart 8.x migration procedures in the [Genesys Migration Guide](#)

- **On subsequent addition of IDBs**

If you add an IDB to an existing Genesys Info Mart deployment, Genesys recommends that you manually execute the applicable update script(s) before you add the new extraction DAP to the Genesys Info Mart application's connections. If you do not do so:

- In releases earlier than 8.5.006, the ETL cycle will be interrupted as Genesys Info Mart enters the migration state, and you will have to run **Job_MigrateGIM** to execute the required script automatically. In release 8.5.006, the ETL cycle will still be interrupted if your deployment uses database links and you do not run the applicable **update_idb_*.sql** script manually in advance, to create required views.

- Starting with release 8.5.006, when **Job_ExtractlCON** creates missing indexes required for the applicable DAP role(s), there is the risk of deadlocks or concurrency issues delaying extraction because of contention between Genesys Info Mart and ICON activity on IDB, as well as the risk of the job failing if the IDB update fails.
- **On subsequent addition of a new data domain**
If you add a new data domain to an existing IDB — for example, you add Multimedia details to a Voice details IDB (a supported configuration starting with release 8.5.007) — JobExtractlCON creates any indexes or views that are missing for the new extraction DAP role.

You do not need to run the applicable **update_idb_*.sql** script manually before you add the new DAP role, unless there is a very large amount of existing data for the new domain already in IDB, which might significantly increase Genesys Info Mart activity on the IDB and, therefore, increase the risk of contention with ICON.

From the point of view of executing the update, it makes no difference whether the IDB is partitioned or not. The Genesys Info Mart jobs and Genesys Info Mart-provided scripts to update IDB detect if an IDB is partitioned and automatically adjust the SQL statements as required.

Use the following procedure to execute the scripts to modify IDB.

Procedure: Preparing IDBs to work with Genesys Info Mart

Purpose: To manually prepare the IDB so that the ETL jobs are able to use it.

Prerequisites

- All IDB instances that are required for your deployment have been created by using the ICON-provided SQL scripts. (Refer to the *Interaction Concentrator Deployment Guide* for your release for the list of initialization scripts, their location, and the order in which to execute them.)

Important

For Microsoft SQL Server deployments with Genesys Info Mart releases earlier than 8.5.015.07, you must use a case-insensitive collation for the SQL Server instance and the IDB.

- The database access account that the ETL jobs will use to access IDB data is available and has the required user account privileges.

The user account does not have to be the same as the owner account. For more information about the rules and recommendations that pertain to database access accounts for Genesys Info Mart, see [required database privileges](#) for the [ICON user account](#) in [Database Privileges](#).

- The **update_idb_*.sql** scripts are available. The scripts are provided in the **sql_scripts** folder in your Genesys Info Mart installation package.

Steps

1. For each IDB from which Genesys Info Mart will extract ICON details, log in to IDB using the

database access account that you used to create the IDB. Refer to your completed [Database Worksheets](#) to determine the ID to use.

2. Run the Genesys Info Mart-provided SQL script to add to IDB the views and indexes that Genesys Info Mart requires.
 - For a Voice details IDB, use **update_idb_for_gim.sql**.
 - For a Multimedia details IDB, use **update_idb_for_gim_mm.sql**.
 - For a Configuration details or an Outbound Contact details IDB, use either **update_idb_for_gim.sql** or **update_idb_for_gim_mm.sql**.

If the IDB stores both Voice and Multimedia details (a supported configuration starting with release 8.5.007), execute both scripts, in any order.

Next Steps

Continue on to [Preparing the Info Mart Database](#).

IDB Tables Accessed by Genesys Info Mart

This page lists the IDB tables that the Genesys Info Mart extraction jobs access. The type of data that is extracted depends on the role that is configured for the DAP. For more information about configuring the DAPs that enable Genesys Info Mart to access IDB, see [Configuring Required DAPs](#) and the DAP role option.

Important

The following table lists only those IDB tables from which Genesys Info Mart actually extracts data. Genesys Info Mart does not populate all of the Global Interaction Database (GIDB) tables in the Info Mart database schema. For more information about the GIDB tables, see [Info Mart Database](#).

IDB Tables Extracted by Genesys Info Mart

DAP Role	Type of Data	Tables Extracted
ICON_CFG	Configuration details Data source: Configuration Server	GCX_AGENT_PLACE GCX_CAMPGROUP_INFO GCX_ENDPOINT_PLACE GCX_GROUP_AGENT GCX_GROUP_PLACE GCX_GROUP_ROUTEDN GCX_LOGIN_INFO GCX_SKILL_LEVEL GC_AGENT GC_ANNEX GC_CALLING_LIST GC_CAMPAIGN GC_ENDPOINT GC_GROUP GC_IVR GC_IVRPORT GC_LOGIN GC_PLACE GC_SCRIPT GC_SKILL GC_SWITCH GC_TENANT GC_TIME_ZONE G_DSS_CFG_PROVIDER
ICON_CORE	Voice details (including voice interactions; voice agent activity; user data; and ACD and virtual-queue activity) Data source: T-Server	GSYS_SYSPROCINFO G_IR G_IS_LINK G_IS_LINK_HISTORY G_CALL G_CALL_STAT G_PARTY G_PARTY_HISTORY GX_SESSION_ENDPOINT G_VIRTUAL_QUEUE G_ROUTE_RESULT G_ROUTE_RES_VQ_HIST

DAP Role	Type of Data	Tables Extracted
		G_USERDATA_HISTORY G_SECURE_USERDATA_HISTORY G_LOGIN_SESSION G_AGENT_STATE_HISTORY G_AGENT_STATE_RC G_AGENT_STATE_RC_A G_DND_HISTORY G_CUSTOM_DATA_S G_DSS_GCC_PROVIDER G_DSS_GLS_PROVIDER
ICON_MM	Multimedia details (including multimedia interactions; multimedia agent activity; user data; and interaction queue, interaction workbin, and virtual-queue activity) Data source: Interaction Server	G_IR G_CALL G_PARTY G_PARTY_HISTORY GX_SESSION_ENDPOINT G_AGENT_STATE_HISTORY G_AGENT_STATE_RC G_AGENT_STATE_RC_A G_VIRTUAL_QUEUE G_ROUTE_RESULT G_ROUTE_RES_VQ_HIST G_USERDATA_HISTORY G_SECURE_USERDATA_HISTORY GM_F_USERDATA GM_L_USERDATA G_LOGIN_SESSION G_DND_HISTORY G_CUSTOM_DATA_S G_DSS_GCC_PROVIDER G_DSS_GLS_PROVIDER
ICON_OCS	Outbound Contact details Data source: Outbound Contact Server	GO_CHAIN GO_CHAINREC_HIST GO_FIELDHIST GO_SEC_FIELDHIST GO_METRICS GO_CAMPAIGN GO_CAMPAIGNHISTORY GOX_CHAIN_CALL G_DSS_GOS_PROVIDER

Preparing the Info Mart Database

This page provides a high-level overview of the steps to prepare the target Genesys Info Mart database and predefined views.

As Genesys Info Mart extracts source data and transforms and loads this data into the target tables, it operates with a single Genesys Info Mart database. The Info Mart database consists of the target fact and dimension tables (Dimensional model), Global Interaction Database (GIDB) tables, Merge tables (used for voice interactions only), Control tables, Staging tables, and Temporary tables. For more information, see [Info Mart Database](#).

Overview: Preparing the Info Mart Database

1. Set up RDBMS resources to support the reporting database.

Create the database instance. For more information, refer to the documentation for your RDBMS.

Important

See the important notes on the [Database Considerations](#) page. In addition:

- For Microsoft SQL Server, in Genesys Info Mart releases earlier than 8.5.015.07 you must use a case-insensitive collation for the SQL Server instance and the Info Mart database. Starting with release 8.5.015.07, you can use either a case-sensitive or a case-insensitive collation.
- For PostgreSQL, Genesys recommends that you use lower case for all schema names. If you cannot do so, specify the value in case-sensitive mode by surrounding the value with a set of double quotes.
- For multi-language support in Oracle and PostgreSQL, you must create the Info Mart database with UTF-8 encoding. For links to more information, including requirements for related components that apply to Microsoft SQL Server as well, see [Multi-Language Support](#).

2. Create and configure the Info Mart database schema to process and store detailed reporting data.

Prepare the databases by running Genesys-provided scripts:

- a. For reporting environments that require custom user-data storage, customize the user-data template script. See [Preparing the User Data Script](#).
- b. For all deployments, create the Info Mart database schema. For more information, see [Creating the Info Mart database schema](#).
- c. For deployments that include Voice details, customize the GSYS_DNPREMOTELLOCATION table in GIDB, as required, to optimize performance of the merge operation. For more information, see [Configuring](#)

[Info Mart database for merge.](#)

3. **(Optional, but recommended) Prepare database links, to streamline performance.**
Configure links between the IDB and Info Mart RDBMS servers. For more information, see [Optimizing Database Performance: Database Links](#).
4. **Tune the Info Mart database.**
To improve ETL execution time, adjust the settings for the target database, as applicable to your RDBMS environment. For more information, see [Optimizing Database Performance: Database Tuning](#).
5. **After you have installed Genesys Info Mart, complete database preparation.**
 - If applicable, create read-only, tenant-specific views. For more information, see [Creating Read-Only Tenant Views](#).
 - (Optional) Create custom calendar dimensions. For more information, see [Creating Custom Calendars](#).

Important

If you plan to employ custom calendars in a deployment that includes the Genesys historical reporting presentation layer (GCXI) or the RAA package, configure the custom calendars before you start aggregation.

Info Mart Database Scripts

This page describes how to modify and run the SQL scripts needed to create the Info Mart database and predefined views. This page also describes how to configure the Info Mart database to optimize performance of the merge operation for voice interactions.

Before You Begin

The following information is important for you to know:

- The Genesys-supplied SQL scripts are provided in the **sql_scripts** folder in your Genesys Info Mart installation package. They are also available as a separate SQL Scripts installation package. Use your database-specific tool (for example, SQL *Plus) to run the supplied SQL scripts.
- The Genesys Info Mart-provided SQL scripts do not qualify database objects by their schema or owner. When you run the SQL scripts, make sure that you use the ID of the schema or owner when you log in to the database. (You noted the schema or owner ID and password of each database in the appropriate section of the [Database Worksheets](#).)
- The Genesys Info Mart-provided SQL scripts create objects without specifying tablespaces or storage parameters. Work with your database administrator or data-warehousing specialist to develop a database implementation that is optimal for your environment, and make the necessary changes to the SQL scripts. See [Database Considerations](#) for more information.

Preparing Custom User-Data Storage

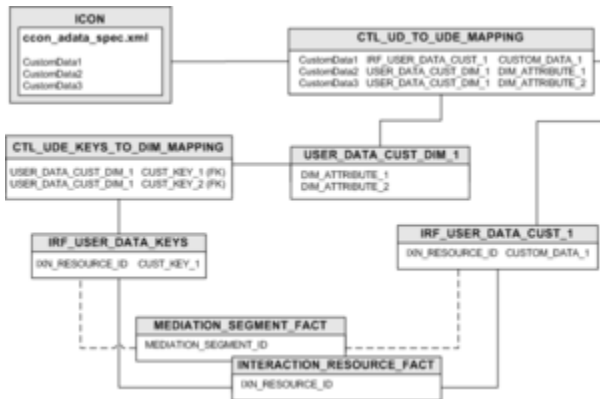
Genesys Info Mart provides SQL scripts to use as a template for modifications you can make to the Info Mart database schema to customize user-data reporting:

- **make_gim_UDE_template.sql** — For use with nonpartitioned databases. For Microsoft SQL Server, use this script for single-language databases.
- **make_gim_UDE_template_partitioned.sql** — For use with partitioned databases. For Microsoft SQL Server, use this script for single-language databases.
- **make_gim_UDE_template_multilang.sql** — Starting with release 8.5.007, for use with nonpartitioned, multi-language databases in Microsoft SQL Server deployments.
- **make_gim_UDE_template_multilang_partitioned.sql** — Starting with release 8.5.007, for use with partitioned, multi-language databases in Microsoft SQL Server deployments.

You modify the applicable user-data template script, as required, to create custom user-data extension tables and columns and to specify storage of custom KVPs. You can use the [User Data Assistant](#), **User_Data_Assistant.xlsm**, to help prepare the customized script.

The following Figure shows the relationships that the user-data template script creates, to illustrate how custom user data is stored in the Info Mart database and populated in interaction records.

Inclusion of the MEDIATION_SEGMENT_FACT (MSF) table in the Figure illustrates optional storage of user data for interactions that are in mediation.



Custom User Data Storage

You can define the names of the custom tables and columns as you choose to see them in the Info Mart database. In custom fact tables, you can also specify the data types — character, numeric, or date/time — for the columns that store KVP values.

To make the best use of the flexible user-data storage that Genesys Info Mart provides, Genesys recommends that you use table and column names that reflect the meaning of the user-data KVPs in your deployment. Meaningful names of columns in recognizable user-data extension tables makes it easier to write unambiguous reporting queries. However, in multi-language databases, do not use non-Latin Unicode characters in table or column names. If you use the Data Export feature with export views (supported in on-premises deployments starting with release 8.5.011.22), table names must not be longer than 26 characters.

For more information about planning user-data storage in your deployment, see [Storing User Data](#).

Preparing the User Data Script

Use the following procedure to prepare the SQL script to customize user-data storage in the Info Mart database. You can modify the script and use it to customize the user-data tables in the Info Mart database schema at any time.

Even if you use the [User Data Assistant](#) to prepare the customized script for your deployment, Genesys recommends that you review the information in the following manual procedure, so that you can verify the validity of the generated script before you execute it.

Procedure: Customizing the user-data template script

Purpose: To customize the Genesys-provided user-data script in order to specify user-defined KVP names and define custom user-data extension tables.

Prerequisites

- The worksheet for mapping user-data keys that are used for reporting in your environment is complete. For the mapping worksheet, see [Mapping User Data Worksheet](#). Alternatively, if you are using the User Data Assistant, the Business Analyst and Report Developer tabs have been completed.
- The ICON application has been configured to store the required user-data KVPs.

Steps

1. Locate a copy of the applicable template script (**make_gim_UDE_template.sql**, **make_gim_UDE_template_partitioned.sql**, **make_gim_UDE_template_multilang.sql**, or **make_gim_UDE_template_multilang_partitioned.sql**) in the RDBMS-specific **sql_scripts** folder on the Genesys Info Mart product CD.

2. Save a copy of the script to a local machine.

3. Modify your copy of the script to provide columns in a user-data fact table to store high-cardinality KVPs that you will use in your reports. By default, the script creates a table named **IRF_USER_DATA_CUST_1**.

Note the following about modifications you can make:

- **The table name** — You can change the name of the **IRF_USER_DATA_CUST_1** table to any name that you want to see in the Info Mart database. However, if you change the name, ensure that you change all instances in the script, including the parts of the script that are described in [Steps 11](#) and [4](#).
- **Column names** — If you are modifying the script to prepare for the initial deployment, simply replace default names for the columns that store KVP values, such as **CUSTOM_DATA_1**, with names that are more meaningful in your deployment. Genesys recommends that you use the actual names of the high-cardinality KVPs.
- **Character data** — Starting with release 8.5.007, you can increase the size of the data type for columns that store character data from 255 to 1024 characters. For information about enabling support for Unicode characters, see [Multi-Language Support](#).
- **Numeric data** — If you want to store particular KVP values as numeric data, change the data type for the columns that store those KVP values to any numeric data type that is supported by your RDBMS.
- **Date/Time data** — If you want to store particular KVP values as date/time data, change the data type for the columns that store those KVP values to one of the following data types:
 - For Microsoft SQL Server, DATETIME
 - For Oracle, DATE or TIMESTAMP
 - For PostgreSQL, TIMESTAMP

If the date/time that you want to store is in the Genesys Info Mart default format for date/time (yyyy-mm-ddThh24:mi:ss.ff), you do not need to perform any further mapping. If the date/time is in another date format, you must specify the conversion expression when you map the KVP to the fact table column (see [Step 12](#)).

- **Updating the database schema** — If you are modifying the script to update the database schema after Genesys Info Mart has already been deployed, you must:
 1. Delete the DROP TABLE SQL statement, which appears in the template script before the CREATE TABLE statement.
 2. Change the CREATE TABLE SQL statement to an ALTER TABLE one.
- 4. Modify the script, as required, to create an index for the user-data fact table that you created in [Step 3](#).
- 5. Continue modifying your copy of the script to provide columns in user-data dimension tables to store low-cardinality KVPs that you will use in your reports. The script provides placeholders for tables named USER_DATA_CUST_DIM_1 and USER_DATA_CUST_DIM_2.
Note the following about modifications you can make:

- **The table name** — You can change the name of the USER_DATA_CUST_DIM_1 table to any name that you want to see in the Info Mart database. However, if you change the name, ensure that you change all instances in the script, including the parts of the script described in [Step 6](#) and [Steps 8](#) through [11](#).
- **Column names** — If you are modifying the script to prepare for the initial deployment, simply replace default column names, such as DIM_ATTRIBUTE_1, with names that are more meaningful in your deployment. Genesys recommends that you use the actual names of the low-cardinality KVPs.
- **Updating the database schema** — If you are modifying the script to update the database schema after Genesys Info Mart has already been deployed, you must:
 1. Delete the DROP TABLE SQL statement, which appears in the template script before the CREATE TABLE statement.
 2. Change the CREATE TABLE SQL statement to an ALTER TABLE one.

Important

Do not modify the data types or the mandatory status of the columns. Genesys Info Mart does not support numerical data types or nullable columns for user-data dimensions.

6. Modify the script, as required, to create an index for the user-data dimension table that you created in [Step 5](#).
7. If necessary, repeat [Steps 3](#) through [6](#) to add SQL commands to create additional custom user-data fact and dimension tables.
8. Modify the script, as required, to create foreign key reference(s) for the user-data dimension table(s) in the IRF_USER_DATA_KEYS table.
The script includes the following placeholders:
 - CUSTOM_KEY_1 and CUSTOM_KEY_2 — The name of the foreign key that Genesys Info Mart will use to reference the user-data dimension table that you created in [Step 5](#). Genesys recommends that you use a key name that provides an obvious association with the table name. You map this key to the referenced table later ([Step 10](#)).

Warning

Do not change the data type of the fields that you add to the IRF_USER_DATA_KEYS table. In releases earlier than 8.5.011.14, also do not change the mandatory status or the default value of your custom fields. (The default value -2 indicates NO_VALUE.)

Tip

Adding columns to a big IRF_USER_DATA_KEYS table can consume significant DBMS resources and time. If you are modifying the script to prepare for the initial deployment, consider adding redundant columns in advance. Later, you can map new user-data dimensions to existing IRF_USER_DATA_KEYS columns, as required.

9. For the user-data dimension table(s) that you created in [Step 5](#), modify the script, as required, to populate the table(s) with mandatory values for predefined keys (for example, UNKNOWN). By default, the script inserts the required values into a table named USER_DATA_CUST_DIM_1.
10. Map the user data dimension table(s) to the foreign key(s). To do so, modify the script to add to the CTL_UDE_KEYS_TO_DIM_MAPPING table the mapping between the user-data dimension table(s) and the foreign key(s) that you added to the IRF_USER_DATA_KEYS table ([Step 8](#)). The script includes the following placeholders:
 - USER_DATA_CUST_DIM_1 — The user-data dimension table name (which you defined in [Step 5](#))
 - ID — The primary key for the user-data dimension table
 - CUSTOM_KEY_1 — The foreign key for the user-data dimension table (which you specified in the IRF_USER_DATA_KEYS table in [Step 8](#))
11. Map user-data keys to user-data fact and dimension table columns. For each column that you defined for user-data fact and dimension tables (see [Steps 3 through 7](#)), modify the script to:
 - Add to the CTL_UD_TO_UDE_MAPPING table the mapping between user-data keys and the user-data table columns.
 - Specify default values.
 - Specify the custom conversion expression (for custom date conversion in user-data fact tables).

Use the [worksheet](#) that you prepared for user-data mapping to identify the required script changes. To customize the date conversion expression, see [Step 12](#).

The script includes the following placeholders for fact tables:

 - CustomDataN — The key name (as stored by ICON)
 - IRF_USER_DATA_CUST_1 — The user-data fact table name (which you defined in [Step 3](#))
 - CUSTOM_DATA_N — The column name (which you defined in [Step 3](#))

The script includes the following placeholders for dimension tables:

- CustomAttributeN — The key name (as stored by ICON)
- USER_DATA_CUST_DIM_1 — The user-data dimension table name (which you defined in [Step 5](#))
- DIM_ATTRIBUTE_N — The column name (which you defined in [Step 5](#))

The script also requires you to specify the propagation rule, default value, and activity status for each KVP. For more information about values for these fields, see the column descriptions for the CTL_UD_TO_UDE_MAPPING table in the [Genesys Info Mart Reference Manual](#) for your RDBMS.

Ensure that the default values that you specify are consistent with the data type for the column.

12. If you want Genesys Info Mart to store a date/time value expressed in a format other than the Genesys Info Mart default format for date/time (for example, DD Mon YY instead of yyyy-mm-ddThh24:mi:ss.ff), specify the conversion expression in the CONVERT_EXPRESSION field in the CTL_UD_TO_UDE_MAPPING table entry for the KVP. Genesys Info Mart includes the conversion expression in SQL statements to convert the data.

- For Microsoft SQL Server, the conversion expression is:
``${schema}`.GIM_TO_TIMESTAMP_ISO8601(`${}`)`

where:

- `\${schema}` is a placeholder for the Info Mart database schema name; Genesys Info Mart gets the value of the `\${schema}` parameter from the default-schema option in the Info Mart DAP.
- `\${}` is a placeholder for the KVP value to be converted.
- **GIM_TO_TIMESTAMP_ISO8601** is an out-of-box function, which first executes another out-of-box function, **GIM_IS_ISO8601_DATE**, to check format before calling the Microsoft SQL Server system function **convert(datetime, `\${}`, 126)** to convert the datetime expression in format yyyy-mm-ddThh24:mi:ss.ff.
 It is not possible to use **convert()** without first checking the format of the expression because of a Microsoft SQL Server limitation that makes transactions unusable after most conversion errors. To customize the conversion, you must define your own conversion function in the database, and then call that function in the CONVERT_EXPRESSION field using the syntax shown above. Use the **GIM_TO_TIMESTAMP_ISO8601** and **GIM_IS_ISO8601_DATE** functions, which are defined in the **make_gim.sql** and **make_gim_partitioned.sql** scripts, as examples for your custom functions, in conjunction with RDBMS documentation about syntax requirements and date formats. Do not modify the out-of-box functions.

- For Oracle, the conversion expression is:
`TO_DATE(`${}`, 'yyyy-mm-dd'T'hh24:mi:ss')`

or

`TO_TIMESTAMP(`${}`, 'yyyy-mm-dd'T'hh24:mi:ss.ff')`

where `\${}` is a placeholder for the KVP value to be converted.

To customize the conversion, use one of the standard RDBMS-provided functions (**TO_DATE** or **TO_TIMESTAMP**), replacing the date-format expression with a valid format, as defined in the RDBMS documentation.

- For PostgreSQL, the conversion expression is:
`TO_TIMESTAMP (${} , 'yyyy-mm-dd' T 'hh24:mi:ss.ms')`
 where `${}` is a placeholder for the KVP value to be converted.

13. Save the modified copy of the script.

Next Steps

- Execute the modified script when you create the Info Mart database schema (see [Creating the Info Mart database schema, Step 4](#)) or as required to update an existing database schema. To verify correct mappings, execute the following SQL command against the Info Mart database:

```
SELECT * FROM CTL_UD_TO_UDE_MAPPING
```

Compare the results of the query against the mapping that you prepared before customizing the script, as described in the [Prerequisites](#).

Important

Before you execute the script to update an existing database schema, Genesys recommends that you back up the Info Mart database.

- If you update an existing database schema that uses read-only tenant views to access Info Mart data for reports, you must re-create the read-only tenant views. For more information, see [Creating Read-Only Tenant Views](#).

Preparing the Info Mart Database

The RDBMS-specific SQL scripts that are provided with Genesys Info Mart create the Info Mart database schema. This includes merge tables, which are a required part of the Info Mart database schema in any deployment. Genesys Info Mart provides separate scripts for partitioned and nonpartitioned database schemas. For Microsoft SQL Server, starting with release 8.5.007 Genesys Info Mart also provides separate scripts for single-language and multi-language databases.

The Genesys Info Mart database scripts do not create the additional database objects that are required to support aggregation. For more information about database preparation for deployments that use the Genesys historical reporting presentation layer (GCXI or the separately installed RAA package, see the [Reporting and Analytics Aggregates 8.x Deployment Guide](#) and the [Genesys CX Insights Deployment Guide](#).

Procedure: Creating the Info Mart database schema

Prerequisites

- For multi-language databases, you have reviewed requirements for the Info Mart database and other system components (see the links provided in [Multi-Language Support](#)) and prepared your environment accordingly.
- You have created a database instance for your Info Mart database.
- The required SQL scripts are available from the RDBMS-specific **sql_scripts** folder on the Genesys Info Mart product CD.

Important

If you are creating a partitioned database schema on Microsoft SQL Server, do not alter **make_gim_partitioned.sql** or **make_gim_multilang_partitioned.sql** so as to create the partitions in multiple filegroups.

- (Optional) If you plan to store user-defined attached data, you have customized the applicable user-data SQL script template, as instructed in [Preparing the User Data Script](#).
- (Optional) If you plan to create multiple calendar dimensions to support your reporting, you have customized the applicable database-creation script to create additional calendar tables. Alternatively, you can create the custom calendars after you have installed Genesys Info Mart. For more information, see [Creating Custom Calendars](#).

Steps

1. Ensure that the database access account that you use to create the Info Mart database schema is available and has the required privileges (see [Required Database Privileges](#)). Refer to your completed [Database Worksheets](#) to determine the ID to use.
2. Log in to the Info Mart database using the Info Mart user account.
3. Run the applicable SQL script to create the Info Mart database schema:
 - For a nonpartitioned database, use **make_gim.sql**. This script creates the Genesys Info Mart dimension and fact tables and related indexes. On Microsoft SQL Server, starting with release 8.5.007 use **make_gim.sql** for a single-language database and **make_gim_multilang.sql** for a multi-language database.
 - For a partitioned database, use **make_gim_partitioned.sql**. This script creates the Genesys Info Mart dimension and fact tables and related indexes. On Microsoft SQL Server, starting with release 8.5.007 use **make_gim_partitioned.sql** for a single-language database and **make_gim_multilang_partitioned.sql** for a multi-language database. For the tables and indexes that are partitioned, this script creates a single, outdated partition that is expected to be purged during the first run of the maintenance job.
- 4.

(Optional) Run the modified UDE template script (**make_gim_UDE_template.sql**, **make_gim_UDE_template_partitioned.sql**, **make_gim_UDE_template_multilang.sql**, or **make_gim_UDE_template_multilang_partitioned.sql**) that you have updated with required KVP names. This script creates extension tables in the Info Mart database schema to store custom user-data, configures user-data mappings, and adds the specified dimension key fields to the IRF_USER_DATA_KEYS table.

5. Ensure that the database access account that the ETL jobs will use to access the Info Mart database is available and has the required user account privileges (see [Required Database Privileges](#)).

Refer to your completed [Database Worksheets](#) to determine the ID to use.

The user account does not have to be the same as the owner account. For more information about the rules and recommendations that pertain to database access accounts for Genesys Info Mart, see [Database Object Owners and User IDs](#).

Next Steps

- (Required for Voice details only) Update the GSYS_DNPREMOTELOCATION table, as required, to optimize performance of the merge operation. For more information, see [Configuring the Info Mart database for merge](#).
- (Recommended, but optional) Configure database links. For more information, see [Optimizing Database Performance: Database Links](#).
- Tune up your Info Mart database, as appropriate for your RDBMS environment. For more information, see [Optimizing Database Performance: Database Tuning](#).

Procedure: Configuring the Info Mart database for merge

Purpose: To optimize performance of the merge operation.

Prerequisites

- The Info Mart database schema has been created, as described in [Creating the Info Mart database schema](#).

Steps

1. If any switches are not monitored by ICON, store those Switch object names in the GSYS_DNPREMOTELOCATION table of the Info Mart schema. Otherwise, merging of some interswitch voice interactions will be delayed until the configured IS-Link timeout occurs, and this delays transformation of those voice interactions.

Example

Suppose that you have four switches and two ICON instances:

- ICON1 monitors switch SITE1_sw1.

- ICON2 monitors switch SITE2_sw2.
- SITE3_sw3 and SITE4_sw4 are not monitored by either ICON instance.

To avoid delays in merging, add the following two records to the GSYS_DNPREMOTELLOCATION table in the Info Mart schema:

- GSYS_DNPREMOTELLOCATION.REMOTELLOCATION=SITE3_sw3
- GSYS_DNPREMOTELLOCATION.REMOTELLOCATION=SITE4_sw4

For each row in the GSYS_DNPREMOTELLOCATION table, populate the ID field with a unique value.

2. Review the settings of the max-call-duration, merge-chunk-size, and merge-failed-is-link-timeout configuration options, and modify them as required for your deployment.

Next Steps

- (Recommended, but optional) Configure database links. For more information, see [Optimizing Database Performance: Database Links](#).
- Tune up your Info Mart database, as appropriate for your RDBMS environment. For more information, see [Optimizing Database Performance: Database Tuning](#).

Optimizing Database Performance: Database Links

Important

Genesys Info Mart used to recommend that you use database links so as to improve performance of the extraction job. However, Genesys Info Mart no longer recommends this configuration.

Since Genesys Info Mart does technically support the use of database links, the configuration instructions on this page have been retained in the documentation for completeness.

To ensure that Genesys Info Mart does not use any database links you may have configured, Genesys recommends setting the **UseDbLinks** Java system property to `false` in the **`gim_etl_server`** startup file, as described in [Modifying the JVM Startup Parameters](#).

You can utilize RDBMS functionality to configure links between the RDBMS servers that host the IDB schemas and the RDBMS server that hosts the Info Mart database schema. If database links are not configured, the extraction job first moves data from IDB into Genesys Info Mart memory, and then from Genesys Info Mart memory into the Info Mart database. When database links are configured, the extraction job can copy data directly from the IDB into the Info Mart database.

Important

Genesys Info Mart does not support database links on PostgreSQL.

This page provides information about:

- [Creating Linked Servers — Microsoft SQL Server](#)
- [Creating Database Links — Oracle](#)
- [Verifying Use of Database Links](#)

Creating Linked Servers — Microsoft SQL Server

The following procedure describes how to use SQL Server Management Studio to configure links between Microsoft SQL Server databases.

Procedure: Creating Linked Servers for Microsoft SQL Server

Purpose: To configure links between the IDB and Info Mart database RDBMS servers to improve performance of the extraction job.

Steps

1. Log in to the SQL Server Management Studio, using administrator credentials.
2. Connect Object Explorer to the Info Mart database.
3. Open Object Explorer and select **Server Objects > Linked Servers**.
4. Follow Microsoft instructions to create Linked Servers that link to the IDBs from which Genesys Info Mart will extract data.
 - a. On each linked server, create the “Info Mart” user account and grant the SELECT permission on IDB (for example, you could include the user in the db_datareader role in IDB).
 - b. On the Info Mart database server, create a linked server and map the local “Info Mart” user account to the “Info Mart” user account on each linked server.

For illustrations of the elements in the database access point (DAP) configuration that are used in the Linked Servers definition, see [Related DAP Configuration Example](#).

5. Log in to the Info Mart database, using the Info Mart user ID.
6. In SQL Server Management Studio, verify that you can access IDB tables and views from the Linked Servers. For example, execute a SQL statement such as:

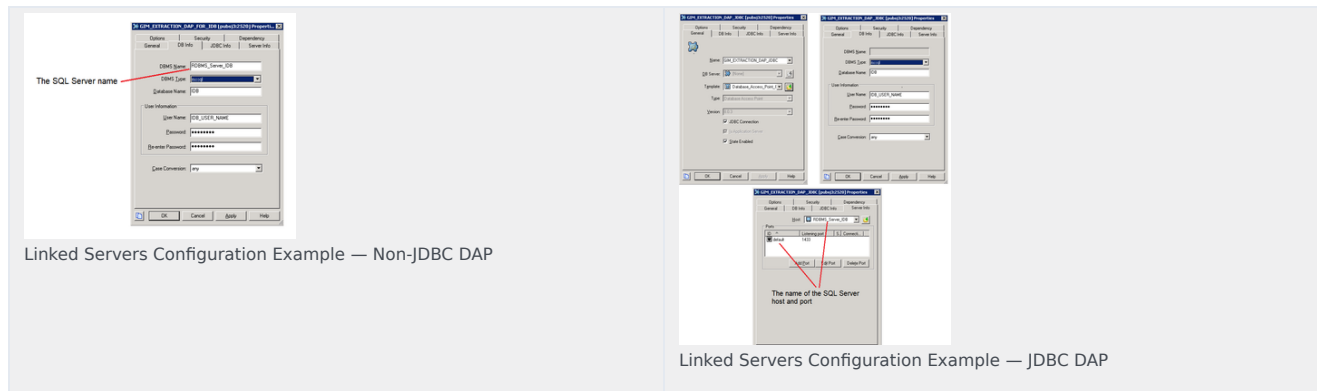
```
select * from [linked-server].[IDB].dbo.G_DB_PARAMETERS;
```

Next Steps

See [Verifying Use of Database Links](#).

Related DAP Configuration Example

The following Figures illustrate the relationship between the components that are referenced in the Linked Servers definition and the properties of the Genesys Info Mart extraction DAP, for non-JDBC and JDBC DAPs, respectively. For full information about configuring the DAPs that Genesys Info Mart requires, see [Configuring Required DAPs](#).



Creating Database Links — Oracle

Important

In Oracle Real Application Cluster (RAC) deployments with database links, node synchronization activity is significant and can lead to performance issues. Genesys recommends that you do not use database links if you are using Oracle RAC.

You can configure either public or private links between Oracle databases. The only requirement is that Genesys Info Mart can access the database link.

The following command configures a public link between Oracle databases:

```
CREATE PUBLIC DATABASE LINK <Link Name>
connect to <IDB User Name>
identified by <IDB User Password>
USING '<IDB Connect_String>';
```

where:

- <Link Name> is any valid database link name.
- <IDB User Name> is the User Name that is specified on the **DB Info** tab of the DAP that enables connection to the IDB.
- <IDB User Password> is the Password that is specified on the **DB Info** tab of the DAP that enables connection to the IDB.
- <IDB Connect_String> is the service name of the remote IDB database. For Oracle, this is the Transparent Network Substrate (TNS) name.

Important

If you specify only the database name, Oracle implicitly appends the database domain to the connect string to create a complete service name. Therefore, particularly if the IDB and Info Mart databases are not in the same database domain, ensure that you specify the complete service name.

Execute the command on the server that hosts the Info Mart database schema. Repeat the command for each IDB from which Genesys Info Mart might need to extract data, using database connection information that matches the DAP that Genesys Info Mart uses to extract data from that IDB.

The following Figures illustrate the relationship between the parameters in the database-link command and the properties of the Genesys Info Mart extraction DAP, for non-JDBC and JDBC DAPs, respectively.



Verifying Connection Information in Database Links

After the database links have been created, Genesys recommends that you verify that Oracle has stored the connection strings correctly. To do so, execute the following statement:

```
SELECT * FROM ALL_DB_LINKS
```

Then verify the connection information that is stored in the ALL_DB_LINKS.HOST column.

See also [Verifying Use of Database Links](#).

Additional Configuration Considerations

If you use database links in an Oracle deployment, ensure that you configure the limit for open links to provide sufficient connections for concurrent processing. Genesys recommends that, at a minimum, you set the value of the **open_links** Oracle initialization parameter to the value of the Genesys Info Mart extract-data-thread-pool-size configuration option.

Verifying Use of Database Links

At the start of each extraction cycle, Genesys Info Mart logs the DAPs and associated database links that will be used during that extraction cycle. Review the logs to verify the use of configured database links during runtime. The following Figure shows an excerpt from a sample log.

```
... INFO ... Logging DAPs:  
... INFO ... DAP=DAP_WITH_DBLINK, role=ICON_CFG, dbname=..., schema=... -> DbLink=LINKNAME  
... INFO ... DAP=DAP_WITHOUT_DBLINK, role=ICON_CORE, dbname=..., schema=...
```

Optimizing Database Performance: Database Tuning

The performance of the Genesys Info Mart jobs is greatly affected by the performance of the RDBMS server. Before you create the target database, tune your RDBMS server for optimal performance.

This page provides recommended parameter settings and tuning guidelines that you can use to improve the Info Mart ETL execution time. It also includes suggestions for your database administrator for managing the target database after it is deployed.

Important

If your IDBs and Info Mart database are not hosted by the same RDBMS instance, ensure that you tune your IDB RDBMS server(s) to provision sufficient connections for the Genesys Info Mart extraction job. See [Note about connections for extraction](#), below.

Tuning the Info Mart Database

There are several database parameters that enable the ETL jobs to load the Info Mart database successfully. This section provides the recommended parameter settings for each RDBMS:

- [Tuning the Info Mart database on Microsoft SQL Server](#)
- [Tuning the Info Mart database on Oracle](#)
- [Tuning the Info Mart database on PostgreSQL](#)

See also [Additional Considerations](#).

Procedure: Tuning the Info Mart database on Microsoft SQL Server

Purpose: To set Microsoft SQL Server RDBMS parameters so that the ETL jobs load the Info Mart database successfully.

Prerequisites

- Create the Info Mart database schema, as instructed in [Preparing the Info Mart Database](#).
- Use Microsoft SQL Server Enterprise Manager to review the settings of the Microsoft SQL Server properties.

Steps

1. Allocate sufficient memory.

The ETL jobs issue many complex SQL queries against several Info Mart database tables. The amount of memory that you allocate to the database server is critical to the performance of these SQL queries. Allocate as much memory as possible to Microsoft SQL Server without causing paging. Optimal settings for your environment depend on the hardware and data volumes. As a quick approximation:

- a. Start with the total real memory on the database server.
- b. Subtract the memory that is required by the operating system and any other applications.
- c. Set the maximum memory that is allocated to Microsoft SQL Server to the result.

2. Select relevant server settings.

Some of the SQL commands that are issued by the ETL jobs are long running. To ensure that their cost is not limited by Microsoft SQL Server, disable **Use query governor to prevent queries exceeding specified cost**.

3. Configure connections.

The ETL jobs use many concurrent database connections. Set **Maximum concurrent user connections** to 0 (unlimited), but see also [Note about connections for extraction](#), below.

4. Review the settings of the following database properties:

- Data Files: Select **Automatically grow file** and **Unrestricted file growth**.
- Transaction Log: Select **Automatically grow file** and **Unrestricted file growth**.
- Options — Settings: Select **Auto update statistics** and **Auto create statistics**.
- Options — Recovery Model: Take into account the following considerations.

The ETL jobs generate large amounts of database activity, with a correspondingly large database log space. The amount of log space that is needed depends on the recovery model and on the frequency of log file backups. The full-recovery model provides the most protection against data loss due to failures, but it requires the most log space. Performing daily log file backups can help limit the size of the transaction logs.

In general, you control the size of a transaction log in one of the following ways:

- If you are maintaining a log backup sequence for full or bulk-logged recovery models, schedule **BACKUP LOG** statements to occur at intervals that will keep the transaction log from growing past the desired size.
- If you are not maintaining a log backup sequence, specify the simple recovery model.

For a more complete description of the recovery models, and for information about how to manage transaction logs, see the Microsoft SQL Server documentation.

5. (Optional, but recommended) Configure the database to use the **READ COMMITTED** isolation level.

In Microsoft SQL Server deployments, the transformation job might record duplicate rows in Info Mart fact tables because

of the inability of Microsoft SQL Server to finish rollback correctly when deadlock happens during execution of rollback. To minimize locking contention, Genesys recommends that you use the **READ COMMITTED** isolation level, with the **READ_COMMITTED_SNAPSHOT** database option set to ON.

To configure this database setting, execute the following SQL statement:

```
ALTER DATABASE <name_of_gim_db> set READ_COMMITTED_SNAPSHOT ON;
```

6. Consult with your database administrator to further fine-tune these and other parameters if you find the performance of the ETL jobs in your environment unacceptable. See also [Additional Considerations](#).

Next Steps

Configure the required DAPs. For more information, see [Configuring Required DAPs](#).

Procedure: Tuning the Info Mart database on Oracle

Purpose: To set Oracle RDBMS parameters so that the ETL jobs load the Info Mart database successfully.

Prerequisites

- Create the Info Mart database schema, as instructed in [Preparing the Info Mart Database](#).

Steps

1. Set the Oracle initialization parameters:
 - `filesystemio_options = ASYNCH`
 - `processes = at least 1000`, but see also [Note about connections for extraction](#), below
 - `sessions = at least 1000`, but see also [Note about connections for extraction](#), below
 - `open_cursors = at least 1000`
 - (For use with database links) `open_links = at least the value of extract-data-thread-pool-size`.

If your deployment uses database links, configure the **open_links** parameter to allow a sufficient number of connections through the database links. For more information about how to configure your deployment to use database links, see [Optimizing Database Performance: Database Links](#).

2. Allocate sufficient memory.

The ETL jobs issue many complex SQL queries against several Info Mart database tables. The amount of memory that you allocate to the database server buffers is critical to the performance of these SQL queries. The optimal settings for your environment depend on the hardware and data volumes. As a quick approximation:

- a. Start with the total real memory on the database server.
 - b. Subtract the amount of memory that is required by the operating system and any other applications.
 - c. Split the result between the buffer cache and the PGA aggregate target.
3. Increase the size of the listener queue for TCP/IP connection requests.

The need to modify the listener configuration depends on deployment-specific factors such as hardware and the configured or desired degree of parallelism. See the Oracle documentation for information about the conditions under which you should increase the queue size in the listener configuration file, **listener.ora**, as well as the syntax for doing so. See also [Performance tuning](#) for a summary of Genesys Info Mart configuration options that control the degree of parallelism for ETL processing.

4. Genesys recommends that you use case-sensitive settings for **NLS_SORT** and **NLS_COMPARE**.
5. Ensure that you allocate sufficient space for the SYSTEM tablespace to accommodate long-term operations, as explained [here](#).
6. Consult with your database administrator to further fine-tune these and other parameters, including JVM startup parameters such as **queryParallelism** (see [Modifying JVM Startup Parameters](#)), if you find the performance of the ETL jobs in your environment unacceptable. See also [Additional Considerations](#).

Next Steps

Configure the required DAPs. For more information, see [Configuring Required DAPs](#).

Procedure: Tuning the Info Mart database on PostgreSQL

Purpose: To set PostgreSQL RDBMS parameters so that the ETL jobs load the Info Mart database successfully.

Prerequisites

- Create the Info Mart database schema, as instructed in [Preparing the Info Mart Database](#).

Steps

1. Set the database server configuration parameters in the **postgresql.conf** file:

- checkpoint_segments = 64
- synchronous_commit = off
- wal_buffers = 256MB
- max_connections = 1000, but see also [Note about connections for extraction](#), below
- constraint_exclusion = partition
- default_statistics_target = 100
- enable_mergejoin = off
- temp_buffers = 128MB
- max_prepared_transactions = 1000
- work_mem = A value in the range 256MB-1GB*
- maintenance_work_mem = A value in the range 64MB-256MB*

*For smaller available memory and smaller workloads, use a lower value in the range.

2. Allocate sufficient memory.

The ETL jobs issue many complex SQL queries against several Info Mart database tables. The amount of memory that you allocate to the database server buffers is critical to the performance of these SQL queries. The optimal settings for your environment depend on the hardware and data volumes. As a quick approximation:

- a. Start with the total real memory on the database server.
- b. Subtract the amount of memory that is required by the operating system and any other applications. The result is the available memory for PostgreSQL.
- c. Set **effective_cache_size** to 75 percent of available memory and **shared_buffers** to 25 percent of available memory.

3. Configure autovacuum settings.

Autovacuum is a background process that performs several important tasks, including producing table statistics for the query planner, recovering disk space for changed rows, and preventing transaction ID wraparound. To balance these tasks with the needs of the ETL jobs, set the following combination of autovacuum parameters in the **postgresql.conf** file:

- autovacuum = on
- autovacuum_analyze_threshold = 10000
- autovacuum_freeze_max_age = 1000000000
- autovacuum_max_workers = 10
- autovacuum_naptime = 20s
- autovacuum_vacuum_cost_delay = 10ms

- `autovacuum_vacuum_cost_limit = 1000`
- `autovacuum_vacuum_scale_factor = 0.3`
- `autovacuum_vacuum_threshold = 100000`
- `vacuum_freeze_min_age = 10000000`
- `vacuum_freeze_table_age = 800000000`

A Genesys Info Mart job, `Job_UpdateStats`, invokes PostgreSQL functionality to supplement the autovacuum process. Ensure that you also configure the Genesys Info Mart application to run `Job_UpdateStats` regularly. For more information, see `run-update-stats` and `update-stats-schedule`.

4. Consult your database administrator to further fine-tune these and other parameters if you find the performance of the ETL jobs in your environment unacceptable. See also [Performance tuning](#) for a summary of Genesys Info Mart configuration options that control the degree of parallelism for ETL processing, as well as [Additional Considerations](#).

Next Steps

Configure the required DAPs. For more information, see [Configuring Required DAPs](#).

Note about connections for extraction

For reasons described under [Database Connections](#), the extraction job in particular uses a large number of connections to the Info Mart database and IDBs. Genesys strongly recommends the connection-related settings specified above. However, if you want to refine your estimates of resource usage, the following calculation approximates the theoretical maximum number of processes and sessions (for Oracle) or connections (for Microsoft SQL Server and PostgreSQL) the extraction job might use.

$$\min(80, \text{extract-data-thread-pool-size}) * \text{Number of IDBs} + 10 + \text{extract-data-thread-pool-size}$$

where:

- `extract-data-thread-pool-size` is the value of the `extract-data-thread-pool-size` configuration option.
- Number of IDBs equates to the number of extraction DAPs in the Genesys Info Mart application's connections.
- The formula adds:
 - 10 connections used for merging extracted data, as well as for other ETL needs.
 - The **`extract-data-thread-pool-size`** value, to account for the connections to the Info Mart database that are used to write data extracted from IDBs into the Info Mart database.

If the IDBs and Info Mart database are hosted by the same RDBMS instance, double the number of IDB connections.

Additional Considerations

In addition to the previously listed database tuning requirements, you might also need to do the following:

- Periodically update statistics on the Info Mart fact tables. Failure to update them periodically can have a negative impact on the performance of end-user queries. Enable the automatic gathering of statistics on Info Mart tables if your RDBMS supports this feature.
- Have database administrators actively manage Genesys Info Mart after it is deployed.

Enabling Database Access

You configure database access points (DAPs) to specify the database connection parameters and other options that Genesys Info Mart uses to access source and target databases. This page provides general information about DAPs in your Genesys Info Mart deployments.

For information about configuring the DAPs for Genesys Info Mart use, see [Configuring Required DAPs](#).

Required DAPs

You must configure DAPs to access the applicable source and target databases in your environment, in order to extract, transform, load, aggregate (if applicable), and maintain all types of data.

The number and type of DAPs that you need depends on your particular deployment topology. For a description of Genesys Info Mart-supported topologies, see [Supported Topologies](#).

At a minimum, you must configure the following DAPs:

- DAPs to access the IDBs from which Genesys Info Mart extracts data. In this document, these DAPs are referred to as *extraction DAPs*. You must configure one extraction DAP for each IDB.
- One DAP to access the Info Mart database. In this document, this DAP is referred to as the *Info Mart DAP*.

Reusing DAPs

Genesys Info Mart Server and the jobs that extract, transform, and load data use Java Database Connectivity (JDBC) to access all databases. The DAPs that the Interaction Concentrator server (ICON) uses to connect to IDB are non-JDBC DAPs that are associated with a DB Server.

To simplify your deployment, you can reuse the non-JDBC DAPs in your deployment and make these DAPs suitable for Genesys Info Mart to access the same databases. In other words, you can reuse the existing DAPs that enable ICON(s) to access IDB(s), to enable Genesys Info Mart to access the same IDBs.

Minimal additional configuration is required for you to reuse non-JDBC DAPs, if all of the following conditions are true:

- DB Server is running on the same host as the DBMS server
- the port of the DBMS listener is the default
- (for Oracle) the TNS name and the SID name are identical

Otherwise, **jdbc-*** options, which you configure in the **[gim-etl]** section on the **Options** tab of the DAP application object, enable you to specify the required JDBC connection parameters.

For more information about the JDBC options that you can configure on the non-JDBC DAPs to enable Genesys Info Mart to reuse these DAPs, see [Configuring a non-JDBC extraction DAP](#).

Warning

Before you decide to reuse the same DAP for more than one purpose, consult your database administration policies. Using the same DAP for multiple purposes has implications for security and access control. For example, the assigned database user needs sufficient privileges for all databases to which a given DAP provides access.

Additional DAPs

If you have a high availability (HA) deployment topology, you must create additional DAPs. See [Enabling High Availability](#) for more information.

Configuring Required DAPs

This page provides instructions for configuring the database access points (DAPs) that Genesys Info Mart requires to access source and target databases. For general information about DAPs in your Genesys Info Mart deployment, see [Enabling Database Access](#).

Overview: Preparing Required DAPs

The following steps summarize the task flow to enable Genesys Info Mart to access source and target databases.

- 1. Enable access to the source databases from which Genesys Info Mart needs to extract data.**
For each IDB from which Genesys Info Mart might need to extract data, configure an extraction DAP, which specifies the connection information and other options for Genesys Info Mart to access the IDB. For each IDB, do one of the following:
 - Modify the non-JDBC DAP that you configured for ICON to access the IDB. For more information, see [Configuring a non-JDBC extraction DAP](#).
 - Create and configure a new JDBC DAP. For more information, see [Configuring a JDBC extraction DAP](#).
- 2. Enable access to the target database in which Genesys Info Mart processes and stores data.**
Create and configure the Info Mart DAP, which specifies the connection information and other options for Genesys Info Mart to access the Info Mart database. For more information, see [Preparing the Info Mart DAP](#).

Important

The preceding task summary does not include information about how to configure the JDBC connection to use Secure Socket Layer (SSL). For information about how to set up a secure JDBC connection, see your RDBMS vendor documentation.

Preparing Extraction DAPs

A separate DAP is required for each IDB from which Genesys Info Mart will extract data. You can create and configure a new, dedicated JDBC DAP, or you can reuse the non-JDBC DAP that you have already configured for ICON to access IDB.

Use one of the following procedures, as applicable, to enable Genesys Info Mart to access the IDBs:

- [Configuring a JDBC extraction DAP](#)
- [Configuring a non-JDBC extraction DAP](#)

Procedure: Configuring a JDBC extraction DAP

Purpose: To create and configure a new, dedicated DAP that enables Genesys Info Mart to access IDB through JDBC, for the purposes of extracting data.

Prerequisites

- [Preparing IDBs](#).
- You are logged in to the interface you use to configure your Genesys applications.
- You have imported the **Database_Access_Point_8x** template into your environment. For full details about how to import the application template and create an application, see the Help for the configuration interface you are using — [Configuration Manager Help \(8.1\)](#), [Genesys Administrator Help](#), or [Genesys Administrator Extension Help](#).

Steps

1. Create a JDBC DAP application, as described in the Help references above. Note the following Genesys Info Mart-specific configuration requirements:
 - **General** tab: Ensure that the **JDBC Connection** and **State Enabled** check boxes are selected.
 - **Tenants** tab: No configuration of tenants is required. Skip the **Tenants** tab if it displays.
 - **DB Info** tab: In the **Database Name** text box, enter the exact name of the IDB to which this DAP will connect. For example, on Oracle, this is the Transparent Network Substrate (TNS) name.

In the **User Name** and **Password** text boxes, enter the user name and password of a user account that has the [required privileges for the Info Mart user](#) on the IDB.
 - **JDBC Info** tab: From the **Role** drop-down list, select **Role Main**. Genesys Info Mart ignores all other fields on the **JDBC Info** tab.
 - **Server Info** tab: From the **Host** drop-down list, select the host name of the database server. If the host name does not appear in the list, you must add it.

If necessary, specify the communication port for the database server, by modifying the **Communication Port** property of the default port. For Microsoft SQL Server, the default communication port is 1433; for Oracle, it is 1521; for PostgreSQL, it is 5432.
2. On the **Options** tab, create a new configuration section, named **gim-etl**, and create and configure the options that are required for Genesys Info Mart.

Genesys Info Mart uses the following **[gim-etl]** options. Click the option name to see more information.
 - role (required)
 - default-schema (optional)
 - geo-location (optional)
 - jdbc-url (required only if you want to enable Secure Socket Layer [SSL] over the JDBC connection)

- cp-reuse-count (optional)
3. Repeat the preceding steps for each IDB from which Genesys Info Mart will extract data and for which you are not reusing an existing Interaction Concentrator DAP. If your deployment topology involves HA, you must also repeat the preceding steps to provide a DAP for each redundant IDB.

Next Steps

- [Preparing the Info Mart DAP](#)

Procedure: Configuring a non-JDBC extraction DAP

Purpose: To modify the configuration of an existing DAP that ICON uses to access an IDB, to enable Genesys Info Mart to access the same IDB, for the purposes of extracting data.

Prerequisites

- [Preparing IDBs](#).
- You have the required permissions to access and modify the ICON DAP(s)
- You are logged in to the interface you use to configure your Genesys applications.

Steps

1. Locate the DAP that enables ICON to access the IDB to store data for the applicable data domain.
2. On the **Options** tab, create a new configuration section, named **gim-etl**, and create and configure the options that are required for Genesys Info Mart. For details about how to create a configuration section and options, see the Help for the configuration interface you are using — [Configuration Manager Help \(8.1\)](#), [Genesys Administrator Help](#), or [Genesys Administrator Extension Help](#).

Genesys Info Mart uses the following **[gim-etl]** options. Click the option name to see more information.

- role (required)
- default-schema (optional)
- geo-location (optional)
- jdbc-url or jdbc-host, jdbc-port, jdbc-sid. You must configure the **jdbc-url** option or other **jdbc-*** options if one of the following conditions applies:
 - DB Server is not running on the same host as the database management system (DBMS) server.

- The port of the DBMS listener is not the default (1433 for Microsoft SQL Server, 1521 for Oracle, or 5432 for PostgreSQL).
 - For Oracle, the SID name is not the same as the TNS name.
 - You want to enable SSL over the JDBC connection.
- cp-reuse-count (optional)
3. Repeat the preceding steps for each IDB from which Genesys Info Mart will extract data and for which you want to reuse an existing ICON DAP.

Next Steps

- Verify that the **CLASSPATH** environment variable provides the correct path to the JDBC driver. For more information about modifying the **CLASSPATH** environment variable, see [Installing JDBC Drivers](#).
- [Preparing the Info Mart DAP](#).

Preparing the Info Mart DAP

To process and store data, Genesys Info Mart Server requires access to its target database. The following procedure describes how to create and configure the Info Mart DAP.

Procedure: Configuring the Info Mart DAP

Purpose: To create and configure a new, dedicated DAP that enables Genesys Info Mart Server to access the Info Mart database.

Prerequisites

- [Preparing IDBs](#).
- You are logged in to the interface you use to configure your Genesys applications.
- You have imported the **Database_Access_Point_8x** template into your environment. For full details about how to import the application template and create an application, see the Help for the configuration interface you are using — [Configuration Manager Help \(8.1\)](#), [Genesys Administrator Help](#), or [Genesys Administrator Extension Help](#).

Steps

1. Create a JDBC DAP application, as described in the Help references above. Note the following Genesys Info Mart–specific configuration requirements:

- **General** tab: Ensure that the **JDBC Connection** and **State Enabled** check boxes are selected.
- **Tenants** tab: No configuration of tenants is required. Skip the **Tenants** tab if it displays.
- **DB Info** tab: In the **Database Name** text box, enter the exact name of the Info Mart database to which this DAP will connect. For example, on Oracle, this is the Transparent Network Substrate (TNS) name.

In the **User Name** and **Password** text boxes, enter the user name and password of the user account that has the [required privileges for the Info Mart user](#).

- **JDBC Info** tab: From the **Role** drop-down list, select **Role Main**. Genesys Info Mart ignores all other fields on the **JDBC Info** tab.
- **Server Info** tab: From the **Host** drop-down list, select the host name of the database server. If the host name does not appear in the list, you must add it.

If necessary, specify the communication port for the database server, by modifying the **Communication Port** property of the default port. For Microsoft SQL Server, the default communication port is 1433; for Oracle, it is 1521; for PostgreSQL, it is 5432.

2. On the **Options** tab, create a new configuration section, named **gim-etl**, and create and configure the options that are required for Genesys Info Mart.

Genesys Info Mart uses the following **[gim-etl]** options. Click the option name to see more information.

- [role](#) (required value is **INFO_MART**)
- [default-schema](#) (optional)
- [geo-location](#) (optional)
- [jdbc-url](#) (required only if you want to enable SSL over the JDBC connection)
- [cp-reuse-count](#) (optional)
- [agg-jdbc-url](#) (optional, in Oracle RAC deployments only, if you want aggregation to use a separate node)

Next Steps

- [Configuring the Genesys Info Mart Application](#)

Configuring the Genesys Info Mart Application

This page describes how to create and configure the Genesys Info Mart application, which you must do before you install it.

Before You Proceed

Before you can configure Genesys Info Mart, make sure that you have:

- Prepared your sources of data — the ICON applications and their databases (see [Preparing Interaction Concentrator](#)).
- Prepared your Genesys Info Mart target database(s) (see [Preparing the Info Mart Database](#)).
- Configured the DAPs that are required to access the source and target databases in your topology (see [Configuring Required DAPs](#)).

Overview: Preparing the Genesys Info Mart Application Object

The following steps summarize the task flow to configure an Application object and related configuration objects for Genesys Info Mart.

1. Create the server application.

To create an Application object for Genesys Info Mart Server:

- a. Import the **Genesys_Info_Mart_ETL_<release>.apd** template. For full details, see [Importing the application template](#).
- b. Create the Application object with basic configuration. For more information, see [Creating the Genesys Info Mart application](#).

2. Customize the configuration of the Genesys Info Mart Application object to support the functionality that you require.

- a. Review the configuration options and decide on the settings that are appropriate for your environment. For information about the options, see the following:
 - [Data-Processing Options for Genesys Info Mart](#)
 - [Operations-Related Options for Genesys Info Mart](#)
 - [Genesys Info Mart Aggregation-Related Options for GCXI and RAA](#)
- b. Modify settings of configuration options, as required for your environment. For more information, see [Configuring Options for Genesys Info Mart](#).

- c. (Optional) When you configure the Genesys Info Mart application options, create custom **[date-time-***] configuration sections to support multiple calendar dimensions. For more information, see [Setting the Genesys Info Mart application options](#), Step 6.

3. **Configure the other objects that are required to support detailed reporting about interactions of various media types.**

For more information, see [Configuring Supporting Objects](#).

If you need to enable HA in either a new or an existing Genesys Info Mart environment, see [Enabling High Availability](#).

Importing the Application Template

Before you can configure an Application object for Genesys Info Mart, you must import its application template. The application template provides a majority of the configuration options, as well as the default values for them.

The Genesys Info Mart installation package includes an application template, which is named **Genesys_Info_Mart_ETL_<release>.apd**.

You must import the application template only once, no matter how many Genesys Info Mart Application objects you create.

You import the Genesys Info Mart application template in the usual way; Genesys Info Mart has no special requirements. For full details about how to import the application template and create an application, see the Help for the configuration interface you are using — [Configuration Manager Help \(8.1\)](#), [Genesys Administrator Help](#), or [Genesys Administrator Extension Help](#).

After you have imported the application template:

- If you plan to deploy the Genesys reporting presentation layer (GCXI or the separately installed RAA package), review the recommendations on application deployment and modify the Genesys Info Mart application template to support aggregation, as described in the section about importing aggregation options in the [Reporting and Analytics Aggregates Deployment Guide](#) for your release.
- Otherwise, continue with [Creating the Genesys Info Mart Application](#).

Creating the Genesys Info Mart Application

After you import the application template, you create and configure an Application object for Genesys Info Mart in the interface you use to configure your Genesys applications.

Procedure: Creating the Genesys Info Mart application

Purpose: To create an application with basic configuration for your environment, by using the Genesys Info Mart application template that you just imported.

Prerequisites

- You are logged in to the interface you use to configure your Genesys applications.
- The application template has been imported, as described in [Importing the Application Template](#).
- In an environment in which you plan to deploy GCXI reports or the RAA package, you have completed any required modifications to the Genesys Info Mart application template, as described in the section about importing aggregation options in the [Reporting and Analytics Aggregates Deployment Guide](#) for your release.

Steps

1. In the configuration interface, create a new application, based on the Genesys Info Mart template that you imported. For full details about how to create an application, see the Help for the configuration interface you are using — [Configuration Manager Help \(8.1\)](#), [Genesys Administrator Help](#), or [Genesys Administrator Extension Help](#).
2. Configure the application. Note the following Genesys Info Mart requirements on the various configuration tabs:
 - General tab**
 - In the **Name** text box, enter a name for your Genesys Info Mart application, or select one from the drop-down list.
 - Make sure that the **State Enabled** check box is selected.
 - Tenants tab**
 - Skip the **Tenants** tab if it displays. No configuration of tenants is required.
 - Server Info tab**
 - In the **Host** text box, select the host on which you will install the Genesys Info Mart Server, or click **Browse** to navigate to the host location. If the host does not appear in the list, you must add it.
 - In the **Communications Port** text box, enter the port number that corresponds to your host. Genesys Info Mart Manager uses this port to communicate with the Genesys Info Mart Server.
 - Start Info tab**
 - Enter any value in the **Working Directory**, **Command Line**, and **Command Line Arguments** text boxes. The values that you enter are merely placeholders; they are updated with actual values during the Genesys Info Mart installation process.

- If your deployment will include primary and standby instances of the Genesys Info Mart application, ensure that the **Auto-Restart** check box is unchecked on both Application objects (in other words, automatic restart is not selected). If your deployment will include only a single instance of the Genesys Info Mart application, you may choose to select **Auto-Restart**.

Connections tab

Add a connection to:

- Each Interaction Concentrator (ICON) Application that you configured to capture data-source information for Genesys Info Mart.
- Each of the extraction DAPs and the Info Mart DAP that you configured, as described in [Configuring Required DAPs](#).
- The Message Server Application object. Genesys Info Mart uses Message Server to send log messages to the Genesys Central Logger.
For information about how to secure the connection to Message Server, see [Enabling Secure Connections](#).
- (Optional) The Configuration Server application (named **confserv**). You must configure an overt connection to Configuration Server only if you want to:
 - Use ADDP for the connection. To enable ADDP for the connection, specify **addp** as the **Connection Protocol**, and set the values for the **Local Timeout**, **Remote Timeout**, and **Trace Mode** properties. For more information, see [Configuring ADDP](#) in the *Management Framework Deployment Guide*.
 - Secure the connection. For more information, see [Enabling Secure Connections](#).

Important

In an environment with distributed data centers, including a SIP Cluster deployment, configure this optional connection to Configuration Server Proxy instead of to Configuration Server.

3. Save your changes.

Next Steps

- Verify that customized and required options are set correctly. See the information and instructions in [Configuring Options for Genesys Info Mart](#).

Configuring Options for Genesys Info Mart

The default settings in the Genesys Info Mart application template provide a Genesys Info Mart

application that is suitable for a wide range of standard deployments. However, for reasons of performance or data quality or data availability, you might need to customize aspects of Genesys Info Mart functioning to suit your reporting requirements and the characteristics of your network and interaction flows.

The available Genesys Info Mart-related options are summarized in tables, grouped into the following broad categories:

- [Data-Processing Options for Genesys Info Mart](#) — Affect the content and quality of data that is stored in the Info Mart database.
- [Operations-Related Options for Genesys Info Mart](#) — Affect the day-to-day operations of the Genesys Info Mart components.
- [Genesys Info Mart Aggregation-Related Options for GCXI and RAA](#) — Enable aggregation in your deployment if GCXI or RAA is installed.

To use the configuration options information on the pages listed above:

1. Review the options in the various categories to identify the ones that are relevant for your purposes.
2. Refer to the [Genesys Info Mart Configuration Options Reference](#) to understand how a particular configuration option works and what functionality it enables.
3. Review the valid values, shown in the option descriptions, and determine the values that are appropriate for your environment.
4. Change option settings as required on the Genesys Info Mart application or other objects.

Except for the option that enables aggregation (aggregation-engine-class-name), all of the Genesys Info Mart application options take effect without requiring you to restart the application, so you can adjust Genesys Info Mart functioning during runtime without disrupting Genesys Info Mart operations. However, be aware that Genesys Info Mart functioning is complex and interrelated, and changing an option setting can have unintended and unexpected effects. As a general rule, Genesys recommends testing all changes to the default configuration in a lab environment, before you deploy them in production.

For information about additional, ICON-related options that affect Genesys Info Mart functioning, see [Preparing the ICON Application](#) and [Configuring Supporting Objects](#).

Customizing the Genesys Info Mart Configuration Settings

The following procedure describes how to customize your Genesys Info Mart configuration settings to best suit your environment. Refer to this information while you create your Genesys Info Mart application (see [Creating the Genesys Info Mart Application](#)), or refer to it after the initial configuration to perform additional customization.

To customize data processing for certain environments and various types of ICON details, you might also have to set options on other configuration objects, such as DNs. For more information, see [Configuring Supporting Objects](#).

Procedure: Setting the Genesys Info Mart application options

Purpose: To configure Genesys Info Mart application settings to suit your environment.

You specify configuration options on the **Options** tab of the Genesys Info Mart Application object. Options are specific to your application and release. They appear on the **Options** tab in sections that are related to specific functions.

Prerequisites

- The Genesys Info Mart application object has been created, as described in [Creating the Genesys Info Mart Application](#).

Steps

1. In the interface you use to configure your Genesys applications, open the Application object that you configured for your Genesys Info Mart. The **Application Properties** dialog box appears.
2. Select the **Options** tab.
3. If you plan to use the Genesys reporting presentation layer (GCXI) or the separately installed RAA package, review the options that are listed in the table of [Genesys Info Mart Aggregation-Related Options for GCXI and RAA](#), and change the default settings as required for your environment.
If you do not plan to use GCXI or RAA, ensure that these aggregation-related options retain their default values.

Important

The options that are listed in [Genesys Info Mart Aggregation-Related Options for GCXI and RAA](#) are necessary to enable aggregation in your Genesys Info Mart deployment, but not sufficient for GCXI reports. For more information about how to configure Genesys Info Mart to support aggregation, see the [Reporting and Analytics Aggregates Deployment Guide](#) for your release.

4. Configure the options that control the ETL process. Refer to [Operations-Related Options](#) for lists of relevant options and their default values.
5. Configure the options that affect the content and quality of data that is stored in the Info Mart database. Refer to [Data-Processing Options](#) for lists of relevant options and their default values.
6. (Optional) Customize the calendar dimensions:
 - To modify the default calendar to support the ISO 8601 standard for week numbering, modify the values of the simple-week-numbering, first-day-of-week, and min-days-in-first-week options in the **[date-time]** section on the **Options** tab.
 - To change the default calendar (which is a Gregorian one) to a fiscal calendar, modify the values of the fiscal-year-week-pattern and fiscal-year-start options in the **[date-time]**

section on the **Options** tab.

- To provide multiple, customized calendars, create additional **[date-time-***] sections with the same options as in the **[date-time]** section, and configure the options as required for your reporting purposes.
7. After you set all of the desired options for your environment, click **Apply** to save your changes, and then click **OK** to close the **Applications Properties** dialog box.

Next Steps

- If you are creating additional calendars for reporting purposes, modify the **make_gim.sql** or **make_gim_partitioned.sql** script to create the custom calendar tables in the Info Mart database. For more information, see [Creating Custom Calendars](#).
- Otherwise, proceed to configuring ICON- and Genesys Info Mart-related options on other objects. See [Configuring Supporting Objects](#).

Data-Processing Options for Genesys Info Mart

Genesys Info Mart behavior and functionality are controlled by configuration option settings on the Genesys Info Mart Application and other supporting objects, such as DNs and Scripts.

The tables on this page list the configuration options that affect the content and quality of data that is stored in the Info Mart database. The tables group the options by functional area and, within each functional area, by type of data. Some options are set on the Genesys Info Mart Application object, and some on other objects.

Review the options to identify the ones that are relevant to the reports that you are required to provide on the data types that are relevant to your environment, and modify the option values if necessary.

For example, suppose that you would like to report on interactions and agent activity at the DN and ACD queue levels, using Genesys Info Mart pre-aggregated data, in a contact center that processes inbound voice interactions. Review the options in the following tables:

- [Voice media interactions data](#)
- [Agent activity data not specific to media type](#)
- [Voice agent activity data](#)
- [Queue activity data for voice \(ACD queue or Virtual Queue\)](#)

Carefully consider the values that you set for data-related options. Changing these settings after Genesys Info Mart has started collecting data compromises data consistency, especially for long-lived multimedia interactions.

Example of consistency issue

For example, if an agent works on an e-mail reply over a period of time and periodically saves drafts to an Interaction Workbin, there might be mixed results for the workbin activity that is associated with the e-mail interaction if the value of the populate-workbin-as-hold option changes: Some of the workbin time might be considered to be mediation (which Genesys Info Mart might or might not represent in the dimensional model, depending on other configuration), and some might be reported as hold.

Related Information

In addition to the data-processing options on this page, you might be interested in the following:

- [Operations-Related Options for Genesys Info Mart](#) — Affect the day-to-day operations of the Genesys Info Mart components and control the ETL process.
 - [Genesys Info Mart Aggregation-Related Options for GCXI and RAA](#) — Enable aggregation in your deployment, if GCXI or RAA is installed.
-

Data-Processing Options Summary Tables

The following tables summarize the Genesys Info Mart data-related options:

- [Voice media interactions data](#)
- [Multimedia interactions data](#)
- [SIP Instant Messaging Data](#)
- [Agent activity data not specific to media type](#)
- [Voice agent activity data](#)
- [Multimedia agent activity data](#)
- [Queue activity data for voice \(ACD queue or Virtual Queue\)](#)
- [Queue activity data for multimedia \(Virtual Queue, Interaction Queue, or Interaction Workbin\)](#)
- [Outbound Contact data](#)

See [Summary of options configurable at different levels](#) for a comparison of similar options on various configuration objects.

Tip

Click an option name in the tables below to see a short description, from which you can link directly to the option description in the *Genesys Info Mart Configuration Options Reference*.

Voice media interactions data

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl]	short-abandoned-threshold=10	In the Application object, configure the option on the Options tab.
	[gim-transformation]	default-ivr-to-self-service=false introduced-transfer-threshold=0 routing-target-regular-dn-fold-external=true	
	[gim-etl-populate]	populate-irf-asm-engage-duration=false	

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Multimedia interactions data

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl]	max-msfs-per-irf=50 max-thread-duration-after-inactive-in-days=31	In the Application object, configure the option on the Options tab.
	[gim-etl-populate]	populate-thread-facts=false	
	[gim-etl-media-<media type>] where <media type> exactly matches the name of the applicable Media Type Business Attribute (for example, chat).	For example, in the [gim-etl-media-chat] section: short-abandoned-threshold=10	Each [gim-etl-media-<media type>] section contains options that apply for the specific media type only. By default, sections for eServices email and chat are predefined. This setting can be overridden at the tenant level. In the Application object, configure the option on the Options tab.
Tenant Media Type Business Attribute	[gim-etl-media]	short-abandoned-threshold=10	For the particular Media Type attribute, which is configured for a particular tenant, this setting overrides the same option that is configured at the application level. In the Media Type Business Attribute object for the tenant, configure the option on the Annex tab.

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SIP Instant Messaging data

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl-populate]	populate-sip-im-facts=false	In the Application object, configure the options on the Options tab. The option controls both

Configuration Object	Section Name	Option Name and Default Value	Comments
			interaction data and agent activity data.

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Agent activity data not specific to media type

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl]	max-session-duration-in-hours=24 max-state-duration=14400 sm-resource-state-priority=ACW, NOT_READY, BUSY, READY	In the Application object, configure the options on the Options tab.
	[gim-etl-populate]	populate-media-neutral-sm-facts=false	
	[gim-transformation]	ignored-reason-codes=INTERACTION_WORKSPACE	
Switch	[gim-etl]	factor-dnd-into-sm-resource-states=FALSE (for voice-handling and SIP switches); TRUE (for multimedia-handling switches)	In the Switch object, configure the option on the Annex tab.

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Voice agent activity data

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl-populate]	populate-sm-voice-resource-activity=true	In the Application object, configure the option on the Options tab.

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Multimedia agent activity data

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl-populate]	populate-sm-busy-from-mm-ixns=false	In the Application object, configure the

Configuration Object	Section Name	Option Name and Default Value	Comments
		populate-sm-chat-resource-activity=true populate-sm-email-resource-activity=true	options on the Options tab.

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Queue activity data for voice (ACD queue or Virtual Queue)

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl]	q-answer-threshold-voice=60 q-short-abandoned-threshold-voice=10 link-msf-userdata-voice=false	The q-answer-threshold-voice setting and, starting with release 8.5.003, the q-short-abandoned-threshold-voice setting can be overridden at the Switch or DN object level. The link-msf-userdata-voice option can be overridden at the DN object level. In the Application object, configure the options on the Options tab.
	[gim-transformation]	msf-target-route-thru-queue=false cb-virtual-queue-pattern=.*	In the Application object, configure the option on the Options tab.
DN (Virtual Queue or ACD Queue), Switch	[gim-etl]	q-answer-threshold-voice=60 q-short-abandoned-threshold-voice=10 (starting with release 8.5.003)	Overrides the same option that is configured at the application level. In the Switch or DN object, configure the option on the Annex tab.
DN (Virtual Queue or ACD Queue)	[gim-etl]	link-msf-userdata=false	Overrides the value of the link-msf-userdata-voice option configured at the application level. In the DN object, configure the option on the Annex tab.

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Queue activity data for multimedia (Virtual Queue, Interaction Queue, or Interaction Workbin)

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl]	link-msf-userdata-mm=false	The link-msf-userdata-mm option can be overridden at the DN or Script object level. In the Application object, configure the options on the Options tab.
	[gim-etl-media- <media type>] where <media type> exactly matches the name of the applicable Media Type Business Attribute (for example, email)	q-answer-threshold=60 q-short-abandoned-threshold=10	Each [gim-etl-media- <media type>] section contains options that apply for the specific media type only. By default, sections for eServices email and chat are predefined. These settings at the Application level can be overridden at the tenant level. In addition, for each specific media type, the q-answer-threshold setting and, starting with release 8.5.003, the q-short-abandoned-threshold setting at the Application level can be overridden for Virtual Queues at the Switch or DN object levels or, for Interaction Queues and Workbins, at the Script level. In the Application object, configure the options on the Options tab.
	[gim-etl-populate]	populate-mm-ixnqueue-facts=false populate-mm-workbin-facts=true populate-workbin-as-hold=false	The populate-mm-ixnqueue-facts and populate-mm-workbin-facts settings can be overridden on the Script object level. In the Application object, configure the options on the Options tab.
	[gim-	adjust-vq-time-by-strategy-time=false	In the Application

Configuration Object	Section Name	Option Name and Default Value	Comments
	transformation]	canceled-queues=iWD_Canceled completed-queues=iWD_Completed expand-mediation-time-for-gapless=true (default value was false in releases earlier than 8.5.003; option was discontinued in release 8.5.007) fix-missing-party-links=false show-non-queue-mediation-mm=false stop-ixn-queues=No default value	object, configure the option on the Options tab.
Tenant Media Type Business Attribute	[gim-etl-media]	q-answer-threshold=60 q-short-abandoned-threshold=10	For the particular Media Type attribute, which is configured for a particular tenant, these settings override the same options that are configured on the Application object. In addition, for each specific media type, the q-answer-threshold setting and, starting with release 8.5.003, the q-short-abandoned-threshold setting at the tenant level can be overridden in the Switch or individual DN objects (for Virtual Queues) or in individual Script objects (for Interaction Queues or Interaction Workbins). In the Media Type Business Attribute object for the tenant, configure the options on the Annex tab.
DN (Virtual Queue), Script (Interaction Queue or Interaction Workbin), Switch	[gim-etl-media-<media type>] where <media type> exactly matches the name of the applicable Media Type Business Attribute (for example, email)	q-answer-threshold=60 q-short-abandoned-threshold=10 (starting with release 8.5.003)	Each [gim-etl-media-<media type>] section contains options that apply for the specific media type only. By default, sections for eServices email and chat are predefined. If configured, this setting overrides the same option that is configured at the application or tenant level. In the Switch or DN object for

Configuration Object	Section Name	Option Name and Default Value	Comments
			a Virtual Queue or in the Script object for an Interaction Queue or a Workbin, configure the option on the Annex tab.
DN (Virtual Queue) or Script (Interaction Queue or Interaction Workbin)	[gim-etl]	link-msf-userdata=false	Overrides the value of the link-msf-userdata-mm option configured at the application level. In the DN object for a Virtual Queue or in the Script object for an Interaction Queue or a Workbin, configure the option on the Annex tab.
Script (Interaction Queue or Interaction Workbin)	[gim-etl-populate]	populate-mm-ixnqueue-facts=false populate-mm-workbin-facts=true	Overrides the same option that is configured at the application level. In the Script object for an Interaction Queue or a Workbin, configure the options on the Annex tab.

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Outbound Contact data

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl]	max-camp-group-session-duration-in-hours=168 max-camp-group-state-duration-in-hours=168 max-chain-processing-duration-in-hours=8	In the Application object, configure the options on the Options tab.
	[gim-transformation]	ocs-caf-aggregates-calls=true ocs-chain-history-limit=5000 ocs-allowed-lateness=PT0S ocs-dial-sched-time=last	

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Summary of options configurable at different levels

The following tables for the Voice and Multimedia data domains, respectively, summarize the options

that can be configured on different objects. The scope of the option depends on the level at which you configure it. An option configured at a more granular level overrides the value of the equivalent option configured at a broader level. A checkmark in a table cell indicates that the option can be configured at that particular level. The order of priority (lowest to highest) is: Application -> Tenant (Media Type Business Attribute) -> Switch -> DN/Script. (The tenant-specific Media Type Business Attribute and Script levels apply only for Multimedia.)

The flexibility to selectively override option values at different levels of the hierarchy enables you to fine-tune your reporting. For example, for an option that can be configured at the application, switch, and DN levels, you can specify the desired option value you want to take effect for all DNs, then specify a different value to apply to all the DNs of a particular switch, and then specify yet another different value for a particular DN. For multimedia-related options, you can further specify different values for each media type at all levels of the hierarchy.

Important

GCXI/RAA customers please note:

RAA relies on threshold values that are used to calculate SLA (and other threshold-related measures metrics), which are controlled by aggregation-specific **[agg-gim-thld-*]** options. For more information, see [How Do I Configure Genesys Info Mart for Aggregation?](#) in the *Reporting and Analytics Aggregates Deployment Guide*.

Options configurable at different levels — Voice

Functionality	Option	Configuration Section	Configuration Object		
	Application	Switch	DN		
IRF metrics: Abandoned threshold	short-abandoned-threshold	[gim-etl]	✓		
MSF metrics: Abandoned threshold	q-short-abandoned-threshold-voice	[gim-etl]	✓	✓ (8.5.003 and later)	✓ (8.5.003 and later)
MSF metrics: Answer threshold	q-answer-threshold-voice	[gim-etl]	✓	✓	✓
User data in MSFs	link-msf-userdata	[gim-etl]	Use link-msf-userdata-voice		✓
	link-msf-userdata-voice	[gim-etl]	✓ (8.5.003 and later)		Use link-msf-userdata

Options configurable at different levels — Multimedia

Functionality	Option	Configuration Section	Configuration Object				
Application	Tenant Media Type Business Attribute	Switch	DN	Script			
IRF metrics: Abandoned threshold	short-abandoned-threshold	<i>Depends on the configuration object:</i> [gim-etl-media] on the Media Type Business Attribute	✓	✓			
MSF metrics: Abandoned threshold (virtual queues)	q-short-abandoned-threshold		✓	✓	✓ (8.5.003 and later)	✓ (8.5.003 and later)	
MSF metrics: Abandoned threshold (interaction queues or workbins)	q-short-abandoned-threshold		✓	✓			✓ (8.5.003 and later)
MSF metrics: Answer threshold (virtual queues)	q-short-abandoned-threshold		✓	✓	✓	✓	
MSF metrics: Answer threshold (interaction queues or workbins)	q-answer-threshold	[gim-etl-media-<media type>] on all other objects	✓	✓			✓
User data in MSFs	link-msf-userdata	[gim-etl]	Use link-msf-userdata-mm			✓	✓
	link-msf-userdata-mm	[gim-etl]	✓ (8.5.003 and later)			Use link-msf-userdata	Use link-msf-userdata
Data population	populate-mm-ixnqueue-facts	[gim-etl-populate]	✓				✓

Functionality	Option	Configuration Section	Configuration Object				
	populate-mm-workbin-facts	[gim-etl-populate]	✓				✓

Operations-Related Options for Genesys Info Mart

Genesys Info Mart behavior and functionality are controlled by configuration option settings on the Genesys Info Mart Application and other supporting objects, such as DNs and Scripts.

The tables on this page list the configuration options that affect the operations of the Genesys Info Mart components. These options control the ETL process, and most of them apply in any environment. The tables group the options by functional area.

Review the options to identify the ones that are relevant to the Genesys Info Mart operation in your environment. In particular, decide:

- For new deployments, from which date you want Genesys Info Mart to start extracting data after the Info Mart database is initialized (see [Startup](#)).
- How you want Genesys Info Mart to schedule launching of ETL jobs (see [Scheduling](#)).
- How you want Genesys Info Mart to process error conditions during data transformation (see [Transformation error handling](#)).
- What logging level is sufficient for Genesys Info Mart Server (see [Logging](#)).
- How you want to adjust ETL behavior to meet requirements for data quality and data availability, given the characteristics of your environment and interaction flows (see [Miscellaneous](#)).
- Which, if any, of the redundant IDBs in an HA set you want to identify as preferred for the purposes of extraction (see [Miscellaneous](#)).
- How you want Genesys Info Mart to optimize Genesys Info Mart Server performance (see [Performance tuning](#)).
- What connection and other data source-related information Genesys Info Mart needs to extract data that comes through data streams other than Interaction Concentrator (see [Alternative data streams](#)).
- If you use the Data Export functionality, whether you need to modify the parameters of the export job (see [Data export](#)).
- What data-retention policies and other purge-related strategies you want to implement (see [Database maintenance](#)).
- What calendar dimensions you need for your reports (see [Calendar maintenance](#)).

Related Information

In addition to the operations-related options on this page, you might be interested in the following:

- [Data-Processing Options for Genesys Info Mart](#) — Affect the content and quality of data that is stored in the Info Mart database.
 - [Genesys Info Mart Aggregation-Related Options for GCXI and RAA](#) — Enable aggregation in your deployment, if GCXI or RAA is installed.
-

Operations-Related Options Summary Tables

The following tables summarize the Genesys Info Mart operations-related options:

- [Startup](#)
- [Scheduling](#)
- [Transformation error handling](#)
- [Logging](#)
- [Miscellaneous](#)
- [Performance tuning](#)
- [Alternative data streams](#)
- [Data export](#)
- [Database maintenance](#)
- [Calendar maintenance](#)

Tip

Click an option name in the tables below to see a short description, from which you can link directly to the option description in the *Genesys Info Mart Configuration Options Reference*.

Startup

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl]	etl-start-date=Initialization date minus 30 days	In the Application object, configure the options on the Options tab.

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Scheduling

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[schedule]	timezone=GMT run-scheduler=false	In the Application object, configure the

Configuration Object	Section Name	Option Name and Default Value	Comments
		etl-frequency=1 etl-start-time=06:00 etl-end-time=22:00 run-aggregates=false aggregate-schedule=0 1 aggregate-duration=5:00 run-maintain=true maintain-start-time=03:00 run-update-stats=false update-stats-schedule=0/10 * run-export=false export-schedule=20 0/8 on-demand-migration=false	options on the Options tab.

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Transformation error handling

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[error-policy]	error-policy-call-mergecall-missing=resume error-policy-campaign-group-missing=exception error-policy-cfg-check-backup-data-source=error error-policy-ipurpose-numberformat=resume error-policy-islink-dangling=resume error-policy-islink-multiple-sources=resume error-policy-islink-multiple-targets=resume error-policy-islink-multiple-vertices=resume error-policy-islink-source-party-missing=resume error-policy-party-created-duplicated=resume error-policy-party-created-missing=resume error-policy-party-parent-missing=resume error-policy-irf-exception=log_db_resume error-policy-irf-exception-resumable=Exception	In the Application object, configure the options on the Options tab.

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Logging

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[log4j]	log4j.appender.ConsoleLogger.Threshold=info logging-level=info log-file-name=gim_etl.log max-log-file-size=50MB max-backup-index=10	In the Application object, configure the options on the Options tab.

Configuration Object	Section Name	Option Name and Default Value	Comments
		console-pattern-layout=%d{ISO8601} %-5p %-12t %m%n file-pattern-layout=%d{ISO8601} %-5p %-12t %m%n	
	[log]	verbose=standard standard=network	

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Miscellaneous

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl]	delayed-data-threshold=900 extract-data-stuck-threshold=28860 max-call-duration=3600 max-time-deviation=30 memory-threshold=0 merge-failed-is-link-timeout=0 user-event-data-timeout=3600	Note: The primary purpose of these options is to control aspects of Genesys Info Mart behavior that affect data quality or data availability. However, these options also have an impact on operating performance (for example, because they influence the size of merge tables or staging tables). In the Application object, configure the options on the Options tab.
	[gim-transformation]	pipeline-timeout-in-hours=1	In the Application object, configure the option on the Options tab.
Info Mart and extraction DAPs	[gim-etl]	geo-location=""	In the DAP object, configure the option on the Options tab.

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Performance tuning

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl]	extract-data-cfg-facts-chunk-size=90000 extract-data-chunk-size=900 extract-data-thread-pool-size=32 max-chunks-per-job=10 merge-chunk-size=200000	In the Application object, configure the options on the Options tab.
	[gim-transformation]	chunk-size=7200 irf-io-parallelism=4 ixn-data-limit=10000 ud-io-parallelism=5	
Info Mart and extraction DAPs	[gim-etl]	cp-reuse-count=-1	In the DAP object, configure the option on the Options tab.

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Alternative data streams

Use the following configuration options to specify data sources and to manage data that does not come through ICON.

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[elasticsearch-<data-source-id>]	client=off g:index-interval=No default value g:tenant-prefix=No default value rest:max-content-length=100 MB sources:extra=None	In the Application object, configure the options on the Options tab.
	[kafka-<cluster-name>]	bootstrap.servers=No default value g:topic:<topic-name>=No default value Native Kafka client options	
	[gim-transformation]	kafka-idle-timeout=10 seconds	Genesys Info Mart must predefine the mapping of data from Elasticsearch and Kafka. Support for data from these alternative data streams is limited to certain applications, some of which are currently available only in cloud deployments.

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Data export

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-export]	chunk-size-seconds=86400 days-to-keep-output-files=14 encrypt-certificate=No default value max-retries=3 output-directory=output output-files-encoding=utf8 retry-delay-seconds=30 start-date= thread-pool-size=10 use-export-views=false	In the Application object, configure the options on the Options tab.

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Database maintenance

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[gim-etl]	days-to-keep-gidb-facts=14 days-to-keep-cfg-facts=400 or days-to-keep-gim-facts days-to-keep-gim-facts=400 days-to-keep-active-facts=30 days-to-keep-gdpr-history=15 days-to-keep-deleted-annex=2 days-to-keep-discards-and-job-history=600 purge-transaction-size=100000 purge-thread-pool-size=32 For partitioned databases only: partitioning-interval-size-gidb=86400 partitioning-interval-size-gidb-mm=86400 partitioning-interval-size-gidb-ocs=86400 partitioning-interval-size-gim=86400 partitioning-ahead-range=14	In the Application object, configure the options on the Options tab.

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Calendar maintenance

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[date-time] For custom calendars: [date-time-*]	date-time-table-name=DATE_TIME date-time-tz=GMT date-time-start-year=2012 date-time-min-days-ahead=183 date-time-max-days-ahead=366 simple-week-numbering=true	In the Application object, configure the options on the Options tab.

Configuration Object	Section Name	Option Name and Default Value	Comments
		first-day-of-week=1 min-days-in-first-week=1 fiscal-year-week-pattern=none fiscal-year-start=	

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Aggregation-Related Options for GCXI and RAA

Genesys Info Mart behavior and functionality are controlled by configuration option settings on the Genesys Info Mart Application and other supporting objects, such as DNs and Scripts.

The table on this page lists the configuration options that are essential to enable aggregation in your Genesys Info Mart deployment, if the Genesys historical reporting presentation layer—Genesys CX Insights (GCXI)—or RAA is installed.

Related Information

In addition to the aggregation-related options on this page, you might be interested in the following:

- [Data-Processing Options for Genesys Info Mart](#) — Affect the content and quality of data that is stored in the Info Mart database.
- [Operations-Related Options for Genesys Info Mart](#) — Affect the day-to-day operations of the Genesys Info Mart components and control the ETL process.

Genesys Info Mart Options for GCXI and RAA

The following table summarizes the Genesys Info Mart aggregation-related options for GCXI and RAA.

Tip

Click an option name in the table below to see a short description, from which you can link directly to the option description in the *Genesys Info Mart Configuration Options Reference*.

Configuration Object	Section Name	Option Name and Default Value	Comments
Genesys Info Mart Application	[schedule]	run-aggregates=true aggregate-schedule=<as specified in the aggregation-specific template> aggregate-duration=<as specified in the aggregation-specific template>	In the Application object, configure the options on the Options tab.
	[gim-etl]	aggregation-engine-class-name="GIMAgg.GimInterfaceImpl.AggregationImpl"	
Info Mart DAP	[gim-etl]	agg-jdbc-url=	In the Info Mart DAP,

Configuration Object	Section Name	Option Name and Default Value	Comments
			configure the option on the Options tab.

Important

In addition to specifying the aggregation engine class name (in the **aggregation-engine-class-name** configuration option), you must also modify the **gim_etl_paths** file to specify the path to the correct .jar file.

There are additional aggregation-related options that are set on the Genesys Info Mart Application object, to control the functioning of the aggregation engine and population of the aggregate tables. GCXI has specific requirements for certain option values.

Note that, starting with RAA release 8.1.1, RAA does not use the thresholds specified by the Genesys Info Mart ***-threshold** options to calculate SLA and other threshold-related measures. Instead, in RAA release 8.1.1 and higher, thresholds are controlled by aggregation-specific **[agg-gim-thld-*]** options, which are described in the RAA documentation.

For more information about all of the aggregation-related options and installation steps, see the *Reporting and Analytics Aggregates Deployment Guide* for your release.

Configuring Supporting Objects

Both ICON and Genesys Info Mart require certain settings on other Genesys configuration objects, such as DN and Field objects, in order to support specific functionality. This page provides links to more information about configuring supporting objects to meet ICON and Genesys Info Mart requirements.

ICON- and Genesys Info Mart–Related Configuration on Other Objects

Configuration settings on the following configuration objects affect ICON processing in ways that are significant for Genesys Info Mart:

- [Switch](#) (for Voice or Multimedia details)
- [DN](#) (for Voice or Multimedia details)
- [Field](#) (for Outbound Contact details)

Configuration settings on the following configuration objects affect Genesys Info Mart data processing:

- [Switch](#) (for Voice or Multimedia details)
- [Media Type Business Attribute](#) (for Multimedia details)
- [DN](#) (for Voice or Multimedia details)
- [Script](#) (for Multimedia details)
- [Field](#) (for Outbound Contact details)

Use the instructions on the following pages to configure the appropriate settings for your environment:

- [Configuring Switch Objects](#)
- [Configuring Media Type Business Attribute Objects](#)
- [Configuring DN Objects](#)
- [Configuring Script Objects](#)
- [Configuring Field Objects](#)

Annex or Options Tab

In all cases, you use a Genesys configuration interface to configure the options that ICON or Genesys Info Mart require on supporting objects:

- If you use Genesys Configuration Manager, configure the options on the **Annex** tab of the applicable configuration object.
- If you use Genesys Administrator, configure the options on the **Advanced View (Annex)** of the configuration object's **Options** tab.
- If you use Genesys Administrator Extension (GAX), configure the options on the **Options** tab of the applicable configuration object.

For more information about locating the configuration objects in your Genesys configuration interface, see the Help — [Configuration Manager Help \(8.1\)](#), [Genesys Administrator Help](#), or [Genesys Administrator Extension Help](#).

Configuring Switch Objects

This page provides instructions for configuring the Switch object for ICON and Genesys Info Mart reporting.

Settings on the Switch object affect how:

- ICON gathers and reports data about voice or multimedia interactions, including interaction, user-data, resource, and agent activity details. For multimedia details, the only ICON-related option that applies relates to virtual queues.
- Genesys Info Mart processes network activity, for all types of ICON details.
- Genesys Info Mart reports do-not-disturb (DND) activity.
- Genesys Info Mart reports queue metrics for voice or multimedia interactions. Options on the switch enable you to override certain application-level—or, for multimedia interactions, tenant-level—option settings for all ACD Queue or Virtual Queue DN's configured on the switch.

The following procedure and the [Important Switch Options](#) tables describe the required switch configuration settings for ICON and Genesys Info Mart reporting.

Important

GCXI/RAA customers please note: RAA thresholds are controlled by aggregation-specific **[agg-gim-thld-*]** options, which are described under [How Do I Configure Genesys Info Mart for Aggregation?](#) in the *Reporting and Analytics Aggregates Deployment Guide*.

Procedure: Configuring the switch for ICON and Genesys Info Mart reporting

Prerequisites

- You are logged in to the interface you use to configure your Genesys applications.
- You have the required access privileges to modify properties for the Switch object in the Genesys Configuration Layer.

Steps

1. Open the **Annex** of the Switch object that handles voice or multimedia interactions.
2. Configure ICON-related options:
 1. Create a new section that is named **gts**, if it does not exist already on the **Annex**.
 2. Open the **[gts]** section.
 3. Configure the required ICON-related options:
 - For Voice details, configure all required options that are described in the **ICON-Related Switch Options — [gts] Section** table.
 - For Multimedia details, if your deployment includes Virtual Queue DNs, verify that the **support-dn-type-5** option is set to the default value of 1. By default, ICON will monitor and store data for all virtual queues that belong to this switch.

For more information, see **Switch Options** in the *Interaction Concentrator Deployment Guide*.

3. If you want to change whether or not Genesys Info Mart factors DND into summarized resource states and reasons, or if you want to use switch-wide settings for queue metrics, configure Genesys Info Mart-related options.
 - To change Genesys Info Mart behavior with respect to DND:
 1. Create a new section that is named **gim-etl**, if it does not exist already on the **Annex**.
 2. Open the **[gim-etl]** section, and add the factor-dnd-into-sm-resource-states option, with the desired value.
 - To configure switch-wide thresholds for queue metrics for ACD queues and virtual queues for voice interactions:
 1. Create a new section that is named **gim-etl**, if it does not exist already on the **Annex**.
 2. Open the **[gim-etl]** section, and add the q-answer-threshold-voice and/or, starting with release 8.5.003, the q-short-abandoned-threshold-voice options, with the desired values.

The thresholds set in the Switch object will override a value set in the Genesys Info Mart Application object. In turn, values set on the Switch can be overridden by values set at the DN level.
 - To configure switch-wide thresholds for queue metrics for virtual queues for multimedia interactions:
 1. For each media type for which you want to configure a switch-wide threshold for virtual queues, add a new section, named **gim-etl-media-<media type>**, on the **Annex** of the Switch object. The <media type> that you specify in the section name must match the name of the Media Type Business Attribute exactly, including case (for example, **gim-etl-media-email**).
 2. Open the new section and add the q-answer-threshold and/or, starting with release 8.5.003, the q-short-abandoned-threshold options for the specific media type (for example, email), with the desired values.

The thresholds set in the Switch object will override a value set in the Genesys Info Mart Application object or in the tenant-specific Media Type Business Attribute. In turn, values set on the Switch can be overridden by values set at the DN level.

For a summary of the Genesys Info Mart–related options, see [Genesys Info Mart–Related Switch Options, by Area of Functionality](#).

Next Steps

- (Optional) For Multimedia details, [Setting Media Type Business Attribute object options for Genesys Info Mart reporting](#).
- For Voice or Multimedia details, [Configuring a DN for ICON and Genesys Info Mart reporting](#).
- For Outbound Contact details, [Configuring Field Objects](#).

Important Switch Options

The following tables describe required or recommended settings for options that you set on the Switch object.

For more information about the Genesys Info Mart Application configuration options, see [Configuring the Genesys Info Mart Application](#).

For more information about all of the ICON configuration options, see [Configuration Options](#) in the *Interaction Concentrator Deployment Guide*.

Tip

In the following tables, click an option name to see a short description of that option.

ICON-Related Switch Options — [gts] Section, by Area of Functionality

Area of Functionality	Option Name	Recommended Value
Agent state and login session	gls-associations-rule	0
	gls-flag-on-disconnect	0 (default)
	gls-use-ts-id	1 (default)
Agent metrics	gls-acw-first	To ensure that ICON associates ACW with the first voice interaction, do one of the following:

Area of Functionality	Option Name	Recommended Value
		<ul style="list-style-type: none"> At the switch level, set this option value to 1. Retain the default value of -1 at the switch level, and set the gls-acw-first option to 1 (or true) at the ICON application level.
	gls-enable-acw-busy	<p>No recommended value, but the setting might affect reporting results:</p> <ul style="list-style-type: none"> 0—ICON does not interrupt ACW and NotReady agent states. 1 (default)—ICON interrupts ACW and NotReady agent states. <p>Note: If you set the option value to 0 (false) because you want ICON to report uninterrupted ACW, ICON will also report uninterrupted NotReady states. Other states that might occur during NotReady (for example, Busy) will not be reported in IDB or the Info Mart database. For more information, see Populating Agent Activity in the <i>Genesys Info Mart User's Guide</i>.</p>
Virtual queue	support-dn-type-5	1 (default)
Parallel ACD queues	third-party-queue-in-divert	<ul style="list-style-type: none"> 0 (default) 1 (for switches, such as Avaya Communication Manager release 7.6 and later, that enable T-Server to supply AttributeThirdPartyQueue in EventDiverted)

Genesys Info Mart-Related Switch Options, by Area of Functionality

Area of Functionality	Section	Option Name	Recommended Value
Agent metrics	[gim-etl]	factor-dnd-into-sm-resource-states	No recommended value, but the setting affects reporting results.
Queue activity data for voice (ACD queue or Virtual Queue)	[gim-etl]	q-answer-threshold-voice	No recommended value, but the setting affects reporting results.
		q-short-abandoned-threshold-voice (starting with release 8.5.003)	For more information, see Summary of options configurable at different
Queue activity data for	[gim-etl-media-<media	q-answer-threshold	

Area of Functionality	Section	Option Name	Recommended Value
multimedia (Virtual Queue, Interaction Queue, or Interaction Workbin)	type>] where <media type> exactly matches the name of the applicable Media Type Business Attribute (for example, email)	q-short-abandoned-threshold (starting with release 8.5.003)	levels, as well as the comments in the tables summarizing options relating to Queue activity data for voice (ACD queue or Virtual Queue) and Queue activity data for multimedia (Virtual Queue, Interaction Queue, or Interaction Workbin).

Configuring Media Type Business Attribute Objects

This page provides instructions for configuring Media Type Business Attribute objects for Genesys Info Mart reporting. Settings on Media Type Business Attribute objects affect Genesys Info Mart reporting of queue metrics for multimedia interactions for a tenant.

Important

GCXI and RAA customers please note: RAA thresholds are controlled by aggregation-specific **[agg-gim-thld-*]** options, which are described under [How Do I Configure Genesys Info Mart for Aggregation?](#) in the *Reporting and Analytics Aggregates Deployment Guide*.

Procedure: Configuring a Media Type Business Attribute for Genesys Info Mart reporting

Purpose: To implement media-specific, tenant-specific thresholds for multimedia interactions.

Prerequisites

- You are logged in to the interface you use to configure your Genesys applications.
- You have the required access privileges to modify properties for Media Type Business Attribute objects in the Genesys Configuration Layer.

Steps

1. For the media type for which you want to configure tenant-specific thresholds, display the properties for the Media Type Business Attribute object for that tenant.
2. Open the **Annex** of the configuration object.
3. Add a new section, named **gim-etl-media**, if it does not exist already on the **Annex**.
4. Open the new section and add one or more of the following options, with values that are suitable for that tenant, for the media type. Click the option name to see more information about the option.

- q-answer-threshold
- q-short-abandoned-threshold
- short-abandoned-threshold

The values you set for these options in a specific Media Type Business Attribute object, which is configured for a particular tenant, will override values that are set in the Genesys Info Mart Application object. In turn, options set on a Media Type Business Attribute can be overridden by values set at the DN, Script, or Switch level. For more information, see [Summary of options configurable at different levels](#), as well as the comments in the tables summarizing options relating to [Multimedia interactions data](#) and [Queue activity data for multimedia](#).

Tip

For Genesys Info Mart-related options that you configure in a Media Type Business Attribute object, changes take effect on the next ETL cycle. The new option value is not applied to previously loaded facts.

Next Steps

- For Voice or Multimedia details, see [Configuring a DN for ICON and Genesys Info Mart reporting](#).
- (Optional) For Multimedia details, see [Setting Script object options for Genesys Info Mart reporting](#).
- For Outbound Contact details, see [Configuring Field Objects](#).

Configuring DN Objects

This page provides instructions for configuring the DN objects for ICON and Genesys Info Mart reporting.

Settings on DN objects affect:

- How ICON gathers and reports data on IVR and virtual-queue usage for voice or multimedia interactions.
- Genesys Info Mart reporting of queue metrics for voice or multimedia interactions. Options on Virtual Queue or ACD Queue DNs enable you to override equivalent switch-level, tenant-level (for multimedia interactions), or application-level option settings at the queue level, as appropriate.
- Whether Genesys Info Mart stores user data for interactions that are in mediation.

Important

GCXI/RAA customers please note: RAA thresholds are controlled by aggregation-specific **[agg-gim-thld-*]** options, which are described under [How Do I Configure Genesys Info Mart for Aggregation?](#) in the *Reporting and Analytics Aggregates Deployment Guide*.

The following procedure and the tables under [Important DN Options](#) describe the required configuration settings.

Tip

For Genesys Info Mart-related options that you configure in a DN object, changes take effect on the next ETL cycle. The new option value is not applied to previously loaded facts.

Procedure: Configuring a DN for ICON and Genesys Info Mart reporting

Prerequisites

- You are logged in to the interface you use to configure your Genesys applications.

- If you are deploying Genesys Info Mart to report on both ICON Voice details and ICON Multimedia details, make sure that any DN objects for virtual queues for voice calls are configured under the Switch object that is configured for your traditional telephony switch, and any DN objects for virtual queues for multimedia interactions are configured under the Switch object that is configured for your multimedia switch. Otherwise, if you configure virtual queues for voice calls under the multimedia switch, Genesys Info Mart will extract all the virtual-queue data as multimedia data, and Genesys Info Mart voice processing will ignore it. Similarly, if you configure virtual queues for multimedia interactions under the telephony switch, Genesys Info Mart will not process multimedia virtual-queue data.

Steps

1. Configure ICON-related options:

1. Open the **Annex** of the DN object that handles voice or multimedia interactions.
2. Create a new section that is named **gts**, if it does not exist already on the **Annex**.
3. Open the **[gts]** section.
4. Configure the required ICON-related options:
 - For Voice details, configure all required options that are described in the table, **ICON-related DN options—[gts] section**.
 - For Multimedia details, if your deployment includes virtual queues, configure only the **monitor** option.

For more information, see the chapter about **DN Options** in the *Interaction Concentrator Deployment Guide*.

2. If you want to use DN-specific settings for queue metrics or you want mediation segment fact (MSF) records to store associated user data, configure Genesys Info Mart-related options. To do so, display the properties for the DN object of type Virtual Queue or ACD Queue in the configuration interface. Then:

- To configure DN-specific thresholds for voice interactions:
 1. Add a new section, named **gim-etl**, on the **Annex**.
 2. Open the new section, and add the `q-answer-threshold-voice` and/or, starting with release 8.5.003, the `q-short-abandoned-threshold-voice` options, with the desired values.

The thresholds set in a specific DN object of the Virtual Queue or ACD Queue type will override a value set in the Genesys Info Mart Application object or the Switch object.

- To configure media-specific thresholds for multimedia interactions:
 1. For each media type for which you want to configure a custom threshold, add a new section, named **gim-etl-media-<media type>**, on the **Annex** of a Virtual Queue DN for multimedia interactions.

The `<media type>` that you specify in the section name must match the name of the Media Type Business Attribute exactly, including case (for example, **gim-etl-media-email**).

2. Open the new section and add the `q-answer-threshold` and/or, starting with release 8.5.003, the `q-short-abandoned-threshold` options for the specific media type (for example, email), with the desired values.

The thresholds set in a specific DN object of the Virtual Queue type will override a value set in the Genesys Info Mart Application, in the Switch, or in the tenant-specific Media Type Business Attribute object.

- For every Virtual Queue or ACD Queue DN for which you want mediation segment facts (MSFs) to store associated user data:
 1. Create or open the **[gim-etl]** section on the **Annex**.
 2. Add the `link-msf-userdata` option, and set the value to `true`. (The default value is `false`.)

Starting with release 8.5.003, you can configure Genesys Info Mart at the application level so that MSFs for all queues for voice or multimedia interactions store associated user data. Setting the DN-level **link-msf-userdata** option overrides the setting of the application-level options (`link-msf-userdata-voice` or `link-msf-userdata-mm`) for that DN.

Next Steps

- (Optional) For Multimedia details, see [Setting Script object options for Genesys Info Mart reporting](#).
- For Outbound Contact details, see [Configuring Field Objects](#).
- If you have not already done so, configure or complete the preparation of Interaction Concentrator and Genesys Info Mart. For more information, see [Preparing Interaction Concentrator](#) and [Configuring the Genesys Info Mart Application](#).

Important DN Options

The following tables describe required or recommended settings for options that you set on the DN object.

For information about Genesys Info Mart Application configuration options, see [Configuring the Genesys Info Mart Application](#).

For more information about all of the ICON configuration options, see [Configuration Options](#) in the *Interaction Concentrator Deployment Guide*.

Tip

In the following tables, click an option name to see a short description of that option.

ICON-related DN options—[gts] section

Area of Functionality	Option Name	Recommended Value
Scenario recognition	ivr	0 (default)
Network Routing Solution	emulate-event-queued	<ul style="list-style-type: none"> 0—EventQueued is not emulated. 1—EventQueued is emulated. <p>Note: Network Routing Solution uses Service Number DNs. There is no EventQueued-related option at the switch level for Service Numbers. If the Network T-Server does not generate EventQueued, set this option to 1 on the Service Number DNs.</p>
Virtual queue	monitor	1 (default)

Genesys Info Mart-related DN options, by area of functionality

Area of Functionality	Section	Option Name	Recommended Value
Queue activity data for voice (ACD queue or Virtual Queue)	[gim-etl]	q-answer-threshold-voice	No recommended value, but the setting affects reporting results.
		q-short-abandoned-threshold-voice (starting with release 8.5.003)	The value that is set for these options on the DN object overrides a value that is set at the application level. In addition, the value that is set on the DN object for the q-answer-threshold-voice and, starting with release 8.5.003, q-short-abandoned-threshold-voice options overrides a value set for those options at the switch level.
Queue activity data for multimedia (Virtual Queue)	[gim-etl-media-<media type>] where <media type> exactly matches the name of the applicable Media Type Business Attribute (for example, email)	link-msf-userdata	
		q-answer-threshold	No recommended value, but the setting affects reporting results.
		q-short-abandoned-threshold (starting with release 8.5.003)	Each [gim-etl-media-<media type>] section contains options that apply for the specific media type only. The value that is set for these options on the DN object (for a Virtual Queue) overrides a value that is set at the application, tenant, or switch levels.

Configuring Script Objects

This page provides instructions for configuring Script objects for Genesys Info Mart reporting. Settings on Script objects affect:

- Genesys Info Mart reporting of queue metrics for multimedia interactions. Options on the Script objects associated with particular Interaction Queues or Interaction Workbins enable you to override equivalent tenant-level or application-level option settings at the queue level, as appropriate.
- Whether Genesys Info Mart populates queue-specific data in mediation segment facts (MSFs).
- Whether Genesys Info Mart stores user data for interactions that are in mediation.

Important

GCXI/RAA customers please note: RAA thresholds are controlled by aggregation-specific [**agg-gim-thld-***] options, which are described under [How Do I Configure Genesys Info Mart for Aggregation?](#) in the *Reporting and Analytics Aggregates Deployment Guide*.

Tip

For Genesys Info Mart-related options that you configure in a Script object, changes take effect on the next ETL cycle. The new option value is not applied to previously loaded facts.

In the following procedure, click an option name to see a short description of that option.

Procedure: Setting Script object options for Genesys Info Mart reporting

Purpose: To provide queue-specific settings for queue thresholds and population of mediation data.

Prerequisites

- You are logged in to the interface you use to configure your Genesys applications.
- You have the required access privileges to modify properties for Script objects in the Genesys

Configuration Layer.

Steps

1. Display the properties for the Script object that corresponds to the Interaction Queue or Interaction Workbin.
2. Open the **Annex** of the Script object.
3. (Optional) Configure queue-specific thresholds for multimedia interactions.
 - a. For each media type for which you want to configure a custom threshold, add a new section, named **gim-etl-media-<media type>**, if it does not exist already on the **Annex**. The **<media type>** that you specify in the section name must match the name of the Media Type Business Attribute exactly, including case (for example, email).
 - b. Open the new section and add the `q-answer-threshold` and, starting with release 8.5.003, `q-short-abandoned-threshold` options for the specific media type (for example, email), with the desired values.

The thresholds set in a specific Script object will override the value of the option with the same name that is set in the Genesys Info Mart Application object or in the tenant-specific Media Type Business Attribute object.

4. (Optional) Enable or disable population of queue-specific data in MSFs.
 - a. Add a new section, named **gim-etl-populate**, if it does not exist already on the **Annex**.
 - b. Add one of the following options, depending on whether the Script object corresponds to an Interaction Queue or an Interaction Workbin, and specify the desired value:
 - `populate-mm-ixnqueue-facts` (The default value is `false`.)
 - `populate-mm-workbin-facts` (The default value is `true`.)

The value that is set in the Script object for a particular interaction queue or workbin will override the value of the option with the same name that is set in the Genesys Info Mart Application object.

5. (Optional) Enable or disable the storage of user data in MSFs for the interaction queue or workbin.
 - a. Open the **[gim-etl]** section on the **Annex**.
 - b. Add the `link-msf-userdata` option, and set the desired value. (The default value is `false`.)

The value that is set in the Script object for a particular interaction queue or workbin will override the value of the `link-msf-userdata-mm` option, which, starting with release 8.5.003, can be set in the Genesys Info Mart Application object.

Next Steps

- For Outbound Contact details, see [Configuring Field Objects](#).
- If you have not already done so, configure or complete preparation of Interaction Concentrator and Genesys Info Mart. For more information, see [Preparing Interaction Concentrator](#) and [Configuring the Genesys Info Mart Application](#).

Configuring Field Objects

This page provides instructions for configuring Field objects for Genesys Info Mart reporting.

To enable Genesys Info Mart to report on Outbound Contact activity, you must:

1. Configure Field objects so that Outbound Contact Server (OCS) will send the required data and ICON will store it. For more information, see [Configuring the storage of OCS record field data](#).
2. Map Field objects to columns in the Info Mart database. For more information, see [Configuring the mapping of OCS record fields](#).

For more information about Outbound Contact data in Genesys Info Mart, see [Outbound Contact Data](#).

Procedure: Configuring the storage of OCS record field data

Purpose: To enable the Field object settings that are required for ICON to store mandatory and nonmandatory field data in IDB.

Prerequisites

- You are logged in to the interface you use to configure your Genesys applications.
- You have the required access privileges to modify properties for Field objects in the Genesys Configuration Layer.
- You have opened the **Annex** for the Field object that requires configuration.

Steps

1. Review the configuration options in the [Field Object-Annex-\[default\] Section](#) table that you should configure on the **Annex** of the Record Field object. In the table, click an option name to see a short description of the option.
2. Add the **icon_attribute** option to the **[default]** section on the **Annex** of the Field object:
 - For each mandatory field that is listed in the [Mandatory Record Field Data](#) table
 - For each nonmandatory (custom) field that you want Genesys Info Mart to store in its database

For more information about mandatory and nonmandatory fields in Genesys Info Mart, see [Outbound Contact Data](#).

3. If you want to use a field to indicate that the answered call was with the proper contact, add the

right_person option to the **[default]** section on the **Annex** of that Field object.

- If you want to use a field to indicate that the answered call was a successful transaction, add the **conversion** option to the **[default]** section on the **Annex** of that Field object.

Tip

You do not have to configure the **send_attribute** option for any fields. See [send_attribute](#) for a description of the option.

Field Object—Annex—[default] Section

Option Name	Recommended Value
icon_attribute	<ul style="list-style-type: none"> For nonsensitive data, set this option to 1 to store the data in the IDB GO_CUSTOM_FIELDS and GO_FIELDHIST tables. For sensitive data, set this option to 2 to store the data in the IDB GO_SECURE_FIELDS and GO_SEC_FIELDHIST tables. <p>For more information, see Configuring for Outbound Contact Data in the <i>Interaction Concentrator Deployment Guide</i>.</p>
right_person	<p>(Optional) Specify a value that indicates that the right person was contacted — for example: TRUE, YES, or 1.</p> <p>Do not specify this option for more than one field within a calling list.</p> <p>For more information, see Right Person Contacted Record Field.</p>
conversion	<p>(Optional) Specify a value that indicates that a transaction was successful.</p> <p>Do not specify this option for more than one field within a calling list.</p> <p>For more information, see Conversion Record Field.</p>

Next Steps

- [Configuring the mapping of OCS record fields](#)

Procedure: Configuring the mapping of OCS record fields

Purpose: To enable the Field object settings that are required for mapping to the Genesys Info Mart database.

To determine what fields you need to map, see the [Mapping OCS Record Fields Worksheet](#). Configure the mapping only for those nonmandatory Field objects that you want to store in the Info Mart database. Follow this procedure to configure the **Annex** of the corresponding Field object, to indicate the Info Mart table name and column name to which it will be mapped.

Prerequisites

- You are logged in to the interface you use to configure your Genesys applications.
- You have opened the **Annex** for the Field object that requires configuration.
- [Configuring the storage of OCS record field data](#) is complete.
- Mapping requirements must be finalized, as per the [Mapping OCS Record Fields Worksheet](#).

Steps

1. For each nonmandatory (custom) field that you want Genesys Info Mart to store in its database, add a section named **gim-etl-mapping** on the **Annex** of the Field object.
 1. In the **[gim-etl-mapping]** section, add an option named table-name, and set its value to the name of the Info Mart table in which you want the ETL to store this field.
 2. In the **[gim-etl-mapping]** section, add an option named column-name, and set its value to the name of the column in the Info Mart table in which you want the ETL to store this field.

Important

When you configure options in the **[gim-etl-mapping]** section, do not map more than one field to the same Info Mart table and column, and do not configure options for extra Info Mart table columns that will not store Field object data.

2. In addition, Genesys Info Mart supports the designation of nonmandatory fields to indicate right party contacted and conversion:
 - For a field to indicate that the correct party was contacted, add the **right_person** option to the **[default]** section on the **Annex** of the Field object, and set its value to the field value that you want to indicate that the right party has been contacted (for example, TRUE).
 - For a field to indicate conversion, add the **conversion** option to the **[default]** section on the **Annex** of the Field object, and set its value to the field value that you want to indicate that a

conversion has taken place (for example, TRUE).

Next Steps

- If you have not already done so, configure or complete preparation of Interaction Concentrator and Genesys Info Mart. For more information, see [Preparing Interaction Concentrator](#) and [Configuring the Genesys Info Mart Application](#).
- [Preparing the Genesys Info Mart Server Host](#)

Installing Genesys Info Mart

This page provides a high-level overview of the steps to prepare the Genesys Info Mart Server host and install the Genesys Info Mart application and Genesys Info Mart Manager, the user interface for administering Genesys Info Mart operations.

Before You Proceed

Before you can install Genesys Info Mart components, make sure that you have:

- Configured the Application object for Genesys Info Mart Server. For more information, see [Configuring the Genesys Info Mart Application](#).
- Set Genesys Info Mart-related options in relevant configuration objects. For more information, see [Configuring Supporting Objects](#).

Overview: Installing Genesys Info Mart and Genesys Info Mart Manager

1. Prepare the Genesys Info Mart Server host.

Verify and, if necessary, install or modify system information about the following supporting software components:

- Genesys Local Control Agent (LCA)
- Java Development Kit (JDK) or Server Java Runtime Environment (Server JRE), including the **PATH** and **JAVA_HOME** environment variables
- The Java Database Connectivity (JDBC) driver, including the **CLASSPATH** environment variable

For more information, see [Preparing the Genesys Info Mart Server host](#).

2. (Optional) Enable Transport Layer Security (TLS) protocol on the connections from Genesys Info Mart Server to Configuration Server and Message Server.

For more information, see [Enabling Secure Connections](#).

3. Install the Genesys Info Mart Server application.

Install Genesys Info Mart Server, using instructions that are appropriate to your environment:

- [Installing the Genesys Info Mart application \(Windows\)](#)
- [Installing the Genesys Info Mart application \(UNIX\)](#)

4. Verify the Genesys Info Mart Server host setup.

Verify that the operational parameters of the Genesys Info Mart Server host conform with Genesys Info Mart requirements. For more information, see [Verifying Host Requirements](#).

5. Install Genesys Info Mart Manager, the management GUI for monitoring and controlling

Genesys Info Mart jobs.

Install and then open Genesys Info Mart Manager. For more information, see:

- [Installing Genesys Info Mart Manager](#)
- [Accessing Genesys Info Mart Manager](#)

6. Ensure time synchronization in the deployment.

Verify that the system times are synchronized on all hosts on which Genesys applications and databases are running. Otherwise, Genesys Info Mart might report inaccurate data.

Preparing and Installing the Genesys Info Mart Server

This page provides detailed instructions for setting up the Genesys Info Mart Server host and installing the Genesys Info Mart Server application.

Preparing the Genesys Info Mart Server host

Review the [Before You Proceed](#) information and the high-level task summary on [Installing Genesys Info Mart](#). Then:

- If you want to use SCI to control the operation of the Genesys Info Mart Server, install, or verify the installation of, LCA. For more information, see [Installing LCA](#).
- Install the Java Development Kit (JDK) or Server Java Runtime Environment (JRE) and modify, or verify the content of, the **PATH** and the **JAVA_HOME** environment variables. For more information, see [Installing Java](#).
- Install, or verify the installation of, a Java Database Connectivity (JDBC) driver for each RDBMS that Genesys Info Mart Server will access (Microsoft SQL Server, Oracle, or PostgreSQL). Modify, or verify the content of, the **CLASSPATH** environment variable. For more information, see [Installing JDBC Drivers](#).

Installing LCA

If you plan to monitor or control Genesys Info Mart through the Management Layer, you must also configure and install Management Layer components — in particular, LCA.

To monitor the status of Genesys Info Mart components through the Management Layer, you must load an LCA instance on every host that is running Info Mart instances. Without LCA, the Management Layer cannot monitor the status of components.

If you do not use the Management Layer, you do not need LCA.

You will need a Genesys Management Framework product CD in order to install the components of the Management Layer. For more information about these Framework components, including deployment instructions, see the [Management Framework Deployment Guide](#) and the [Framework Management Layer User's Guide](#) for your release.

Installing Java

Install the JDK or Server JRE on the Genesys Info Mart Server host, according to instructions in the Java documentation. For the Java versions that Genesys Info Mart supports, see the [Genesys Supported Operating Environment Reference Guide](#).

Then modify the **PATH** and the **JAVA_HOME** environment variables:

- For Java on Windows:
 - If you plan to use SCI to start and stop Genesys Info Mart Server, you must modify the **PATH** and the **JAVA_HOME** environment variables for either the system account or the user account under which you plan to start the LCA service.
 - If you plan to run the Genesys Info Server as a Windows service, you must modify the **PATH** and the **JAVA_HOME** environment variables for either the system account or the user account under which you plan to start the Genesys Info Mart Server Windows service.

To modify the **PATH** environment variable, add <java-install-dir>\bin to the path (where <java-install-dir> is the path where you installed the JDK or Server JRE), so that it appears earlier in the path than any other reference to Java.

For the **JAVA_HOME** environment variable, specify <java-install-dir>.

- For Java on UNIX:
 - If you plan to use LCA to start and stop Genesys Info Mart Server, you must modify the **PATH** and the **JAVA_HOME** environment variables for the user account under which you plan to start the LCA service.
 - If you will not use LCA, you must modify the **PATH** and the **JAVA_HOME** environment variables for the user account under which you plan to start Genesys Info Mart Server.

To modify the **PATH** environment variable, add <java-install-dir>/bin to the path (where <java-install-dir> is the path where you installed the JDK or Server JRE), so that it appears earlier in the path than any other reference to Java.

For the **JAVA_HOME** environment variable, specify <java-install-dir>.

Installing JDBC Drivers

- [JDBC Driver for Microsoft SQL Server](#)
- [JDBC Driver for Oracle](#)
- [JDBC Driver for PostgreSQL](#)

JDBC Driver for Microsoft SQL Server

The Microsoft SQL Server Client is not shipped with a JDBC driver. Therefore, you must download and install the driver separately. The required driver is available from the Microsoft Download Center website by searching for “JDBC Driver.” Genesys Info Mart requires JDBC Driver 4.1 or higher.

Install the driver by following the installation instructions that are supplied with it. The name of the .jar file that contains the driver varies by version (for example, **sqljdbc41.jar** or **mssql-jdbc-6.2.2.jre8.jar**). Genesys recommends that you use an up-to-date version of the JDBC driver that is compatible with the SQL Server version you use (see [Microsoft JDBC Driver for SQL Server Support Matrix](#)).

After the installation, you must update the **CLASSPATH** environment variable to include the path to this .jar file. Add the following to the CLASSPATH environment variable:

```
<MSSQL-jdbc-driver-dir>\<jar>
```

where <MSSQL-jdbc-driver-dir> is the path where you installed the Microsoft SQL Server JDBC driver and <jar> is the name of the .jar file for the version. Do not include multiple versions of the same driver in the class path. If your deployment includes Reporting and Analytic Aggregates (RAA), see also [JDBC Driver for RAA](#), below.

JDBC Driver for Oracle

You must use Oracle Thin Driver version 11.2.0.1.0 or higher, regardless of the Oracle RDBMS version that you are using. The required Type 4 JDBC thin client driver ships with the Oracle client, or you can download it from the Oracle website.

Install the driver by following the installation instructions that are supplied with it. The class name of the driver that Genesys Info Mart uses for Oracle is **oracle.jdbc.driver.OracleDriver**. This class is from the **ojdbc<java-version>.jar** file (for example, **ojdbc6.jar**).

You must also modify your **CLASSPATH** environment variable, so that Genesys Info Mart can locate the JDBC driver. The specific **CLASSPATH** environment variable that you modify depends on the operating system and user account under which the Genesys Info Mart Server runs. Do not include multiple versions of the same driver in the class path.

- On Windows:
 - If you plan to use SCI to start and stop Genesys Info Mart Server, you must modify the **CLASSPATH** environment variable for either the system account or the user account under which you plan to start the LCA service.
 - If you plan to run Genesys Info Mart Server as a Windows service, you must modify the **CLASSPATH** environment variable for either the system account or the user account under which you plan to start the Genesys Info Mart Server Windows service.

Add the following to the CLASSPATH environment variable:

```
<oracle-jdbc-driver-dir>\<jar>
```

where <oracle-jdbc-driver-dir> is the path where you installed the Oracle JDBC driver and <jar> is the name of the .jar file for the version.

- On UNIX:
 - If you plan to use SCI to start and stop Genesys Info Mart Server, you must modify the **CLASSPATH** environment variable for the user account under which you plan to start LCA.
 - If you will not use SCI, you must modify the **CLASSPATH** environment variable for the user account under which you plan to start Genesys Info Mart Server.

Add the following to the CLASSPATH environment variable:

```
<oracle-jdbc-driver-dir>/<jar>
```

where <oracle-jdbc-driver-dir> is the path where you installed the Oracle JDBC driver and <jar> is the name of the .jar file for the version.

If your deployment includes RAA, see also [JDBC Driver for RAA](#), below.

JDBC Driver for PostgreSQL

You must download and install the JDBC driver. The required driver is available from the PostgreSQL website by searching for “JDBC Driver.” The following table lists the versions of the JDBC driver that are recommended for supported versions of the PostgreSQL RDBMS.

PostgreSQL	JDBC Driver	Comments
Supported releases earlier than 9.6	9.3-1101	
9.6	9.4.1212	
10	42.2.2	

Install the driver by following the installation instructions that are supplied with it. The name of the .jar file that contains the driver varies by version (for example, **postgresql-9.4.1212.jar**). After the installation, you must update the **CLASSPATH** environment variable to include this .jar file.

Add the following to the CLASSPATH environment variable:

```
<PostgreSQL-jdbc-driver-dir>\<jar>
```

where <PostgreSQL-jdbc-driver-dir> is the path where you installed the PostgreSQL JDBC driver and <jar> is the name of the .jar file for the version. Do not include multiple versions of the same driver in the class path. If your deployment includes RAA, see also [JDBC Driver for RAA](#), below.

JDBC Driver for RAA

The RAA installation package (IP) includes a default JDBC driver for each RDBMS in the **agg/lib** subdirectory of the RAA installation directory. It is important to ensure that RAA is configured to use the same JDBC driver version as Genesys Info Mart. Otherwise, because of the order in which the class path is set in the **gim_etl_paths** startup file, Genesys Info Mart will use the default JDBC driver RAA provides, instead of the .jar file specified in the **CLASSPATH** environment variable.

Starting with RAA release 8.5.006, RAA enables you to use symbolic links to maintain consistency between the JDBC driver versions for Genesys Info Mart and RAA. For full information, see [Configuring the JDBC Driver for RAA](#) in the *Reporting and Analytics Aggregates 8.5 Deployment Guide*.

If your deployment includes RAA releases earlier than 8.5.006 and you want Genesys Info Mart to use a JDBC driver version that is later than the version provided in the RAA IP, contact [Genesys Customer Care](#) for information about how you can enforce use of the desired version.

Installing the Genesys Info Mart Application

You can install the Genesys Info Mart application on either a Windows or a UNIX operating system.

Windows

Installing the Genesys Info Mart application (Windows)

When you install Genesys Info Mart on a Windows operating system, Genesys Info Mart is also installed as a Windows service with a startup type of Automatic. This means that if the host machine is restarted, the Windows service will start Genesys Info Mart automatically.

The following procedure provides step-by-step instructions for installing Genesys Info Mart. You can install more than one Genesys Info Mart application that you have configured in the configuration interface you use.

Procedure: Installing the Genesys Info Mart application on Windows

Prerequisites

- You have created and configured a Genesys Info Mart Application object in the interface you use for configuration, as described in [Configuring the Genesys Info Mart Application](#).
- The host has been prepared, as described in [Preparing the Genesys Info Mart Server Host](#).

Steps

1. Insert the Genesys Info Mart CD into the CD-ROM drive of the machine on which you want to install Genesys Info Mart.
2. Navigate to, and open, the **genesys-info-mart\windows** directory.
3. Double-click the **setup.exe** file, and then follow the directions in the installation wizard.

Warning

If you are installing on a 64-bit operating system, Genesys recommends that you specify an installation folder under **/gcti/gim_etl/**. There must not be any parentheses in the path name. For example, if you specify an installation folder under **/Program Files (x86)/**, the installation will fail.

If you want to enable client-side port definition for the initial connection to Configuration Server, specify the required parameters on the **Client Side Port Configuration** page in the wizard. For more information, see the instructions on [Client-Side Port Definition](#) in the *Genesys Security Deployment Guide* for your release.

Tip

The following error message might appear. If it does, you should ignore it: Unable to find configuration information. Either you have not used configuration wizards and the GCTISetup.ini file was not created or the file is corrupted.

Next Steps

- Verify the Genesys Info Mart host setup. See [Verifying Host Requirements](#).
- Review the default startup arguments for the Genesys Info Mart application, and modify them if necessary. For more information about supported startup arguments and how to use them, see [Command-Line Parameters](#) and [Modifying the Genesys Info Mart Default Arguments](#).
- Install Genesys Info Mart Manager, as described in [Installing Genesys Info Mart Manager](#).

UNIX

Installing the Genesys Info Mart application (UNIX)

The following procedure provides step-by-step instructions for installing Genesys Info Mart. You can install more than one Genesys Info Mart application that you have configured in the configuration interface you use.

Procedure: Installing the Genesys Info Mart application on UNIX

Prerequisites

- You have created and configured a Genesys Info Mart Application object in the interface you use for configuration, as described in [Configuring the Genesys Info Mart Application](#).
- The host has been prepared, as described in [Preparing the Genesys Info Mart Server Host](#).

Steps

1. Insert the Genesys Info Mart CD into the CD-ROM drive of the machine on which you want to install Genesys Info Mart.
2. Locate the correct installation directory for your platform — for example, **genesys_info_mart/gim_etl/solaris**.
3. Save the contents of this directory to a local folder.
4. Locate and run the **install.sh** shell script. Enter requested information when you are prompted to do so.

If you want to enable client-side port definition for the initial connection to Configuration Server, specify the required parameters when you get the **Client Side Port Configuration** prompt in the wizard. For more information, see the instructions on [Client-Side Port Definition](#) in the *Genesys Security Deployment Guide* for your release.

Next Steps

- Verify the Genesys Info Mart host setup. See [Verifying Host Requirements](#).
- Review the available startup arguments for the Genesys Info Mart application, and modify them if you wish. For more information, see [Command-Line Parameters](#) and [Modifying the Genesys Info Mart Default Arguments](#).
- Install Genesys Info Mart Manager, as described in [Installing Genesys Info Mart Manager](#).

Verifying Host Requirements

As described in [Preparing the Genesys Info Mart Server Host](#), Genesys Info Mart has specific requirements for supporting system software components and operational parameters, such as JDBC drivers and environment variables. This section describes important system information that you cannot verify or modify before installation.

gim_etl_paths.bat File

After the installation, verify that the path in the **gim_etl_paths.bat** file correctly points to the Java executable. For example:

```
set JAVACMD=java.exe
```

Update the path in the **gim_etl_paths.bat** file, if necessary.

For related information about modifying the **PATH** and **JAVA_HOME** environment variables, see [Installing Java](#).

Modifying the Configuration Checkup Properties File

On startup, or whenever the configuration of the Genesys Info Mart application changes, the Genesys Info Mart Server automatically performs a configuration check, which can include verification that the installed JDBC driver version matches or exceeds a specified minimum version. If the available version is not as specified in a properties file (**`gim_cfg_checkup.properties`**), the configuration check logs an error, and the Genesys Info Mart Server will not run any jobs until the error has been fixed. If no version for the particular RDBMS is specified in the properties file, the configuration check effectively skips this check.

By default, the properties file specifies the required minimum version of Oracle Thin Driver (`oracle.jdbc.driver.OracleDriver=11.2.0.1.0`). For later Oracle versions, for Microsoft SQL Server deployments, or for PostgreSQL, Genesys recommends that you modify the properties file to specify the installed version of the driver for Genesys Info Mart to use. After installation, the **`gim_cfg_checkup.properties`** file is available in the **resources** subfolder in the Genesys Info Mart installation folder.

Installing Genesys Info Mart Manager

About Genesys Info Mart Manager

Genesys Info Mart Manager is a web-based GUI that was introduced in Genesys Info Mart release 8.1.4, to enable the monitoring and real-time administration of Genesys Info Mart jobs. Genesys Info Mart Manager is included as a separate installation package (IP) on the Genesys Info Mart CD. Genesys Info Mart Manager is a Genesys Administrator Extension (GAX) plug-in, which you install on the same host as your GAX application.

Genesys Info Mart Manager interfaces directly with Genesys Info Mart Server to monitor the status of Genesys Info Mart jobs and to start and stop jobs on an ad-hoc basis. For a high-level description of Genesys Info Mart Manager functionality, see [Genesys Info Mart Manager](#).

Before You Proceed

Before you install Genesys Info Mart Manager:

1. Ensure that GAX release 8.5 or higher has been installed, and verify that the Genesys Info Mart Application object is in the contact center configuration represented in GAX.

For instructions about installing GAX, see the [GAX Deployment Guide](#) for your 8.5.x release.

2. Verify that the users who will use Genesys Info Mart Manager have been assigned to access groups that have the necessary permissions and role privileges to access GAX plug-ins and the Genesys Info Mart Server. (*Permissions* control access to objects configured in the Configuration Layer; *privileges* control access to functionality in GUI-based applications, such as GAX. For more information, see [Permissions](#) and [Privileges](#) in the [Genesys Administrator Extension Help](#).)

If necessary, work with your GAX administrator to create and assign Users, Access Groups, or Roles as required to provide the following minimum access permissions and role privileges:

- User must have Read permission for the user's own Persons object and Read and Execute permissions for the GAX Application object. These permissions enable the user to log in to GAX.
- User must be a member of a Role that has the Read Plugins privilege. This enables the user to access Genesys Info Mart Manager after logging in to GAX.
- User must have Read permissions for the Genesys Info Mart Application object. This enables the user to monitor Genesys Info Mart Server. To enable the user to start and stop jobs as well, also provide Execute permissions.

For information about configuring permissions and privileges, see the [GAX Deployment Guide](#) for your 8.5.x release.

Installing Genesys Info Mart Manager

The page about [managing plug-ins](#) in the [GAX Deployment Guide](#) describes how to use the Software Installation Wizard, together with the Genesys Deployment Agent (GDA), to install a plug-in. However,

for Genesys Info Mart Manager specifically, Genesys recommends the following procedure, which is similar to the method for installing language packs. This method does not require you to have any particular privileges to administer GAX.

Procedure: Installing the Genesys Info Mart Manager plug-in

Purpose: To install Genesys Info Mart Manager on the host on which GAX is installed.

Prerequisites

You have completed the tasks described in [Before You Proceed](#).

Steps

1. Stop GAX if it is running.
2. Insert the Genesys Info Mart CD into the CD-ROM drive of the machine on which GAX is installed.
3. Navigate to the **InfomartMgr\windows** or **InfomartMgr/<UNIX OS>** directory, as applicable, and open it.
4. To install on:
 - Windows, double-click the **setup.exe** file.
 - UNIX, run the **install.sh** script.
5. Follow the directions in the installation wizard. When the wizard prompts you for a destination directory, ensure that you specify a destination directory that is different from the one where GAX is installed.

Warning

The installation wizard installs the Genesys Info Mart Manager plug-in into the destination directory, and then copies the plug-in .jar file into the <GAX installation directory>\webapp\WEB-INF\lib directory. If you install the Genesys Info Mart Manager plug-in in the GAX installation directory, the installation wizard might copy additional .jar files present in that directory, which results in problems with GAX functionality.

Next Steps

- If desired, install language packs to localize Genesys Info Mart Manager. For the available language packs, see the [list of international release notes](#).

For information about installing the language packs, see the page about [managing plug-ins](#) in the *GAX Deployment Guide* for your 8.5.x release.

- Perform post-installation activities, as described on [Post-Installation Activities](#), which includes information about how to [access Genesys Info Mart Manager](#) after installation.

Post-Installation Activities

Overview: Completing the Deployment

There are a number of important tasks you must perform after you finish configuring and installing Genesys Info Mart and Genesys Info Mart Manager.

1. Initialize Genesys Info Mart.

Start the Genesys Info Mart Server application. On startup, Genesys Info Mart automatically performs a configuration check and runs **Job_InitializeGIM**, which initializes the Info Mart database.

Job_InitializeGIM also automatically modifies the Interaction Database (IDB) schemas for use with Genesys Info Mart, if you did not already do so (see [Preparing IDBs](#)).

For more information about how to start Genesys Info Mart, see [Starting Genesys Info Mart Server](#).

2. Access Genesys Info Mart Manager. **How?**

3. Verify the deployment.

- a. Review the **gim_etl** log file to confirm the results of the configuration check. If necessary, modify the configuration option settings or connections in the Genesys Info Mart, Interaction Concentrator (ICON), or data-source Application objects in your deployment, to ensure that they have been configured for correct Genesys Info Mart functioning.

For more information about how to configure the required applications for Genesys Info Mart, see [Preparing Interaction Concentrator](#), [Configuring Required DAPs](#), and [Configuring the Genesys Info Mart Application](#).

Tip

After Genesys Info Mart checks the configuration, the console and the **gim_etl** log file might report results for configuration options that you cannot modify. Any options that are not listed in [Data-Processing Options for Genesys Info Mart](#), [Operations-Related Options for Genesys Info Mart](#), or [Genesys Info Mart Aggregation-Related Options for GCXI and RAA](#) are not configurable.

- b. Review the status of **Job_InitializeGIM** in Genesys Info Mart Manager, to verify successful completion. Completion of the job indicates successful initialization of the Info Mart database and successful update of the IDBs.

Tip

If **Job_InitializeGIM** fails, the **Status** column in the job list in Genesys Info Mart Manager will display **FAILED** to the right of the job. To determine the nature of the error, refer to the **gim_etl** log file.

4. (Optional) Define online media types for 3rd Party Media interactions.

Execute an INSERT command to add a record for each online media type to the MEDIA_TYPE dimension table, with the IS_ONLINE flag set to 1 (online). Otherwise, when Genesys Info Mart encounters the unknown media type during transformation, it will add the media type dynamically to the MEDIA_TYPE table, but with the IS_ONLINE flag set to 0 (offline). Therefore, you do not have to add offline media types in advance.

For more information about how to add the media type to the MEDIA_TYPE table, see [Setting up media types for online interactions](#).

For more information about online and offline media types in Genesys Info Mart, see [Online and Offline Interactions](#).

5. If your deployment includes Reporting and Analytics Aggregates (RAA), ensure that the JDBC driver configuration for RAA is consistent with Genesys Info Mart requirements.

For more information, see [JDBC Driver for RAA](#). See also [Configuring the JDBC Driver for RAA](#) in the *Reporting and Analytics Aggregates 8.5 Deployment Guide* for information about using symbolic links to maintain consistency between the JDBC driver versions for Genesys Info Mart and RAA.

6. Run the first ETL cycle.

- a. If you did not set scheduling options when you configured the Genesys Info Mart Application object, review the configuration options in the [\[schedule\]](#) section and, if necessary, modify them to suit your deployment.
- b. Wait for the first scheduled ETL cycle to run, or run the ETL jobs manually for the first time.
- c. Review the jobs status in Genesys Info Mart Manager and the logs, to verify that the jobs completed successfully.

For more information about scheduling considerations and about how to run ETL jobs, see [Managing and Scheduling Jobs](#) in the *Genesys Info Mart Operations Guide*.

7. Complete deployment of the Info Mart database, to prepare it for reporting queries.

- a. (Optional) Create custom calendars, as described in [Creating Custom Calendars](#).
- b. Using your prepared RDBMS user accounts, which have been configured with the proper privileges, run the scripts to create Genesys Info Mart read-only views. Read-only views are strictly required only if you have a multi-tenant deployment, but Genesys recommends using them in all deployments. See [Creating Read-Only Tenant Views](#).

Tip

You cannot create the read-only views until the first ETL cycle has completed and the TENANT dimension has been populated.

8. (Optional) Disable processing of unwanted interaction subtypes.

Execute an ALTER TABLE command to set the IGNORE flag to 1 (ignore) in the INTERACTION_TYPE record for each unwanted interaction subtype.

Tip

You can change the IGNORE flag for a particular interaction subtype during runtime.

9. (Optional) Enable data export.

For full information, see the "About Data Export" page in the *Genesys Info Mart Physical Data Model* for your RDBMS.

Accessing Genesys Info Mart Manager

To monitor and manage the day-to-day operations of Genesys Info Mart, you can use Genesys Info Mart Manager, a web-based GUI that is available through Genesys Administrator Extension (GAX).

Multiple instances of Genesys Info Mart Manager can be running at the same time, each associated with the same instance of the Genesys Info Mart Server.

Procedure: Accessing Genesys Info Mart Manager during runtime

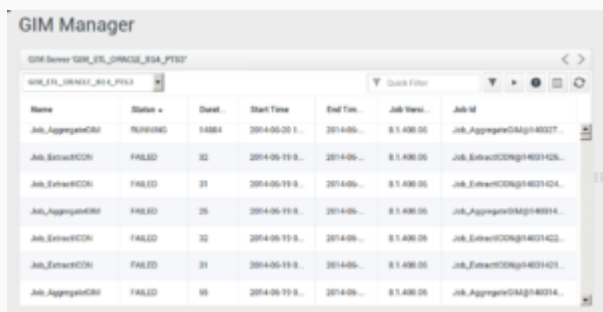
Purpose: To access Genesys Info Mart Manager to manage Genesys Info Mart jobs.

Prerequisites

- The Genesys Info Mart Manager plug-in has been installed, as described in [Installing Genesys Info Mart Manager](#)
- 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 required permissions and privileges, see [Before You Proceed](#).
- The Genesys Info Mart Server application is started.

Steps

1. Use a web browser to log in to GAX.



The screenshot shows the GIM Manager interface for a server named 'GIM Server GIM_ITL_ORACLE_S04_PT02'. It features a table with columns for Name, Status, Dwell, Start Time, End Time, Job Name, and Job ID. The table contains several rows of job data, including one 'RUNNING' job and several 'FAILED' jobs.

Name	Status	Dwell	Start Time	End Time	Job Name	Job ID
Job_AggregateGIM	RUNNING	14884	2014-06-20 1...	2014-06-...	\$1,400.00	Job_AggregateGIM140207...
Job_ExtractCDN	FAILED	32	2014-06-19 8...	2014-06-...	\$1,400.00	Job_ExtractCDN14021425...
Job_ExtractCDN	FAILED	31	2014-06-19 8...	2014-06-...	\$1,400.00	Job_ExtractCDN14021424...
Job_AggregateGIM	FAILED	25	2014-06-19 8...	2014-06-...	\$1,400.00	Job_AggregateGIM140214...
Job_ExtractCDN	FAILED	32	2014-06-19 8...	2014-06-...	\$1,400.00	Job_ExtractCDN14021422...
Job_ExtractCDN	FAILED	31	2014-06-19 8...	2014-06-...	\$1,400.00	Job_ExtractCDN14021421...
Job_AggregateGIM	FAILED	16	2014-06-19 8...	2014-06-...	\$1,400.00	Job_AggregateGIM140214...

Genesys Info Mart Manager

2. Select **Administration > GIM Manager**.

The **GIM Manager** screen appears, displaying the status of the Genesys Info Mart jobs.

3. 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.

Next Steps

- For more information about how to use Genesys Info Mart Manager to start and stop jobs, and to view job status, see the [Genesys Info Mart Operations Guide](#).
- Perform additional post-installation activities, as required. For an overview of post-installation tasks, see [Overview: Completing the Deployment](#).

Completing Database Preparation

This page describes steps you must take to complete deployment of the Info Mart database after it has been initialized.

Preparing the Info Mart Database for 3rd Party Media

The Genesys Info Mart transformation job processes online and offline interactions differently. (For definitions of online and offline as used in Genesys Info Mart, see [Online and Offline Interactions](#).) The `IS_ONLINE` field in the `MEDIA_TYPE` dimension table identifies whether a particular media type will be associated with online interactions or with offline interactions.

Genesys Info Mart will dynamically add to the `MEDIA_TYPE` table any unknown media types that it encounters during transformation, but it identifies them as media types for offline interactions (`IS_ONLINE=0`, by default). Genesys recommends specifying new online media types in advance, to ensure that they are represented correctly in interaction data from the start.

Tip

It is only new *online* media types that Genesys recommends that you add manually in advance, because *offline* media types that are added dynamically by Genesys Info Mart will be identified correctly as offline from the start.

The following procedure describes how to set up the Info Mart database to handle online 3rd Party Media interactions. You can perform this procedure at any time after the Info Mart database schema has been initialized.

Procedure: Setting up media types for online interactions

Purpose: To prepopulate the `MEDIA_TYPE` dimension table with media types that Genesys Info Mart might encounter in 3rd Party Media interactions, so that they will be processed as online interactions.

Prerequisites

- The Info Mart database has been initialized (see [step 1](#) in [Overview: Completing the Deployment](#)).

- You have the required permissions to alter the Info Mart database.

Steps

1. Log in to the Info Mart database as any user with INSERT and ALTER permissions.
2. Check the current contents of the MEDIA_TYPE table to identify the last MEDIA_TYPE_KEY value. Media types for 3rd Party Media interactions have values of 1001 or higher.
3. Execute an SQL INSERT command to add the desired media types to the MEDIA_TYPE table. For each new media type, specify values for the required fields.
 - MEDIA_TYPE_KEY — The unique primary key. Using the information from [step 2](#), specify the next available value greater than 1000 (in other words, 1001 or higher).
 - MEDIA_NAME — Any name, up to 64 characters, that you want to use to identify the media type.
 - MEDIA_NAME_CODE — The name of the media type that Genesys Info Mart uses internally. The code name can be up to 32 characters, must be unique, and must exactly match the name of the corresponding Media Type Business Attribute, including case.
 - IS_ONLINE — The online/offline flag. For online media types, specify a value of 1.
 - CREATE_AUDIT_KEY — The lineage for data creation. Specify a value of -1, which indicates that the row was not inserted by Genesys Info Mart.
 - UPDATE_AUDIT_KEY — The lineage for data update. Specify a value of -1, which indicates that the row was not updated by Genesys Info Mart.

The following Figure shows the contents of a sample MEDIA_TYPE table in which:

MEDIA_TYPE_KEY	MEDIA_NAME	MEDIA_NAME_CODE	IS_ONLINE	CREATE_AUDIT_KEY	UPDATE_AUDIT_KEY
0	None	NONE	0	2	0
1	Voice	VOICE	1	2	0
2	Email	EMAIL	0	2	0
3	Chat	CHAT	1	2	0
1001	SampleOnlineMedia1	SampleOnlineMedia1	1	-1	-1
1002	SampleOfflineMedia	SampleOfflineMedia	0	5	0
→ 1003	SampleOnlineMedia2	SampleOnlineMedia2	1	5	-1

Sample MEDIA_TYPE Table View Large

- None, Voice, Email, and Chat are the default media type dimensions.
- SampleOnlineMedia1 is an online 3rd Party Media media type that was added manually in advance.
- SampleOfflineMedia is an offline 3rd Party Media media type that was added dynamically by Genesys Info Mart during runtime.
- SampleOnlineMedia2 is an online 3rd Party Media media type that was not added in advance (for example, because the user forgot or because it is new to the deployment). The media type was added dynamically by Genesys Info Mart (as an offline media type) during runtime, and then the IS_ONLINE field in the record was manually altered to indicate that it is an online media type.

For more information about the required data types and the meaning of the fields, see the

Genesys Info Mart Physical Data Model (formerly called *Reference Manual*) for your RDBMS.

If you are executing this procedure during runtime and you encounter a constraint violation, go to [step 4](#). Otherwise, go to [step 5](#).

4. Constraint violations, if they occur, are most likely to occur if you are manually adding media types while the transformation job is running.

You might encounter a constraint violation when you execute the INSERT command if:

- The media type has already been added. Check the contents of the MEDIA_TYPE table to identify if a record with that MEDIA_NAME_CODE already exists, and verify the value of the IS_ONLINE flag. If the record exists because Genesys Info Mart added it dynamically during transformation, execute an ALTER TABLE command to change the value of the IS_ONLINE flag to 1.
- Genesys Info Mart dynamically added a media type to the MEDIA_TYPE table and used a MEDIA_TYPE_KEY value that you were planning to use. Repeat [step 2](#) and [step 3](#) to add the desired media type with a different MEDIA_TYPE_KEY value.

Genesys Info Mart might encounter a constraint violation if the transformation job was coincidentally trying to add an unknown media type at the exact time that you were manually adding it or using the same MEDIA_NAME_KEY to add another media type, and your insert took effect first. In this case, no action is required.

- The transformation job will complete unsuccessfully.
 - In the next ETL cycle, the transformation job will take the appropriate action — either recognizing the media type that you inserted, or else using a different MEDIA_TYPE_KEY to insert the new media type.
5. Commit the change to the database.

Creating Custom Calendars

To enable you to customize the calendars that you use in your reporting, Genesys Info Mart supports multiple custom calendar dimensions. The following procedure describes the steps to create a custom calendar.

Procedure: Configuring custom calendars

Purpose: To modify the Genesys Info Mart Application object and Info Mart database schema to provide additional calendar dimensions for use in reports.

Prerequisites

- You have the required permissions to access and modify the Genesys Info Mart Application object, if required (see [step 1](#)).
- The database access account that you use to create the Info Mart database schema is available and has the required privileges (see [Database Privileges](#)). If you prepared a [database worksheet](#), refer to it to determine the ID to use.
- 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. Configure the Genesys Info Mart application to support the required custom calendars, if you did not configure the required options before installing the application.
 1. On the **Options** tab of the Genesys Info Mart Application object, create a new section that has a section name that starts with the prefix **date-time-** (for example, **[date-time-emea]**).
 2. Create new options that have the same names as the options in the default **[date-time]** section, and configure the options as required for your reporting purposes.
For more information about the **[date-time]** options, see [date-time Section](#) in the *Genesys Info Mart Configuration Options Reference*.
2. Prepare the script to create the custom dimension tables in the Info Mart database schema.
 1. Locate the script that you ran to create the Info Mart database schema, as described in [Preparing the Info Mart Database](#). (The script is **make_gim.sql**, **make_gim_partitioned.sql**, **make_gim_multilang.sql**, or **make_gim_multilang_partitioned.sql** in the **sql_scripts** folder in your Genesys Info Mart installation package.)
 2. Copy the SQL statements that create the default DATE_TIME table, and use them as the basis for a custom script to create additional calendar table(s), with the same structure and column names as the default DATE_TIME table.
The table name must match the value of the **date-time-table-name** option that you specified in the custom [date-time-*] configuration section (see [step 1](#)).
3. Log in to the Info Mart database by using the Info Mart owner ID.
4. Execute the script that you created in [step 2](#).

Next Steps

- Verify that the custom dimension tables have been populated.
If you configure the custom calendars before you start Genesys Info Mart for the first time, **Job_InitializeGIM** will populate the custom calendar dimension tables. If you configure the custom calendars after **Job_InitializeGIM** has run, the custom calendar dimension tables will be populated at the next run of **Job_MaintainGIM**.

- If you have not already done so, create read-only views for your reporting application to query. See [Creating Read-Only Tenant Views](#).

Creating Read-Only Tenant Views

Read-only views allow you to control end-user access to Info Mart data.

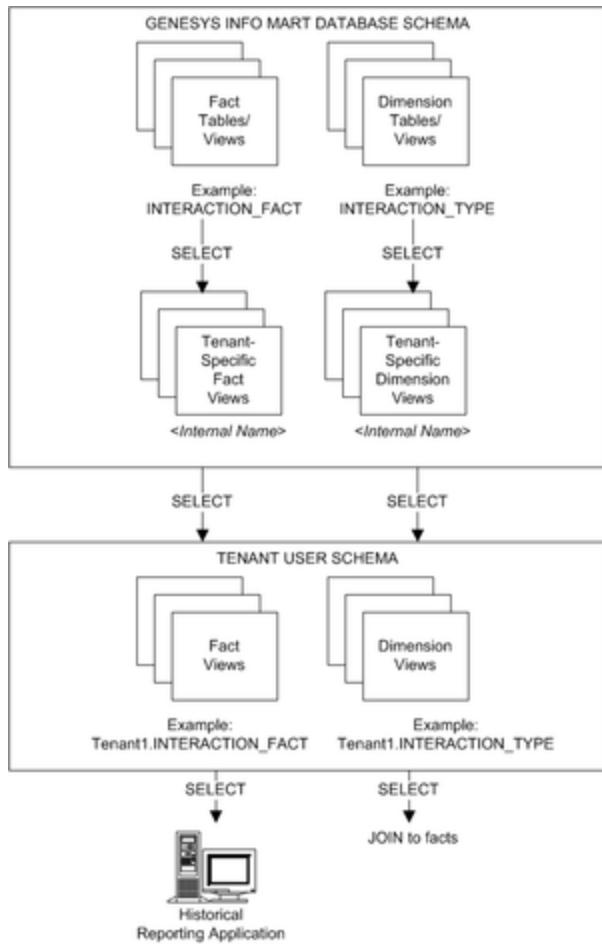
Tip

Creating read-only, tenant-specific views is strictly required only for multi-tenant deployments. However, even in single-tenant deployments, Genesys recommends that you consider setting up a tenant-specific, read-only view for security reasons: A read-only view helps protect the data, because your queries do not work directly on the database tables.

About Read-Only Views

Each Tenant User schema has a view on a single DATE_TIME table, so each schema supports a single time zone. Genesys Info Mart supports creating table views for more than one tenant in the same Tenant User schema. This functionality simplifies deployment of the reporting solution.

The following Figure illustrates how the tenant-specific, read-only Genesys Info Mart Views function in a Genesys Info Mart deployment. The diagram shows a Tenant User schema that contains table views for only one tenant.



Multi-Tenant Filtered Views or Single-Tenant Read-Only View View Large

Reports in multiple time zones

To provide reports in multiple time zones, the downstream report developer must use a separate Tenant User schema for each time zone. However, the Tenant Admin does not need to create a separate Tenant User schema for each combination of time zone and tenant. Instead, the Tenant Admin can include all tenants, or a group of tenants, in a single schema per time zone.

In addition to creating a separate Tenant User schema for each time zone, you must configure your aggregation software to identify the different time-zone calendars and enable tenant-specific access to the applicable Tenant User schema for a particular time zone. For deployments that use GCXI, see [Configuring aggregation across more than one time zone](#) in the *Reporting and Analytics Aggregates User's Guide* for more information.

Creating the Views

The Genesys Info Mart installation package includes a script, **make_gim_view_for_tenant.sql**, that you run in order to create tenant-specific, read-only views on the Genesys Info Mart tables. The following procedures describe the modifications you must make to the

make_gim_view_for_tenant.sql script for your RDBMS, in order to create the tenant views in your deployment.

Microsoft SQL Server

Creating Read-Only Views — Microsoft SQL Server

Repeat the following procedure for each tenant in your Genesys Info Mart configuration.

The script that creates each tenant view first drops the view, so the script can be rerun if necessary (for example, if you add new custom user-data tables to the Info Mart database schema).

Procedure: Creating Genesys Info Mart tenant views for Microsoft SQL Server

Purpose: In a tenant user schema, to create tenant-specific, read-only views on database objects (database tables and views) that are in the Info Mart schema in Microsoft SQL Server.

Prerequisites

- You have identified database connection parameters for each database. Refer to the [database worksheet](#) you prepared for Microsoft SQL Server.
- You have obtained the TENANT_KEY, which Genesys Info Mart uses to identify the tenant, in one of the following ways:
 - You have obtained the database identifier that Configuration Server assigned to the tenant (Tenant DBID). The TENANT_KEY matches the Tenant DBID.
 - You have successfully run the first ETL cycle, so that the TENANT dimension has been populated, and then you queried the TENANT dimension table in the Info Mart view that is named TENANT, to obtain the TENANT_KEY. The TENANT view was created by the script you ran to create the Info Mart database schema (**make_gim.sql**, **make_gim_partitioned.sql**, **make_gim_multilang.sql**, or **make_gim_multilang_partitioned.sql**).
- The Tenant User user accounts are available. Refer to the [database worksheet](#) you prepared for Microsoft SQL Server to determine the IDs to use.
- You have located a copy of the **make_gim_view_for_tenant.sql** script, which is available in the **sql_scripts** folder in the installation directory or in the **sql_scripts** folder on the Genesys Info Mart CD.

Steps

1. Log in to the Info Mart database as the Tenant Admin database user.
2. In a text editor, modify the **make_gim_view_for_tenant.sql** script to provide the required parameters:
 - **&&1** — Replace all instances of **&&1** with the name of the Tenant User schema.
 - **&&2** — Replace all instances of **&&2** with the name of the Info Mart schema.
 - **&&3** — Replace all instances of **&&3** with one of the following:
 - **all_tenants** — To create views for all the tenants that have been configured for the deployment
 - A list of Tenant keys (for example: 101, 102, 103) — To create views for a group of tenants
 - The Tenant key — To create views for a single tenant
 - **&&4** — Replace all instances of **&&4** with the name of the tenant user who will access the view.
3. Run the modified **make_gim_view_for_tenant.sql** script.

Next Steps

- If you are enabling optional functionality, see the task summaries that are provided under [Enabling Specific Functionality](#).
- If you want to use the Data Export feature to export your Info Mart data to a data warehouse for the purpose of archiving or custom reporting, see the "About Data Export" page in the [Genesys Info Mart Physical Data Model](#) for your RDBMS. There you will find information about configuring and scheduling the export job, optionally creating and using export views for the export, and creating a target database consistent with the Info Mart schema. (The Data Export feature is supported for premise customers starting with release 8.5.011.22.)
- Otherwise, your Genesys Info Mart deployment process is complete.

Oracle

Creating Read-Only Views — Oracle

Repeat the following procedure for each tenant in your Genesys Info Mart configuration.

The script that creates each tenant view first drops the view, so the script can be rerun if necessary (for example, if you add new custom user-data tables to the Info Mart database schema).

Procedure: Creating Genesys Info Mart tenant views for Oracle

Purpose: In a tenant user schema, to create tenant-specific, read-only views on database objects (database tables and views) that are in the Info Mart schema in Oracle.

Prerequisites

- You have identified database connection parameters for each database. Refer to the [database worksheet](#) you prepared for Oracle.
- You have obtained the TENANT_KEY, which Genesys Info Mart uses to identify the tenant, in one of the following ways:
 - You have obtained the database identifier that Configuration Server assigned to the tenant (Tenant DBID). The TENANT_KEY matches the Tenant DBID.
 - You have successfully run the first ETL cycle, so that the TENANT dimension has been populated, and then you queried the TENANT dimension table in the Info Mart view that is named TENANT, to obtain the TENANT_KEY. The TENANT view was created by the script you ran to create the Info Mart database schema (**make_gim.sql**, **make_gim_partitioned.sql**, **make_gim_multilang.sql**, or **make_gim_multilang_partitioned.sql**).
- The Tenant User user accounts are available. Refer to the [database worksheet](#) you prepared for Oracle to determine the IDs to use.
- You have located a copy of the **make_gim_view_for_tenant.sql** script, which is available in the **sql_scripts** folder in the installation directory or in the **sql_scripts** folder on the Genesys Info Mart CD.

Steps

1. Log in to the Info Mart database as the Tenant Admin database user.
2. In a text editor, modify the **make_gim_view_for_tenant.sql** script to provide the required parameters:
 - `&&1` — Replace all instances of `&&1` with the name of the Tenant User schema.
 - `&&2` — Replace all instances of `&&2` with the name of the Info Mart schema.
 - `&&3` — Replace all instances of `&&3` with one of the following:
 - `all_tenants` — To create views for all the tenants that have been configured for the deployment
 - A list of Tenant keys (for example: 101, 102, 103) — To create views for a group of tenants
 - The Tenant key — To create views for a single tenant

Tip

Ensure that you use upper case for the user names. For example, if the name of the Tenant User is Tenant1, replace all instances of &&1 with TENANT1.

3. Run the modified **make_gim_view_for_tenant.sql** script.

Next Steps

- If you are enabling optional functionality, see the task summaries that are provided under [Enabling Specific Functionality](#).
- If you want to use the Data Export feature to export your Info Mart data to a data warehouse for the purpose of archiving or custom reporting, see the "About Data Export" page in the [Genesys Info Mart Physical Data Model](#) for your RDBMS. There you will find information about configuring and scheduling the export job, optionally creating and using export views for the export, and creating a target database consistent with the Info Mart schema. (The Data Export feature is supported for premise customers starting with release 8.5.011.22.)
- Otherwise, your Genesys Info Mart deployment process is complete.

PostgreSQL

Creating Read-Only Views — PostgreSQL

Repeat the following procedure for each tenant in your Genesys Info Mart configuration.

The script that creates each tenant view first drops the view, so the script can be rerun if necessary (for example, if you add new custom user-data tables to the Info Mart database schema).

Procedure: Creating Genesys Info Mart tenant views for PostgreSQL

Purpose: In a tenant user schema, to create tenant-specific, read-only views on database objects (database tables and views) that are in the Info Mart schema in PostgreSQL.

Prerequisites

- You have identified database connection parameters for each database. Refer to the [database worksheet](#) you prepared for PostgreSQL.
- You have obtained the TENANT_KEY, which Genesys Info Mart uses to identify the tenant, in one of the following ways:
 - You have obtained the database identifier that Configuration Server assigned to the tenant (Tenant DBID). The TENANT_KEY matches the Tenant DBID.
 - You have successfully run the first ETL cycle, so that the TENANT dimension has been populated, and then you queried the TENANT dimension table in the Info Mart view that is named TENANT, to obtain the TENANT_KEY. The TENANT view was created by the script you ran to create the Info Mart database schema (**make_gim.sql**, **make_gim_partitioned.sql**, **make_gim_multilang.sql**, or **make_gim_multilang_partitioned.sql**).
- The Tenant User user accounts are available. Refer to the [database worksheet](#) you prepared for PostgreSQL to determine the IDs to use. In releases earlier than 8.5.009, the name of the Tenant User schema must be the same as the name of the corresponding tenant user.
- You have located a copy of the **make_gim_view_for_tenant.sql** script, which is available in the **sql_scripts** folder in the installation directory or in the **sql_scripts** folder on the Genesys Info Mart CD.

Steps

1. Log in to the Info Mart database as the Tenant Admin database user.
2. In a text editor, modify the **make_gim_view_for_tenant.sql** script to provide the required parameters:
 - **&&1** — Replace all instances of **&&1** with the name of the Tenant User schema.
 - **&&2** — Replace all instances of **&&2** with the name of the Info Mart schema.
 - **&&3** — Replace all instances of **&&3** with one of the following:
 - **all_tenants** — To create views for all the tenants that have been configured for the deployment
 - A list of Tenant keys (for example: 101, 102, 103) — To create views for a group of tenants
 - The Tenant key — To create views for a single tenant

Starting with release 8.5.009, you must also provide the following parameters:

 - **&&4** — Replace all instances of **&&4** with the name of the Tenant user.
 - **&&5** — Replace all instances of **&&5** with the name of the Info Mart database user.
3. Run the modified **make_gim_view_for_tenant.sql** script.

Next Steps

- If you are enabling optional functionality, see the task summaries that are provided under [Enabling Specific Functionality](#).
- If you want to use the Data Export feature to export your Info Mart data to a data warehouse for the purpose of archiving or custom reporting, see the "About Data Export" page in the [Genesys Info Mart Physical Data Model](#) for your RDBMS. There you will find information about configuring and scheduling the export job, optionally creating and using export views for the export, and creating a target database consistent with the Info Mart schema. (The Data Export feature is supported for premise customers starting with release 8.5.011.22.)
- Otherwise, your Genesys Info Mart deployment process is complete.

Starting and Stopping Genesys Info Mart Server

You can start and shut down Genesys Info Mart Server by using the Genesys Management Layer, a startup file, a manual procedure, or Services Manager. All of these methods usually require command-line parameters for a server application, as well as an executable file name. This page describes the prerequisites for Genesys Info Mart Server startup and provides instructions for starting and stopping Genesys Info Mart Server, including information about the command-line parameters that are common to most Genesys server applications.

Before You Begin

For information about how to use the Management Layer, startup files, and Services Manager for startup, see the [Management Framework Deployment Guide](#) that applies for your deployment.

The following issues are important for you to consider.

Genesys Info Mart Connections and Configuration

Before you attempt to start Genesys Info Mart Server, confirm that the connections and configuration options that have been configured for your Genesys Info Mart Application object are correct for your deployment.

In general, do not change any connections on the **Connections** tab of the Genesys Info Mart Application object during startup. For more information about how to configure connections, see [step 2](#) in the procedure about [creating the Genesys Info Mart Application object](#).

Do not make changes to Genesys Info Mart configuration options during startup. You can make changes to Genesys Info Mart configuration options during runtime; in almost all cases, you do not need to restart Genesys Info Mart for the changes to take effect. For more information, see [Configuring Options for Genesys Info Mart](#).

Other Applications

Genesys recommends that the following applications be running before you start Genesys Info Mart Server:

- Configuration Server
- Message Server
- The relational database management system (RDBMS)
- The data sources and ICON applications from which Genesys Info Mart obtains data

If your deployment includes attached data, ensure that there is a proper attached data specification

file in the ICON working directory, suitably modified for use with Genesys Info Mart. (By default, ICON uses the `ccon_adata_spec.xml` file.) For more information about modifying the attached data specification file, see [Customizing Attached Data Storage](#).

For detailed instructions about starting the Genesys components on which Genesys Info Mart depends, see the:

- [Management Framework Deployment Guide](#) for your release
- [Framework T-Server Deployment Guide](#) for your particular T-Server type and release
- [Interaction Concentrator Deployment Guide](#) for your release
- [Outbound Contact Deployment Guide](#) for your release
- [eServices Deployment Guide](#) for your release

Command-Line Parameters

Genesys Info Mart supports the following startup command-line parameters:

-host	The name of the host on which Configuration Server is running
-port	The communication port that client applications must use to connect to Configuration Server
-app	The exact name of an application as configured in the Configuration Database
-service	(Windows only) The name of the Windows service
-v	The version of the component. Note that specifying this parameter does not start an application, but instead returns version information, including Genesys Info Mart server release, Info Mart database schema version, and minimum required Interaction Concentrator release. You can use either an uppercase letter (V) or lowercase letter (v).

Genesys Info Mart also supports the following optional command-line parameters, which configure client-side port definition for a secure connection to Configuration Server:

-transport-port	The port number that the client application will use for the TCP/IP connection
-transport-address	The IP address that the client application will use for the TCP/IP connection

In addition, the `gim_etl_server` file, which is included in the Genesys Info Mart installation package (IP), specifies a number of Java Virtual Machine (JVM) startup parameters. For information about JVM parameters that you might want to modify, see [Modifying JVM Startup Parameters](#).

Modifying the Genesys Info Mart Default Arguments

You might want to change the Genesys Info Mart application's default arguments; for example, change the host on which Configuration Server is running.

If you plan to use Genesys Solution Control to start and stop Genesys Info Mart Server, you can edit the default command-line arguments directly on the **Start Info** tab of the Genesys Info Mart Application object in the interface you use to configure applications. These changes will take effect when you use Genesys Solution Control to start the application.

The following example (provided for a Windows operating system) shows the command-line arguments that are created under the **Start Info** tab of the Genesys Info Mart Application object in the configuration interface after the installation is complete:

```
-host <lhostname> -port <port_number> -app InfoMart -service InfoMart
```

The Windows service name of the Genesys Info Mart application is identified by the `-service` parameter. If Genesys Info Mart is installed multiple times, there will be a Windows service for each installation, in which the value of the `-service` parameter will be the service name of the corresponding Genesys Info Mart application in the Windows service. Genesys recommends that you not change the value of this parameter.

Modifying JVM Startup Parameters

The `gim_etl_server` file specifies a number of JVM parameters that set the overall context for Genesys Info Mart functioning — for example, Java memory settings. You might need to modify the file for performance reasons or to enable certain Genesys Info Mart or RDBMS functionality.

In particular, consider modifying the `gim_etl_server` file to set the following startup parameters:

- `-DfilterUserData=false` — Enables the extraction job to extract user data that was sourced from the **UserData**, **Reasons**, or **Extensions** attributes in TEvents or Interaction Server events. Otherwise, the extraction job extracts KVPs from the **UserData** attribute only. For more information, see [Source Attributes in Events](#).
- `-DqueryParallelism=<degree of parallelism>` — (For Oracle only) Enables you to control the degree of query parallelism that Oracle will use, to improve performance. Genesys Info Mart uses the value that is specified by the startup parameter to provide a parallelism hint in certain transformation queries.
By default, Genesys Info Mart uses query parallelism at a level that is expected to be optimal for most deployments (`queryParallelism=4`).

For more information about how parallel execution works, see the Oracle documentation.

- `-Dcfg.protocol.timeout=<timeout value in seconds>` — Enables you to change the timeout value for a response from Configuration Server. The default timeout of 60 seconds is appropriate in most installations. If you encounter error messages that the Genesys Info Mart Server timed out while reading configuration data, increase the value of the `cfg.protocol.timeout` parameter. Genesys recommends values between 60 and 1800 seconds.
- `-DUseDbLinks=false` — Ensures that Genesys Info Mart will not use database links even if they have been configured.

Warning

Do not change the `-Duser` JVM parameters specified in the `gim_etl_server` file. For example, do not change the time zone specified in `-Duser.timezone=GMT`; changing this parameter will result in incorrect population of the `DATE_TIME` calendar.

The following procedure provides the syntax for modifying the **gim_etl_server** file.

Procedure: Modifying the gim_etl_server file

Purpose: To modify JVM- or system-related startup parameters.

Prerequisites

- Genesys Info Mart has been installed, as described in [Preparing and Installing the Genesys Info Mart Server](#).

Steps

1. Locate the **gim_etl_server** file for your operating system. After Genesys Info Mart has been installed, the **gim_etl_server** file is available in the installation directory.
2. Edit the file to add or change command-line parameters as required. JVM-related parameters use the prefix “-X” (for example, -Xmx900m); system-related parameters use the prefix “-D” (for example, -DfilterUserData=false).
 - On Windows, use the following syntax:

```
set JVM_PARAMETERS=%JVM_PARAMETERS% <parameter=value>
```

Use a separate line for each new system-related parameter.
 - On UNIX, use the following syntax:

```
${JAVACMD} <other command-line parameters> <parameter=value>  
com.genesyslab.gim.etl.server.GIMServer "$@"
```
3. Save the file to the Genesys Info Mart installation directory.
4. Start or restart the Genesys Info Mart Server.

Starting Genesys Info Mart Server

You can start Genesys Info Mart Server in any of the following ways:

- From SCI
- Manually on Windows
- Manually on UNIX

SCI

Starting Genesys Info Mart Server with Solution Control Interface

The following procedure describes how to use Solution Control Interface (SCI) to start Genesys Info Mart Server.

Procedure: Starting Genesys Info Mart Server by using SCI

Prerequisites

- You have modified startup arguments if required. For more information, see [Command-Line Parameters](#).

Steps

1. On the list pane in the **SCI Applications** view, select your Genesys Info Mart Server.
2. Do one of the following:
 - On the toolbar, click the **Start** button.
 - From the **Action** menu, select **Start**.
 - Right-click the Application object to access the shortcut menu, and then select **Start**.
3. In the confirmation box that appears, click **Yes**.
SCI starts your Genesys Info Mart Server.

Windows

Starting Genesys Info Mart Server Manually on Windows

Important

On Microsoft Windows platforms, by default, the installation process installs Genesys Info Mart Server as a Windows Service.

Use one of the following procedures to start Genesys Info Mart Server manually on Windows:

- Starting Genesys Info Mart Server from the Start menu **[+] Show steps**

Procedure: Starting Genesys Info Mart Server from the **Start** menu

Prerequisites

- You have modified startup arguments if required. For more information, see [Command-Line Parameters](#).

Steps

1. Go to **Start > Programs > Genesys Solutions > Genesys Info Mart (<Application Name>) > ETL Server**.
2. Select **ETL Server**.
The Genesys Info Mart Server application starts.

- Starting Genesys Info Mart Server from a batch file **[+] Show steps**

Procedure: Starting Genesys Info Mart Server from a batch file

Purpose: To start Genesys Info Mart Server manually by using the batch file that is provided in the IP.

Prerequisites

- You have modified startup arguments if required. For more information, see [Command-Line Parameters](#).

Steps

1. In Windows Explorer, go to the directory in which you installed Genesys Info Mart.
2. Double-click the **startServer.bat** file.
The Genesys Info Mart Server application starts.

- Starting Genesys Info Mart Server as a Windows service **[+] Show steps**

Procedure: Starting Genesys Info Mart Server as a Windows service

On Microsoft Windows platforms, by default, the installation process installs Genesys Info Mart Server as a Windows

Service. If you stopped Genesys Info Mart Server from running as a Windows Service and need to start it again as a Windows Service, complete this procedure.

Prerequisites

- You have modified startup arguments if required. For more information, see [Command-Line Parameters](#).

Steps

1. Open the Windows **Control Panel**, and then double-click the **Services** icon. The **Services** dialog box opens.
2. In the **Services** list box, select your Genesys Info Mart Server service, and then click **Start**. (If you disabled Genesys Info Mart Server from operating as a Windows Service, the Start option for this application will not be available.)

Tip

You can install the Local Control Agent (LCA) as a Windows Service with the user interface disabled. In this case, all servers that are started through SCI are started without a console, unless you specifically select the **Allow Service to Interact with Desktop** check box for both LCA and Genesys Info Mart Server.

UNIX

Starting Genesys Info Mart Server Manually on UNIX

The following procedure describes how to start Genesys Info Mart Server manually on a UNIX system.

Procedure: Starting Genesys Info Mart Server manually

Prerequisites

- You have modified startup arguments if required. For more information, see [Command-Line Parameters](#).

Steps

1. Open a console window.
2. Go to the directory in which you have installed Genesys Info Mart.
3. Enter the name of the Genesys Info Mart executable, followed by the appropriate command-line parameters. Use the following syntax:

```
./gim_etl_server -host <hostname> -port <portno> -app <application>
```

where:

- `hostname` is the name of the host on which Configuration Server is running.
- `portno` is the communication port that client applications must use to connect to Configuration Server.
- `application` is the name of the Genesys Info Mart Application object, as defined for Configuration Server.

Important

If the host name or application name contains spaces or hyphens (-), enclose the name in double quotation marks.

For example, to start Genesys Info Mart Server by using command-line parameters that specify the host as `cs-host`, the port as 2020, and the name as `Genesys_Info_Mart_85`, enter the following:

```
./gim_etl_server -host "cs-host" -port 2020 -app "Genesys_Info_Mart_85"
```

Stopping Genesys Info Mart Server

You can stop Genesys Info Mart Server in any of the following ways:

- From SCI. (This is the recommended method.)
- Manually on Windows.
- Manually on UNIX.

To prevent Genesys Info Mart Server from self-starting after you stop it, make sure that you clear the `autorestart` property in the Genesys Info Mart Application object in the configuration interface.

SCI

Stopping Genesys Info Mart Server with Solution Control Interface

If you are using LCA and Solution Control Server (SCS), complete the following procedure to stop Genesys Info Mart by using SCI.

Procedure: Stopping Genesys Info Mart Server by using SCI

Steps

1. On the list pane in the SCI Applications view, select your Genesys Info Mart Server.
2. Do one of the following:
 - On the toolbar, click **Stop**.
 - From the **Action** menu, select **Stop**.
 - Right-click the Application object to access the shortcut menu, and then select **Stop**.
3. In the confirmation box that appears, click **Yes**.
SCI stops your Genesys Info Mart Server.

Windows

Stopping Genesys Info Mart Server on Windows

Use one of the following procedures to stop Genesys Info Mart manually on Windows:

- If Genesys Info Mart Server is running as an application (not as a Windows Service), stop Genesys Info Mart Server from the console window. **[+] Show steps**

Procedure: Stopping Genesys Info Mart Server from the console window

Steps

1. In the application's console window, press **CTRL+C**.

- If Genesys Info Mart Server is running as a Windows Service, stop Genesys Info Mart Server running as a Windows service. **[+] Show steps**

Procedure: Stopping Genesys Info Mart Server running as a Windows service

If you are running Genesys Info Mart Server as a Windows Service, you should stop it only from the Services Control Manager, as described here.

Steps

1. Open the **Control Panel**, and then double-click the **Services** icon. The **Services** dialog box opens.
2. In the **Services** list box, select your Genesys Info Mart Server service, and then click **Stop**.

UNIX

Stopping Genesys Info Mart Server on UNIX

The following procedure describes two methods for stopping Genesys Info Mart Server manually on UNIX: from the command line and from a console window.

Important

If you are using LCA and SCS, you can also use SCI to stop Genesys Info Mart Server (see [Stopping Genesys Info Mart Server with Solution Control Interface](#)).

Procedure: Stopping Genesys Info Mart Server manually

Steps

1. Do one of the following:

- On the command line, enter the following command:

```
kill -SIGTERM <processid>
```

where <processid> is the UNIX process ID of the application.
- In the active console window, press **CTRL+C**.

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 Operations Guide* describes the procedures that you must follow to schedule and monitor the Genesys Info Mart jobs that extract, transform, and load (ETL) data, maintain the Info Mart database, migrate Genesys Info Mart, and export Info Mart data.
- 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](#).