Deployment Guide

License Reporting Manager 8.5.0

9/23/2016

Table of Contents

Table of Contents

LRM Deployment Guide

Use for a License Reporting Manager overview and deployment details.

LRM Deployment

Standard overview and deployment details.

Customization

Additional customization details.

Change History

Find information about what has changed in this release of the content.

What is LRM?

License Reporting Manager (LRM) measures and stores usage data for licensed Genesys products and user-defined bundles, providing Genesys users with license usage reports for compliance monitoring, and Hosted Service Providers with usage data that can be used for billing end customers.

LRM is a server application that uses data from the Interaction Concentrator Database (IDB), GVP Reporting Server, 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).

> **Important**
>
> LRM does not support ADDP (Advanced Disconnect Detection Protocol).

LRM automatically retrieves configuration data for the various Genesys components at the 0, 10, 20, 30, 40, and 50 minute marks of every hour, which is used by LRM to calculate concurrent seat usage during a nightly statistics job. You can schedule the nightly statistics job 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 concurrent peak usage for certain sellable items.
- Generates concurrent peak usage data for various sellable items 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 levels.
  - Calculates and stores the daily value for all user-defined bundles at the tenant and system levels. See Predefined and User-Defined Bundles for details.
    Note: For LRM to retrieve data from ICON, the ICON DB must be running and available, although ICON itself is not required.

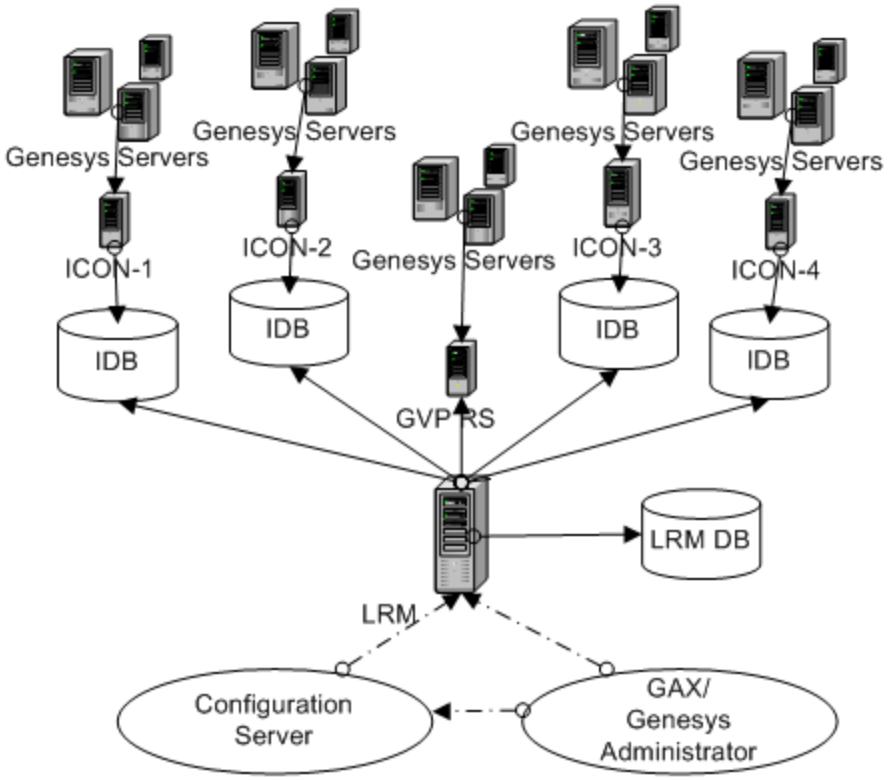
- Generates concurrent peak usage data for some sellable items for GVP, for the GVP Reporting Server, and GVP-related sellable item:
    - Creates HTTP requests for each of these sellable items, all the tenants, and the system.
    - Stores the data in the LRM DB.
- Generates enabled seat count data for sellable items from Configuration Server:
    - Takes a snapshot of the Places and DN objects in configuration.
    - Stores the data in the LRM DB.
- Generates Agent Groups and Place Groups usage data if the configuration options are set to enable this functionality.

LRM also accepts HTTP requests for reports and generates HTTP responses containing these reports. The LRM Plug-in for GAX 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 Architecture

The following is a diagram of the LRM architecture diagram. Any functionality not shown in the diagram is designed to support ease of installation.



1. ICON 1–4: Independent Interaction Concentrator instances
2. IDB: Interaction Concentrator databases
3. LRM: License Reporting Manager
4. LRM DB: LRM database
5. GVP RS: GVP Reporting Server instance

LRM Components

[+] License Reporting Manager

The License Reporting Manager (LRM) server is a standalone server that performs the following functions:

- Reads the license file imported into Genesys Configuration Server, extracts the entitlement information from the license file, and stores the entitlement information to be used by the LRM.
- 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 LRM Plug-in for GAX.
- Confirms the availability of the following and generates a message after thirty minutes of failure:
  - JDBC connection to all configured ICON databases
  - JDBC connection to the LRM database
  - Write access to the JOURNAL table of the LRM database
  - Read access to object on Configuration Server

[+] LRM Database

The LRM Database stores summarized data calculated by LRM.

[+] LRM Plug-in for GAX

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

- Upload a Bundles XML file.
- Generate a License Usage Report.
- Provide Agent and Place group reporting.
- Modify the Provisional Count for tenants.

Associated Components

[+] Genesys Administrator Extension (GAX)

- Installs and configures ICON and LRM using a wizard for ease of installation
- Displays on-demand reports to the user, by retrieving data from the LRM via the HTTP Web Services API.
- Provides custom screens to allow provisioning of tenant usage limits
- Provides custom screens to upload files representing bundle definitions.

[+] Management Framework

Use Management Framework to obtain entitlement information from the license file provided by Genesys Management Framework. See the *Entitlement Information* tab on this page for details.

Important

To successfully install and use Management Framework 8.5.x, you must install and have LRM 8.5.x running. For Management Framework 8.1.x or earlier, you must use LRM 8.1.x.

[+] Configuration Server

Use Configuration Server to perform the following tasks:

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

Loading Configuration Objects from Configuration Server

LRM reads the license file stored on Configuration Server, extracts the entitlement sellable item information from the license file, and stores the entitlement information to be used by the LRM. See the Genesys Licensing Guide available on the Genesys System-Level Guides page for additional details about license files.

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.

[+] Interaction Concentrator and the Interaction Concentrator database

ICON collects run-time information from Genesys Servers and stores the information in the Interaction Concentrator database (IDB). LRM retrieves data from the IDB to perform calculations for the various sellable items. ICON does not have to be running for LRM to retrieve data from the IDB. LRM supports ICON servers in high availability without counting duplicate records which exist in more than one ICON server.

The table below lists the database tables from which LRM extracts data to generate reports, and the purpose of the extracted data.

IDB Tables and Data Extracted by LRM

Table name	Purpose of extracted data
G_LOGIN_SESSION	For login sessions
G_AGENT_STATE_RC	To determine the usage of Genesys Agent Desktop or Genesys Supervisor Desktop
G_DSS_GOS_PROVIDER	To determine the data gap
G_DSS_GLS_PROVIDER	To determine the data gap
GO_CAMPAIGN	To determine the usage of Outbound sellable items
GX_SESSION_ENDPOINT	To determine the usage of Web and E-mail sellable items

[+] GVP Reporting Server

LRM collects HTTP reports from GVP Reporting Server to obtain concurrent peaks for GVP-related sellable items. GVP Reporting Server performs the concurrent peak calculations that are required by LRM. LRM collects and stores these results in the LRM DB. LRM supports the high availability setup of GVP Reporting Server, which is set up with HTTP basic authentication.

Important

- Historical reporting must be enabled on the GVP Reporting Server for LRM and GVP to work

together. To enable historical reporting on GVP Reporting Server, do not run GVP Reporting Server in *nodb* mode; that is, set the **[persistence] rs.nodb.enabled** option to `false` (the default value).
- GVP Reporting Server must be running for LRM to collect data.

[+] Genesys Servers

Genesys Servers 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, and GVP Media Control Platform.

[+] Genesys Administrator

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

[+] Message Server

Message Server receives log output from the LRM Report Generator.

High Availability - LRM

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 LRM Plug-in for GAX 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 does not respond to any incoming report requests from the LRM Plug-in for GAX.

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.

LRM supports ICON servers in a high availability configuration without counting duplicate records which exist in more than one ICON server. LRM also supports the primary/backup setup of the GVP Reporting Server, and GVP Reporting Server set up with HTTP basic authentication.

Entitlement Information

The entitlement information for your system describes how many seats of each sellable item it is entitled to use. LRM measures the usage of your system for each sellable item comparing it to the entitled amount.

LRM obtains entitlement information from the license file provided by Genesys Management Framework. The system operator must import the license file to their Configuration Server database using their provided tools. See Management Framework documentation on how to do this. The import process writes the license file content to one of the options of the Configuration Server object.

An existing license file is valid when it meets the following conditions:

- The file generated date is in the past.
- The string `genesys.d` is in each technical license feature line.
- The expiration date of at least one technical license line is in the future.

LRM checks for updates in the imported license file on the Configuration Server every 10 minutes. When LRM detects an updated license file, it imports the content of the license file into the LRM entitlement data on configuration server for use in future entitlement calculations. LRM imports the data from each entitlement record into a single transaction object. The transaction object is named `lrm-entitlement-<id>` where the `<id>` is calculated from the license text.

If there is a problem while parsing the license file, an error is logged in the LRM log file, the license is not imported, and LRM uses previous entitlement information. License file problems can include format errors, or no valid sellable items recognized by LRM.

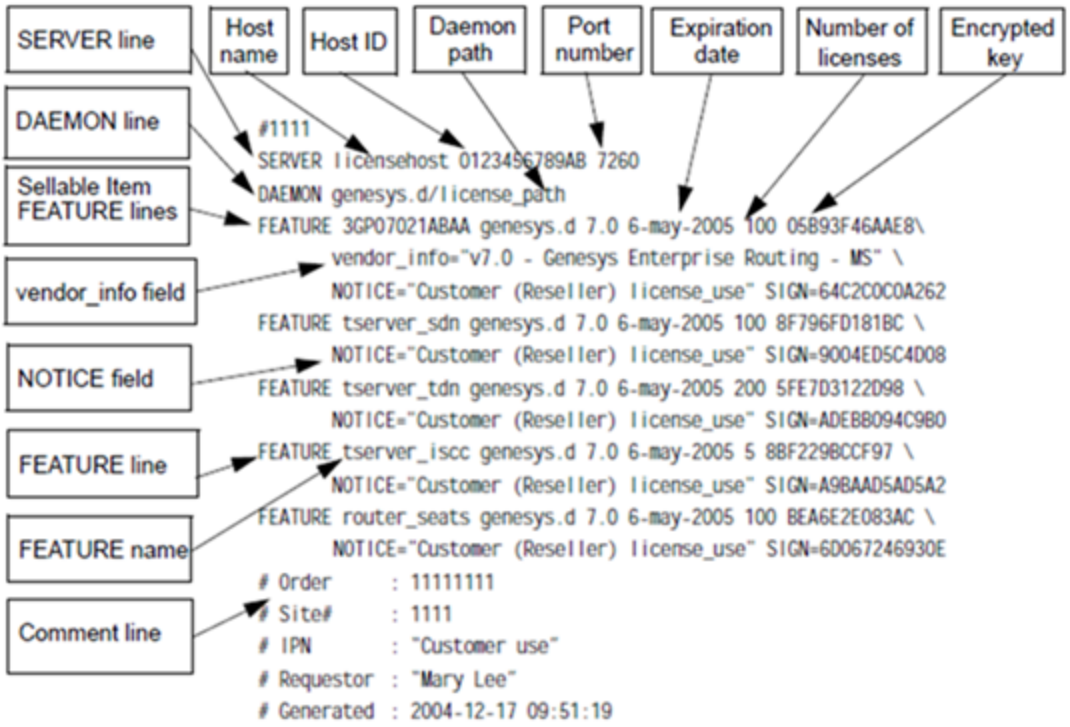
License File Example

[+] License file example

In this example, LRM verifies the license file by checking the technical lines for genesys.d, valid future dates, and the file generated date. LRM selects “CIM Platform – MS” as the product license and the quantity 100 as the entitlement reference data for use in LRM reports.

```
SERVER hostname 0123456789AB
DAEMON genesys.d/license_path
FEATURE 3GP08394ADAA genesys.d 8.0 1-dec-2000 100 0123456789AB \
               vendor_info= " v8.0 SIP Server" \
               NOTICE="Customer (Reseller) license_use" SIGN=0123456789AB
FEATURE 3GP08394ADAA genesys.d 8.0 1-dec-2000 100 0123456789AB \
               vendor_info= " v8.0  CIM Platform - MS" \
               NOTICE="Customer (Reseller) license_use" SIGN=0123456789AB
 FEATURE tserver_sdn genesys.d 8.0 1-dec-2000 15000 EED4CB263FBA \
               NOTICE="Customer (Reseller) license_use" SIGN=0123456789AB
FEATURE tserver_tdn genesys.d 8.0 1-jan-2020 999999 A38192807F61 \
               NOTICE="Customer (Reseller) license_use" SIGN=0123456789AB
FEATURE tserver_iscc genesys.d 8.0 1-jan-2020 999999 84AF27E990C7 \
               NOTICE="Customer (Reseller) license_use" SIGN=0123456789AB
FEATURE cti_ha_option genesys.d 8.0 1-jan-2020 999999 2DF38A08C725 \
               NOTICE="Customer (Reseller) license_use" SIGN=0123456789AB
#
#  Order    : 11111111
#  Site#    : 1111
#  IPN      : "Customer (Reseller) license_use "
#  Requestor: "Mary Lee"
#  Generated: 2004-12-17 09:51:19c
```

[+] License file description



Important

To create entitlement data for License Reporting Manager (LRM) release 8.1.2 or earlier, see Creating the Entitlement File in the *License Reporting Manager 8.1.2 Deployment Guide*.

Concurrent-Seat Calculations

License Reporting Manager uses the concurrent-seat measurement to indicate concurrent peak usage and time of the concurrent peak usage (rounded to the previous one-minute boundary). LRM determines peak concurrent-seat usage by calculating the actual number of seats instantaneously in use at one minute intervals.

A seat is a physical chair whose occupant is logged in to T-Server, Interaction Server, or SIP Server and provides data on Place and DN details. A login session includes login from a:

- DN that is associated with a Place.
- DN that is not associated with a Place.
- Place that is not associated with a DN.

LRM assumes that each login session has a unique ID. Seat usage is based on a Place; when a Place is not available in the login session, seat usage is based on a DN.

The table below shows how the seat usage is determined by the Place and DN data in the login session.

Seat Calculations

Place name	DN name	Seat for which this login session is counted
Place 1	DN1DN2DN3	Seat 1
	DN4	Seat 2
Place 1		Seat 1

- For login sessions from DNs associated with Place1—DN1, DN2 or DN3—These are considered single seat usage. During calculation, LRM uses seat usage based on a *Place*.
- For login sessions from DNs not associated with a Place (separate seat per DN), LRM uses seat usage based on a *DN*.
- For login sessions from a Place. For example, for an Interaction Server login session, LRM uses seat usage based on a *Place* calculation type.

You can configure LRM to calculate the number of concurrent seats. To calculate concurrent seats, LRM records the peak number of logged-in seats for each 24 hour interval, and the time of the concurrent peak usage.

LRM calculates concurrent seats by performing the following:

1. Selects the available login sessions by using the following criteria:
    - Time frame—LRM selects login sessions from the `G_LOGIN_SESSION` table of the Interaction Concentrator database that have at least a one second overlap with a given time interval. The login sessions that were started or terminated exactly at the edges of the given time interval are not counted. For example, to receive login sessions for 08/08/10, the following criteria is used:
        - Start time < 08/09/10 00:00:00 and termination time (or sessions not yet terminated) > 08/08/10 00:00:00
        - All sessions in which termination time = 08/08/10 00:00:00 and start time = 08/09/10 00:00:00 are excluded.
          Note: Sessions that are not terminated, but started nine hours before the reporting day, are treated as stuck sessions and are not counted for concurrent-seat usage.

        - Place and DN filter combination—LRM selects login sessions based on seat calculations.
    - Applies the particular sellable item criteria.
    - Calculates and stores the number of active login sessions in the LRM database.
2. Applies the particular sellable item criteria.
3. Calculates and stores the number of active login sessions in the LRM database.

Concurrent Peak Use Calculation

A data snapshot of concurrent peak use is used to calculate concurrent-seat measurements. Concurrent peak use is determined as the actual peak during the 24-hour period, using a continuously updated record of seats in use according to the license definitions. The data snapshot of concurrent peak use is an instantaneous snapshot taken at one-minute intervals.

The concurrent peak use calculation includes a method of filtering or minimizing the weight of concurrent-seat peak values, possibly on predefined time intervals. For example, during Agent shift change overlaps. This filtering mechanism is enabled by configuring the `lrm-excluded-time` option. For more information about how to configure this option, see Configuration Options.

To calculate concurrent seats peak usage data for a given period, the date and hour of concurrent peak usage during that period is also recorded.

Concurrent-Seat Processing

This section describes how concurrent seats are calculated based on sellable items.

Agent Connector

License Reporting Manager measures and generates usage reports for Agent Connector. An Agent Connector seat is a physical seat occupied by a person who is not using a Genesys Agent Desktop, Genesys Supervisor Desktop, or Interaction Workspace for the log-in.

Use is measured from the time the person logs in until the time the person logs out. If the seat has an associated place, usage is based on the place. If the seat does not have a place, usage is based on the person's voice session.

Call Qualification Parking

License Reporting Manager measures and generates usage reports for simultaneous sessions using Genesys Media Server providing the following services:

- Video on hold
- DTMF digit collection
- Prompts and Announcements
- Audio streaming on hold

License Reporting Manager determines the number of simultaneous Media Server ports in use providing one of the above services and the associated time stamps that have a resolution of one minute or less. The calculation indicates the maximum number of Media Server ports simultaneously in use within a given reporting interval, and the date and time the maximum use occurred. If the maximum number of simultaneous resources used of a given type occurs on more than one occasion, LRM reports the date and time of the latest occasion on which the maximum count was reached.

> **Important**
>
> LRM stores only DAY, WEEK, and MONTH for this sellable item.

Chat Media Type for Interaction Server

A Genesys Web Media seat is a physical seat that is occupied by a person who is configured as an Agent, logged into Interaction Server, and associated with a media channel of type chat.

Use of a Genesys Web Media seat is measured from the time the Agent logs in until the time the Agent logs out. If an Agent logs in to Interactions Server using other media, but the Agent added chat media later during a login session, the entire duration of the login session are counted as consuming a Genesys Web Media seat license. Use is based on the Place from which the Agent logs in.

The calculation of Genesys Web Media Concurrent seats includes the use of a Genesys Web Media seat. The calculation provides the maximum number of Genesys Web Media seats simultaneously in use within a given reporting interval, and the date and time the maximum use occurred.

Computer Telephony Integration Contact-Center Legacy

A Computer Telephony Integration (CTI) seat refers to a physical seat that is occupied by an Agent who is logged in to a T-Server, SIP Server or Interaction Server in a tenant for which at least one tenant-specific instance (in other words, has only this tenant in the tenant list) of Universal Routing Server (URS) is configured with a connection to a database access point (DAP).

LRM provides a report of a CTI seat that is based on the presence of a DAP connection and applies to all of the logged in seats in a given tenant. The report does not depend on whether database queries were actually performed in the process of routing calls to a given seat.

Use is measured from the time the person logs in until the time the person logs out. If the DN from which the Agent logs in has an associated Place configured in Configuration Database, use is based on the Place. If the DN does not have a Place configured in Configuration Database, use is based on the DN from which the Agent logs in. A login is counted as using a license even if the Agent who logs in is not configured in Configuration Database.

If a URS with a DAP connection is associated with multiple tenants, LRM does not report any usage of CTI seat licenses associated with that URS instance.

If a tenant has multiple URS instances with DAP connections, LRM reports one CTI seat license per logged-in seat.

The calculation of CTI Concurrent seats includes any use of a CTI seat that indicates the maximum number of CTI seats simultaneously in use within a given reporting interval, and the date and time the maximum use occurred.

E-Mail Media Type for Interaction Server

A Genesys E-Mail seat is a physical seat that is occupied by a person who is configured as an Agent, logged in to Interaction Server, and associated with a media channel of type email.

Use of a Genesys E-Mail seat is measured from the time the Agent logs in until the time the Agent logs out. If an Agent logs in to an e-mail media channel at any time during a login session, the entire duration of the login session are counted as consuming a Genesys E-Mail seat license. Use is based on the Place from which the Agent logs in.

The calculation of Genesys E-Mail Concurrent seats includes any use of a Genesys E-Mail seat that indicates the maximum number of Genesys E-Mail seats simultaneously in use within a given reporting interval, and the date and time the maximum use occurred.

Genesys Agent Desktop and Genesys Supervisor Desktop

License Reporting Manager measures and generates usage reports for Genesys Agent Desktop and Genesys Supervisor Desktop.

A Genesys Agent Desktop seat is a physical seat that is occupied by a person who is configured as an Agent and logged in to a T-Server, SIP Server or Interaction Server through Genesys Agent Desktop. A Genesys Supervisor Desktop seat is a physical seat that is occupied by a person who is configured as a Supervisor and logged in to a T-Server, SIP Server or Interaction Server through Genesys Supervisor Desktop.

Genesys Agent Desktop and Genesys Supervisor Desktop sellable items are associated with a Place. If a login session from a particular Place has a special Reason Code, this Place is calculated as a Genesys Desktop item.

If two different Genesys applications login to the same Place (in other words, one application initiates an Open Media session and the other application initiates a voice session), the two applications are calculated as one Genesys Desktop sellable item because both applications are logged into and are using the same Place.

Genesys CIM Platform - Single-Site and Multi-Site

A CIM Platform has two kinds of seats: Single-Site (SS) seat and Multi-Site (MS) Concurrent seat. Each is a physical seat occupied by a person who is logged in to a T-Server, SIP Server, or Interaction Server in a location that is defined as SS for Single-Site or MS for Multi-Site in the Genesys Entitlement File. Use is measured from the time the person logs in until the time the person logs out. If the DN from which the Agent logs in has an associated Place configured in Configuration Database, use is based on the Place. If the DN does not have a Place configured in Configuration Database, use is based on the DN from which the Agent logs in.

For the CIM Platform - MS or SS Concurrent seats, LRM provides a report that shows the maximum number seats (MS or SS) simultaneously in use within a given reporting interval, and the date and time the maximum use occurred.

LRM determines if the site is defined as Single-Site or Multi-Site by examining data in the entitlement tables (which contain(s) the data from the Entitlement File). When the site has been defined as SS or MS, all of the login sessions from the preselected set are calculated as a Genesys CIM Platform - SS or MS sellable items.

Genesys Inbound Voice

A Genesys Inbound Voice seat is a physical seat whose occupant is logged in to any T-Server other than SIP Server. Use of a Genesys Inbound Voice seat is measured from the time the Agent logs in until the time the Agent logs out. If the DN from which the Agent logs in has an associated Place configured in Configuration Database, use is based on the Place. If the DN does not have a Place configured in Configuration Database, use is based on the DN from which the Agent logs in. A login is counted as using a license even if the Agent who logs in is not configured in Configuration Database.

The calculation of Genesys Inbound Voice concurrent seats includes any use of a Genesys Inbound Voice seat that indicates the maximum number of Genesys Inbound Voice seats simultaneously in use within a given reporting interval, and the date and time the maximum use occurred.

Because SIP Server and T-Server have the same application type in Configuration Database, to distinguish between the two different server types LRM uses the switch type information where the login occurred.

Genesys Info Mart

A Genesys Info Mart seat is a physical seat occupied by a person who is configured as an Agent and logged in to a Genesys deployment where at least one instance of the Genesys Info Mart application is configured. Use is measured from the time the person logs in until the time the person logs out. If the seat has an associated place, usage is based on the place. If the seat does not have a place, usage is based on the person’s voice session.

Genesys Interaction Workspace

A Genesys Interaction Workspace seat is a physical seat that is occupied by a person who is configured as an Agent and logged in to a T-Server, SIP Server or Interaction Server through Interaction Workspace. Use is measured from the time the person logs in until the time the person logs out. If the seat has an associated place, usage is based on the place. If the seat does not have a place, usage is based on the person’s voice session.

Genesys Interactive Insights

A Genesys Info Mart seat is a physical seat that is occupied by a person who is configured as an Agent and logged in, in a Genesys deployment where at least one instance of the Genesys Info Mart application is configured and Interactive Insights is defined in the Entitlement File.

Use is measured from the time the person logs in until the time the person logs out. If the seat has an associated place, usage is based on the place. If the seat does not have a place, usage is based on the person's voice session.

Genesys Network Voice

A Genesys Network Voice seat is a physical seat occupied by an Agent who is configured as an Agent and is logged in to a T-Server other than SIP Server, on a system that has one or more (non-SIP) Network T-Servers configured. Use of a Genesys Network Voice seat is measured from the time the Agent logs in until the time the Agent logs out. If the DN from which the Agent logs in has an associated Place configured in Configuration Database, use is based on the Place. If the DN does not have a Place configured in Configuration Database, use is based on the DN from which the Agent logs in.

Limitation

There is no reliable way to determine a Network Switch or a Network T-Server. However, it is possible to configure the Network Switch as a Voice switch in Configuration Database. You can also enable LRM to count Genesys Network Voice sellable items by setting the LRM lrm-network-switch option to true. Refer to the License Reporting Manager 8.1 Deployment Guide for more information about how to configure this option.

Genesys Outbound Contact - Multi-Site

A Genesys Outbound Contact - Multi-Site (MS) seat is a physical seat a person logs into a Genesys T-Server, where at least one of the following conditions is true:

- The person who logs in is an Agent who is a member of an Agent Group that is associated with at least one Outbound Contact Service Campaign Group that was loaded during this login session.
- The Place the login occurs is a member of a Place Group that is associated with at least one Outbound Contact Service Campaign Group that was loaded during this login session.

And a site type that is defined as MS (Multi-Site) in the Genesys Entitlement File.

Use of a Genesys Outbound Contact - MS seat is measured from the time the person logs in until the time the person logs out, regardless of when the Campaign Group was loaded or unloaded.

> **Important**
>
> If the DN from which the person logs in has an associated Place configured in Configuration Database, use is based on the Place. If the DN does not have a Place configured in Configuration Database, LRM does not report usage of an Outbound Contact - MS seat license, because OCS does not deliver calls to that DN.

The calculation of Genesys Outbound Contact - MS Concurrent seats includes any use of a Genesys Outbound Contact - MS seat that shows the maximum number of Genesys Outbound Contact - MS seats simultaneously in use within a given reporting interval, and the date and time the maximum use occurred.

Genesys SIP Server

A SIP Server seat is a physical seat whose occupant is logged in to SIP Server. Use of a SIP Server seat is measured from the time the Agent logs in until the time the Agent logs out. If the DN from which the Agent logs in has an associated Place configured in Configuration Database, use is based on the Place. If the DN does not have a Place configured in Configuration Database, use is based on the DN from which the Agent logs in. A login is counted as using a license even if the Agent who logs in is not configured in Configuration Database.

The calculation of SIP Server Concurrent seats includes any use of a SIP Server seat that indicates the maximum number of SIP Server seats simultaneously in use within a given reporting interval, and the date and time the maximum use occurred.

Genesys Social Media

A Genesys Social Media seat is a physical seat occupied by a person who is configured as an Agent logged in to Interaction Server and associated with a media channel of type other than email, chat, or voice and the sub-type of the login is facebook, twitter, or rss.

Use is measured from the time the person logs in until the time the person logs out. If an agent logs into a media channel other than email, chat, or voice with a subtype of facebook, twitter, or rss at any time during a login session, the entire duration of the login session is counted as consuming a Genesys Social Media seat license.

The Genesys Social Media seat usage is based on the place the agent logs in. One Genesys Social Media seat license is required for each Genesys Social Media in each place, regardless of the number of media types supported by each system.

The calculation of Genesys Social Media seats includes any use of a Genesys Social Media seat indicates the maximum number of Genesys Social Media seats simultaneously in use within a given reporting interval, and the date and time the maximum use occurred.

Genesys Workforce Management

A Workforce Management seat is a physical seat that is occupied by a person who is logged in to a T-Server, SIP Server, or Interaction Server where WFM Data Aggregator is configured with a connection to a Stat Server that is associated with the person's tenant. When these conditions are met, LRM treats all logins within the tenant as utilizing a Workforce Management seat license, regardless of the identity of the person who is logging in. Use is measured from the time the person logs in until the time the person logs out.

If the seat has an associated Place configured in Configuration Database, usage count is based on the Place. If the seat does not have a Place configured in Configuration Database, usage count is based on the DN on which the person is logged in.

LRM provides a report of Workforce Management Concurrent seats that indicates the maximum number of persons simultaneously logged into T-Server, SIP Server, or Interaction Server in a tenant that has Genesys Workforce Management configured.

GVP Ports

License Reporting Manager measures and generates usage reports for simultaneous sessions using Genesys Voice Platform. License Reporting Manager determines the number of simultaneous GVP ports in use providing VoiceXML services and the associated time stamps that have a resolution of one minute or less.

The calculation indicates the maximum number of GVP ports simultaneously in use within a given reporting interval, and the date and time the maximum use occurred. If the maximum number of simultaneous resources used of a given type occurs on more than one occasion,

LRM reports the date and time of the latest occasion on which the maximum count was reached.

> **Important**
> LRM stores only DAY, WEEK, and MONTH for this sellable item.

GVP TTS and ASR Ports

License Reporting Manager measures and generates usage reports for simultaneous sessions using GVP text-to-speech (TTS) and automatic speech recognition (ASR) resources.

Use is measured from the time the resource is included in the call flow until the time the resource is released from the call flow. License Reporting Manager determines the number of simultaneous GVP resources of each type in use and the associated time stamps that have a resolution of one minute or less.

The calculation of resources includes any use of a GVP resource that indicates the maximum number of GVP resources simultaneously in use within a given reporting interval, and the date and time the maximum use occurred. If the maximum number of simultaneous resources used of a given type occurs on more than one occasion, LRM reports the date and time of the latest occasion on which the maximum count was reached.

> **Important**
> LRM stores only DAY, WEEK, and MONTH for this sellable item.

High Availability

A High Availability seat is a physical seat that is occupied by a person who is configured as an Agent and logged in to a T-Server or SIP Server configured in high availability mode.

Use is measured from the time the person logs in until the time the person logs out. If the seat has an associated place, usage is based on the place. If the seat does not have a place, usage is based on the person’s voice session.

QM Call Recording

License Reporting Manager measures and generates usage reports for simultaneous sessions using QM Call Recording, by measuring the number of simultaneous sessions using Genesys Media Server providing the Recording service.

License Reporting Manager determines the number of simultaneous Media Server ports in use providing the above services and the associated time stamps that have a resolution of one minute or less.

The calculation indicates the maximum number of Media Server ports simultaneously in use within a given reporting interval, and the date and time the maximum use occurred. If the maximum number of simultaneous resources used of a given type occurs on more than one occasion, LRM reports the date and time of the latest occasion on which the maximum count was reached.

> **Important**
>
> LRM stores only DAY, WEEK, and MONTH for this sellable item.

Skills-Based Routing

A Skills Based Routing seat refers to a physical seat that is occupied by a person who is logged in to a T-Server, SIP Server or Interaction Server and has at least one Skill configured.

LRM provides a report of a Skills-Based Routing seat based on the configuration of the Skills of the Agent who is logged in. The report does not take into account whether the skills were actually considered in the process of routing calls to a given seat.

Use is measured from the time the person logs in until the time the person logs out. If the DN from which the Agent logs in has an associated Place configured in Configuration Database, use is based on the Place. If the DN does not have a Place configured in Configuration Database, use is based on the DN from which the Agent logs in.

The calculation of Skills-Based Routing Concurrent seats includes any use of a Skills-Based Routing seat that indicates the maximum number of Skills-Based Routing seats simultaneously in use within a given reporting interval, and the date and time the maximum use occurred.

Tenant-License Usage

License Reporting Manager measures and generates usage reports for purchased quantities and actual usage quantities of tenant licenses.

During creation of a daily or monthly usage report in its database, LRM includes the purchased license quantity that was in effect for the interval that is being reported, as follows:

- If a single purchased license quantity was in effect for the entire duration of the report interval, LRM reports that value as the purchased license quantity.
- If more than one purchased license quantity was in effect during the report interval, LRM reports the value that was in effect at the end of the report interval.
- If the purchased license quantity in effect at the time of report creation is different from the value that was in effect at the time of the interval being reported, LRM uses the value that was in effect for the interval being reported.

LRM does not regenerate existing usage reports stored in its database when purchased license quantities are changed.

Third-Party Work Items

A third-party work items seat is a physical seat that is occupied by a person, who is configured as an Agent logged in to Interaction Server, and associated with a media channel of type other than email, chat, or voice.

Use is measured from the time the person logs in until the time the person logs out. If an agent logs into a media channel other than email, chat, or voice at any time during a login session, the entire duration of the login session is counted as consuming a third-party work item seat license.

The third-party work item seat usage is based on the place from which the agent logs in. One third-party work item seat license is required for each third-party system in each place, regardless of the number of media types supported by each system.

The calculation of third-party work item seats includes any use of a third-party work item seat that indicates the maximum number of third-party work item seats simultaneously in use within a given reporting interval, and the date and time the maximum use occurred.

Enabled-Seat Calculations

LRM calculates the number of enabled seats by looking at the DN and Places configurations in the Configuration Server. For the purpose of counting enabled seats, a seat is defined as either of the following objects configured in the Configuration Server:

- Place associated with at least one DN.
- DN not associated with a Place.

License Reporting Manager can count the number of enabled seats by counting the objects configured in the Configuration Server. LRM counts sellable items differently, depending on the sellable item criteria.

Enabled-Seat Processing

Agent Connector

The enabled seat count for Agent Connector is measured differently than the other enabled seat counts mentioned here. The daily enabled seat count for Agent Connector is defined as the total number of unique seats (i.e. Places and DNs) that has been used during the day that are not using a Genesys Agent Desktop, Genesys Supervisor Desktop, or Interaction Workspace for the log-in.

Chat Media Type for Interaction Server

Assume any seats configured in the system may be used to log into the Interaction Server and then once logged in, they can use any of the media channel they want. In this case, the enabled seat count is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

Computer Telephony Integration Contact-Center Legacy

A Computer Telephony Integration (CTI) seat refers to a physical seat occupied by an Agent who might use it to log in to a T-Server, SIP Server or Interaction Server in a tenant for which at least one tenant-specific instance (in other words, has only this tenant in the tenant list) of Universal Routing Server (URS) is configured with a connection to a database access point (DAP). If a URS with a DAP connection is associated with multiple tenants, LRM does not report any usage of CTI seat licenses associated with that URS instance.

If a tenant has multiple URS instances with DAP connections, LRM counts one CTI seat license per enabled seat. LRM provides a report of enabled CTI seat count based on the presence of a DAP connection and applies to all of the logged in seats in a given tenant. The enabled seat count is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place, where the DNs belong to a switch that belong to a tenant that meet the above URS configuration condition.

E-Mail Media Type for Interaction Server

Assume any seats configured in the system may be used to log into the Interaction Server and then once logged in, they can use any of the media channel they want. In this case, the enabled seat count is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

Genesys CIM Platform - Single-Site and Multi-Site

A CIM Platform has two kinds of seats: Single-Site (SS) seat and Multi-Site (MS) Concurrent seat. Each is a physical seat occupied by a person who might log in to a T-Server, SIP Server, or Interaction Server in a location defined as SS for Single-Site or MS for Multi-Site in the Entitlement File. LRM determines if the site is defined as Single-Site or Multi-Site by examining data in the entitlement tables, which contain the data from the Entitlement File. When the site has been defined as SS or MS, all of the login sessions from the preselected set are calculated as a Genesys CIM Platform- SS or MS sellable items. For the CIM Platform - MS or SS Concurrent seats, LRM counts the number of enabled seats as the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

Genesys Inbound Voice

A Genesys Inbound Voice seat is a physical seat whose occupant might use it to log in to any T-Server other than SIP Server. A seat is enabled for use if the DN associated with this seat is on this kind of Switch. For Genesys Inbound Voice, the enabled seat count for the system is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with any Place, where the DNs belong to a switch that is not configured as 0 (Unknown Switch), 72 (SIP Switch) or 63 (OM Switch).

Genesys Network Voice

A Genesys Network Voice seat is a physical seat whose occupant is configured as an Agent and might log in to a T-Server other than SIP Server, on a system that has one or more (non-SIP) Network T-Servers configured. A seat is enabled for use if the DN associated with this seat is on this kind of switch and the LRM has determined that one or more (non-SIP) Network T-Servers is configured. In this case, the enabled seat count for Genesys Network Voice for the system is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place, where the DNs belong to a switch that is not configured as 72 (SIP Switch) or 63 (OM Switch).

Limitation

There is no reliable way to determine a Network Switch or a Network T-Server. However, it is possible to configure the Network Switch as a Voice switch in Configuration Database. You can also enable LRM to count Genesys Network Voice sellable items by setting the lrm-network-switch option in the [lrm] section to true. For more information about how to configure this option, see Configuration Options.

Genesys SIP Server

A SIP Server seat is a physical seat whose occupant might use it to log in to SIP Server. A seat is enabled for SIP Server use if the DN associated with this seat is on a SIP Server Switch. For Genesys SIP Server, the enabled seat count for the system is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with any Place, where the DNs belong to a switch that is configured as 72 (SIP Switch).

Genesys Social Media

Assume any seats configured in the system may be used to log into the Interaction Server and then once logged in, they can use any of the media channel they want. In this case, the enabled seat count is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

Genesys Workforce Management

A Workforce Management seat is a physical seat occupied by a person who might log in to a T-Server, SIP Server, or Interaction Server where WFM Data Aggregator is configured with a connection to a Stat Server associated with the person's tenant. When these conditions

are met, the LRM considers the seats enabled for this tenant to be enabled for Workforce Management. The enabled seat count is the total of: the number of Places associated with at least one DN, plus the number of DNs not associated with a Place, where the DNs belong to a switch that belongs to a tenant that has Workforce Management enabled.

Genesys Outbound Contact - Multi-Site

The License Reporting Manager assumes that any seats configured in a Multi-Site environment is enabled for outbound contacts. LRM determines from the entitlement data whether the location is SS or MS. If the location is multi-site, LRM counts the number of enabled seats as the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

Skills-Based Routing

The License Reporting Manager assumes that any seats configured in the customer environment may be logged in by an agent with skills configured. LRM counts the number of enabled seats as the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

Third-Party Work Items

Assume any seats configured in the system may be used to log into the Interaction Server and then once logged in, they can use any of the media channel they want. In this case, the enabled seat count is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

Genesys Agent Desktop

This sellable item is based on the client software used to log in. The LRM assumes that any seats configured in the system may be used to log into the T-Server, SIP Server or Interaction Server. In this case, the enabled seat count is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

Genesys Supervisor Desktop

This sellable item is based on the client software used to log in. The LRM assumes that any seats configured in the system may be used to log into the T-Server, SIP Server or Interaction Server. In this case, the enabled seat count is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

Genesys Info Mart Server

In a deployment where at least one instance of the Genesys Info Mart application has been configured, the enabled seat count for Genesys Info Mart Server is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

Genesys Interactive Insights

In a deployment where at least one instance of the Genesys Info Mart application has been configured and Interactive Insights has been defined in the Entitlement File, the enabled seat count for Genesys Info Mart Server is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

Interaction Workspace

This sellable item is based on the client software used to log in. The LRM assumes that any seats configured in the system may be used to log into the T-Server, SIP Server or Interaction Server. In this case, the enabled seat count is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place.

IVR Connector

An enabled IVR Connector port is an IVR Port object on the Configuration Server where the IVR Port option is set to enabled. The LRM counts the total number of these objects for the number of enabled IVR Connector ports.

High-Availability

A T-Server, or SIP-Server may be configured as High-Availability if you set up a Backup Server for it. A seat is enabled for High-Availability if it can be used to log into such a T-Server. In this case, the enabled seat count for High-Availability is the total of the number of Places associated with at least one DN, plus the number of DNs not associated with a Place, where the DNs belong to a switch where its associated T-Server has been configured as Highly-Available.

Voicemail

A voicemail count is a DN object on the Configuration Server where the DN object has the [Tserver] gvm_mailbox option set to any value. The LRM counts the number of these DN objects as the number of enabled mailboxes.

Agent Groups and Place Groups Calculations

LRM provides the following reporting of Agent groups and Place groups usage:

- Date/Time
- Agent Group
- Number of agents configured in an agent group (enabled agents)
- Concurrent Seat usage by agents in an agent group

The data collected enables trending reports over time:

- Groups Detailed Seat Usage
- Groups Daily Seat Usage
- Groups Weekly Seat Usage
- Groups Monthly Seat Usage

LRM provides group details by sellable item. This requires that for agent group reports, reporting by individual sellable items (from a menu) may be selected, as with other usage reports.

The `agentgroup_enabled` configuration option enables agent group reporting and the `placegroup_enabled` configuration option enables place group reporting. Both are disabled by default. These options must be enabled for LRM to retrieve group data during the nightly statistics job and perform the usage calculation. See Configuration Options for details.

Bundles are not supported for agent groups or place groups.

Enabled Seat Count

LRM stores the enabled seat count for each sellable item at 10-minute intervals for each configured agent group and place group. LRM calculates the enabled seat count in the group by counting the number of agents or places configured for the group and stores the result in a temporary table.

Concurrent Seat Count

During the LRM nightly statistics job, LRM retrieves data from ICON to calculate and store the concurrent seat usage for each Agent Group and Place Group. The per-minute concurrent seat usage is created and stored for each day for the sellable item for each group.

When calculating the concurrent seat count, LRM uses the latest collected place and agent group membership information at the time of calculation for the report day.

For example, if the LRM server is running without interruption and you calculate the concurrent seat count, the group membership information from the end of day is used for the calculation. If the group membership configuration changes between the time the agent logs in and the concurrent seat calculation time (end of the day), LRM may not calculate an accurate place and agent group concurrent seat usage based on the group membership configuration at the time of the agent login.

Supported Sellable Items

LRM supports the following set of sellable items for Agent groups and Place groups:

- genesys_inbound_voice
- sip_server
- genesys_outbound_contact_ms
- genesys_email
- genesys_web_media
- third_party_work_items
- genesys_cim_platform_ss
- genesys_cim_platform_ms
- genesys_network_voice
- cti
- genesys_workforce_management
- skills_based_routing
- genesys_agent_desktop
- genesys_supervisor_desktop

- genesys_interaction_workspace
- high_availability
- genesys_info_mart_server
- genesys_interactive_insights
- genesys_social_engagement

Logging Events

To permit the manual verification of License Reporting Manager operations, LRM generates log messages that report all significant events.

These significant events include the following:

- Event for Normal Operation:
    - Data collection from Interaction Concentrator (start and end times)
    - Data output into LRM Report Database (start and end times)
    - License Report File created
    - Genesys Entitlement data imported
    - Overuse alert generated
    - Gap detected
- Event for Error Conditions:
    - Data-source connection failure
    - Data-source data errors
    - Entitlement data errors
    - LRM internal processing errors
    - LRM database connection failure
    - LRM database corruption
    - LRM application outage and recovery

To view actual log events for License Reporting Manager, see the Framework 8.1 Combined Log Events Help, which provides detailed information about log events that are associated with LRM.

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.

The Product License Coverage table lists the licenses that are measured and tracked in License Reporting Manager.

Product License Coverage

Product category	Product	Releases	Measurement	Condition/ Limitation
Base platform	Genesys CIM Platform-MS	7.6+	Concurrent and Enabled Seats	
Base platform	Genesys CIM Platform-SS	7.6+	Concurrent and Enabled Seats	
Base platform	HA-CIM	7.6+	Concurrent and Enabled Seats	
Desktops and Gplus Adapters	Computer-telephony integration (CTI)	7.6+	Concurrent and Enabled Seats	Restricted to existing customers
Desktops and Gplus Adapters	Genesys Agent Desktop	7.6.3+	Concurrent and Enabled Seats	
Desktops and Gplus Adapters	Genesys Supervisor Desktop	7.6.3+	Concurrent and Enabled Seats	
Desktops and Gplus Adapters	Interaction Workspace	8.1+	Concurrent and Enabled Seats	
Multi-channel	Genesys E-Mail	7.6+	Concurrent and Enabled Seats	
Multi-Channel	Genesys Social Media	7.6+	Concurrent and Enabled Seats	
Multi-channel	Genesys Web Media	7.6+	Concurrent and Enabled Seats	
Multi-channel	SIP Voicemail	8.1	Concurrent and Enabled Seats	

Product category	Product	Releases	Measurement	Condition/ Limitation
Multi-channel	Third-party work items	7.6+	Concurrent and Enabled Seats	
Outbound Contact	Genesys Outbound Contact - MS	7.6+	Concurrent and Enabled Seats	
Reporting	Genesys Info Mart	7.6+	Concurrent and Enabled Seats	
Reporting	Genesys Interactive Insights (GI2)	7.6+	Concurrent and Enabled Seats	
Routing	Agent Connector	7.6+	Concurrent and Enabled Seats	
Routing	Genesys Inbound Voice	7.6+	Concurrent and Enabled Seats	
Routing	Genesys Network Voice	7.6+	Concurrent and Enabled Seats	
Routing	IVR Connector	7.6+	Concurrent and Enabled Seats	
Routing	SIP Server	7.6+	Concurrent and Enabled Seats	
Routing	Skills Based Routing	7.6+	Concurrent and Enabled Seats	Restricted to existing customers
Voice Portal	Call Qualification Parking	8.1.6+	Concurrent ports	
Voice Portal	GVP ASR Ports	8.1.6+	Concurrent ports	
Voice Portal	GVP TTS Ports	8.1.6+	Concurrent ports	
Voice Portal	GVP Ports	8.1.6+	Concurrent ports	
Workforce Management	Genesys Workforce Management	7.6+	Concurrent and Enabled Seats	
Workforce Management	QM - Call Recording	8.1+	Concurrent and Enabled Seats	

Deploying LRM

LRM Deployment Overview

Use this overview of the deployment to serve as a License Reporting Manager (LRM) deployment quick reference. Select a link for more information or click `Next Step` to view details of each step. The browser `back` button is not supported on this page.

1. Install initial Management Framework components.
2. Confirm platform support.
3. Confirm installation requirements.
4. Install GAX.
5. Install the LRM Plug-in for GAX and add the LRM application to the Connections list for GAX.
6. Import the LRM application template.
7. Create a LRM DB and add a DAP.
8. Create and configure the LRM application.
9. Install LRM.
10. Set the timezone to GMT on the LRM server and the GVP Reporting Server.
11. Schedule the statistics gathering job.
12. Plan data backup.
13. Configure LRM High Availability (Optional).
14. Enable Secure Connection Features (Optional).
15. Complete Management Framework Installation.
16. Configure Interaction Concentrator (ICON) and Interaction Workspace options.
17. Install ICON.
18. Add a DAP object for each ICON DB.
19. Create a cron job to clean up old ICON data.
20. Configure GVP Reporting Server for LRM.
21. Start LRM.

Install initial Management Framework components

Before you install LRM 8.5.x, you must install a portion of Management Framework 8.5.x components. However, until LRM is installed, Configuration Server interacts only with Management Framework. When you start LRM for the first time after installation, it connects to Configuration Server, and this enables Configuration Server functionality.

> **Important**
> In a distributed environment, LRM works only with the master Configuration Server, not Configuration Server Proxy.

See the Management Framework installation.

Confirm platform support

The Platforms Supported by LRM table lists the operating systems, databases, and virtualization that are supported by LRM in this release.

Platforms Supported by LRM

Platform category	Platform	Versions
OS	IBM AIX	• 7.1 (64-bit)
OS	Microsoft Windows	• 2012 64-bit • 2008 64-bit
OS	Red Hat Linux	• 5.0 (32-bit) • 5.0 (64-bit) • 6.0 (64-bit)
OS	Solaris	• 10
Database	IBM DB2	• 9.7
Database	Microsoft SQL Server	• 2008 • 2012
Database	Oracle	• 11g • 11g RAC • 12c • 12c RAC
Database	PostgreSQL	• 9.0
Virtualization	VMware	• 5.0, 5.1

Confirm installation requirements

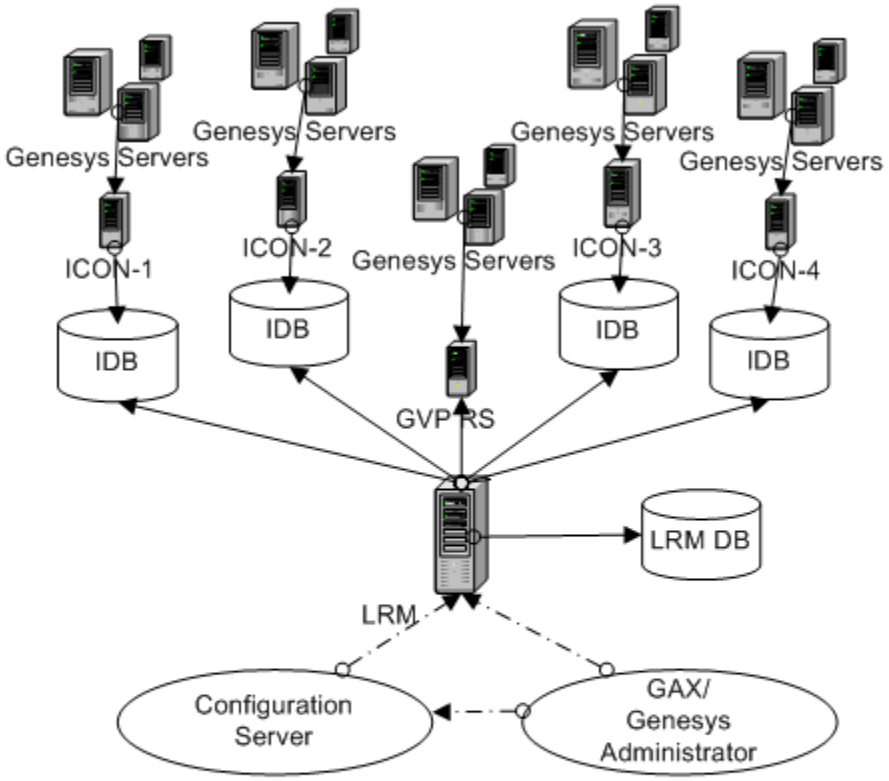
Confirm hardware sizing and performance information in the Genesys Hardware Sizing Guide.

Confirm you are using:

- Management Framework 8.5 or later
- Customer Interaction Management 8.5 or later
- Genesys Interaction Concentrator 8.1.x
- Genesys Voice Platform Reporting Server 8.1.5 or later
- Sun Java Runtime Environment (JRE) 7.0 or later

> **Tip**
>
> Before you install LRM 8.5.x, you must install a portion of Management Framework 8.5.x components including Configuration Server. However, until LRM is installed, Configuration Server interacts only with Management Framework. When you start LRM for the first time after installation, it connects to Configuration Server, and this enables Configuration Server functionality. See the Management Framework installation.

LRM Architecture



1. ICON 1–4: Independent Interaction Concentrator instances
2. IDB: Interaction Concentrator databases
3. LRM: License Reporting Manager
4. LRM DB: LRM database
5. GVP RS: GVP Reporting Server instance

Any additional functionality not shown in the above diagram is designed to support ease of installation.

Install GAX

Genesys recommends you install GAX release 8.1.4 or later. See the *GAX Deployment Guide* available on the Genesys Administrator page.

Install LRM Plug-in for GAX

The LRM Plug-in for GAX is an add-on component that is hosted by an existing Genesys Administrator Extension (GAX) installation. The LRM Plug-in for GAX accesses data from the LRM database to provide on-demand reporting to Service Providers and tenant administrators in the GAX graphical user interface (GUI) application .

1. Install the LRM plug-in files into the existing GAX directories to enable report generation of LRM statistics from GAX. See Installing a GAX compatible plug-in for details.
2. In Configuration Manager, add the LRM Application object on the Connection tab of the GAX object.

Notes:

- To use the plug-in, open GAX and select License Reporting from the reports menu.
- Refer to GAX online help for:
    - Report Generation – System Reports, Tenant reports, Agent and Place Group reports
    - Provisioning
    - Bundle upload
    - Viewing Entitlements

Import the LRM application template

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.

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_850.apd.
4. Click Open. The Properties window opens.
5. Click OK. The template is imported into the Application Templates folder.

Create a LRM DB and add a DAP

1. Create your LRM database.
2. Configure the `DAP` object on the `General` tab as a JDBC connection with the correct database server credentials for the DAP object.
3. Set the `role` configuration option in the [`lrm`] section to `main`.

Exactly one of your DAPs must have the `role` value set to `main` for the LRM DAP. At least one of your DAPs must have the `role` value set to `icon`.

> **Tip**
> You do not need to run any SQL scripts create empty tables for LRM. LRM creates the tables automatically when the nightly job runs for the first time.

Create and configure the LRM application

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 are 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 each DAP. Add:
    - A DAP for the LRM database. Set the value of `role` to `main` in the DAP Application.
9. Select the Security Tab. Under Log On As, select `This Account`. Click `Open file` to display a list of names and select a user with full control permissions over the Environment tenant. This enables LRM to write the entitlement information into the Transactions of the Environment tenant when it imports the license file.
10. Click OK. Configuration of your LRM instance is complete.

Install LRM

[+] Install LRM on Linux

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

1. Confirm your target computer meets the platform and component prerequisites that are listed in the *Genesys Supported Operating Environment Reference Guide*.
2. Confirm you have installation rights.
3. Locate the compressed installation files, Read_Me file, and templates on the installation DVD.
4. In a terminal window, open and run the install.sh file in the License Reporting Manager directory on the installation DVD.
5. When prompted, enter the Host Name or press Enter for “Local Host”.
6. When you are prompted to do so, enter the Configuration Server Name, Network port number, User name, and Password.
7. 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.
8. Enter the location in which you want your application to be installed. Provide the full path.

   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.
9. Verify you have installed License Reporting Manager successfully by inspecting the destination directory of your application for completeness.
   - Browse to the destination location of your LRM application.
   - Inspect the directory and confirm it contains the following folders:
     - libs/
     - templates/
   - Inspect the directory and confirm it contains the following files:
     - lrm_startup.sh
     - lrmserver.jar

Important

If the system has more than 50,000 agents, LRM requires additional Java Heap space to load the agent information from the Configuration Server. Edit the `lrm_startup.sh` file so that `LRM_OPTS` has the following Java parameter:

```
# Non-standard parameters
LRM_OPTS=-Xms2048m
```

> **Tip**
> To uninstall LRM, remove all of the files from the folder in which LRM is installed.

[+] Install LRM on Windows

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

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. 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\LRM\<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.
11. Browse to the destination location of your LRM application.
    - Inspect the directory to confirm that it contains the following folders:
        - libs\
        - templates\
    - Inspect the directory to confirm that it contains the following files:
        - JavaServerStarter.ini
        - lrmserver.jar
        - lrmservice.exe
        - startServer.bat

> **Important**
>
> If the system has more than 50,000 agents, LRM requires additional Java Heap space to load the agent information from the Configuration Server. In the LRM installation directory, add the following line to the `JavaServerStarter.ini` file under `[JavaArgs]`:
>
> ```
> -Xms2048m
> ```

> **Tip**
>
> To uninstall LRM, remove all of the files from the folder in which LRM is installed.

Set the timezone to GMT

You must configure LRM server and GVP Reporting Server to use the GMT timezone, because LRM uses the GMT time zone to keep track of the days in the system.

Schedule the statistics gathering job

Schedule the nightly statistics gathering job to run at the time each day when there is a low volume of interactions in the contact center (for example, at night).

Set the `schedule` option in the [lrm] section to an appropriate value for your contact center. The default value is `01:00` (1am GMT).

Plan data backup

It is important to regularly backup the data in your License Reporting Manager database to prevent data loss. Backup of the LRM database is the responsibility of the Database Administrator. The following LRM tables can be backed up using the tools in your particular RDBMS:

```
LRM_CONCURRENT_SEAT
LRM_ENABLED_SEAT
LRM_CONCURRENT_GROUP_USAGE
LRM_ENABLED_GROUP_DETAILS
LRM_ENABLED_GROUP_SUMMARY
LRM_JOURNAL
```

Configure LRM High Availability (Optional)

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.
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.

Enable Secure Connection Features (Optional)

You can secure connections from LRM to Configuration Server. All of the security features are optional.

1. Enable Transport Layer Security (TLS) protocol.
    a. UNIX only: Install the Genesys Security Pack on the LRM server host, and set the applicable environment variable to specify the path to the Security Pack libraries. See "Security Pack Installation" in the Genesys 8.1 Security Deployment Guide.
    b. Create and install certificates on the LRM server host and Configuration Server host. See "Certificate Generation and Installation" in the Genesys 8.1 Security Deployment Guide.
    c. If required, change the configurations of the Configuration Server applications:
        - Add a new port for secure connections. On the Configuration Server `Application` object, select the `Auto Detect` mode.
        - Use a host certificate.
        See "Genesys TLS Configuration" in the Genesys 8.1 Security Deployment Guide.
    d. On the LRM Application object, add connections to Configuration Server. When you add the connection(s), you must use the port that you created in the previous step.
5. Enable client-side port definition.
    a. When you install LRM, select the connection parameters that LRM will use for the initial connection to Configuration Server. See "Client-Side Port Definition" in the Genesys 8.1 Security Deployment Guide.
    b. In the LRM `Application` object, add or modify the connection to Configuration Server, to specify the connection parameters (port number and, optionally, IP address) that LRM uses to reconnect to Configuration Server after a switchover or disconnection. Configure the parameters in the `Transport Protocol Parameters` text box on the `Advanced` tab of the connection properties. See "Client-Side Port Definition" in the Genesys 8.1 Security Deployment Guide.
3. Enable the SSL protocol on the JDBC connections between LRM and its source and target databases. When you configure the extraction DAP(s) and the LRM DAP, use the `jdbc-url` option to specify the URL information as required by your RDBMS to implement JDBC over SSL.

Complete Management Framework Installation

1. Start LRM.
2. Complete the Management Framework installation.

Configure ICON and Interaction Workspace options

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`. Do not combine the `lrm` role with any other in the same instance of ICON.

   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 gls data options are set to their default values (equal to 0).

- [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.

Install ICON

Install ICON and create a database for ICON if necessary. See the *ICON Deployment Guide* on the Interaction Concentrator page

> Important
> You can reuse ICON from other parts of your deployment.

Add a DAP object for ICON

To configure the LRM solution properly, you must define Database Access Point (DAP)objects that describe the databases to which LRM has access. 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 LRM application extracts data from these ICON databases used to prepare the reporting data.

1. Configure the DAP object on the `General` tab as a JDBC connection with the correct database server credentials for the DAP object.
2. Set the `role` configuration option in the [`lrm`] section to `icon`.

> Important
> Exactly one of your DAPs must have the `role` value set to `main` for the LRM DAP. At least one of your DAPs must have the `role` value set to `icon`.

Create a cron job to clean up old ICON data

Create a cron job to clean up old ICON data by using the DB purge script. See the *ICON User's Guide* on the Interaction Concentrator page for details.

Configure GVP Reporting Server for LRM

Important

- Historical reporting must be enabled on the GVP Reporting Server for LRM and GVP to work together. To enable historical reporting on GVP Reporting Server, do not run GVP Reporting Server in *nodb* mode; that is, set the **[persistence] rs.nodb.enabled** option to `false` (the default value).
- GVP Reporting Server must be running for LRM to collect data.

1. Select the Connections tab. Right-click and select `New`. In the Server field, enter the name of the GVP Reporting Server. If your GVP Reporting Server is set up as an HA pair, add only the primary instance and not the backup.

Start LRM

When the installation of License Reporting Manager (LRM) has been verified, and the LRM databases have been initialized, start LRM in Genesys Administrator.

1. In Genesys Administrator, select **Operations > Applications > <LRM Application>**.
2. Right click on the LRM application name and select **Start applications**.

Create a Custom Billing Adapter

The License Reporting Manager (LRM) plug-in for GAX provides a report interface to display license usage information that is collected by LRM. However, you might want to use your own custom reporting solution to display licensing information that is collected by the LRM Server.

You can use the Web Services API that is exposed by the LRM Server to obtain the information that is collected by LRM.

GET data from LRM

GET data from LRM

When the LRM Application is running, it can accept HTTP GET requests and return an LRM report.

The URL that is exposed by the LRM server has the following format:

`http://<server>:<port>/lrm/seats?name1=value1&name2=value2...`

Where `<server>` is where the LRM application is running and `<port>` is the socket that is being opened by the LRM application to listen for HTTP requests. All the request parameters that control which records are returned in an LRM report can be presented as HTTP Request URI parameters (for example, `name1=value1` in the URL above). The following HTTP Request-URI parameters are supported:

Name	Description	Valid Values
`type`	Specifies the type of report. If `type` is `system`, then `tenant`, `agentgroup`, and `placegroup` are ignored. If `type` is one of `tenant`, `agentgroup`, or `placegroup`, then unmatched parameters within the set are ignored.	• `system` • `tenant` • `agentgroup` • `placegroup`

Name	Description	Valid Values
	This parameter is required.	

`start`	Specifies the starting timestamp.
	
	This parameter is required.
		Specifies the timestamp in the format of:
		`yyyy-mm-ddThh:mm:ss.mmmZ`
		
		For example:
		`2010-09-01T00:00:00.000Z`

`end`	Specifies the ending timestamp.
	
	This parameter is required.
		Timestamp in the format of:
		`yyyy-mm-ddThh:mm:ss.mmmZ`
		
		For example:
		`2010-09-01T00:00:00.000Z`

`granularity`	Specifies the granularity for each record; that is the duration represented by each record: `10minute`, `hour`, `day`, `week`, or `month`. This parameter is required.	• `10minute` • `hour` • `day` • `weekly` • `month`
`firstDayOfWeek`	Specifies how a week is is calculated for reports where `granularity=week`. This parameter is required if `granularity=week`.	• `sunday` • `monday`
`pageSize`	Specifies the maximum number of records in a single page of a report. Reports are paginated based on the `pageSize` parameter, and the page that is returned in a report is specified by using the `pageNumber` parameter.	integer

Name	Description	Valid Values
	This parameter is required.	
`pageNumber`	Works with `pageSize` to control which records are returned. This parameter is required.	integer
`tenant`	Specifies which tenant's license usage data are in the report. If this value is not specified and the type parameter is set to `tenant`, then data for all the tenants is returned.	comma-separated list of tenant IDs
`sellableitem`	Specifies which sellable items are in the report.	comma-separated list of sellable item IDs
`agentgroup`	Specifies which agent groups are in the report.	comma-separated list of agent group IDs.
`placegroup`	Specifies which place groups are in the report.	comma-separated list of place group IDs
`bundle`	Specifies which bundles are in the report.	comma-separated list of bundle IDs
At least, one sellable item or bundle can be specified. If neither a sellable item nor a bundle is specified, then data for all the sellable items and bundles is returned.		

LRM reports

LRM reports

The report is returned in the HTTP response body in JSON format (see RFC 4627). The report is a single JSON object that has the following properties:

Name	Description
total	The total number of records in the report.
start	The start timestamp of the report. Note that the start and end timestamps might be different from the parameter that is specified by the HTTP

Name	Description
	Request URI parameter in the case of weekly or monthly reports, so that the start and end timestamps line up with the week and month boundaries.
end	The end timestamp of the report.
pageNumber	The page number from the set of records.
tenants	The set of tenants known in the LRM system.
records	An array of records that contains the data for this report. The logical meaning for each entry of the array is described above.

Note: Within each record of the records array:

- If the request type is `tenant`, then only `tenantid` and `tenantname` attributes are included in the report.
- If the request type is `agentgroup` then only `agentgroupid` and `agentgroupname` attributes are included in the report.
- If the request type is `placegroup` then only `placegroupid` and `placegroupname` attributes are included in the report.
- If the request type is `system` then none of these attributes are included in the report.

Data Description

This section describes the logical meaning of the data that is presented by LRM.

A unit of record in the LRM data contains information about the usage of a single sellable item at a single unit of time. Each record contains the following information:

Name	Description
`report_period`	The starting time of the License Usage information for this record.
`sellableitemid`	The Sellable Item ID of the Sellable Item for which this record applies. If the `sellableitemid` is 10000 or greater, then this is a record for a bundle.
`sellableitemname`	The name of the sellable item for this record.
`tenantid`	The Genesys Management Framework DBID for the tenant that this record is for. If this is a record for system-wide data, then the `tenantid` is set to `0`.

Name	Description
`tenantname`	The name of the tenant. If this is a record for system-wide data, then the `tenantname` is set to the value `null`.
`agentgroupid`	The Genesys Management Framework DBID for the agent group for this record.
`agentgroupname`	The name of the agent group.
`placegroupid`	The Genesys Management Framework DBID for the place group for this record.
`placegroupname`	The name of the tenant.
`si_amount`	Records the concurrent peak usage for this time period, for this sellable item, for this tenant.
`timestamp`	The timestamp at which the concurrent peak usage has occurred.
`enabled_seat_count`	Contains the enabled seat count that is calculated for this time period, for this sellable item, for this tenant.
`provlimit`	The provision limit, as configured by customer, applicable to the day in which the record occurred. For system-wide reports, this comes from the Entitlement File that is uploaded by the System Administrator. For tenant reports, this comes from the Provisioned Count screen as entered by the System Administrator. This not available for `agentgroup` and `placegroup` reports.
`provdatetimestamp`	The day when the provision limit first came into effect. This not available for `agentgroup` and `placegroup` reports.
`gap`	Indicates whether a data source gap (from the T-Server and Interaction Server to the ICON) has been detected while calculating the concurrent peak usage

An LRM report contains a sequence of these records that are retrieved from the LRM Server based on some query criteria that is provided by the request.

Examples

HTTP Request Example

An example of an HTTP request is as follows:

```
http://135.17.176.48:8801/lrm/
seats?type=tenant&start=2008-05-07T00:00:00.000Z&end=2012-05-17T00:00:00.000Z
id=1&sellableitem=1
```

Report Example

An example of the report is as follows:

```
{
    "total": 14,
    "end": "2012-05-17T00:00:00.000Z",
    "start": "2008-05-07T00:00:00.000Z",
    "pageNumber": 1,
    "tenants": {
        "550": "Tenant_sg04_03_INBD",
        "1": "Environment",
        "551": "Tenant_sg04_04_OTBD",
        "548": "547"
    }
    "records": [{
        "timestamp": "2009-01-01T14:56:51.000Z",
        "tenantid": 1,
        "tenantname": "Environment",
        "agentgroupid": 12,
        "agentgroupname": "kathyteam"
        "placegroupid": 24,
        "placegroupname": "newplace"
        "report_period": 200901010000,
        "si_amount": 1,
        "gap": false,
        "enabled_seat_count": 3,
        "provdatetimestamp": "2009-01-01T00:00:00.000Z",
        "sellableitemid": 1,
        "provlimit": 100,
        "sellableitemname": "Genesys Inbound Voice",
    }, {
        "timestamp": "2009-01-02T14:56:51.000Z",
        "tenantid": 1,
        "tenantname": "Environment",
        "agentgroupid": 12,
        "agentgroupname": "kathyteam"
```

```
        "placegroupid": 24,
        "placegroupname": "newplace"
        "report_period": 200901020000,
        "si_amount": 2,
        "gap": false,
        "enabled_seat_count": 3,
        "provdatetimestamp": "2009-01-01T00:00:00.000Z",
        "sellableitemid": 1,
        "provlimit": 100,
        "sellableitemname": "Genesys Inbound Voice",
    }],
}
```

Use Predefined and User-Defined Bundles

What are Bundles?

Predefined 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. The predefined bundle appears as a single item in the license-usage measurement data that is accessed for billing and other tenant reports in License Reporting Manager (LRM).

User-Defined Bundles

A user-defined bundle is a group of standard Genesys-sellable items that you configure and name for resale as a single feature to your customers. The user-defined bundle appears as a single item in the license usage measurement data that is accessed for billing and other tenant reports. You have the option of creating the bundle definition file manually and importing it into LRM. Each of the user-defined bundles has an ID, name, description, and definition in terms of included and excluded sellable items.

Bundle Set

A bundle set is a set of related bundles that are managed as a group. Each bundle set has an ID, name, description, issue date (the date that the set was created), valid from date, valid to date, and a list of bundles within that set. The ID of the bundle set and the ID of the bundles must be unique, must be numeric and must be greater than or equal to 10000.

The bundle set is considered active, if the requested reporting date belongs to the date interval that is defined in this set (the `valid_from` date to the `valid_to` date). You may have many active bundle sets during the reporting period, and it is possible for the bundle sets to overlap. If there is more than one active bundle set, then LRM uses the bundle set where the `issue-date` is the latest date.

Logical Expression for a User-defined Bundle

The logical expression for a user-defined bundle takes the form of two lists—the Include list and the Exclude list. LRM reports a seat as using a license for a given bundle type, if at least one of the license types in the Include list is used during the login session and none of the

license types in the Exclude list is used during the login session. The bundle definitions can be represented as two linked tables: Included Sellable Items and Excluded Sellable Items.

Included Sellable Items

Bundle GUID	Bundle name	SI-1 included	SI-2 included	...	...		SI-40 included
Id-1	B1	0	1	...	...	0	
Id-2	...			...	...		
Id-3	Bn	1	1	...	...	1	

Excluded Sellable Items

Bundle GUID	SI-1 excluded	SI-2 excluded	...	...	SI-40 excluded
Id-1	0	1	...	...	0
Id-2			...	...	
Id-3	1	1	...	...	1

When a sellable item is included in a bundle, the corresponding field in the Included Sellable Items table has the value of 1. If a sellable item is not included in a bundle, it has the value of 0. When a sellable item is excluded from a bundle, the corresponding field in the Excluded Sellable Items table has the value of 1. If a sellable item is not excluded, it has the value of 0. Note the difference between a bundle being excluded and not included.

Logical Expression Example

Suppose you decided to define four bundles into the following:

- Bundle 1—Advanced Voice:
  - Includes:
    - Agent Desktop
    - Outbound Contact
    - Third-party work items
  - Excludes:
    - E-mail
    - GVP Speech
- Bundle 2—E-mail:

    - Includes:
        - E-mail
    - Excludes:
        - Outbound Contact
        - Third-party work items
        - GVP Speech
        - Web Media
- Bundle 3—AutoContact:
    - Includes:
        - GVP Speech
    - Excludes:
        - Outbound Contact
        - Third-party work items
        - E-mail
        - Web Media
- Bundle 4—Advanced Plus:
    - Includes:
        - Outbound Contact
        - Third-party work items
        - E-mail
        - Web Media
        - GVP Speech

The following linked sellable items tables show the contents of these four bundles and demonstrate which sellable items are included and excluded:

Included Sellable Items

Bundle name	Genesys CIM	SIP Server	Desktop	Outbound	Third-party	E-mail	GVP	Web
Advanced	0	0	1	1	1	0	0	0
E-mail	0	0	0	0	0	1	0	0
AutoContact	0	0	0	0	0	0	1	0
Advanced Plus	0	0	0	1	1	1	1	1

Excluded Sellable Items

Bundle name	Genesys CIM	SIP Server	Desktop	Outbound	Third-party	E-mail	GVP	Web
Advanced	0	0	0	0	0	1	1	1
E-mail	0	0	0	1	1	0	1	1
AutoContact	0	0	0	1	1	1	0	1
Advanced Plus	0	0	0	0	0	0	0	0

Calculating Seats

Bundle usage is calculated in the same way that concurrent sellable item usage is calculated.

To calculate the value of any user-defined bundle, the LRM shell script calculates all Genesys-sellable items that make up that particular bundle. Then, LRM applies the bundle definition to comply with the include and exclude rules.

For example, by using the E-mail user-defined bundle in the Logical Expression Example:

- For each one minute interval, LRM calculates the sellable item Genesys E-mail for every corrected seat.
- If the seat has a sellable item type of Genesys E-mail, LRM checks to confirm this seat does not have: Genesys Outbound, third-party work items, GVP or Web items.
- If all conditions are true, the minute for this seat is stored for bundle calculation. If just one condition is false, the value for this one minute is zero (0).
- This procedure is applied to all other seats for this minute interval and the total number of satisfied seats for this minute is stored by LRM. This process continues for the entire reporting interval and the maximum value with corresponding timestamps are stored as the value of the E-mail user-defined bundle.

User-Defined Bundle File Format

User-Defined Bundle File Format

The Bundle File is an XML file that uses the following structure:

<lrm_bundle_set>

The `lrm_bundle_set` element is the root element of the Bundle File.

Attributes

Attribute	Required	Description
issue_date	Yes	The issue date of the bundle set, in `YYYY-MM-DD` format.
valid_from	Yes	The date this bundle set is valid from, in `YYYY-MM-DD` format.
valid_to	Yes	The date this bundle set is valid to, in `YYYY-MM-DD` format.
id	Yes	The unique ID of the bundle set.

Child Elements

Child element	Occurrence	Description
header	Once	The bundle set header
bundle	One or more times	The bundle element

<header>

The `header` element is the header of a bundle or bundle set.

Child Elements

Child element	Occurrence	Description
name	Once	The name of the bundle or bundle set
description	Once	The description of the bundle or bundle set

<bundle>

The `bundle` element is the bundle definition.

Attributes

Attribute	Required	Description
id	YES	The id of the bundle, must be a unique number greater or equal to 10000.

Child Elements

Child element	Occurrence	Description
header	Once	The bundle header
include_items	Once	The list of bundle included items
exclude_items	Zero or more times	The optional list of bundle excluded items

<include_items>

The `include_items` element is the list of bundle include items.

Child Elements

Child element	Occurrence	Description
sellable_item	One or more times	The sellable items

<exclude_items>

The `exclude_items` element is the list of bundle exclude items.

Child Elements

Child element	Occurrence	Description
sellable_item	One or more times	The sellable items

<sellable_item>

The `sellable_item` element is the sellable item description, which is in the `include_item` or `exclude_item` list.

Attributes

Attribute	Required	Description
item	YES	The name of the Genesys-sellable item.
license_type	YES	The type of license. In this release, only concurrent_seat license type is supported.

Bundle File Example

Bundle File Example

```
<?xml version="1.0" encoding="utf-8" ?>
<lrm_bundle_set issue_date="2010-01-01" valid_from="2010-01-15"
valid_to="2010-12-31"
  id="5000" >
  <header>
    <name>Basic bundle set_1</name>
    <description>General use bundles</description>
  </header>
  <bundle id="10001">
      <header>
        <name>A-Out Advanced Voice</name>
        <description> Voice only</description>
      </header>
      <include_items>
        <sellable_item item="genesys_inbound_voice"
license_type="concurrent_seat"/>
        <sellable_item item="sip_server"
license_type="concurrent_seat"/>
        <sellable_item item="genesys_network_voice"
license_type="concurrent_seat"/>
      </include_items>
      <exclude_items>
        <sellable_item item="genesys_email"
license_type="concurrent_seat"/>
      </exclude_items>
      <exclude_items>
        <sellable_item item="genesys_web_media"
```

```
license_type="concurrent_seat"/>
      </exclude_items>
  </bundle>
  <bundle id="10002">
    <header>
      <name>A-Out Advanced Voice</name>
      <description> Voice only</description>
    </header>
    <include_items>
      <sellable_item item="genesys_inbound_voice"
license_type="concurrent_seat"/>
      <sellable_item item="sip_server"
license_type="concurrent_seat"/>
      <sellable_item item="genesys_network_voice"
license_type="concurrent_seat"/>
    </include_items>
    <exclude_items>
      <sellable_item item="skills_based_routing"
license_type="concurrent_seat"/>
    </exclude_items>
  </bundle>
  <bundle id="10003">
    <header>
      <name>A-Out Advanced Plus</name>
      <description>Voice and e-mail</description>
    </header>
    <include_items>
      <sellable_item item="genesys_inbound_voice"
license_type="concurrent_seat"/>
      <sellable_item item="sip_server"
license_type="concurrent_seat"/>
      <sellable_item item="genesys_network_voice"
license_type="concurrent_seat"/>
      <sellable_item item="skills_based_routing"
license_type="concurrent_seat"/>
      <sellable_item item="genesys_email"
license_type="concurrent_seat"/>
      <sellable_item item="genesys_web_media"
license_type="concurrent_seat"/>
      <sellable_item item="genesys_outbound_contact_ms"
license_type="concurrent_seat"/>
    </include_items>
```

```
  </bundle>
</lrm_bundle_set>
```

Add a New Bundle Set

Add a New Bundle Set

1. To add a new bundle set to your system, you must first create a new bundle file.
    - The `lrm_bundle_set` ID and `bundle` ID must be unique.
    - The `valid_from` date should not be earlier than the date you choose to import your bundle.
2. Browse to the destination location of your LRM application.
3. To upload the new bundle file using GAX, go to **Configuration > License Usage Reporting > Bundles** and click **Upload**.

The information from the bundle file is imported into the Configuration Server and the new user-defined bundle is added to your system where it is now included in calculations and reports.

Deactivate a Bundle Set

Deactivate a Bundle Set

If you no longer require the use of a bundle set, you can stop the calculation of the bundle set by changing the `valid_to` date.

1. Change the date of the `lrm_bundle_set` in the Bundle File to yesterday's date (in UTC time zone).
2. To upload the new bundle file using GAX, go to **Configuration > License Usage Reporting > Bundles** and click **Upload**.

Even though you have changed the `valid_to` date in the Bundle File to yesterday's date, the report calculation for yesterday's date (in UTC time zone) is not affected because the bundle is still active for yesterday's date.

The information from the Bundle File is imported into the Configuration Server and deactivates the Bundle in your system. From this point forward it is no longer included in calculations and reports.

Change an Existing Bundle Set

Change an Existing Bundle Set

To change an existing bundle set, deactivate the old bundle set and then create a new one.

1. Deactivate the bundle set from a specific date.
2. Create a new bundle set and confirm you set the `valid_to` date of the newly created bundle is set to the day after the deactivation date in the previous step.
3. Change both of the IDs of the bundle sets and the IDs of all the bundles within those sets.
4. To upload the new bundle file using GAX, go to **Configuration > License Usage Reporting > Bundles** and click **Upload**.

Previous definitions of the bundles should be kept in the LRM database and Configuration Server in case you need run reports for past dates. The bundle definitions are required to create the report files.

The information from the Bundle File is imported into the Configuration Server and the changed user-defined bundle is updated in your system. From this point, the bundle set is updated with your changes for calculations and reports.

Start LRM

When the installation of License Reporting Manager (LRM) has been verified, and the LRM databases have been initialized, start LRM in Genesys Administrator.

1. In Genesys Administrator, select **Operations > Applications > <LRM Application>**.
2. Right click on the LRM application name and select **Start applications**.

Stop LRM

Use Genesys Administrator to stop LRM.

1. In Genesys Administrator, select **Operations > Applications > <LRM Application>**.
2. Right click on the LRM application name and select **Start applications**.

LRM Configuration Options

LRM Application object

LRM Application object

You can set the following configuration options in the [lrm] section on the Options tab of each LRM Application object.

agentgroup_enabled
Default Value: false
Valid Values: true or false
Changes Take Effect: After restart
Specifies whether the LRM Server collects statistics and reports for agent groups.

binding.address
Default Value: `::`
Valid Values: String representing an IP address.
Changes Take Effect: After restart
Specifies the address to which the HTTP/HTTPS listening socket binds to receive requests.

The default value `::` binds to all IPv4 and IPv6 addresses. If your system does not have IPv6 configured, then you must set it to another valid value. You can set it to either one of the addresses for this server or `0.0.0.0` to bind to all available IPv4 addresses on this server.

data-retention-days
Default Value: 400
Valid Values: Integer
Changes Take Effect: After restart
Specifies the number of days that LRM keeps data in the database.

first_time_data_calculation_max_days
Default Value: 2
Valid Values: 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 LRM runs the statistics job.

lrm-excluded-time-1, lrm-excluded-time-2, lrm-excluded-time-3 (Optional)
Default Value: None
Valid Values: HH:MM:SS (hours, minutes, seconds); Duration (Seconds. The maximum value is 600)
For example:18:00:00;600
Changes Take Effect: After restart
Specifies the time interval (start time and duration in seconds) for which LRM does not calculate concurrent seats.

> Warning
>
> - If you do not use one or more of these options, remove them from the **Options** tab of the LRM **Application** object.
> - If you use the option without specifying a value, or with a value in the incorrect format (for example, an empty string), LRM does not work properly and cannot calculate concurrent seats.

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

lrm-retention-days
Default Value: 400
Valid Values: positive integer
Changes Take Effect: After restart
Specifies the number of days LRM data is kept in the database.

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

placegroup_enabled
Default Value: false
Valid Values: true or false

Changes Take Effect: After restart
Specifies whether the LRM Server should collect statistics and reports for place groups.

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

schedule-retry-delay
Default Value: 30
Valid Values: 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.

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

DAP Application object

DAP Application object

You can set the following configuration option in the [lrm] section on the Options tab of the DAP Application object.

role
Default Value: main
Valid Values: main or icon
Changes Take Effect: Immediately
Specifies the role of the DAP. The LRM DAP value should be set to main and the ICON DAP value should be set to icon.

GAX Application object

GAX Application object

You can set the following configuration options in the [lrm] section on the Options tab of the GAX Application object.

agentgroup_enabled
Default Value: false
Valid Values: true or false
Changes Take Effect: Immediately
Specifies whether Agent group usage reporting is enabled.

license_type
Default Value: concurrent
Valid Values: concurrent or enabled
Changes Take Effect: Immediately
Specifies either enabled or concurrent as the license type. When set to enabled, only enabled seat information is shown. When concurrent, both the enabled and concurrent seat information are shown. By default, LRM reports using concurrent seats.

operation_type
Default Value: compliance
Valid Values: compliance or hosted
Changes take Effect: Next user login.
Specifies whether LRM operates in either hosted mode or compliance mode. When operating in hosted mode, all LRM features are available. When operating in compliance mode, the following features are not available: reports for tenants, and provisioned count configuration.

placegroup_enabled
Default Value: false
Valid Values: true or false
Changes Take Effect: Immediately
Specifies whether Place Group usage reporting is enabled.

Change History

This section lists topics that are new or that have changed significantly since the 8.1.x release of this content.

New in Release 8.5.0

- The Deployment Guide and User's Guide were merged and restructured for usability.
- The installation prequisites were updated to include a tip about the inter-dependency between LRM and Management Framework.
- Added requirement for GVP Reporting Server to About LRM and Deploying LRM (step 20).
- The Entitlement Information and Components and Functions were updated in About LRM.
- Platform Support was updated in Deploying LRM.
- The `agentgroup_enabled`, `binding.address`, `first_time_data_calculation_max_days`, and `lrm-retention-days` configuration options were added to the LRM Application object in LRM Configuration Options.