License Reporting Manager 8.1

Deployment Guide

About Genesys

Genesys is the world's leading provider of customer service and contact center software—with more than 4,000 customers in 80 countries. Drawing on its more than 20 years of customer service innovation and experience, Genesys is uniquely positioned to help companies bring their people, insights and customer channels together to effectively drive today's customer conversation. Genesys software directs more than 100 million interactions every day, maximizing the value of customer engagement and differentiating the experience by driving personalization and multi-channel customer service—and extending customer service across the enterprise to optimize processes and the performance of customer-facing employees. Go to www.genesyslab.com for more information.

Each product has its own documentation for online viewing at the Genesys Technical Support website or on the Documentation Library DVD, which is available from Genesys upon request. For more information, contact your sales representative.

Notice

Although reasonable effort is made to ensure that the information in this document is complete and accurate at the time of release, Genesys Telecommunications Laboratories, Inc., cannot assume responsibility for any existing errors. Changes and/or corrections to the information contained in this document may be incorporated in future versions.

Your Responsibility for Your System's Security

You are responsible for the security of your system. Product administration to prevent unauthorized use is your responsibility. Your system administrator should read all documents provided with this product to fully understand the features available that reduce your risk of incurring charges for unlicensed use of Genesys products.

Trademarks

Genesys and the Genesys logo are registered trademarks of Genesys Telecommunications Laboratories, Inc. All other company names and logos may be trademarks or registered trademarks of their respective holders. © 2012 Genesys Telecommunications Laboratories, Inc. All rights reserved.

The Crystal monospace font is used by permission of Software Renovation Corporation, www.SoftwareRenovation.com.

Technical Support from VARs

If you have purchased support from a value-added reseller (VAR), please contact the VAR for technical support.

Technical Support from Genesys

If you have purchased support directly from Genesys, please contact Genesys Technical Support. Before contacting technical support, please refer to the ***Genesys Care Program Guide*** for complete contact information and procedures.

Ordering and Licensing Information

Complete information on ordering and licensing Genesys products can be found in the ***Genesys Licensing Guide.***

Released by

Genesys Telecommunications Laboratories, Inc. www.genesyslab.com

Document Version: 81lrm_dep_03-2013_v8.1.101.00

Table of Contents

List of Procedures

Preface

Welcome to the *License Reporting Manager 8.1 Deployment Guide*. This document provides a high-level overview of License Reporting Manager 8.1 features and functions, together with software-architecture information and deployment-planning materials.

This document is valid only for the 8.1 release of this product.

Note: For versions of this document created for other releases of this product, visit the Genesys Technical Support website, or request the Documentation Library DVD, which you can order by e-mail from Genesys Order Management at orderman@genesyslab.com.

This preface contains the following sections:

For information about related resources and about the conventions that are used in this document, see the supplementary material starting on page 53.

About LRM

License Reporting Manager (LRM) calculates and stores usage data for licensed Genesys products and user-defined bundles, for the purpose of providing Hosted Service Providers with billing data and management reports.

The existing Genesys reporting components ICON and GVP Reporting Server perform the first-level of event analysis and data storage. LRM then performs data analysis and aggregation from these reporting components into usage data for the various sellable items.The usage data is collected in LRM and may be accessed in one of two ways:

- Using a custom billing adapter that is designed to extract data in the form that the hosted service provider's back-office billing systems need.

- Using on-demand reports that can be run from the Genesys Administrator Extension user interface.

Benefits of LRM

The specific benefits of implementing LRM include the following:

- Hosted service providers can extract concurrent license-usage data for billing their customers by using custom billing adapters for their back-office systems.
- Customer- or system-usage historical reports can be run on-demand from Genesys Administrator Extension. This enables the system administrator to monitor usage directly from the Genesys system.
- The bundle file with predefined bundles of concurrent licenses are provided for Hosted Provider Edition (HPE) deployments (available on the HPE DVD), so that hosted service providers can quickly deploy typical market offerings that might be appropriate for their customers. Bundles of concurrent licenses can also be user-defined and measured, so that hosted service providers can build market offerings that are customized for their customers.

Intended Audience

This document, primarily intended for those who install the software and those who run the usage report, assumes that you have a basic understanding of:

- Computer-telephony integration (CTI) concepts, processes, terminology, and applications.
- Network design and operation.
- Your own network configurations.

You should also be familiar with:

- Genesys Framework architecture and functions.
- Architecture and functions of your Genesys solutions.
  - Genesys Administrator
  - Genesys Administrator Extension
  - Genesys-sellable licenses (as per orders, not technical licenses)
- Genesys concept of redundancy, as explained in the *Framework 8.1 Deployment Guide*.

Making Comments on This Document

If you especially like or dislike anything about this document, feel free to e-mail your comments to Techpubs.webadmin@genesyslab.com.

You can comment on what you regard as specific errors or omissions, and on the accuracy, organization, subject matter, or completeness of this document. Please limit your comments to the scope of this document only and to the way in which the information is presented. Contact your Genesys Account Representative or Genesys Technical Support if you have suggestions about the product itself.

When you send us comments, you grant Genesys a nonexclusive right to use or distribute your comments in any way it believes appropriate, without incurring any obligation to you.

Contacting Genesys Technical Support

If you have purchased support directly from Genesys, please contact Genesys Technical Support.

Before contacting technical support, please refer to the *Genesys Care Program Guide* for complete contact information and procedures.

Document Change History

This section lists topics that are new or that have changed significantly since the first release of this document.

New in Document Version v8.1.101.00

The document has been updated and restructured to support License Reporting Manager release 8.1.1. The following chapters have been significantly changed since the previous release of this document:

- "Product Overview" on page 13
- "Special Configuration Requirements" on page 37
- "Starting and Stopping License Reporting Manager" on page 41
- "Configuration Options" on page 49

The following topics have been added or significantly changed since the previous release of this document:

- Content has been added to "Product License Coverage" on page 21 to include eServices, Reporting, and Routing products.
- Platforms have been updated in "Platforms Supported by LRM" on page 23.
- Sun Java Runtime Environment (JRE) was added to "LRM Installation Prerequisites" on page 23.
- The template name, DAP roles, and LRM Template File Contents were updated in "Configuring LRM" on page 28.

- Folder and filenames were updated and the Windows installation was added to “Installing the LRM Application” on page 31
- The new section, “Installing the LRM Plug-in for GAX” on page 35, was added.

New in Document Version v8.1.002.00

The document has been updated to support License Reporting Manager release 8.1.0. The following topics have been added or significantly changed since the previous release of this document:

- The description of LRM configuration option `lrm-network-switch` in “LRM Configuration Options” on page 49 has been modified for clarity.
- Starting LRM automatically from scheduled scripts on Unix and runLrm.sh have been added to describe how to start LRM automatically by using cron to schedule scripts.
- Interaction Workspace has been updated to release 8.1 or later in “Prerequisites” on page 23 and in “Product License Coverage” on page 21.
- The “interaction-workspace Section:” on page 25 has been added to “Prerequisites to Collect Data” on page 24.

Chapter

1 Product Overview

This chapter describes the basic License Reporting Manager (LRM) architecture, the components of LRM and their functions, and the various deployment scenarios that LRM instances play in a contact center. It also provides a high-level overview of LRM functionality, including features and functionality that are new in release 8.1.

This chapter contains the following sections:

Basic Architecture

LRM is a server application that uses the data from Interaction Concentrator Database (IDB), the GVP Reporting Servers, and Configuration Manager to execute data analysis and summarization. The LRM Server should always be running, so it is available to respond to HTTP requests and generate reports from the LRM Database (LRM DB).

The LRM has a nightly statistics job which you can schedule to run at the same time each day when there is a low volume of interaction in the contact center (for example, at night). During this nightly statistics job, LRM performs the following tasks:

- Reads the configuration data for the various Genesys components to calculate the peak usage for certain sellable items.
- Generates sellable items data from ICON:
  - Reads the login session data from all the ICON instances connected to the LRM and temporarily stores the results in the LRM DB.
  - Calculates all sellable items in minute intervals at the tenant level.

  - Calculates and stores the daily value for all sellable items at the tenant and system level.
  - Calculates and stores the daily value for all user-defined bundles at the tenant and system level.

Note: For LRM to retrieve data from ICON, the ICON DB must be running and available, although ICON itself is not required.

- Generates peak usage data for some sellable items for GVP, for each GVP Reporting Server, and GVP-related sellable item:
  - Creates HTTP requests for each of these sellable items, all the tenants, and the system.
  - Stores the data in the LRM DB.
- Generates enabled seat count data for sellable items from Configuration Server:
  - Takes a snapshot of the Places and DN objects in configuration.
  - Stores the data in the LRM DB.

LRM also accepts HTTP requests for reports and generates HTTP responses containing these reports. The GAX plug-in for LRM uses this HTTP service to generate reports.

You can also use other services to generate their own reports by using the LRM web services API.

LRM General Architecture

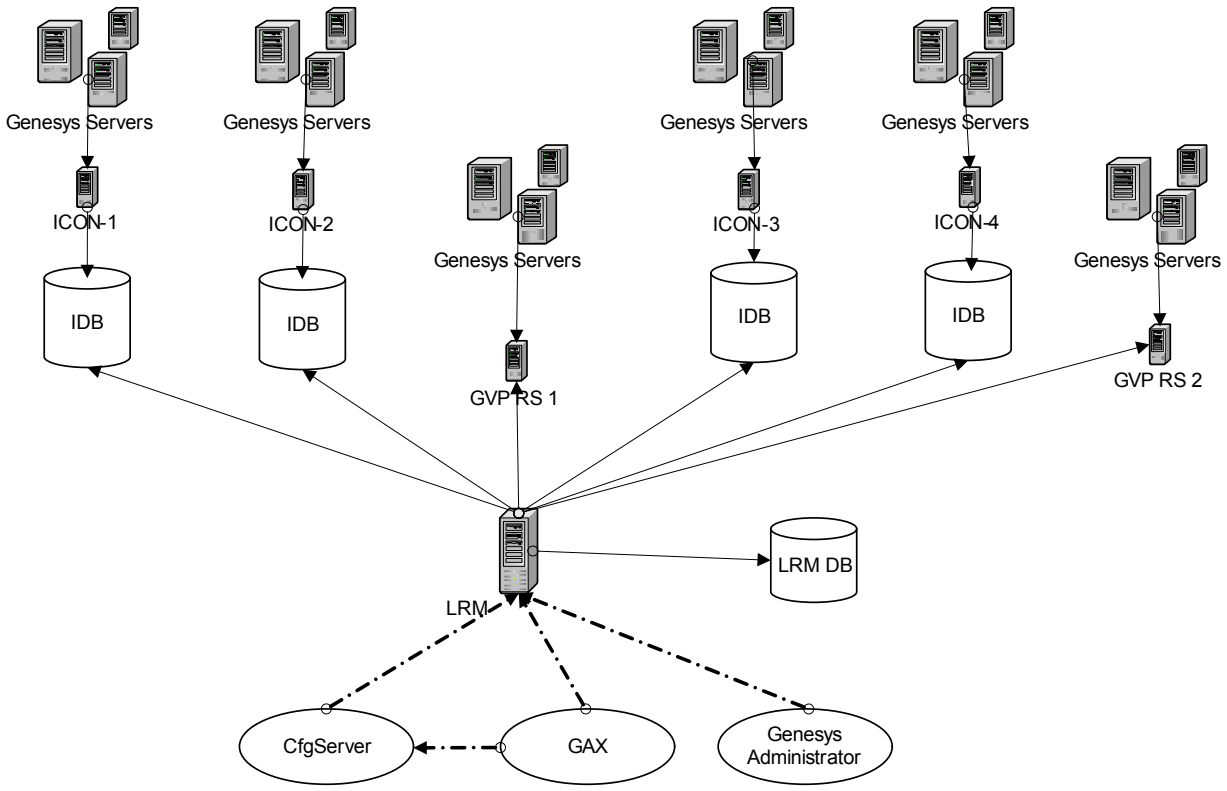
The following contains a brief description of functions of components in Figure 1 on page 15:

- Genesys Servers: These are the servers running Genesys software, which perform the functions required by the customer. LRM measures the usage of these servers. Examples of these servers are T-Server, SIP-Server, Interaction Server, GVP Media Control Platform, etc.
- ICON: ICON collects run-time information from Genesys Servers and store the information in the ICON Databases (ICON DB). LRM retrieves data from the ICON DB to perform calculations for the peaks of various sellable items. LRM supports ICON servers in high availability without counting duplicate records which exist in more than one ICON server.
- GVP RS: LRM collects HTTP reports from the GVP Reporting Server to obtain peaks for GVP-related sellable items. GVP Reporting Server a performs the peak calculations that are required by LRM. LRM stores these results in the LRM DB. LRM supports the primary/backup setup of the GVP Reporting Server, and GVP Reporting Server which is set up with HTTP basic authentication.
- GAX: GAX performs multiple functions for LRM
  - GAX installs and configures ICON and LRM using a wizard for ease of installation

- GAX displays reports to the user, by retrieving data from the LRM via the HTTP Web Services API.
- GAX provides custom screens to allow provisioning of tenant usage limits
- GAX provides custom screens to upload files representing system entitlements and bundle definitions.

- GA: LRM uses Genesys Administrator (GA) to perform general Genesys OA&M functionality, such as:
  - Manual starting LRM
  - Monitoring and display of alarms generated from LRM

Any additional functionality not shown in Figure 1 on page 15 is designed to support ease of installation.



1	ICON 1–4	Independent ICON instances.
2	IDB	ICON databases.
3	LRM	This is the LRM executable utility that retreives configuration, starts and executes the summarization software on ICON data in the IDB.
4	LRM DBS	LRM database, which stores summarized data calculated by the LRM utility.
5	GVP RS 1-2	GVP Reporting Server instances.

Figure 1: General Architecture

High Availability

LRM Report Generator operates in conjunction with any high-availability database implementation that is supported by DB Server, such as Oracle Real Application Clusters.

To implement high-availability in LRM, use one pair of identically configured LRM instances. Each LRM instance must have its own LRM application object in the Management Framework, where one LRM instance is configured as a `Backup Server` of the other. Both LRM instances share the same LRM Database and you can use the same DAP object to access the LRM Database. Each LRM instance can be in either `Primary` or `Backup` mode, which is determined by the Management Framework Solution Control Server.

When operating in `Primary` mode, the LRM server gathers data from ICON, GVP and Configuration Server and stores the result in the LRM database as a nightly statistics job. The LRM server also responds to HTTP requests from the GAX Plug-in to generate reports. When operating in `Backup` mode, no nightly statistics job runs, even when the scheduled time is reached, and the LRM server closes the HTTP socket, which means it will not respond to any incoming report requests from the GAX Plug-in.

The nightly statistics job has a locking mechanism, so that in the unlikely event that more than one LRM Server tries to invoke the nightly statistics job, only one of these jobs can occur at one time.

Components and Functions

LRM consists of the following elements:

- LRM server
- LRM Plug-in for Genesys Administrator Extension
- Genesys Administrator
- Configuration Server

LRM Server

The LRM Server is a standalone server that performs the following functions:

- Executes a nightly statistics job to gather statistics for sellable item data from ICON, GVP and Configuration Server at the scheduled time.
- Sends alarm messages in case of failures during the nightly statistics job.
- Ensures no two LRM instances can run nightly statistics jobs at the same time.
- Generates JSON reports over HTTP requests, in response to requests sent from the GAX Plug-in.

LRM Plug-in for Genesys Administrator Extension

The LRM Plug-in for Genesys Administrator Extension (GAX) provides a GAX User Interface to perform the following tasks:

- Upload an Entitlement XML file.
- Upload a Bundles XML file.
- Generate a License Usage Report.
- Modify the Provisional Count for tenants.

Genesys Administrator

Use Genesys Administrator to perform the following tasks:

- Manually start or stop the LRM server.
- Monitor the LRM application based on the Local Control Agent (LCA) and the Solution Control Server.

Configuration Server

Use Configuration Server to perform the following tasks:

- Configure the customer's environment.
- Configure the LRM application.
- Store data (for example, entitlement file data and user-defined bundles).

Sources of Data

The GVP Reporting Server and ICON databases are the primary data sources for LRM.

ICON Databases

The LRM application supports connections to multiple instances of ICON databases. The ICON databases can have overlapping coverage of the same T-Server or Interaction Server between two ICON database instances connected to LRM. LRM can handle multiple records for the same login session existing in multiple ICON databases.

When the nightly statistics job is run, the LRM will retrieve the records for the previous day from all the connected ICON databases and temporarily write them into the LRM database; after data from all ICON databases are written locally, the LRM will then go through all these records to calculate the peak usage for the previous day for the various sellable items.

If any ICON database is not available when the nightly statistics job is run, the entire nightly statistics job is cancelled and will be retried at a later time.

GVP Reporting Server

The LRM application supports connections to multiple instances of GVP Reporting Servers. The LRM application must be configured with connections to all of the required instances of GVP Reporting Server. Genesys recommends that the different instances of the GVP Reporting Server process independent sets of GVP resources.

Notes:
- LRM supports high-availability (HA) instances of the GVP Reporting Server.
- If the GVP resources overlap on the different GVP Reporting Servers, the counts that are received from GVP are replicated, which might cause incorrect counts.

At the time the nightly statistics job is run, the LRM application makes HTTP requests to the GVP Reporting Server to obtain its daily peak data for the relevant sellable items. For each type of GVP-related Sellable Item supported by LRM, the LRM makes an independent HTTP request to the GVP Reporting Server. If an HTTP request fails, the entire nightly job is cancelled and it will be retried at a later time.

Configuration Server

When the nightly statistics job runs, the LRM application reads the objects from the Configuration Server and counts the number of various objects to derive the Enabled Seat count for the various Sellable Items.

Supported Features and Functionality

Predefined and User-Defined Bundles

A predefined bundle is a group of standard Genesys-sellable items that are configured and named for you for resale as a single feature to your customer.

A user-defined bundle is a group of standard Genesys-sellable items that are configured and named by you (either by using Genesys Administrator Extension or manually) for resale as a single feature to your customer.

The predefined or user-defined bundle appears as a single item in the license-usage measurement data that is accessed for billing and other tenant reports. Detailed information about predefined and user-defined bundles can be found in the *License Reporting Manager 8.1 User's Guide*.

New in this Release

New in Release 8.1.1

The 8.1.1 release of License Reporting Manager provides the following additional or changed functionality:

Usage Reporting

- Usage reporting includes SIP Voicemail, Genesys Voice Platform Ports, Call Qualification Parking, High Availability, Genesys Info Mart, Genesys Interactive Insights, Genesys Social Media, QM Call Recording, Agent Connector, and IVR Connector.

Enabled Seat Counts

- Enabled seat count data for the sellable items from Configuration Server includes Third Party Work Items, High Availability, Genesys Info Mart, Genesys Interactive Insights, Genesys Social Media, and Agent Connector.

Security Features

- LRM supports Transport Layer Security (TLS) protocol between Genesys components. LRM supports HTTPS authentication for any HTTP connection.

Database Support

- LRM provides database support for Microsoft SQL Server 2008 and PostgreSQL 9.0.

Operating System Support

- LRM supports for Red Hat Enterprise Linux 6 and Windows 2008 Server (x64).

New in Release 8.1.0

The 8.1.0 release of License Reporting Manager provides the following additional or changed functionality:

- Includes purchased usage quantities for resources in tenant usage, in addition to the actual usage quantities that already are provided. See “Prerequisites to Include Purchased Usage Quantities” on page 25.
- Captures and stores detailed information about the following sellable items:
  - Genesys Interaction Workspace
  - Genesys Voice Platform ASR Ports
  - Genesys Voice Platform TTS Ports
  - Third-party work items

  For more information, see “Product License Coverage” on page 21.
- Provides predefined bundles: a group of standard Genesys-sellable items that already are configured and named for resale as a single feature to your customer. For more information, see “Predefined and User-Defined Bundles” on page 18.

Chapter

2 Deployment Planning

This chapter lists the prerequisites for License Reporting Manager (LRM) deployment, including information about compatibility with other Genesys components.

This chapter contains the following sections:

Compatibility

Product License Coverage

Genesys has over 100 product licenses, not all of which can be measured and tracked by LRM. LRM focuses primarily on the most common licenses that are used in production systems. Laboratory and demonstration system licenses are not tracked.

Table 1 lists the licenses that are measured and tracked in License Reporting Manager 8.1.

Table 1: Product License Coverage

Product	Releases	Measurement	Condition/Limitation
Base platform			
Genesys CIM Platform-MS	7.6+	Concurrent seats	
Genesys CIM Platform-SS	7.6+	Concurrent seats	
Desktops and Gplus Adapters			

Table 1: Product License Coverage (Continued)

Product	Releases	Measurement	Condition/Limitation
Computer-telephony integration (CTI)	7.6+	Concurrent seats	Restricted to existing customers
Genesys Agent Desktop	7.6.3+	Concurrent seats	
Genesys Supervisor Desktop	7.6.3+	Concurrent seats	
Interaction Workspace	8.1+	Concurrent seats	
eServices			
Genesys Social Media	7.6+	Concurrent seats	
Multi-channel			
Genesys E-Mail	7.6+	Concurrent seats	
Genesys Web Media	7.6+	Concurrent seats	
Third-party work items	7.6+	Concurrent seats	
Outbound Contact			
Genesys Outbound Contact - MS	7.6+	Concurrent seats	
Reporting			
Genesys Info Mart	7.6+	Concurrent seats	
Genesys Interactive Insights (GI2)	7.6+	Concurrent seats	
Routing			
Agent Connector	7.6+	Concurrent seats	
Genesys Inbound Voice	7.6+	Concurrent seats	
Genesys Network Voice	7.6+	Concurrent seats	
SIP Server	7.6+	Concurrent seats	
Skills Based Routing	7.6+	Concurrent seats	Restricted to existing customers
Voice Portal			
GVP ASR Ports	8.1.5+	Concurrent ports	
GVP TTS Ports	8.1.5+	Concurrent ports	

Table 1: Product License Coverage (Continued)

Product	Releases	Measurement	Condition/Limitation
Workforce Management			
Genesys Workforce Management	7.6+	Concurrent seats	

Platform Support

Table 2 lists the operating systems, databases, and virtualization that are supported by LRM in this release.

Table 2: Platforms Supported by LRM

Platform	Versions
OS support	
Red Hat Linux	• 5.0 (32-bit) • 6.0 (64-bit)
Windows	2008 64-bit
Database support	
MS SQL Server	2008
Oracle	• 11g • 11g RAC
PostgreSQL	9.0
Virtualization support	
VMware	ESX 3.5

Prerequisites

For Genesys release 8.x, License Reporting Manager 8.1 is available as a separate, optional product, at no additional cost, for customers who purchase or upgrade to Genesys Management Framework 8.1.0 or later. There are two types of prerequisites, for License Reporting Manager installation, and for measurements of specific products.

LRM Installation Prerequisites

- Customer Interaction Management 8.x or Management Framework 8.x

- Genesys Interaction Concentrator 8.x
- Sun Java Runtime Environment (JRE) 6.0 Update 19 or later

Product Measurement Prerequisites

Products that are measured must be of release 7.6 or later, with the following exceptions:

- Genesys Administrator Extension 8.1.0 or later
- Genesys Agent Desktop 7.6.3 or later
- Genesys Supervisor Desktop 7.6.3 or later
- Genesys Voice Platform (GVP) 8.1.5 or later
- Interaction Workspace 8.1 or later

Prerequisites to Collect Data

In order for LRM to calculate statistics it is important that certain Interaction Concentrator and Interaction Workspace options be set correctly.

callconcentrator Section:

1. [role]—This option specifies the type of data that the Interaction Concentrator instance processes and stores in the Interaction Concentrator database.

   For Interaction Concentrator release 8.1 and later, the ICON instance can be configured to store your LRM-specific data. You must set the role option to lrm.

See the *Interaction Concentrator 8.1 Deployment Guide* for more information about using ICON for License Reporting Data.

2. [use-dss-monitor]—This option must be used with LRM for the usage data gap processing. Set this option to 1 to populate the G_DSS_GLS_PROVIDER and G_DSS_GOS_PROVIDER tables with Interaction Concentrator release 8.0.000.25 or later.

See the *Interaction Concentrator 8.1 Deployment Guide* for more information on the use-dss-monitor option.

3. [dss-no-data-tout]— This option must be used with LRM for the usage data gap processing. Set this option to the preferred value. This option enables you to set the time interval after which Interaction Concentrator provides the NoData indication in the G_DSS_GLS_PROVIDER and G_DSS_GOS_PROVIDER tables. The NoData indication enables you to distinguish cases in which there was no data from those in which a connection problem prevented the data from being properly recorded.

See the *Interaction Concentrator 8.1 Deployment Guide* for the default and valid values for the dss-no-data-tout option.

filter-data Section:

Make sure that the options that pertain to `gls` data were set to their default values, equal to `0`.

These options are the following:

- [`gls-all`]
- [`gls-ivr`]
- [`gls-no-person`]
- [`gls-queue`]

See the *Interaction Concentrator 8.1 Deployment Guide* for the full description of the `filter-data` options.

interaction-workspace Section:

- [`license.lrm-enabled`]— This option must be added and set to `true` to enable Interaction Workspace to support LRM. This feature might not work if Interaction Workspace is customized. Changes take effect after you restart Interaction Workspace.

Prerequisites to Include Purchased Usage Quantities

In order for LRM to include purchased usage quantities for tenants, in addition to the actual usage quantities that already are provided, it is important that Genesys Administrator Extension (GAX) is configured correctly.

The purchased usage quantities for tenants must be configured in the License Usage Reporting interface of Genesys Administrator Extension (GAX) release 8.1 and later. See the *Genesys Administrator Extension 8.1 Help* for more information about specifying provisioned counts.

Sizing

For information about sizing requirements for LRM, see the *Genesys 8.x Hardware Sizing Guide*.

Chapter

3 Configuration and Installation

This chapter describes how to configure License Reporting Manager in your Genesys environment. It contains the following sections:

LRM Task Summary

Task Summary: LRM Tasks and Procedures, on page 27 summarizes LRM tasks and related procedures.

Task Summary: LRM Tasks and Procedures

Objective	Related procedures and actions
Configure LRM.	1. Procedure: Importing an application template into your configuration, on page 28. 2. Procedure: Configuring License Reporting Manager for installation, on page 29.
Install LRM.	1. Procedure: Installing License Reporting Manager on Linux, on page 32. 2. Procedure: Installing the LRM application on Windows, on page 33.

Task Summary: LRM Tasks and Procedures (Continued)

Objective	Related procedures and actions
Start LRM.	Procedure: Starting LRM manually on Linux, on page 42.
Uninstall LRM.	Remove the files that were added during the installation procedure. See the Note on page 33 for details.

Configuring LRM

Before you install License Reporting Manager, you must verify that you have the required application template in the Configuration Database, add the application, and configure it correctly using Configuration Manager or Genesys Administrator.

Procedure: Importing an application template into your configuration

Purpose: To import the required application templates before you configure License Reporting Manager to work in your Genesys environment. Configuration Manager or Genesys Administrator can be used for this and all other procedures that are related to configuration.

Prerequisites

- For information about the contents of the template, see "LRM Template File Contents" on page 30.

Start of procedure

1. Open the `Environment` folder and select the `Application Templates` folder.
2. From the `File` menu, select `Import Application Template`.
3. In the `Open` window that appears, import the following template from your CD:
   - `templates/License_Reporting_Manager_811.apd`.
4. Click `Open`. The corresponding `Properties` window opens.
5. Click `OK`. The template is imported into the `Application Templates` folder.

End of procedure

Next Steps

- Configure License Reporting Manager using Procedure: Configuring License Reporting Manager for installation, on page 29.

Procedure: Configuring License Reporting Manager for installation

Purpose: To configure License Reporting Manager to work in your Genesys environment.

Prerequisites

- Before you create the application, check to see that an application template exists. The template provides most of the application's configuration options and default values.
  - Open the `Environment` folder, and then open the `Application Templates` folder.
  - If the License Reporting Manager template `License Reporting Manager` is not present, you must import the template by using Procedure: Importing an application template into your configuration, on page 28.
- Configure your Database Access Point (DAP) objects that describe the LRM databases and set the `role` option value. To set the `role` option value:
  a. In your DAP object, select the `Options` tab to display the list of `Sections`.
  b. Right-click and select `New`. In the `Section Name` field enter `lrm`.
  c. Double-click the new `lrm` section to open the `Option` view.
  d. Right-click and select `New`. In the `Option Name` field add `role` and set the `role` value.

  Exactly one of your DAPs must have the `role` value set to `main`. At least one of your DAPs must have the `role` value set to `icon`. See "Defining Database Access Point (DAP) objects" on page 38 for more details.

Start of procedure

1. Open the `Environment` folder and select the `Applications` folder.
2. From the `File` menu, select `New` > `Application`. The Browse window opens, listing all application templates that are present in the Configuration Database.
3. Choose the `License Reporting Manager` application template.
4. Click `OK`. The `Properties` window appears.

5. On the General tab, add a unique name to the Name field for this instance of LRM.
6. Select the Server Info tab. In the Host Name field, add the name of the host on which you will be installing the application.
7. Select the Start Info tab, and add "..." to each of the following fields:
   - Working Directory
   - Command Line

   These fields are automatically filled with the correct information when LRM is installed.
8. Select the Connections tab. Right-click and select New. In the Server field, enter the name of the DAP. Add:
   - One or more of the local DAPs pointing to ICON Databases. Set the value of role set to icon in the DAP Application.
   - A DAP for the LRM database. Set the value of role set to main in the DAP Application.
9. Select the Connections tab. Right-click and select New. In the Server field, enter the name of the GVP Reporting Servers. Add:
   - Each GVP Reporting Server from which you would like to retrieve data. If your GVP Reporting Server is set up as an HA pair, add only the primary instance and not the backup GVP Reporting Server.
10. Click OK. Configuration of your LRM instance is complete.

End of procedure

Next Steps

- Install License Reporting Manager by using Procedure: Installing License Reporting Manager on Linux, on page 32.

LRM Template File Contents

The LRM template file contains the following default settings:

[lrm]

schedule=01:00

nightly_data_calculation_max_days=7

first_time_data_calculation_max_days=2

db_lock_timeout=30

schedule-retry-max=0

schedule-retry-delay=30

[log]

verbose=all

all=logs/lrm

standard=stdout

debug=logs/lrm

segment=10MB

expire=false

message_format=full

time_format=time

x-server-trace-filter=org.*;net.*;edu.*;antlr.*;oracle.*;atomikos.*;com.microsoft.*;com.noelios.*;com.genesyslab.platform.*

x-server-trace-level=1

[reporting]

port=8801

protocol=http

lrm.stylesheet-path=/static

lrm.stylesheet-landing-page-enabled=false

[https]

https.keystore.path=${user.home}/.keystore

https.keystore.type=JKS

https.certificate.algorithm=SunX509

https.protocol=TLS

https.client.authentication=none

https.connector.type=2

Installing the LRM Application

When you have properly configured License Reporting Manager, you must install License Reporting Manager using one of the following procedures:

- Installing License Reporting Manager on Linux, on page 32
- Installing the LRM application on Windows, on page 33

Procedure:
Installing License Reporting Manager on Linux

Purpose: To locate and launch the License Reporting Manager installation wizard to manually install LRM on Linux.

Prerequisites

- Be sure that your target computer meets the platform and component prerequisites that are listed in the *Genesys Supported Operating Environment Reference Manual*.
- Locate the compressed installation files, `Read_Me` file, and templates on the installation CD.
- Check to make sure that you have installation rights.

Start of procedure

1. Navigate to the License Reporting Manager directory on the CD.
2. Open and run the `install.sh` file in a terminal window.
3. When you are prompted to do so, enter the Host Name or press `Enter` for "Local Host".
4. When you are prompted to do so, enter the Configuration Server Name, Network port number, User name, and Password.
5. From the displayed list, choose an application that you want to install. When you are prompted to do so, enter the number of your chosen application.
6. Enter the location in which you want your application to be installed. Provide the full path.
7. A list of files that have been installed in your application's destination location is displayed, along with a message that informs you of your successful installation.
8. Verify you have installed License Reporting Manager successfully by inspecting the destination directory of your application for completeness.
   a. Browse to the destination location of your LRM application.
   b. Inspect the directory and confirm it contains the following folders:
      - libs/
      - templates/
   c. Inspect the directory and confirm it contains the following files:
      - lrm_startup.sh
      - lrmserver.jar

Next Steps

- You can now start License Reporting Manager by using Procedure: Starting LRM manually on Linux, on page 42.

Note: To uninstall LRM, remove all of the files from the LRM folder. See Step 8 on page 32 for a complete list of files that should be removed.

Procedure: Installing the LRM application on Windows

Purpose: To manually install the LRM application using the Genesys installation wizard provided on the LRM product DVD.

Start of procedure

1. On the License Reporting Manager 8.1 product DVD, open the `lrm\Windows\` directory.
2. Locate and double-click `setup.exe` to start the Genesys Installation Wizard.
3. On the `Welcome` page, click the `About` button to review the `read_me` file for this installation package. The file also contains a link to the Release Notes file for LRM.
4. Click `Next` to proceed with the installation.

   Note: Click `Next` at the end of each step to proceed to the next page.

5. On the `Connection Parameters to the Genesys Configuration Server` page, specify the following login parameters:
   - Host and port of Configuration Server
   - User name and password used to log in to the Configuration Layer
6. The `Select Application` page displays all applications of the `Call Concentrator` type in the Configuration Database. When you select one application from the list, the wizard displays some of the parameters configured for that application (in particular, the application type, host, working directory, command line, and command-line arguments).

   Select the application you want to install.
7. The `Choose Destination Location` page displays the destination directory, as specified in the `Working Directory` property of the LRM `Application` object. If the path is configured as `Working Directory` is invalid, the wizard generates the following path to the destination directory:

C:\Program Files\GCTI\License Reporting Manager\<LRM Application Name>\

If necessary, click one of the following:

- Browse—To select another destination folder. The wizard updates the Application object's Working Directory property in the Configuration Database.
- Default—To reinstate the path specified in the Application object's Working Directory property.

8. On the Ready to Install information page, click one of the following:
   - Back—To update any installation information.
   - Install—To proceed with installation. The Installation Status window appears, showing the installation progress.
9. On the Installation Complete page, click Finish.

   As a result of the installation, the wizard adds Interaction Concentrator icons to the following:
   - Windows Start menu, under Programs > Genesys Solutions.
   - Windows Add or Remove Programs dialog box, as a Genesys server.
   - Windows Services list, as a Genesys service with the Automatic startup type.
10. Verify you have installed License Reporting Manager successfully by inspecting the destination directory of your application for completeness.
    a. Browse to the destination location of your LRM application.
    b. Inspect the directory and confirm that it contains the following folders:
       - libs\
       - templates\
    c. Inspect the directory and confirm that it contains the following files:
       - JavaServerStarter.ini
       - lrmserver.jar
       - lrmservice.exe
       - startServer.bat

Next Steps

- You can now start License Reporting Manager by using Procedure: Starting LRM manually on Linux, on page 42.

Note: To uninstall LRM, remove all of the files from the folder in which LRM is installed. See Step 10 on page 34 for a complete list of files that should be removed.

Initializing LRM Databases

There is no need to explicitly initialize the LRM Database. The tables required for the LRM Database will be created the first time the nightly statistics gathering job is run.

Installing the LRM Plug-in for GAX

The LRM Plug-in for GAX is a graphical user interface (GUI) application that is hosted by Genesys Administrator Extension (GAX). It accesses data from the License Reporting Manager (LRM) database to provide on-demand reporting to Service Providers and tenant administrators.

Procedure: Installing the LRM Plug-in for GAX

Purpose: Enable report generation of LRM statistics from GAX.

Note: The LRM Plug-in for GAX is an add-on component to an existing GAX installation. It will be enabled automatically when the plug-in files are installed into existing GAX directories.

Prerequisites

- The following information is required:
  - The full path to your Tomcat installation.
  - Whether to use the default installation directory or choose a new one.
- If the target installation directory is populated, you must choose an action:
  - Back up all files in the directory.
  - Overwrite only the files contained in this package.
  - Wipe the directory clean.

Start of procedure

1. Stop Tomcat on the host running GAX.
2. Run the installation executable.
   - For Windows, this file is `<IP plug-in directory>/setup.exe`.
   - For Linux, this file is `<IP plug-in directory>/install.sh`.
3. Perform the installation steps, using the information that you gathered for the prerequisites.

4. Start Tomcat on the host running GAX.

End of procedure

Notes:

- To use the plug-in, open GAX and select License Reporting from the reports menu.
- For help with generating a report using the LRM Plug-in for GAX see the GAX online help.
- For help with selecting filters-an important aspect of generating a report-see the GAX online help.
- For help reading and understanding a generated report, see the GAX online help.

Chapter

4 Special Configuration Requirements

This chapter describes how to configure the License Reporting Manager (LRM) `Application` object and other applications in the Genesys Configuration Layer, in order to make various kinds of data available in the LRM Database (LRM DB).

This chapter contains the following sections:

LRM Application and Components

Each LRM application must have his own separate LRM application instance with a unique object name, as required by Genesys Configuration Server.

Each LRM instance has a list of DAPs that point to the ICON database in its connection list. The LRM application connects to each of the DAPs in the list that have their `role` set to `icon`. The LRM application extracts data from these ICON databases used to prepare the reporting data.

LRM must also have a single DAP with `role` set to `main` in its connection list. This DAP provides the information for the database the LRM application uses to store its calculated reporting data.

Defining Database Access Point (DAP) objects

To configure the LRM solution properly, you must define DAP objects that describe the databases to which LRM has access. You must create a DAP object for each ICON to which you connect, and you cannot reuse the corresponding DAP object already in use by ICON, because LRM uses the JDBC options to configure the connection to the databases.

The following types of DAP objects are used by LRM:

- One for each ICON database from which LRM should read data. The ICON DAP object must have the value of the LRM `role` option set to `icon`.
- One for the LRM database used to store the LRM reporting data. The LRM DAP object must have the value of the LRM `role` option set to `main`.

Configure both DAP objects on the `General` tab as a `JDBC Connection` with the correct database server credentials for each DAP object.

Connecting to the GVP Reporting Server

LRM connections to the Genesys Voice Platform (GVP) Reporting Server are managed on the `Connections` tab of the LRM application.

LRM uses the preliminary GVP data and might have one or several instances of GVP Reporting Server on the `Connections tab`.

The LRM application must connect to all configured GVP Reporting Servers that transfer GVP data to LRM database.

Loading Configuration Objects from Configuration Server

To calculate certain sellable items, LRM loads some configuration information into the database, including the following configuration objects:

- Switch—For the calculation of all sellable items
- Person, Agent Group, Place Groups—For the calculation of the Outbound Contact - MS seats sellable item.
- Person's Skills (as a part of Person)—For the calculation of the Skill Based Routing seats sellable item.

LRM looks for specific conditions and loads information into the LRM database about the tenants to whom these conditions apply before it starts data

preprocessing. The following conditions are examined in order to determine eligibility of a sellable item:

- URS with a single tenant and DAP connection for CTI seats sellable item.
- WFM Data Aggregator application with connection to Stat Server for the Workforce Management Seat sellable item.
- All SIP Server and T-Server applications to determine if they are configured as an HA pair, for the High Availability Sellable Item.
- Info Mart applications for the Genesys Info Mart Server and Genesys Interactive Insights Sellable Items.

Storing Bundle and Entitlement Data on Configuration Server

LRM requires at least one Entitlement File has been uploaded to function. Bundles and Entitlement XML files may be uploaded to the Configuration Server by using the GAX interface. For more information about bundles and entitlement, see the *License Reporting Manager 8.1 User's Guide*.

High Availability configuration

You can set up LRM as a pair of primary-backup applications. Both applications must be installed, configured, and started. If both of these applications are up and running, the Solution Control Server determines which of the applications act as the Primary, while the other acts as the backup.

To configure the system, the system administrator must:

1. Install and configure two separate instances of LRM using the procedures in Chapter 3 on page 27.
2. Select the Server Info tab in the `Application` object for the primary LRM application.
3. Click the open folder icon next to the `Backup Server` field to choose the LRM application which is to serve as the backup.

Chapter

5 Starting and Stopping License Reporting Manager

This chapter describes the prerequisites for License Reporting Manager (LRM) startup, and it provides instructions for starting LRM.

This chapter contains the following sections:

Overview

You can start or stop LRM by using Solution Control Interface (SCI) or a manual procedure. LRM stops automatically when it has completed its task.

When the installation of your application has been verified, and the LRM databases have been initialized, you can start LRM.

Starting LRM

This section provides startup instructions for LRM. You can start LRM in the following ways:

- From Solution Control Interface (see page 42). (Recommended method.)
- Manually on Linux (see page 42).
- Manually on Windows (see page 43).
- As a Windows Service (see page 44).

Starting LRM from Solution Control Interface (SCI)

Complete the following procedure to start LRM.

Procedure: Starting LRM from SCI

Purpose: To start LRM by using Solution Control Interface (SCI).

Prerequisites

- You must have LRM installed.

Start of procedure

1. To be able to run LRM by using SCI, the following parameters must be configured in the LRM application on the `Start Info` tab:
   - Add `./startserver.bat in` the `Command Line` field.
   - Include the following in the `Command Line Arguments` field:
     `-host [host] -port [port] -app [app]`
2. On the list pane in the SCI `Applications` view, select your LRM `Application` object.
3. 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 select `Start`.

End of procedure

Next Steps

- You have completed all the steps necessary to start LRM from SCI.

Starting LRM manually on Linux

Complete the following procedure to start LRM on Linux.

Procedure: Starting LRM manually on Linux

Purpose: To start LRM by using the console window on Linux.

Prerequisites

- You must have LRM installed.

Start of procedure

1. Go to the directory in which you installed LRM.
2. Type the following command-line parameters:

   ```
   lrm_startup.sh -host <Configuration Server host> -port
   <Configuration Server port> -app <LRM Application>
   ```

End of procedure

Next Steps

- You have completed all the steps necessary to start LRM manually on Linux.

Starting LRM on Windows

Complete the following procedure to start LRM on Windows.

Procedure: Starting LRM on Windows

Purpose: To start LRM from the `Start > Programs` menu, or from the console window.

Start of procedure

1. Open a console window.
2. Go to the directory in which you installed LRM.
3. Type the following command-line parameters:

   ```
   startServer.bat -host <Configuration Server host> -port
   <Configuration Server port> -app <LRM Application>
   ```

Note: If the host name or application name contains spaces or hyphens (-), enclose them in double quotation marks.

For example, to start LRM with command-line parameters that specify the host as `cs-host`, the port as `2020`, and the name as `LRM 03`, enter the following:

```
startServer.bat -host "cs-host" -port 2020 -app "LRM 03"
```

End of procedure

Next Steps

- You have completed all the steps necessary to start LRM on Windows.

Starting LRM as a Windows Service

On Microsoft Windows platforms, by default, the installation process installs License Reporting Manager as a Windows Service. If you stopped LRM from running as a Windows Service and need to start it again as a Windows Service, complete the following procedure.

Procedure: Starting LRM as a Windows service

Start of procedure

1. Open the Windows `Control Panel`, and then double-click `Services`. The `Services` dialog box opens.
2. In the `Services` list box, select your LRM service, and then click `Start`. (If you disabled LRM from operating as a Windows Service, the `Start` option for this application will not be available.)

Next Steps

- You have completed all the steps necessary to start LRM as a Windows service.

Stopping LRM

You can stop LRM in any of the following ways:

- From SCI (see page 44). (This is the recommended method.)
- Manually on Linux (see page 42).
- Manually on Windows (see page 46).
- As a Windows Service (see page 47).

Note: To prevent LRM from self-starting, make sure that you clear the `autorestart` property in the LRM `Application` object in Configuration Manager.

Stopping LRM with SCI

Complete the following procedure to stop LRM with SCI.

Procedure:
Stopping LRM using SCI

Start of procedure

1. On the list pane in the SCI `Applications` view, select your LRM `Application` object.
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 LRM application.

End of procedure

Next Steps

- You have completed all the steps to stop LRM using SCI.

Stopping LRM on Linux

Stop LRM on Linux by using one of the following procedures.

Procedure:
Stopping LRM on Linux from the command line

Start of procedure

- On the command line, enter the following:

  `kill -SIGTERM <processid>`

  Where `<processid>` is the application's Linux process ID.

End of procedure

Next Steps

- You have completed all the steps to stop LRM from the command line.

Procedure:
Stopping LRM on Linux from the console window

Start of procedure

- From the active console window, press `CTRL+C`.

End of procedure

Next Steps

- You have completed all the steps to stop LRM from the console window.

Note: If you are using LCA and SCS, you can also use SCI to stop LRM (see "Stopping LRM with SCI" on page 44).

Stopping LRM on Windows

If LRM is running as an application—not as a Windows Service—stop it using the following procedure.

Procedure:
Stopping LRM on Windows from the console window

Start of procedure

- From the application's console window, press `CTRL+C`.

End of procedure

Next Steps

- You have completed all the steps to stop LRM from the console window.

Note: If you are running LRM as a Windows Service, you should stop it only from the Services Control Manager (see "Stopping LRM as a Windows Service" below).

Stopping LRM as a Windows Service

To stop Interaction Concentrator running as a Windows Service, use the following procedure.

Procedure: Stopping LRM running as a Windows service

Start of procedure

1. Open the `Control Panel`, and then double-click the `Services` LRM. The `Services` dialog box opens.
2. In the `Services` list box, select your LRM service, and then click `Stop`.

End of procedure

Next Steps

- You have completed all the steps to stop LRM running as a Windows Service.

Chapter

6 Configuration Options

This chapter describes the configuration options that you can set for effective operation of LRM. It contains the following sections:

LRM Configuration Options

The LRM configuration options are defined in the `[lrm]` section as follows:

lrm-excluded-time-1

Default Value: None.
Valid Value: `HH:MM:SS;Duration`(seconds)-for example:`18:00:00;600`
Changes Take Effect: After restart
Specifies the time interval (the start time and duration in seconds) in which the peak values of sellable items will not be considered as maximum values. Maximum duration = 900 seconds.

lrm-excluded-time-2

Default Value: None.
Valid Value: `HH:MM:SS;Duration`(seconds)-for example:`18:00:00;600`
Changes Take Effect: After restart
Specifies the time interval (the start time and duration in seconds) in which the peak values of sellable items will not be considered as maximum values. Maximum duration = 900 seconds.

lrm-excluded-time-3

Default Value: None.
Valid Value: `HH:MM:SS;Duration`(seconds)-for example:`18:00:00;600`
Changes Take Effect: After restart

Specifies the time interval (the start time and duration in seconds) in which the peak values of sellable items will not be considered as maximum values. Maximum duration = 900 seconds.

lrm-network-switch

Default Value: `false`
Valid Value: `false` or `true`
Changes Take Effect: After restart
Specifies the presence of the network switch under LRM.

schedule

Default Value: `01:00`
Valid Value: `HH:MM[:SS]`
Changes Take Effect: After restart
Specifies the time of day when the LRM executes the statistics gathering job.

nightly_data_calculation_max_days

Default Value: `7`
Valid Value: `Integer`
Changes Take Effect: After restart
Specifies the maximum number of days the nightly scheduled job will calculate ICON and GVP data for, if the LRM missed calculating data for some days.

first_time_data_calculation_max_days

Default Value: `2`
Valid Value: `Integer`
Changes Take Effect: After restart
Specifies the maximum number of days the nightly scheduled job will calculate ICON and GVP data for the first time the LRM runs the statistics job.

schedule-retry-max

Default Value: `0`
Valid Value: `Integer`
Changes Take Effect: After restart
Specifies the number of times the LRM should attempt to retry the nightly statistics gathering job if it fails.

schedule-retry-delay

Default Value: `30`
Valid Value: `Integer`
Changes Take Effect: After restart
Specifies the delay in minutes after the previous statistics job has failed before it tries to run the job again.

DAP Configuration Options

The LRM DAP configuration option is defined in the `[lrm]` section as follows:

role

Default Value: `main`
Valid Value: `main` or `icon`

Changes Take Effect: Immediately

Specifies the role of the DAP.

Genesys

Supplements

Related Documentation Resources

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

License Reporting Manager

- *License Reporting Manager 8.1 User's Guide*
- *License Reporting Manager 8.1 Physical Data Model for a Microsoft SQL Database*
- *License Reporting Manager 8.1 Physical Data Model for a PostgreSQL Database*
- *License Reporting Manager 8.1 Physical Data Model for an Oracle Database*
- *License Reporting Manager 8.1 Log Events Help*
- Release Notes and Product Advisories for this product, which are available on the Genesys Technical Support website at http://genesyslab.com/support.

Interaction Concentrator

- The *Interaction Concentrator 8.x 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 8.x 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 8.x Physical Data Model* for your relational database management system (RDBMS) provides information about the IDB schemas.

Genesys

- *Genesys Technical Publications Glossary,* which ships on the Genesys Documentation Library DVD and which provides a comprehensive list of the Genesys and computer-telephony integration (CTI) terminology and acronyms used in this document.
- *Genesys Migration Guide*, which ships on the Genesys Documentation Library DVD, and which provides documented migration strategies for Genesys product releases. Contact Genesys Technical Support for more information.

Information about supported hardware and third-party software is available on the Genesys Technical Support website in the following documents:

- *Genesys Supported Operating Environment Reference Guide*
- *Genesys Supported Media Interfaces Reference Manual*

Consult these additional resources as necessary:

- *Genesys Events and Models Reference Manual*, which includes a set of basic interaction models, showing the components involved and the event messages sent among them. These models and events were formerly presented in the *Open Media Interaction Models Reference Manual*. The request messages that were also described in that book are now documented in the API References of the Platform SDK.

For additional system-wide planning tools and information, see the release-specific listings of System Level Documents on the Genesys Technical Support website. These documents are accessible from the `system level documents by release` tab in the Knowledge Base `Browse Documents` Section.

Genesys product documentation is available on the:

- Genesys Technical Support website at `http://genesyslab.com/support`.
- Genesys Documentation wiki at `http://docs.genesyslab.com/`.
- Genesys Documentation Library DVD and/or the Developer Documentation CD, which you can order by e-mail from Genesys Order Management at `orderman@genesyslab.com`.

Document Conventions

This document uses certain stylistic and typographical conventions—introduced here—that serve as shorthands for particular kinds of information.

Document Version Number

A version number appears at the bottom of the inside front cover of this document. Version numbers change as new information is added to this document. Here is a sample version number:

80fr_ref_06-2008_v8.0.001.00

You will need this number when you are talking with Genesys Technical Support about this product.

Screen Captures Used in This Document

Screen captures from the product graphical user interface (GUI), as used in this document, may sometimes contain minor spelling, capitalization, or grammatical errors. The text accompanying and explaining the screen captures corrects such errors *except* when such a correction would prevent you from installing, configuring, or successfully using the product. For example, if the name of an option contains a usage error, the name would be presented exactly as it appears in the product GUI; the error would not be corrected in any accompanying text.

Type Styles

Table 3 describes and illustrates the type conventions that are used in this document.

Table 3: Type Styles

Type Style	Used For	Examples
Italic	• Document titles • Emphasis • Definitions of (or first references to) unfamiliar terms • Mathematical variables Also used to indicate placeholder text within code samples or commands, in the special case where angle brackets are a required part of the syntax (see the note about angle brackets on page 56).	Please consult the *Genesys Migration Guide* for more information. Do *not* use this value for this option. A *customary and usual* practice is one that is widely accepted and used within a particular industry or profession. The formula, $x + 1 = 7$ where x stands for . . .

Table 3: Type Styles (Continued)

Type Style	Used For	Examples
Monospace font (Looks like `teletype` or `typewriter text`)	All programming identifiers and GUI elements. This convention includes: • The *names* of directories, files, folders, configuration objects, paths, scripts, dialog boxes, options, fields, text and list boxes, operational modes, all buttons (including radio buttons), check boxes, commands, tabs, CTI events, and error messages. • The values of options. • Logical arguments and command syntax. • Code samples. Also used for any text that users must manually enter during a configuration or installation procedure, or on a command line.	Select the `Show variables on screen` check box. In the `Operand` text box, enter your formula. Click `OK` to exit the `Properties` dialog box. T-Server distributes the error messages in `EventError` events. If you select `true` for the `inbound-bsns-calls` option, all established inbound calls on a local agent are considered business calls. Enter `exit` on the command line.
Square brackets ([ ])	A particular parameter or value that is optional within a logical argument, a command, or some programming syntax. That is, the presence of the parameter or value is not required to resolve the argument, command, or block of code. The user decides whether to include this optional information.	`smcp_server -host [/flags]`
Angle brackets (< >)	A placeholder for a value that the user must specify. This might be a DN or a port number specific to your enterprise. **Note:** In some cases, angle brackets are required characters in code syntax (for example, in XML schemas). In these cases, italic text is used for placeholder values.	`smcp_server -host <confighost>`

Index

Symbols

A

B

C

D

F

H

I

L

M

P

S

T

V

W