Genesys

Licensing Guide

About Genesys

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

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

Notice

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Your Responsibility for Your System's Security

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

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Ordering and Licensing Information

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

Released by

Genesys Telecommunications Laboratories, Inc. www.genesyslab.com

Document Version: 80g_licensing 10-2012_v8.0.001.12

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Preface

Welcome to the *Genesys Licensing Guide.* This document introduces you to the concepts, terminology, and procedures relevant to the Genesys licensing system. This guide provides system-level information for the Genesys 7.x and 8.x releases to date.

The licensing information includes 7.x and 8.x products when new versions are released, as well as any changes regarding support information for maintenance versions of previously released products.

Note: This manual is continually updated when new Genesys products are released. For the most current version, please visit the Genesys Technical Support Website. To request the Documentation Library DVD, which you can order by e-mail from Genesys Order Management, contact orderman@genesyslab.com.

This Preface contains the following sections:

For information about related resources and about the conventions that are used in this document, see the supplementary material starting on page 87.

Intended Audience

This manual is primarily intended for system engineers and other members of an implementation team who set up and maintain Genesys products. This document assumes that you have a basic understanding of:

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

You should also be familiar with Genesys Framework architecture and functions.

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Chapter

1 Licensing Requirements for Genesys Products

This chapter introduces the Genesys licensing terminology and discusses what types of licenses you need for your specific Genesys installation. Information in this chapter is divided among the following topics:

Introduction

Along with its software, Genesys supplies you with software licenses. Licenses describe your legal rights to use the features that Genesys software provides and permit that use. Genesys bases its licensing system on the concept of *sellable items*. That is, a list of products that you purchase and their quantity are translated into the list of licensed features and the number of licenses. Genesys then combines a licensed feature that corresponds to one sellable item with additional technical information about your contact center environment and translates the result into one or more *technical licenses,* which are designed to make it easier to control licenses. Therefore, the types and number of licenses you receive from Genesys depend entirely on your environment and the items you have purchased.

Starting from Release 7.x, Genesys has improved its licensing system to:

- Better align technical licenses with sellable items, from which they derive.
- Simplify inquiries for license information.

- Increase licensing system flexibility to better meet the needs of a particular customer configuration.

Starting from Release 8.x, Genesys products begin verification of the version of corresponding license features in a license file. This means that Genesys 8.x products will check out only 8.0 license features.

To control the use of licensed features, Genesys currently deploys the FLEXlm/FlexNet Publisher (hereafter referred to as "Flex" or "License Manager") licensing mechanism described elsewhere in this document.

Sellable-Item Licenses

All Genesys products require *sellable-item licenses.* These licenses represent the software capabilities you have purchased, the quantity of units related to these software capabilities, and the deployment mode for the software. The sellable-item licenses you have are listed in the *license file* that Genesys issues you for your installation. For more information on license files, see “License Files” on page 34.

Technical Licenses

These Genesys applications require technical licenses:

- Configuration Server. See page 11.
- T-Server. See page 11.
- Network T-Server. See page 13.
- CTI-Less T-Sever. See page 14.
- Solution Control Server (SCS). See page 15.
- Universal Routing Server (URS). See page 17.
- Outbound Contact Server (OCS). See page 17.
- Voice Callback (VCB). See page 18.
- CPD Server. See page 20.
- Call Concentrator. See page 20.
- Load Distribution Server (LDS). See page 20.
- IVR Server. See page 20.
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- Genesys Desktop. See page 23.
- Genesys Agent Desktop .NET Toolkit. See page 24.
- Genesys SDKs: Agent Interaction Java and GIS. See page 24.

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- G*plus* Adapter 7.x for PeopleSoft CRM. See page 26.
- Interaction Server. See page 26.
- Classification Server. See page 26.
- Virtual Platform Support. See page 28.

In addition, any server operating in a redundant configuration requires a special license. For more information, see "Solution Control Server" on page 15.

The following sections provide general descriptions of technical licenses and offer basic formulas for determining a number of technical licenses derived from licensed features (sellable items). Refer to Table 4 on page 61 for exact license names for the listed products as those names appear in license files.

Warning! A single instance of Genesys components will not be able to check out more than 9999 licenses of the same type, due to limits that were required for FLEXlm 9.5 implementation. FlexNet Publisher 11.9 is not subject to this limitation, but the 9999 limit remains in effect in Genesys components to prevent issues for 9.5 users.

Configuration Server

Basic Functionality

With a stand-alone Configuration Server or a redundant pair of primary and backup Configuration Servers, you do not need any licenses.

Geographically Distributed Environments

In a geographically distributed configuration environment, the master Configuration Server is running at the site where the Configuration Database is located while Configuration Servers at multiple remote sites are working in so-called *Proxy* mode and are connecting to the master Configuration Server. To use this configuration, you must have one license to enable all instances of Configuration Server to operate in Proxy mode.

T-Server

7.0 and 7.1 Releases

T-Server 7.0 and 7.1 releases support four types of licenses:

- First type controls agent seats (`tserver_sdn`).
- Second type controls technical DNs. (`tserver_tdn`).
- Third type controls HA configuration (`cti_ha_option`).
- Fourth type controls multi-site configuration (`tserver_iscc`).

7.2 and Later Releases

Starting with release 7.2, T-Server no longer requires technical DN licenses (`tserver_tdn`) in order to operate.

T-Server 7.2 supports three types of licenses:

- First type controls agent seats (`tserver_sdn`).
- Second type controls HA configuration (`cti_ha_option`).
- Third type controls multi-site configuration (`tserver_iscc`).

Basic Functionality

A stand-alone T-Server serving a single site requires licenses to register all DNs it monitors. DNs that agents use in day-to-day contact center operations, such as Extensions and ACD Positions, have to be registered using licenses that control agent seats. T-Server 7.0 and 7.1 releases, also requires licenses that control technical DNs—DNs that Genesys software uses for various CTI functions, such as ACD Queues and Routing Points.

The number of licenses is defined as the number of DNs that can be registered on T-Server.

`Note:` For more information about the License section configuration options for T-Server, see the latest version of the Framework T-Server Deployment Guide for your specific T-Server.

HA Functionality

In the hot standby high-availability (HA) configuration, a redundant pair of primary and backup T-Servers are operating with the `hot standby` redundancy type. To use this configuration, you must have a special CTI HA technical license per redundant pair in addition to basic T-Server licenses. Neither T-Server in a redundant pair starts if this technical license is unavailable. Moreover, the primary and backup T-Servers must use the same license server to control the same pool of DNs.

`Note:` T-Server, as any other Genesys server, also requires the SCS-controlled high-availability license for redundant configurations. See section "Solution Control Server" on page 15 for details.

Multi-Site Functionality

With the multi-site configuration, a number of T-Servers, usually serving different switches or switch partitions, communicate with each other. To use this configuration, you must have the multi-site configuration type of license, that for multi-site support, one license per site, in addition to basic T-Server licenses. This means:

- One license per T-Server serving a particular site, if running in the stand-alone or warm standby redundancy configuration
- One license per redundant pair of primary and backup T-Servers serving a particular site, if running in the hot standby redundancy configuration

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Note: If none of your T-Servers is configured for multi-site routing, do not order licenses for multi-site support. If some of your T-Servers are configured for multi-site routing while others are not, you will receive licenses for multi-site support for all T-Servers.

Network T-Server

All Network T-Servers require licenses to enable:

- Basic Functionality
- Multi-Site Functionality

In addition, the Network T-Server for GenSpec supports two additional types of licenses:

- NTS Deployment Functionality
- Call Parking and Treatments Functionality

Starting from 7.x Releases, Genesys supports technical licenses for:

- Network T-Server for AT&T
- Network T-Server for Concert
- Network T-Server for GenSpec
- Network T-Server for ISCP
- Network T-Server for NGSN
- Network T-Server for OPSI

Basic Functionality

A stand-alone Network T-Server serving a single site requires licenses to register all DNs it monitors. DNs that agents use in day-to-day contact center operations, such as Extensions and ACD Positions, have to be registered using licenses that control agent seats.

Network T-Server might use this first type of licenses in some rare instances. However, in most cases, this license type is defined with a value of 0.

The number of licenses is defined as the number of DNs that can be registered on the Network T-Server.

Multi-Site Functionality

With the multi-site configuration, Network T-Servers communicate with a premise (traditional telephony) T-Server or another Network T-Server. To use this configuration, you must have the licenses for multi-site support, one license per site, in addition to Basic Functionality Network T-Server licenses.

For example, if your configuration contains one Network T-Server communicating with one premise T-Server, you need two multi-site licenses, one for each T-Server.

Genesys also issues this type of licenses for the IVR Server when it uses the IVR-in-Front configuration mode.

Note: If some of your T-Servers are configured for multi-site routing while others are not, you receive licenses for multi-site support for all T-Servers.

NTS Deployment Functionality

Network T-Server for GenSpec requires one deployment license to run all instances of Network T-Server for GenSpec.

Call Parking and Treatments Functionality

To perform call parking and treatments, Network T-Server for GenSpec requires a separate type of license that controls the number of ports used for call parking and treatments.

CTI-Less T-Server

CTI-Less T-Server supports three types of licenses:

- First type controls agent seats.
- Second type controls HA configuration.
- Third type controls multi-site configuration.

Basic Functionality

With a stand-alone CTI-Less T-Server serving a single site, you only need the first type of license to register DNs that CTI-Less T-Server monitors. The first type controls agent seats—all DNs that agents and supervisors use in day-to-day contact center operations, such as Extensions and ACD Positions. The number of licenses is defined as the number of DNs that can be registered on CTI-Less T-Server.

HA Functionality

In the hot standby high-availability (HA) configuration, a redundant pair of primary and backup CTI-Less T-Servers are operating with the `hot standby` redundancy type. To use this configuration, you must have a special CTI HA technical license per redundant pair in addition to basic CTI-Less T-Server licenses. Neither CTI-Less T-Server in a redundant pair starts if this technical license is unavailable. Moreover, the primary and backup CTI-Less T-Servers must use the same license server to control the same pool of DNs.

Note: CTI-Less T-Server, as any other Genesys server, also requires the SCS-controlled high-availability license for redundant configurations. See section "Solution Control Server" on page 15 for details.

Multi-Site Functionality

With the multi-site configuration, a number of CTI-Less T-Servers, usually serving different switches or switch partitions, communicate with each other. To use this configuration, you must have the third type of license, that for multi-site support, one license per site, in addition to basic CTI-Less T-Server licenses. This means:

- One license per CTI-Less T-Server serving a particular site, if running in the stand-alone or warm standby redundancy configuration
- One license per redundant pair of primary and backup CTI-Less T-Servers serving a particular site, if running in the hot standby redundancy configuration

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Note: If none of your CTI-Less T-Servers are configured for multi-site routing, do not order licenses for multi-site support. If some of your CTI-Less T-Servers are configured for multi-site routing while others are not, you will need licenses for multi-site support for all CTI-Less T-Servers.

Solution Control Server

Three types of licenses enable certain Solution Control Server (SCS) features:

- The first type, MLSNMP, controls SNMP (Simple Network Management Protocol) functionality.
- The second type, MLDistributed, controls support for geographically distributed environments.

- The third type, ha_redundancy, controls the Solution Control Server ability to perform a switchover automatically within any redundant pair of servers (a primary and a backup) running with either the `warm standby` or `hot standby` redundancy type.

Solution Control Server can perform a switchover even without a license, if the Solution Control Interface user first shuts down the primary application in the redundant servers pair or performs a manual switchover command.

Basic Functionality

With a stand-alone SCS or a redundant pair of primary and backup Solution Control Servers that do not communicate with a third-party network management system (NMS) you do not need any licenses.

SNMP Functionality

In an environment with SNMP (for example, an NMS), you must have one SNMP license to enable SNMP functionality of the Management Layer.

Geographically Distributed Environments

In a geographically distributed management environment, Solution Control Servers are communicating with each other and controlling a particular part of the Genesys environment while running at multiple remote sites (but within the same configuration environment). To use this configuration, you must have a separate license, one per entire Genesys configuration environment, that controls the distribution of software-management functions.

Primary Backup Mode Control

Solution Control Server ensures server availability by switching operations from the primary server to the backup server. Licenses are required for SCS to perform a switchover.

`Note:` Solution Control Server can perform a switchover even without a license, if the Solution Control Interface user first shuts down the primary application in the redundant servers pair or performs a manual switchover command.

You must have a special HA technical license, one per Genesys configuration environment, that controls redundant operations. See the corresponding version of *Framework Management Layer User's Guide*.

Universal Routing Server

Universal Routing Server (URS) supports two types of licenses, which you cannot combine:

- Basic routing functionality (router seats)
- HA capability (router HA)

Basic Routing Functionality

Universal Routing Server (URS) is licensed by the maximum number of concurrently enabled places for routing of interactions.

URS is licensed by the maximum number of concurrently enabled places for routing of interactions.

High Availability Mode

Universal Routing Server's `High Availability` mode is subject to licensing. It includes the `Hot Standby` mode of operation and use of the `pickup_calls` option.

If the HA license (the `router_ha_option` license feature) is not available or failed to check out and the URS option `pickup_call` is `true`, URS does not support the pickup-calls functionality (routes as if `pickup_calls` is `false`).

In summary, URS `High Availability` mode means the `Redundancy` type is `Hot Standby`, and the `pickup_calls` option is supported. For more information on the URS `pickup_calls` option, see the corresponding version of *Universal Routing Reference Manual.*

Router Connector License

All third-party sellable tools and applications which require or utilize Genesys Universal Routing functionality, including access to Genesys Universal Router web interface to provision target information, statistics, etc., require the Router Connector License. Please contact your account executive for more information on its applicability and pricing.

Universal Routing Server 8.0

Licensing features of Universal Routing Server (URS) 8.0 are the same as previous releases, however, a new licensing of version 8.0 is required.

Outbound Contact Server

Outbound Contact Server (OCS) supports two types of licenses, which you *cannot* combine:

- Preview dialing functionality
- Full dialing functionality (enables Preview also)

Both types of licenses control outbound seats—those accommodating agents involved in an outbound campaign (or, in other words, the agents logged into a Queue associated with a Campaign Group).

Preview Dialing Functionality

To use `Preview dialing` mode with a stand-alone OCS or a redundant pair of primary and backup OCSs, you must have the licenses that enable `Preview dialing` mode.

Full Dialing Functionality

To use a full range of supported dialing modes with a stand-alone OCS or a redundant pair of primary and backup OCSs, you must have the licenses that enable this complete functionality.

See the corresponding version of *Outbound Contact Deployment Guide.*

Voice Callback

Universal Callback Server (UCS) supports two types of licenses:

- Preview license uses the `Preview` dialing mode; this mode is limited to the preview of callback requests delivered to the agent. `Autodial` (automatic) mode is not allowed.
- Full license enables both `Preview` and `Autodial` mode (with an optional CPD Server). It has no functional limitations.

  You can use either license.

`Note:` If you purchase VCB, you can easily add the CPD Server by simply requesting a separate license for CPD Server. See “CPD Server” on page 20.

See *Voice Callback Reference Manual* and *Voice Callback Deployment Guide* for further licensing details.

Server-Side License Control

Table 1 illustrates how licensing control works in UCB Server:

Table 1: License Types

License Type	Number of Callback Requests
`vcb_preview`	Number of callback `vcb_preview` requests per 60 minutes in `Preview` mode
`vcb_full`	Number of callback `vcb_full` requests per 60 minutes in `Full` mode (that is, `preview+auto`)

Note: For information about the initial license checkout for VCB, see "Universal Callback Server" on page 37.

Primary/Backup Support

UCS, as any other Genesys server, also requires the SCS-controlled high-availability license for redundant configurations. See section "Solution Control Server" on page 15.

Database Dependencies

The main database table where all callback-related information is stored (this table is configured through the `list` option of Routing Point) has a field called `call_time` (type `int`, `not nullable`). This field is populated by the current time in UTC format upon initial insertion of the callback record. UCS uses this field to enforce licensing after recovery on startup or a switch between primary and backup servers.

You enter the table name of your choice when you configure the Table Access object.

Note: For information about processing a request to work in an unlicensed mode, see "Processing Request to Work in Unlicensed Mode" on page 37.

Configuration Dependencies

See the corresponding version of *Voice Callback Reference Manual* for configuration dependencies and options.

CPD Server

A stand-alone CPD Server (or a redundant pair of primary-backup CPD Servers) running in tandem with OCS requires licenses that control the number of Dialogic ports used for outbound and/or engaging calls. When ordering licenses, specify whether CPD Server is functioning in ASM mode (Active Switching Matrix) or in standard mode (non-ASM).

Call Concentrator

One license per instance is required.

Load Distribution Server

One license is required to run all instances of LDS.

IVR Server

IVR Server supports several types of licenses:

- IVR-Behind-The-Switch Mode
- IVR Universal Mode
- IVR Network T-Server Mode
- IVR High Availability

Basic Functionality

Genesys provides the following configuration modes for the IVR Server:

- IVR-Behind-The-Switch, a basic configuration in which a T-Server that is connected to the premise switch (using computer-telephony integration [CTI] links) can monitor the call activity on IVR channels. An IVR-Behind-The-Switch license is required for each IVR port that will be used with an IVR Server running in IVR-Behind-The- Switch mode.
- IVR-In-Front, in which a CTI link is not involved in the call processing. An IVR Universal license is required for each IVR port that will be used with an IVR Server running in this mode. The IVR Universal License can include licenses which would allow customers to run their IVR Server in both the behind and in-front modes.
- IVR Network T-Server, in which the IVR Server (an IVR T-Server running in Network mode) is a link to a user-provided Network IVR application. The routing strategy and a Genesys Network T-Server are used to route the calls to the Network IVR for processing. An IVR Network T-Server license is required for each IVR port that will be used with an IVR Server running

in IVR Network T-Server mode. If routing will be used with an IVR Server running in IVR Network T-Server mode, an IVR Network T-Server Routing license is required.

- IVR High Availability, in which the IVR Servers work in Hot Standby mode. One IVR High Availability license is required for each IVR Server Hot Standby pair of IVR Servers.

Multi-Site Functionality

With a multi-site configuration, a number of IVR Servers (usually serving different switches or switch partitions) communicate with each other. To use this configuration, you must have one issc license for multi-site support per site, in addition to basic IVR Server licenses. This means you need one license per IVR Server serving a particular site.

Note: If your existing environment has one or more T-Servers with multi-site support (i.e., you already have tserver_iscc licenses), then you will need one additional tserver_iscc license for each IVR Server you deploy. This is necessary for all IVR Server deployment modes, even though IVR Server may not directly participate in multi-site routing operations. If you do not currently have tserver_iscc licenses for other T-Servers in your environment, then they are not needed for IVR Server.

Voice Treatment Server

The number of licenses is defined as the number of Voice Treatment Options (VTO) ports.

Genesys Info Mart

Note: Starting in 7.5, Genesys Info Mart no longer requires technical licenses. The information below applies to release 7.2 and prior.

The following Genesys Info Mart technical licenses work in combination to control the type of interaction media, the number of data sources, and the redundancy of those data sources:

- Voice Media (Mandatory)
- Redundancy (Optional)
- High Availability (Optional)

Note: The Redundancy and High Availability technical licenses ship together when you purchase the Genesys Info Mart High Availability sellable item.

Voice Media

You need the Voice Media technical license to transform and to load data from the following sources into Genesys Info Mart:

- Configuration information (extracted from a single Configuration Server database)
- Voice interaction information (extracted from a single Call Concentrator database)
- Agent login and status information (extracted from a single Stat Server database).
- Outbound contact solution information (extracted from a single or multiple Interaction Concentrator databases).

Redundancy

In addition to the Voice Media technical license, you need the Redundancy technical license to transform and to load the following data into Genesys Info Mart:

- Voice interaction information extracted from multiple Call Concentrator databases, where each database records unique events, that is, unique events and no duplicates between Call Concentrator databases.
- Agent login and status information extracted from multiple Stat Server databases, where each database records unique events, that is, unique events and no duplicates between Stat Server databases.

Note: A Redundancy technical license is not required when using multiple Interaction Concentrator databases.

High Availability

In addition to the Voice Media and Redundancy technical licenses, you need the High Availability technical license to transform and to load the following data into Genesys Info Mart:

- Voice interaction information extracted from multiple Call Concentrator databases, where pairs of redundant databases record the same events, so that each event is duplicated in a given pair of Call Concentrator databases.

Note: A High Availability technical license is not required when using multiple Interaction Concentrator databases.

Genesys Desktop

Genesys Desktop supports three types of licenses:

- Basic Functionality
- Genesys Agent Desktop
- Genesys Supervisor Desktop

Genesys Desktop Server requires the Basic Functionality license to startup. At runtime, Desktop Server determines which additional license(s), Genesys Agent Desktop or Genesys Supervisor Desktop, it needs. This depends on the login information that a user provides and on the configuration of the corresponding Person object in the Configuration Database.

Note: Genesys Desktop uses Java Flex Library, which limits supported license server configurations to a single server configuration. See “Single-Server Configuration” on page 71.

Basic (Server) Functionality

Desktop Server includes a Java library called Agent InteractionLayer (AIL). A special license is required to enable this library. A single license is required to run all instances of Desktop Server.

Genesys Agent Desktop

This technical license gives a user access to all of the Agent-facing functionality of Genesys Desktop. One license is required for each logged in user.

Genesys Supervisor Desktop

This technical license gives a user access to both the Supervisor-facing and the Agent-facing functionality of Genesys Desktop. One license is required for each logged in user.

If no more Genesys Supervisor Desktop licenses are available, a supervisor may try to login in a restricted mode using a Genesys Agent Desktop license, if one is available.

Genesys Desktop .NET Toolkit

Users of Genesys Desktop .NET Toolkit (or Genesys Agent Desktop (GAD) .NET Toolkit 7.1 and earlier) must have technical licenses both to run Genesys Integration Server (or Genesys .NET Server, 7.1 and earlier) and connect to it: For information, see “Genesys SDKs: Agent Interaction Java & GIS” on page 24.

Genesys SDKs: Agent Interaction Java & GIS

Genesys SDKs may require two different types of licenses: those related to Agent Interaction Java and those connected with use of Genesys Integration Server (GIS). The Agent Interaction Java licensing provides access to features of the Agent Interaction Layer (AIL). The GIS licensing requirements vary according to the way you plan to interface with that Server. That is, the licenses you need for GIS depend on what GIS services you plan to use. Different implementations of your Genesys SDK-based applications with GIS services require different technical license.

- Agent Interaction Java
- GIS
- GIS Services:
  - Agent Interaction Service
  - Interaction Service
  - Queue Service
  - Configuration Service
  - Statistics Service

Note: Genesys Integration Server uses Java Flex Library, which limits supported license server configurations to a single server configuration. See “Single-Server Configuration” on page 71.

Agent Interaction Java

This technical license (`ISDK_FACTORY`) makes available the agent features of the Agent Interaction Layer (AIL) Java library. You need one license per running AIL instance. In conjunction with Agent Interaction Java, if you plan to

implement DN Route Point monitoring in your customized application, you must also have an `ISDK_QUEUE` license.

GIS

GIS provides various services, each of which has its own licensing requirements. But GIS itself also requires its own license—`GIS`. One license is required for each instance of GIS.

GIS Services

Implementation of the following services requires a corresponding technical license.

Agent Interaction Service

You need the GIS Agent Interaction Layer (AIL) Service license (`ISDK_FACTORY`) if you plan to connect your client to the Agent Interaction that GIS provides. (You also need the Interaction Service license for each GIS instance running the Agent Interaction service.)

Interaction Service

You need the GIS Interaction Service license (`GIS_INTERACTIONSERVICE`) if you plan to connect your client application to the Agent Interaction or Queue service that GIS provides—one license per client connection.

Queue Service

You need the GIS Queue Service license (`ISDK_QUEUE`) if you plan to connect your client application to the Routing service (and benefit from AIL's routing features). You need one license for each GIS instance running the Agent Interaction service.

Configuration Service

You need the Configuration Service license (`GIS_CONFIGSERVICE`) if you plan to connect your client application to the Configuration service that GIS provides from Configuration Server. You need one license per client connection.

Statistics Service

You need the Statistics Service license (`GIS_STATSERVICE`) if you plan to connect your client application to the Statistics service that GIS provides. You need one license per client connection.

Genesys Agent Scripting

One license per instance is required.

Gplus Adapter 7.x for PeopleSoft CRM

One license per instance is required.

Interaction Server

Interaction Server requires one `ics_multi_media_agent_seat` license in order to log in per agent. For an agent to be able to process interactions of different media types, these media licenses are required:

- `ics_email_webform_channel` for e-mail interactions
- `ics_live_web_channel` for chat interactions
- `ics_custom_media_channel` for Open Media interactions

For example, if one agent is to process e-mail, the required licenses are:

- One `ics_multi_media_agent_seat`
- One `ics_email_webform_channel`

Interaction Server requires one `iwd_jms_cp` license in order to enable the JMS Integrated Capture Point functionality for use with Genesys intelligent Workload Distribution.

Classification Server

Without a license, Classification Server provides basic functionality, which includes screening rules. With an `ics_nlp_content_analysis` license for the Genesys Content Analyzer option, it also supports intelligent content analysis (also called classification) using natural-language processing technology.

Licenses for Solutions

When you purchase any of the Genesys solutions, Genesys considers what licensed features that particular solution requires and issues technical licenses you need for each. For example, you would receive the sellable-item license for Universal Routing 7.2 complemented with the following technical licenses:

- URS licenses.
- T-Server 7.2 licenses for all seat-related DNs, and T-Server 7.0/7.1 licenses for both seat-related and technical DNs, involved with interaction processing; possibly, licensing for T-Server hot standby redundancy; and, possibly licenses for the T-Server multi-site processing feature.

High Availability Licensing

There are two layers of high availability/scalability/distribution functionality:

1. Redundancy/warm standby at suite level.
2. Advanced high availability that is service-specific.

> Note: Further information about licenses for high availability functionality that is service-specific is described in the product documentation.

Licenses for high availability enable the following:

- Deployment of primary/backup servers and control through Genesys Management Framework. See “Primary Backup Mode Control” on page 16.
- Usage of LDS. See “Load Distribution Server” on page 20.
- Usage of distributed Management Framework (CL, ML). See “Geographically Distributed Environments” on page 11.

> Note: Primary/backup SCS is already provided in the base solution and does not require a license.
> Customers need a high-availability license to use any Genesys servers in redundant configurations (whether hot standby or warm standby). If the license is unavailable, SCS does not perform a switchover between primary and backup servers when the primary fails.

License Compatibility

When you upgrade an application to the 8.x release, order a new license file. See “Combining New and Existing Licenses” on page 53 for information on how to combine new and existing licenses. If necessary (due to OS or IPv6 support), or desirable, you may also install a new release of License Manager as described in Chapter 2, “Licensing Concepts”starting on page 29. Refer to the *Genesys Migration Guide* for instructions on migrating from the licensing system of previous releases.

> Warning! Genesys applications release 7.x do not work with 6.x licenses. Starting from Release 8.x, Genesys products begin verification of the version of corresponding license features in the license file. This means that Genesys 8.x products will check out only 8.0 license features.

Licenses for Virtual Platform Support

When license control is performed in a virtualized environment, either by running a FlexNet Publisher license server on virtual platforms or by using node-locked application license files, the host-id value returned by the virtual platform is used. When using MAC addresses, it may be necessary to override the default and force the virtual platform to use a static (fixed) MAC address to avoid problems when virtual images are moved between physical machines.

See FlexNet Publisher documentation on virtualization deployment for further details: http://support.flexerasoftware.com/main/Default.aspx.

Chapter

2 Licensing Concepts

This chapter describes the main components of the Genesys licensing system, which is implemented via License Server Manager, and explains how this system works. Information in this chapter is divided between two topics:

License Server Manager

The FLEXlm/FlexNet Publisher License Server is a daemon process that runs continuously in the background, tracking how many instances of Genesys licenses are utilized on a network.

The License Server consists of a License Server Manager and the Genesys vendor daemon.

At startup, all licensed Genesys FlexEnabled applications establish a client connection to License Server, providing a computer host ID or IP address, along with various information about the application. If License Server finds a valid license for the application, it permits the application to start and run properly.

The license server responds to a FlexEnabled application's checkout request for a license if licenses are available. The license server counts the number of licenses that are in use and the number of licenses that are still available. The server can also provide reports on which licenses are being used and by which users.

While licensed applications run, the License Server and FlexEnabled application send polling messages to each other at certain intervals. The license server or FlexEnabled application can therefore know if the application or license server has terminated abnormally. If the application terminates because

of a process or runtime environment failure, the license server records the information about the license(s) no longer being in use.

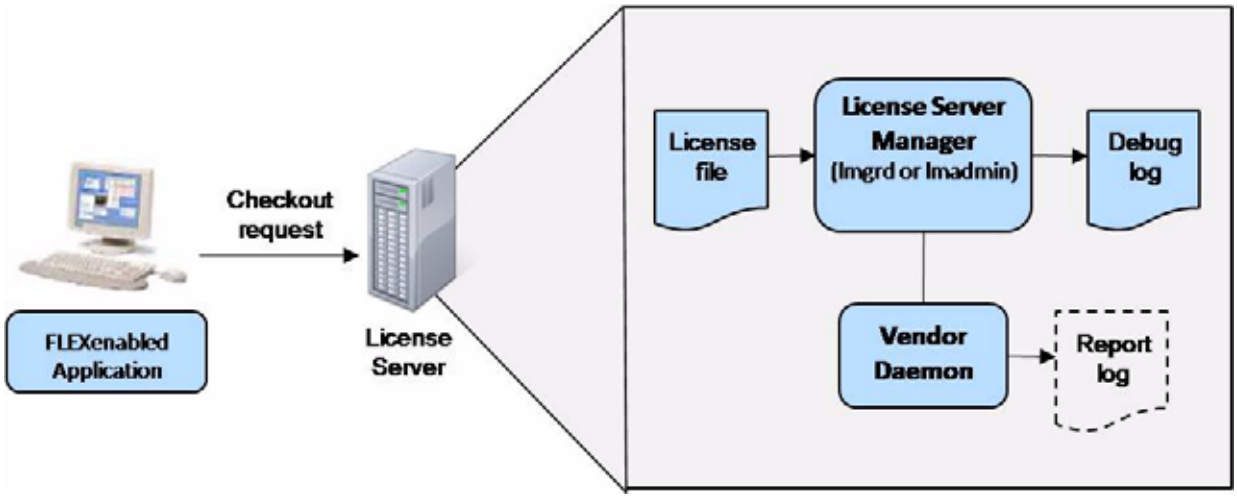


Figure 1: FlexNet Publisher License Server

About FLEXlm and FlexNet Publisher

Genesys License Manager incorporates the FLEXlm 9.5 license manager produced by Macrovision), and the FLEXlm FlexNet Publisher 11.7 and 11.9 license managers inherited and developed by Flexera (formerly known as Acresso). FlexNet Publisher is the successor product name for FLEXlm, and is highly backward compatible with earlier FLEXlm versions. For the purpose of simplicity, these are referred to as "License Manager", or “Flex”, generically, whether FLEXlm or FlexNet Publisher.

Beginning with Genesys Release 8.1, a new version of License Manager is required for use of Genesys products with certain, newer, 64-bit operating systems, as shown below.

Table 2: Genesys License Manager Requirements

Operating System	Bit Mode	License Manager Version	Management Framework Version	Flex lmutil Version
• Windows Server 2008 R1 & R2 • Red Hat Linux 5 • HP-UX 11iv3 Integrity (Itanium)	• 64-bit native	FlexNet Publisher 11.9	• Management Framework 8.1+	lmutil 11.9+
Windows Server 2008	32-bit	• FlexNet Publisher 11.7 or • FlexNet Publisher 11.9	• Management Framework 8.0.2+ • Management Framework 8.1+	• lmutil 11.7+ • lmutil 11.9+
All other Genesys-supported OS versions not listed above	32-bit	• FlexNet Publisher 9.5 or • FlexNet Publisher 11.7 or • FlexNet Publisher 11.9	• Management Framework 7.1+ • Management Framework 8.0.2+ • Management Framework 8.1+	• lmutil 9.5+ • lmutil 11.7+ • lmutil 11.9+

For mixed environments and incremental migrations, FlexNet Publisher 11.x is fully backward-compatible with existing 7.x and 8.0 applications. For example: If you are running CIM Platform 7.x or 8.0 and other 7.x or 8.0 applications, on Windows Server 2008 64-bit native, and wish to migrate to Release 8.1 while continuing to run your other existing Release 7.x or 8.0 Genesys 32-bit applications in parallel, you may do this by upgrading to FlexNet Publisher 11.9. You may migrate the Release 7.x or 8.0 applications at a later date.

Notes:

- Starting with Management Framework 7.1.0, you may use License Manager version 9.5 for Genesys products.
- Starting with Management Framework 8.0.2 , you may use License Manager versions 9. 5 or 11.7 for Genesys 8.x products running on Microsoft Windows operating system. However, if using Microsoft Windows 2008 operating system, you must use FLEXlm License Manager version 11.7.
- When using License Manager version 11.7, you must also upgrade to the Licensing Admin tool lmutil version equal or higher to that version.
- During licensing platform upgrades, a rollback is possible for most supported license control configurations. However, the Genesys 7 licensing platform does not support IPv6, or some of the newer operating systems.

Licensing Vendor's Documentation

Genesys provides vendors' documentation: *License Administration Guide - FlexNet Publisher Licensing Toolkit 11.9,* in the License Manager installation package.

License Manager Components

The License Manager architecture contains these components (see Figure 2):

- License Manager (LM) daemon
- Genesys vendor daemon
- License file
- Application program

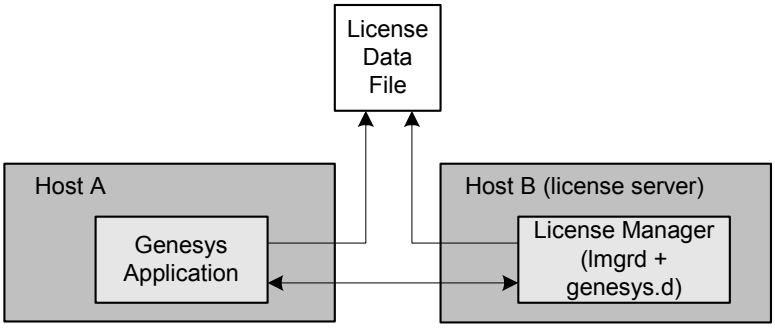


Figure 2: Licensing Process

Note: Figure 2 depicts a generalized disposition of the licensing system components. In reality, the license file reside on the computer running License Manager; a copy of the license file may reside on the computer running a Genesys application; and the application may run on the same host as License Manager.

License Manager Daemon

The LM daemon (`lmgrd`) executes two major tasks. First, it initiates commerce with the client applications, passing the connection on to the appropriate vendor daemon. Second, it starts and restarts the vendor daemons. Genesys maintains the Flex capability of running multiple redundant License Manager daemons on three server nodes, so that licenses are available if any two of the three nodes are running (see "Three-Server Redundant Configuration" on page 72 for details).

Genesys Daemon

Licenses are administered by running a process called the *vendor daemon,* which records how many licenses are checked out and who has them. If the vendor daemon terminates for any reason, all users lose their licenses (this does not mean the applications suddenly stop running). Users normally repossess their licenses automatically when lmgrd restarts the vendor daemon, although they may exit if the vendor daemon remains unavailable. The Genesys daemon is called `genesys.d` for and `genesys.d.exe` for Windows.

Client programs communicate with the Genesys daemon through TCP/IP network communications. Genesys applications and the daemon processes (the license server) can run on separate hosts on a single network (local area) or across a wide-area network of any size.

Note: A combination of the LM daemon (`lmgrd`) and the vendor daemon (`genesys.d` or `genesys.d.exe`) comprises the license server.

License Files

Licensing data is contained in a text file that Genesys creates, but which you edit and install. Genesys recommends saving this file under the name `license.dat`; however, this is not mandatory. The editing procedure is described in "Editing the License Data File" on page 45.

The file contains information about the license server host name, license server host ID, license server port, vendor daemons, and one or more lines of data, called a *FEATURE line,* for each licensed product. Note that because T-Server releases 7.0 and 7.1, for example, requires two types of licenses for basic operation, two `FEATURE` lines (`tserver_sdn` and `tserver_tdn`) appear in a license file for a stand-alone T-Server. You can edit a license data file by adding `FEATURE` lines for new product licensing, even if the products belong to different vendors.

Note: If more than one `FEATURE` line with the same name appears in a license file, License Manager produces an error message in its log, grants a license for the first `FEATURE` line, and ignores all other instances of the same feature. Remove extra `FEATURE` lines or comment them out with the pound sign (`#`).

As long as License Manager can access the license file, the file can reside on a computer other than the one running License Manager.

Notes:

- Genesys no longer issues new sentinel keys (also called *dongles*). If you have dongles that you have used in your previous Genesys installations, refer to the *Licensing Genesys Products* document on the Genesys Technical Support website. That document provides the description, installation instructions, and license file example for dongles.
- License files for License Manager v11.x are the same format and are backward compatible with Genesys Release 7.x and Release 8.0 applications. If you are implementing License Manager 11.7 or 11.9, new license files may be required, and may include a mix of Release 8.1, Release 8.0, and Release 7.x products, as needed.

Applications

At launch, Genesys server applications that require technical licenses connect to the license server and request a license. For this connection to occur, you must inform applications about the license server location. Specify the license server location by using a command-line parameter or the `license-file` option you configure for an application. For detailed information, see Chapter 3, "Installing License Manager," on page 39.

License Check Process

When you launch a Genesys application that requires a license:

1. The application (client) determines which computer runs the license server for that product by either:
   - Taking license server parameters, if available, directly from the startup command line or the `license-file` configuration option.
   - Reading the license data file to determine the license server parameters.
2. The client establishes a connection with the license server and requests a license.
3. The license server checks the license data file to determine the total number of application licenses and compares it with the number of licenses currently in use.

> Note: The license server must read the same license data as the licensed application. That means, the license file describing all licensed Genesys products must be saved to or be accessible from the computer on which License Manager runs.

If a license is available, the license server returns `license granted` to the client and the application starts operating.

If no licenses are available, the license server sends `license denied;` the application generates an appropriate log message (log event `#00-07100 Licensing Violation`) and exits.

Notes on Application-Specific Behavior

The following sections document any deviations in application behavior from the standard license checkout process.

Genesys Desktop

Genesys Desktop Server checks out a user-specific license (either Genesys Agent Desktop or Genesys Supervisor Desktop) when a user (either an agent or a supervisor) submits login parameters to start a web session. If a license is not available, the desktop window does not open. The server closes the user's web session and checks in the license when:

- The user logs out using the `logout` command.
- The user closes the browser window.
- The browser terminates abnormally.

Genesys Desktop .NET Toolkit

Genesys Integration Server checks out a license of the connection type when a client tries to open a connection. If a license is not available, the connection is denied. The server checks in the license when the connection is closed, either at a client's request or because of the timeout.

Outbound Contact Server

At startup, OCS checks out as many licenses as are specified by its num-of-licenses configuration option (providing this amount does not exceed the amount specified in the license file). When the number of agents logged into Queues associated with one or more loaded Campaign Groups reaches the number of licenses checked out, OCS generates the Licensing Violation message: reason for the violation is that the feature usage level has been exceeded for every new agent that has logged into the campaign-related Queue. When an agent currently associated with a loaded Campaign Group logs out of the Queue or OCS unloads the Campaign Group, OCS reuses these freed licenses for new agents (and, if the licensing violation has been reported, removes it).

Because OCS controls the licenses while the switch (through the ACD Queue configuration) or URS (through routing strategies) controls the distribution of an outbound call, the agent who is denied the license may receive the call. As a result,

- The corresponding Agent Desktop application does not interact with OCS to process the Calling List record associated with the call.
- The number of agents that OCS uses in predictive-dialing calculations may be smaller than the real number of agents receiving outbound calls.

T-Server

When T-Server receives `License denied` at startup because it has requested more licenses than are currently available, it checks out the maximum number

of licenses that are available. If a single license is not available, T-Server generates the `Licensing Violation` message and exits.

To ensure that T-Server does not initially request too many licenses, set the corresponding T-Server configuration options to values less than the total number of T-Server-related licenses you have purchased. Pay particular attention to these option settings when using more than one T-Server.

Universal Callback Server

Initial License Checkout

UCS licenses are checked out at startup. The maximum number of licenses that can be checked out is specified in the configuration.

Available licenses are decreased upon receiving a callback request or when a license has been blocked. The decrease is incremented 60 minutes after the callback submission or the license block.

> `Note:` License Manager does not allow you to check out more than 9999 licenses per client; due to this restriction, one Universal Callback Server can handle no more than 9999 callback requests per hour. If the traffic of your anticipated callback requests is higher than this value, consider running several UCSs and spreading the load between several Routing Points.

For further information, see "Request for Service Availability Extension" section in the corresponding version of *Voice Callback Deployment Guide,* and the "Client-Server Protocol Extension" section in the corresponding version of *Voice Callback Reference Manual.*

Processing Request to Work in Unlicensed Mode

UCS produces a `GCTI_LICENSE_FAIL` licensing-violation log message with violation type in the following situation:

- If `vcb_preview` licenses are available but the call arrives on a CDN (Route Point) that is configured for `Autodial` mode.

See the corresponding version of *Voice Callback Reference Manual* for details on how to configure Autodial on CDNs.

Universal Routing Server

At startup, URS checks out all available licenses. When a logged-in agent appears as a valid target for a call for the first time, URS allocates one of the checked-out licenses to the agent. When the number of logged-in agents that at least once appeared as valid targets reaches the number of licenses checked out, URS generates the `Licensing Violation` message for every new logged-in agent. An allocated license is freed for URS to reuse when:

- The agent logs out.
- The Person object describing the agent is disabled or deleted in Configuration Manager.

- URS is restarted.

In the first two cases, URS may generate a `Licensing Restored` message.

Take this URS behavior and the fact that agents cannot manually give up licenses into account when determining the number of required licenses. This recommendation especially applies to sites that have many shift changes where new agents log in while the previously working agents have not yet logged out.

Interaction Server

For each license FEATURE name there is an Interaction Server configuration option with the same name in the `license` section. The value of each such option is a number specifying the number of licenses of that type that Interaction Server checks out. Interaction Server checks out the configured number of licenses of each type at startup. It also reacts to any value changes of the options in the `license` section.

If the number of licenses in use goes above the configured number of licenses (as a result of logging in agents), Interaction Server forces logout of some agents so that the number of licenses in use is equal to the configured number.

Licensing Violation

Although a Genesys application encountering a problem with licenses at runtime generates a `Licensing Violation` log message (a log event with ID `#00-07100`, it does not interrupt its service and it does not drop current interactions. However, the application may cease to process new interactions until the licensing violation is removed. A licensing violation may occur because:

- The license has expired.
- The number of licenses has decreased either in the license file or in the application's configuration.

Appendix D, "License Failure Scenarios," on page 79, describes how you should determine and react to licensing violation.

Chapter

3 Installing License Manager

This chapter describes how to set up licensing. The process consists of the following steps, which are detailed in this chapter:

Installing License Manager

License Manager is shipped on the Management Framework product CD. Depending on your operating system, follow the installation instructions described in "Installing on UNIX" on page 39 or "Installing on Windows" on page 40.

The License Manager package includes a number of administrative utilities for managing the licensing activities on a network. For instructions on using these utilities, refer to the vendor's documentation provided in the License Manager's installation package.

Installing on UNIX

The License Manager installation package contains all of the files needed to run the program. The files are stored in a TAR format.

Before installing License Manager on a UNIX machine, mount a directory from where the license file is visible. This directory can reside on any machine as long as it is mounted so that it is visible to the license server and all host machines of Genesys products that need licensing. If the directory is not

mounted, make sure that a copy of the license data file is saved on each host machine that runs Genesys products that require licensing.

In the `licensing/license_manager` directory on the CD, locate the installation specific to your environment.

To install License Manager, unpack the TAR file using this procedure:

1. To verify the contents of the TAR file, enter the following command at the prompt:
   `tar -tvf <filename>.tar`
2. Unpack the files by typing:
   `tar -xvf <filename>.tar`

   After the unpacking process, you should see these nine files:

   ```
   ./genesys.d
   ./lmdown
   ./lmgrd
   ./lmhostid
   ./lmremove
   ./lmreread
   ./lmstat
   ./lmutil
   ./lmver
   ```

You do not have to install these files and you can store them in any directory specifically created for this purpose.

Installing on Windows

License Manager

1. Insert the Management Framework product CD.
2. Do one of the following:
   - Select `Run` from the `Start` menu, and at the command line, type `<n>:\licensing\license_manager\windows\setup` (where `n` is the designation of the source CD drive), and press `Enter`.
   - Use Microsoft Explorer to locate the `Setup.exe` file in the `licensing\license_manager\windows` directory on the CD, and double-click `Setup.exe` to start the installation.
3. Specify the destination directory into which License Manager is to be installed or accept the default.

> `Note:` If you change the default directory for License Manager, keep in mind that License Manager must be installed on a physical drive of the machine, such as C drive—not on a virtual drive.

4. Specify the program folder to which FLEXlm License Manager is to be added. By default, this folder is created in the `Start > Programs` menu.
5. Specify the license file for this License Manager, with the full path to it.
6. Genesys recommends that you run License Manager as a Windows Service. This allows License Manager to boot automatically and run as a daemon, even if no user is logged in. Refer to the *FlexNet Publisher License Administration Guide.* See the section on Installing License Manager as an Operating System Service.

This completes the License Manager installation.

`Note:` When installed on the same machine with other Genesys products requiring licenses, License Manager needs to be a dependent service for all of them.

After installation, you will notice that a License Manager program group, including the Flex License Manager Start icon and the License Manager Tools icon, has been added to the Windows Programs menu. If License Manager is not configured as a Windows Service, users can starte the applcation manually from its icon in the program group.

Deployment in Mixed IPv6/IPv4 Environments

The FLEXnet Publisher Licensing Toolkit 11.9 used by Genesys supports IPv6 in addition to IPv4.

`Note:` For additional information about FLEXnet Publisher Licensing toolkit 11.9 support of IPv6, refer to the *FlexNet Publisher License Administration Guide - FlexNet Publisher Licensing Toolkit 11.9*, Chapter 16: IPv6 Support.

One place where IPv6 can come into function is the license file; the SERVER line can define an IPv6 address as the host value. Entries in the license search path that use the 'port@host' convention to identify the license server, can specify an IPv6 address as the 'host' value.

For FlexNet Publisher components to work properly using IPv6 addresses, all systems in an enterprise (including the network hardware and software) must be configured properly to support communication using IPv6 addresses.

Before testing or deploying a FlexEnabled application that supports IPv6 or IPv4/IPv6 dual communication, ensure that all systems on the network can communicate successfully.

If the license server is run under any of the following operating systems, it can communicate with FlexEnabled clients using either IPv4 or IPv6 (as long as the network is configured properly).

- Any supported edition of Windows Vista
- Any supported Linux platform
- Any supported Unix platform

Because these operating systems support dual-layer communication, both IPv4 and IPv6 FlexEnabled clients can communicate with an IPv6 license server. In addition, IPv6 clients can communicate with an IPv4 license server using the IPv4 address. See Figure 3.

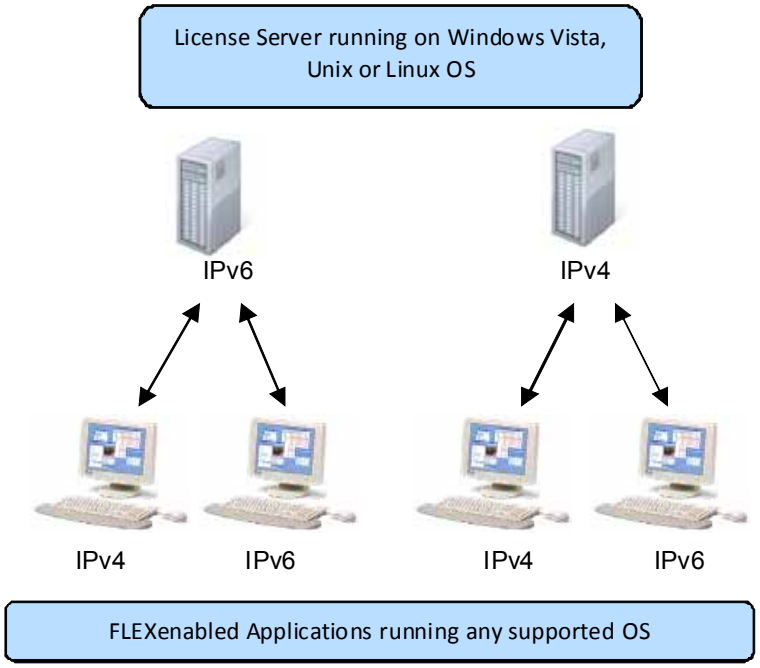


Figure 3: License Server Running on Windows Vista, Unix, or Linux

If you are using lmadmin as your license server, it supports both IPv4 and IPv6 clients. You must rename one of your vendor daemon executable files, because separate IPv4 and IPv6 vendor daemons are required.

If the license server runs on Windows XP or Windows Server 2003, there are certain limitations because of the limited dual-layer support on these operating systems. IPv4 FlexEnabled clients cannot communicate with a IPv6 license server running on these operating systems. However, IPv6 FlexEnabled clients can communicate with an IPv4 license server running on these operating systems. See Figure 4.

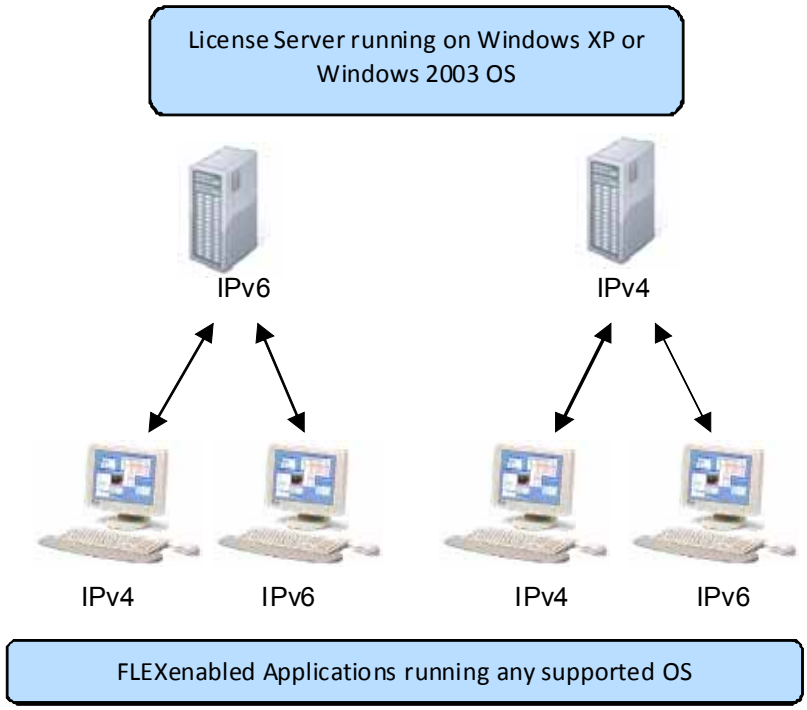


Figure 4: License Server Running on Windows 2003 or XP

If an enterprise runs license servers on Windows 2003 or Windows XP, the license administrators should create and maintain two separate networks - one for IPv6 FlexEnabled clients (which uses the IPv6 license server) and the other for IPv4 FlexEnabled clients (which uses the IPv4 license server). See Figure 5.

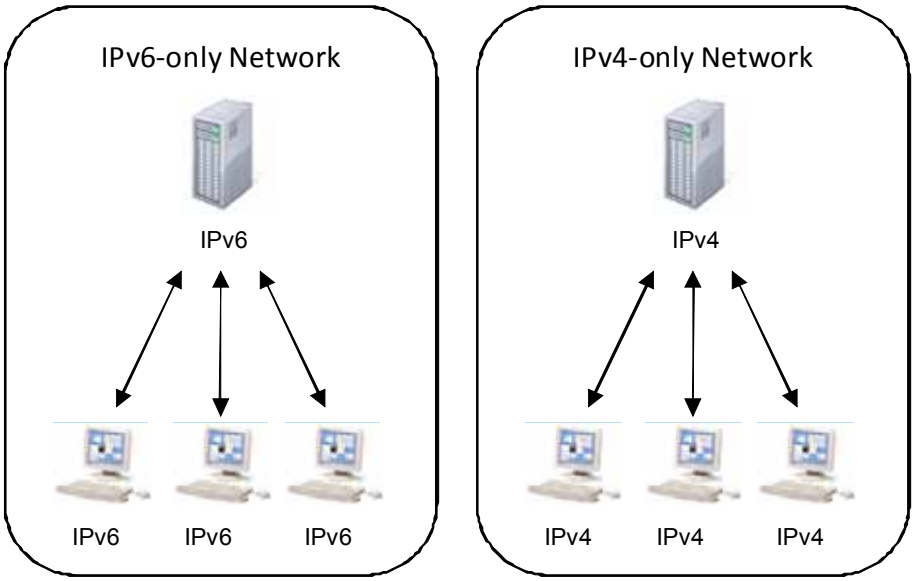


Figure 5: Separate IPv4 and IPv6 Environments

Using Wildcards in an IPv6 Address

You may use the wildcard character, "*," in place of an entire field or on a byte-by-byte basis to specify a range of addresses without having to list them all. As an illustration, the following example feature definition line is locked to four specific addresses:

```
FEATURE f1 myvendor 1.0 1-jan-2010 uncounted \
    HOSTID="INTERNET=127.17.0.1,\
        INTERNET=2001:0db8:0000:0000:ff8f:effa:13da:0001,\
        INTERNET=127.17.0.4,\
        INTERNET=2001:0db8:0000:0000:ff8f:effa:13da:0004" \
SIGN="<...>"
```

The following example feature definition line specifies an entire range of addresses, including the four specific ones from the line above:

```
FEATURE f1 myvendor 1.0 1-jan-2010 uncounted \
        HOSTID="INTERNET=127.17.0.*,\
        INTERNET=2001:0db8:0000:0000:*:*:*:000*"\
    SIGN="<...>"
```

Editing the License Data File

Genesys sends users a license data file containing the information for a license.

License Data File Format

A license data file has four types of lines:

`SERVER` This line begins with the word `SERVER,` followed by the license server's host name, host ID (Disk Serial Number on Windows), and the TCP/IP port number.

`DAEMON` This line begins with the word `DAEMON,` followed by the name of the license daemon (`genesys.d`), and the path to the daemon. If you are using the Flex License Manager for both Genesys and non-Genesys products, additional daemon lines that name other daemons may be present.

`FEATURE` A *feature* is a licensed product or a service (feature) this product provides. These lines begin with the word `FEATURE,` followed by the feature name or identifier, daemon name (`genesys.d`), feature version number, expiration date of license, number of licenses, encrypted key, short feature description (`vendor_info,` is present for some features, to make them easier to visually identify in the file), information on the project or customer the feature relates to (`NOTICE`), and a checksum. Each product or licensed service (if a product provides multiple services licensed through the license server) has one `FEATURE` line.

> Note: If a `FEATURE` line does not fit on one line, a back slash (\) at the end of the first line indicates the `FEATURE` line continuation on the second line. Removing a back slash invalidates the license.

A license file may have comment lines that contain information that does not affect the license. Comment lines begin with a pound sign (`#`).

For instructions on updating license data files, see "Editing New Files" on page 51.

License File Samples

Figure 6 on page 46 shows a sample license data file and identifies all its elements. Other figures in this section represents the variety of license data files that Genesys currently issues (these samples only identify the elements that are critical for you to notice):

- Figure 7 on page 47 and Figure 8 on page 48 show sample license data files for basic 7.x T-Server licenses (100 licenses that control agent seats and 50 licenses that control technical DNs), on UNIX and Windows operating systems respectively.
- Figure 9 on page 49 shows a similar license data file issued for an Ethernet address, which you can use for either a UNIX or Windows operating system.

Note: In these samples, the licensed feature is represented by its name.

- In Figure 10 on page 50, the licensed feature for ERS (Enterprise Routing) is represented by its identification number and is described in the `vendor_info` field.
- Figure 11 on page 51 shows a sample license data file for an environment with a firewall.

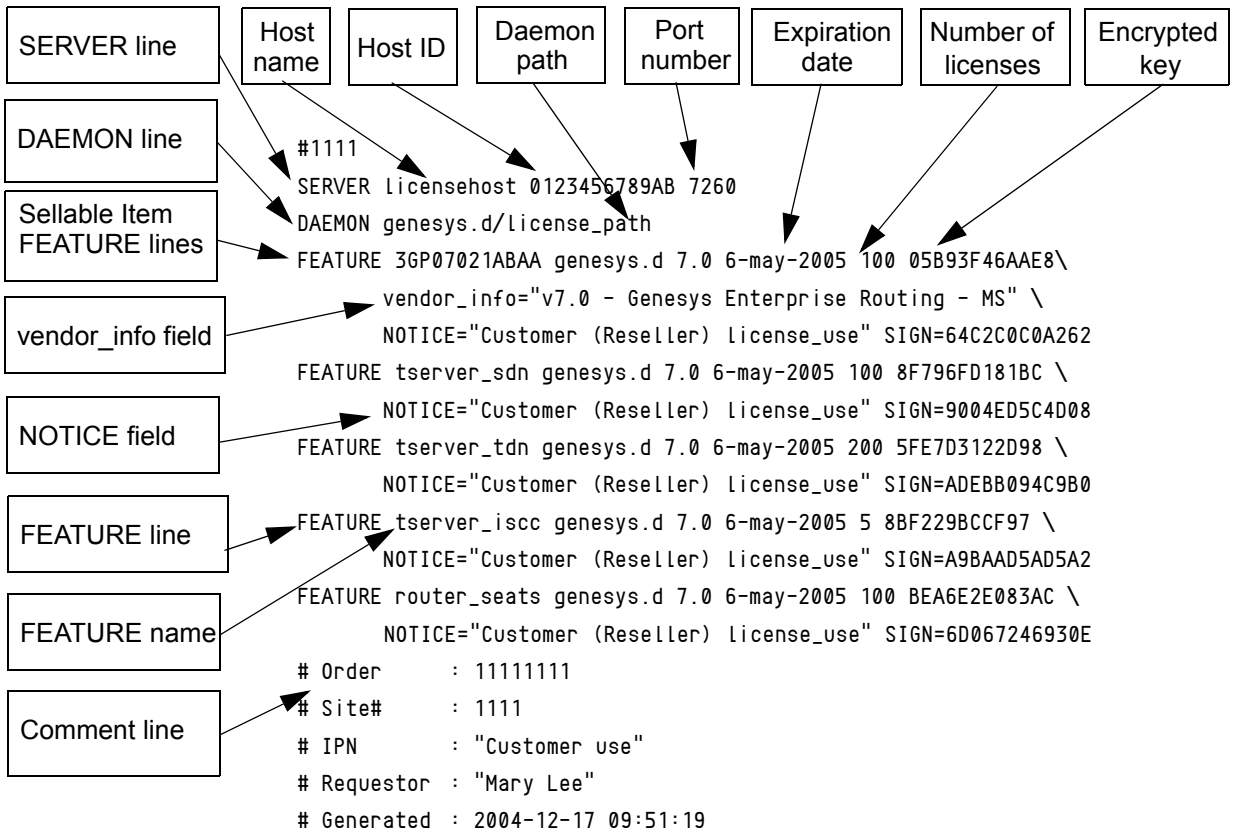


Figure 6: Elements of a License Data File

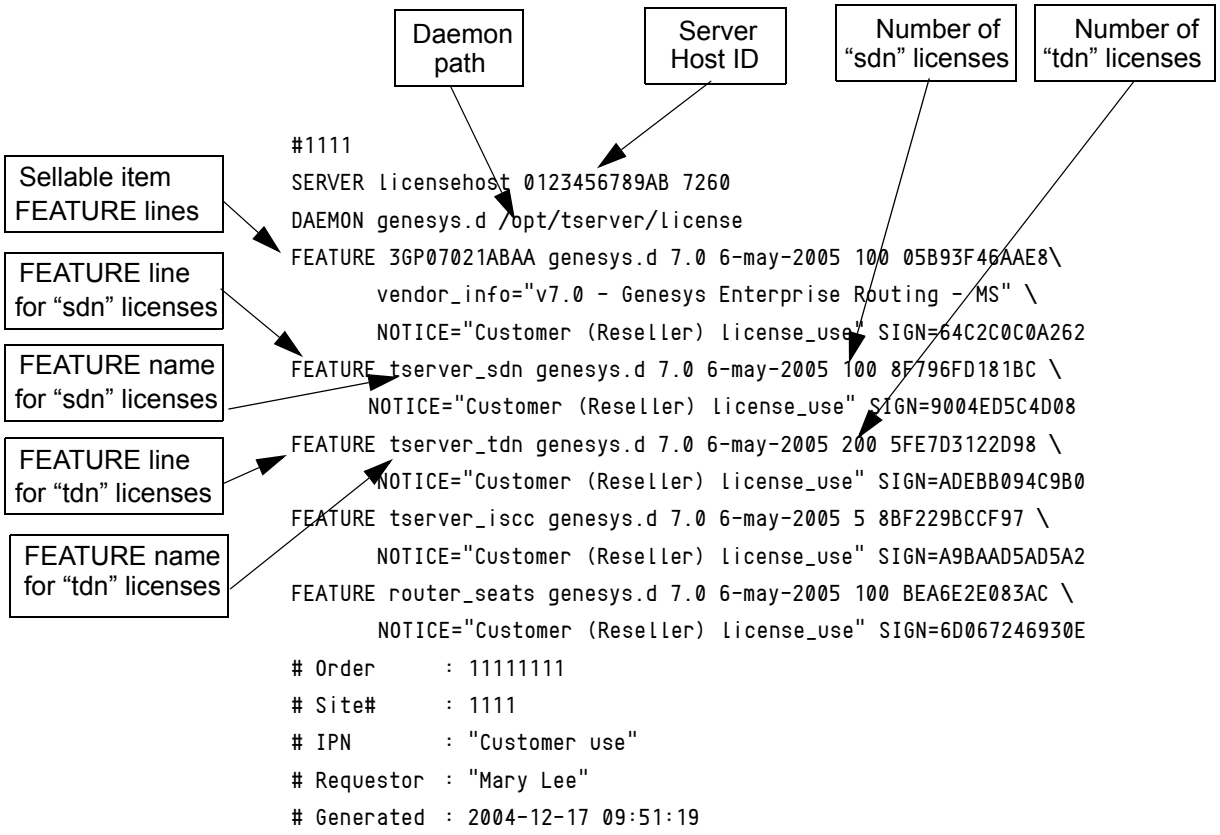


Figure 7: Sample License Data File for UNIX

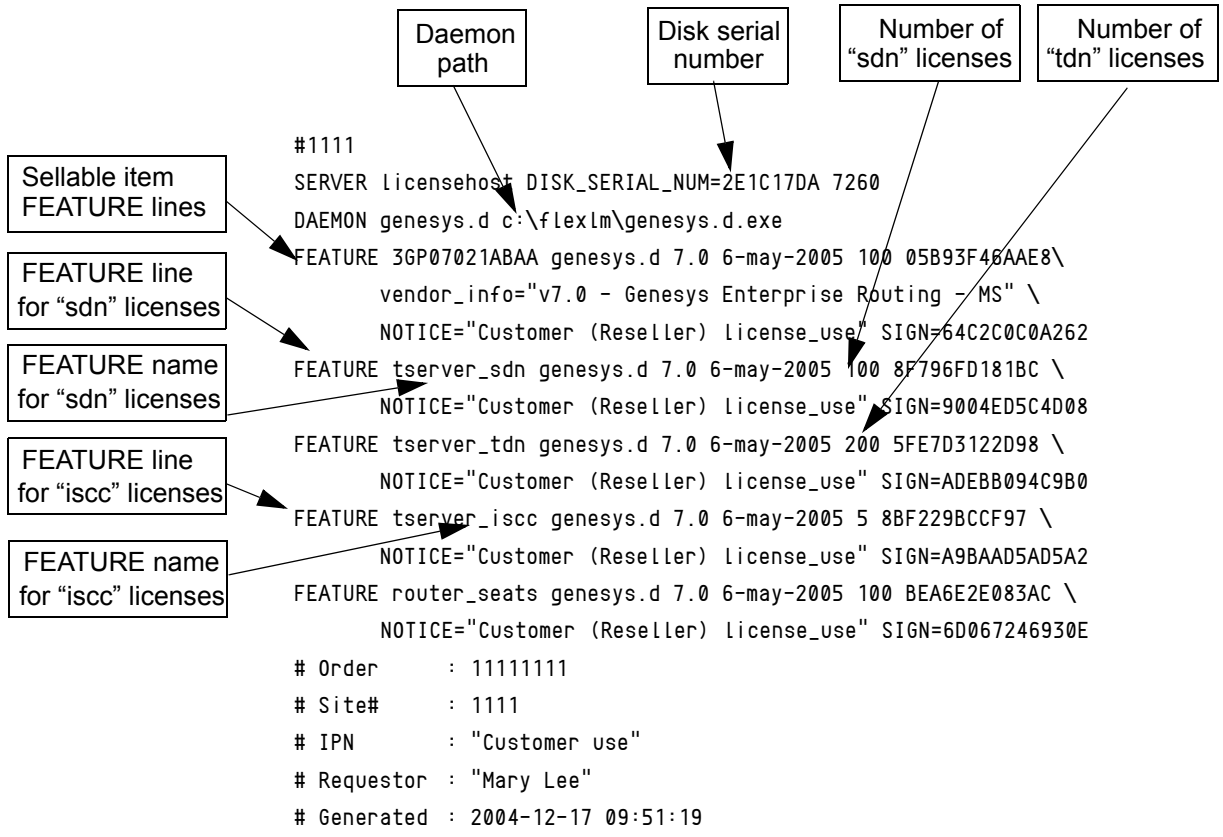


Figure 8: Sample License Data File for Windows

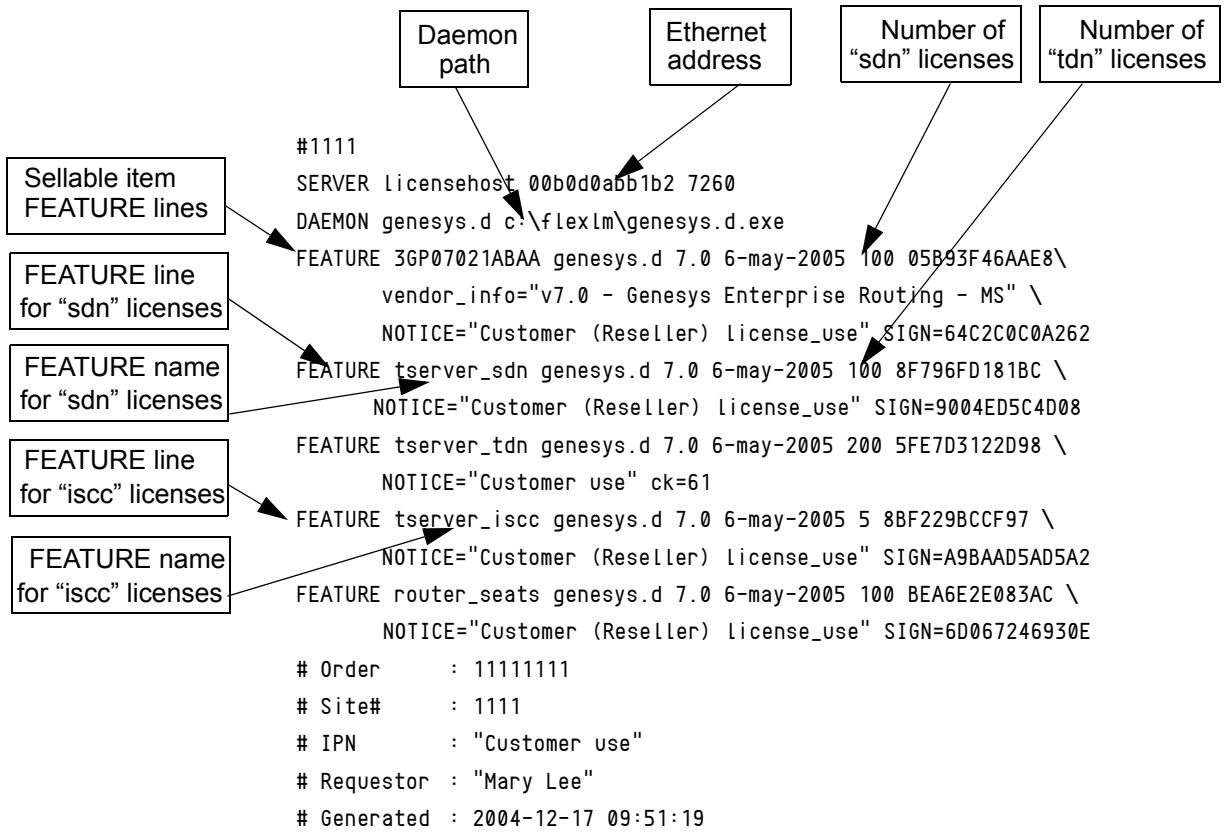


Figure 9: Sample License Data File Using the Ethernet Address

---

Note: A license file using the Ethernet address appears the same for all supported operating systems. See Table 3, "Host ID Commands for Different Operating Systems," on page 60 for information about which operating systems you can use an Ethernet address on.

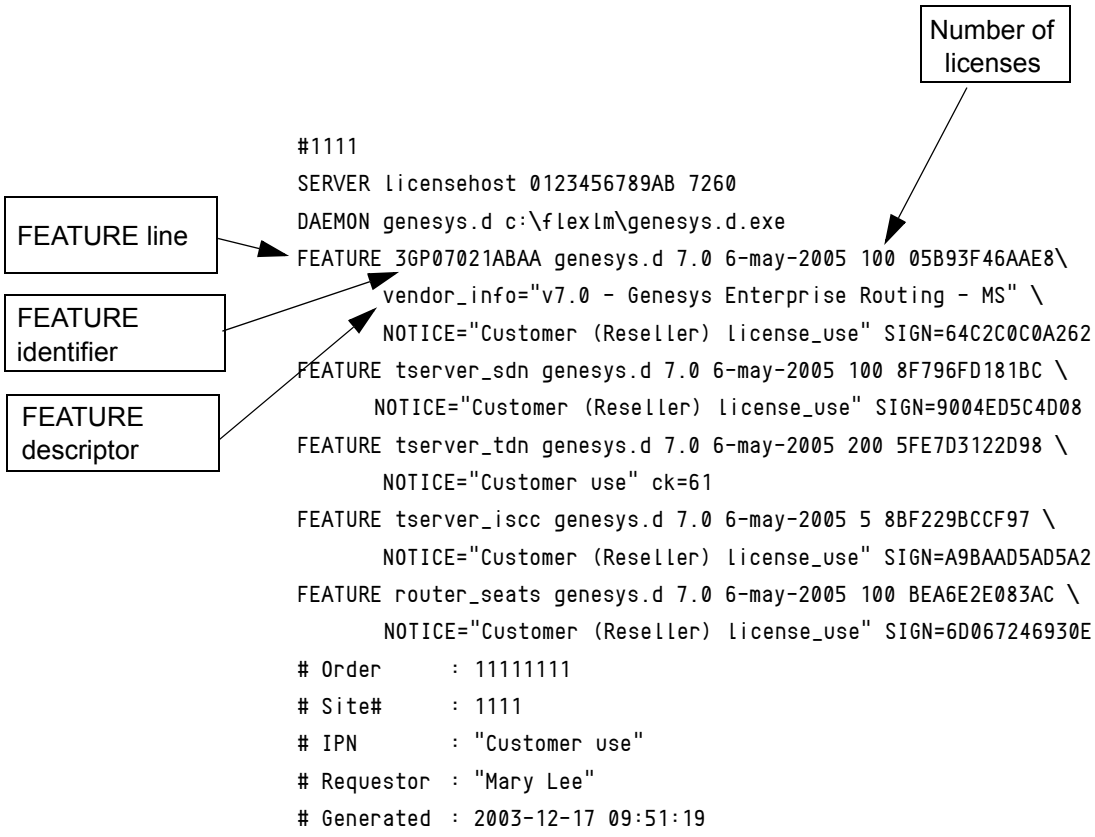


Figure 10: Sample License Data File Using the Feature Identifier and Descriptor

Firewall Support

When a firewall separates an application from the host running the license daemon (`genesys.d`), the application cannot start unless the license daemon port is specified in the application's license file and the same port is open in the firewall. To meet this requirement:

1. Specify the dedicated port number as the last argument of the `DAEMON` line using the following syntax (where *xxxx* is a number):
   `port=`*xxxx*

   Ensure that the license daemon's port number differs from the license server's port number specified in the `SERVER` line.

   See "Editing the License Data File" on page 45 for instructions on how to correctly add parameters to a license file.

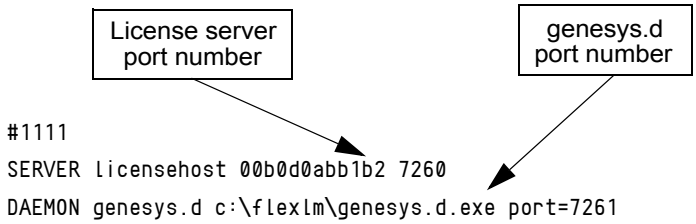
2. Open the same port in the firewall as the one you specified in the license file. See documentation for your particular system for instructions.

Figure 11 on page 51 shows a sample license data file with the daemon port number (in this case, 7261) specified for firewall support.

Note: With firewall support activated, the license daemon does not restart until its clients close their connections to it. If your system does not have a firewall, avoid specifying the license daemon's port in a license file to prevent unnecessary delays in restart.

Refer to the vendor's documentation for more information on firewall support.

Note: Flex only supports firewalls configured for server ports. It does not support firewalls configured for client ports.




```
#1111
SERVER licensehost 00b0d0abb1b2 7260
DAEMON genesys.d c:\flexlm\genesys.d.exe port=7261
FEATURE 3GP07021ABAA genesys.d 7.0 6-may-2005 100 05B93F46AAE8\
       vendor_info="v7.0 - Genesys Enterprise Routing - MS" \
       NOTICE="Customer (Reseller) license_use" SIGN=64C2C0C0A262
FEATURE tserver_sdn genesys.d 7.0 6-may-2005 100 8F796FD181BC \
       NOTICE="Customer (Reseller) license_use" SIGN=9004ED5C4D08
FEATURE tserver_tdn genesys.d 7.0 6-may-2005 200 5FE7D3122D98 \
       NOTICE="Customer (Reseller) license_use" SIGN=ADEBB094C9B0
FEATURE tserver_iscc genesys.d 7.0 6-may-2005 5 8BF229BCCF97 \
       NOTICE="Customer (Reseller) license_use" SIGN=A9BAAD5AD5A2
FEATURE router_seats genesys.d 7.0 6-may-2005 100 BEA6E2E083AC \
       NOTICE="Customer (Reseller) license_use" SIGN=6D067246930E
# Order      : 11111111
# Site#      : 1111
# IPN        : "Customer use"
# Requestor  : "Mary Lee"
```

Figure 11: Sample License Data File Supporting a Firewall

Editing New Files

After receiving valid license data file information from Genesys, create a license file that contains all required information and save the file with the `*.dat` extension in the directory where License Manager is installed. Genesys recommends using the default license file name `license.dat`. For licenses sent

by e-mail, remove the headers and save the file with the `*.dat` extension in the correct directory.

Refer to Table 4, "FEATURE Names by Application," on page 61, for a list of Genesys products that require technical licenses and the corresponding `FEATURE` names you must specify in the license data file.

To edit a license data file:

1. Open the file using a text editor (for example, type the `vi` command followed by the file name on UNIX or use Microsoft Notepad on Windows).
2. Copy the text received from Genesys. The file appears as shown in Figure 12 or with sample information supplied.

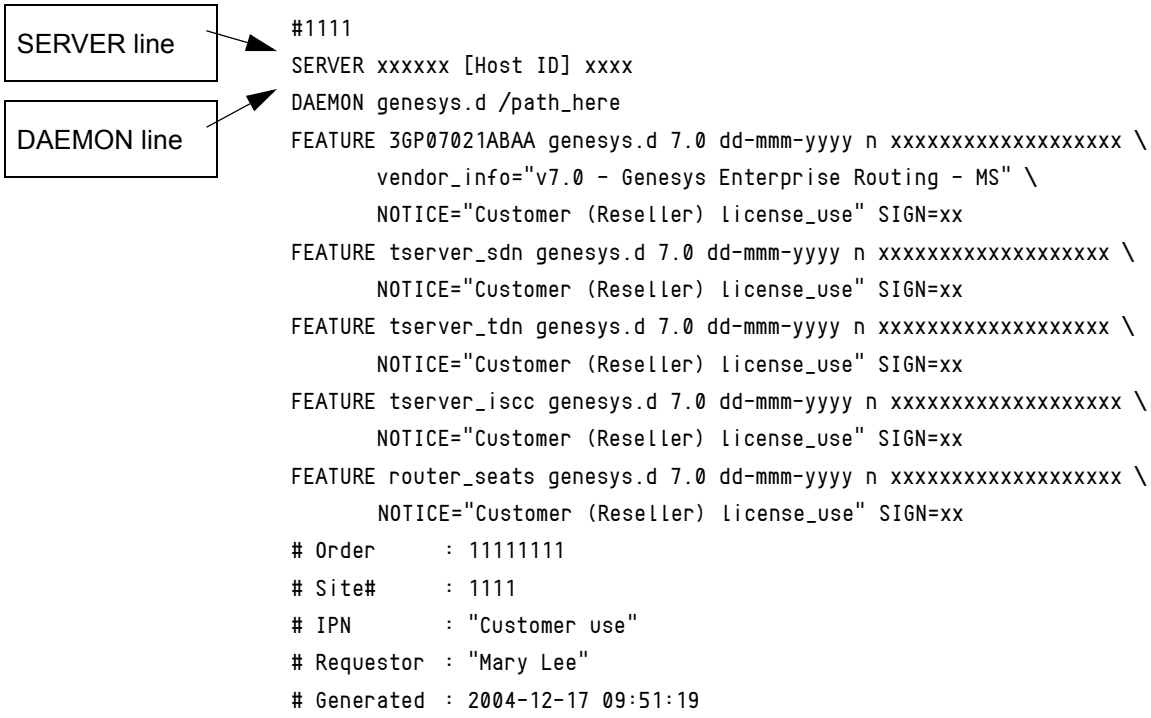


Figure 12: Editing License Data Files

3. Edit the license data file so that it reflects the correct information.

   See "License File Samples" on page 45 for a sample of a valid license data file.

> Warning! To avoid damaging license data files, use only the Spacebar to manage space. Do not use the Tab, BackSpace, or other keys that manage space.

4. After you enter the license information you received from Genesys, modify *only* these items if needed:
   - Host name (but *not* host ID) on the `SERVER` line
   - Port number on the `SERVER` line (Genesys recommends using the default of 7260)
   - Path name on the `DAEMON` line

   Warning! Altering other information invalidates the license.

Note: To move the license server to a new machine, you must order a new license file. Genesys recommends that you plan your installations carefully to avoid frequent and unnecessary relocations of your license server from one host computer to another.

Combining New and Existing Licenses

You might want to order additional licenses for a Genesys product to use with the existing License Manager when you:

- Purchase additional Genesys products.
- Need to increase or decrease the number of existing server applications of the same type.
- Need to increase the number of licenses for a particular feature.
- Upgrade to a higher release of an existing product, which requires different licenses.
- Upgrade the OS to a newer 64-bit platform.
- Require IPv6 support.

Order new licenses from Genesys as described in "Requesting Licenses" on page 76. When you order a license file for a computer for which you have already received a license file, Genesys sends you one of the following:

- A complete license file that contains the license FEATURE line(s) for both the existing and new feature(s). In this case, you have to replace the old license file with the new one and run the License Manager's `lmreread` utility to force License Manager to read the new license file.
- A license file that only contains the license FEATURE line(s) for the new or affected feature(s). In this case, you have to add the new FEATURE line(s) to your existing license file or replace the obsolete FEATURE line(s) with new one(s) as described in this section.

Note: Before you modify your existing license file, make a backup copy of it. Also keep in mind that you can request a copy of your existing license file from Genesys by sending an e-mail to license@genesyslab.com. You can also request a complete license file that combines your new and existing FEATURE lines.

Once you have received new license information from Genesys, you can update your licenses in the currently running environment as follows:

1. Open your existing license file in a text editor.
2. Make sure that newly received licenses are issued for the same host ID as specified in the existing license file.
3. Modify the existing license file:
   - If you are adding a new product, a new feature, or a new release of the existing product, add the new FEATURE line(s).
   - If you are modifying the number of existing licenses, replace each appropriate old FEATURE line with the newly received FEATURE line.

   Warning! Do not delete FEATURE lines for the features for which you have not ordered additional licenses.
4. Save the license file.
5. Run the License Manager's `lmreread` utility to force License Manager to read the updated license file. See the vendor's documentation for more information on using the utility.

Note: If you would like to keep old FEATURE lines in the file, comment them out with the pound sign (`#`).

Warning! When you use the above procedure to increase the number of T-Server licenses, make sure that the `num-of-licenses` and `num-sdn-licenses` configuration options in T-Server are set to exact numbers and not to the `max` alias. Otherwise, T-Server is unable to identify the current number of maximum available licenses.

Starting License Daemons

Before startup, edit the license data file. If the file includes incorrect data, License Manager cannot be started. For information about editing a license data file, see "Editing the License Data File" on page 45.

Genesys products use two license daemons:

`lmgrd` This License Manager daemon sends client processes to the `genesys.d (genesys.d.exe)` license daemon on the appropriate machine. This daemon name on Windows is `lmgrd.exe`.

`genesys.d` This Genesys daemon dispenses licenses for the requested products. This daemon name on Windows is `genesys.d.exe`.

To start successfully, the licensing software must know where the license file is located. This is usually communicated via the environment variable `LM_LICENSE_FILE`. Depending on your environment, use specific instructions from "Starting on UNIX" on page 55 or "Starting on Windows" on page 55 to point License Manager to the license data file.

Warning! Never start or stop `genesys.d (genesys.d.exe)` directly; `lmgrd (lmgrd.exe)` reads the license data file and controls the starting and stopping of `genesys.d (genesys.d.exe)` instances.

Starting on UNIX

Either set the environment variable `LM_LICENSE_FILE` to point to the license file or use the UNIX `-c` option.

To set the environment variable, at the command line enter:

```
setenv LM_LICENSE_FILE <file.name>
```

To start the licensing software using the `-c` option, launch the `lmgrd` executable with the `-c` option followed by `<path to license.dat & file.name>`. For example:

```
/opt/mlink/license/lmgrd -c /opt/mlink/license/license.dat
```

You can set up License Manager so that status and error messages generated during startup are sent to a log file. For information on setting up logs and for an explanation of error codes, Refer to the vendor's documentation provided in the License Manager installation package.

Starting on Windows

When License Manager is not installed as a Windows Service, run the `lmgrd_run.bat` file created in the directory where License Manager is installed or start License Manager from any of these locations:

- Program group
- Command prompt
- License Manager Tools window

A window opens indicating that License Manager is up and running. Status and error messages generated during startup or while License Manager is running display in the window.

Note: For details on the License Manager startup options and for any recommendations on environment variable settings, refer to the vendor's documentation provided in the License Manager installation package.

Running License Manager as a Windows Service

Genesys recommends that you set up License Manager is as a Windows Service with the autostart capability, so that it starts automatically every time the machine reboots. You can also start the service manually. Refer to the vendor's documentation provided in the License Manager installation package, for startup instructions.

Or, you can use License Manager Tools to set up License Manager as a Windows Service at any time after the installation is completed. Refer to the "Configuring the License Manager as a Windows Service" section of the vendor's documentation for instructions.

Starting Licensed Applications

Before starting a licensed application, verify that:

- The time setting on the computer running the license server is accurate.
- Information in the license file is accurate.

If the timestamp on the license server or the information in the license file is not accurate, log event `#00-07100 Licensing Violation` is generated while a licensed application is launching. For more information on this log event, see the corresponding version of *Genesys Combined Log Events Help.* The Licensing Violation log event triggers an alarm condition that is predefined in the Configuration Layer. For more information, see the "Predefined Alarm Conditions" chapter in the corresponding version of *Framework Management Layer User's Guide.*

For instructions on how to start a particular application, refer either to the documentation for this application or to the documentation for the solution to which the application belongs.

At startup, a licensed application searches for the license server location. The following sections describe two methods for instructing a Genesys application on where to find the license server.

Note: You can use the Genesys Management Layer to start your License Manager. Refer to the corresponding version of *Framework Management Layer User's Guide* for instructions.

Command-Line Parameter

The first method requires that you specify the `-l` parameter in the startup command line. You can specify a value for this parameter as one of the following:

- The host name and port of the license server, as specified in the `SERVER` line of the license file, in the `port@host` format. For example:
  `-l 7260@ctiserver`
- The full path to and the exact name of the license file. For example:
  `-l /opt/mlink/license/license.dat`

> Note: Specifying the License Manager's host and port parameter eliminates the need to store a copy of a license file on all computers running licensed applications.

Submit a value for the `-l` parameter during the installation procedure of any given application.

All Genesys server applications that require licensing support this method, and it has the highest priority out of the two methods.

Configuration Option

The second method for instructing a Genesys application on where to find the license server is to specify the full path to, and the exact name of, the license file as a value for the `license-file` configuration option.

Most Genesys server applications support this method, and it has a lower priority than the `-l` parameter method.

Configure the `license-file` option in the `license` section on the `Options` tab for an Application object in the Configuration Layer. (Square brackets in the option description indicate a configuration section name.)

license-file

[license]
Default Value: No default value
Valid Value: <string>
Changes Take Effect: After an application is restarted

Specifies the license address in either format:

- The host name and port of the license server, as specified in the `SERVER` line of the license file, in the `port@host` format. For example:
  `7260@ctiserver`
- The full path to and the exact name of the license file. For example:
  `/opt/mlink/license/license.dat`

Note: Genesys recommends that you specify the License Manager's host and port parameter. This value eliminates the need to store a copy of a license file on all computers running licensed applications.

Notes for Windows

When running Genesys applications on Windows, note the following:

- If run as a Windows Service under a System account, a Genesys product cannot read its license file remotely. To avoid this situation, use the `port@host` format for pointing to the License Manager location.

Appendix

A Determining Host IDs

This appendix helps you find out and correctly format the host ID of the computer running your License Manager. Information in this appendix is divided between two topics:

About Host IDs

The Flex component in Genesys License Manager uses different machine identifications for different operating systems. For example, all Sun Microsystems, Inc., machines have a unique host ID, whereas DEC machines do not. For this reason, the Ethernet address is used on some machine architectures as the host ID. An Ethernet address is a 6-byte number, with each byte specified as two hexadecimal digits. You must specify all 12 hex digits when using an Ethernet address as a host ID. For example, if the Ethernet address is `8:0:20:0:5:ac`, specify `0800200005ac` as the host ID.

When determining the host ID, make sure it is not the IP address. These two are not the same.

Use the `lmhostid` utility to print out the exact host ID that Flex expects to see for any given machine.

Numeric, 32-bit host IDs are normally used in hexadecimal format. However, on some systems, including HP and SGI, the system command returns the number in decimal format. Since v3.0 of Flex, a pound symbol (`#`) before the host ID indicates a decimal number to Flex. For example, if the HP `uname -i` command returns `2005771344`, Flex will accept `#2005771344`. Alternatively, you can convert the number to hexadecimal. On a UNIX system, you can convert the decimal format to hexadecimal with the following script:

```
% echo 2005771344 16o p | dc
```

which returns:

```
778DA450
```

Host ID Commands

Table 3 lists various platform-specific methods for obtaining the host ID required and supported by Genesys.

Note: Genesys recommends using Ethernet addresses, where supported, for greater license management flexibility.

Table 3: Host ID Commands for Different Operating Systems

OS Name	Type	Command	Host ID String
AIX (RS/6000, PPC)	32-bit host ID	Enter `uname -m`, which returns `000276513100`. Remove the last two digits and use the last eight digits out of the remaining ten.	02765131
DEC Alpha	Ethernet address	Enter `netstat -i`	080020005532
HPUX a	32-bit host ID	Enter `uname -i` and convert to hex or prefix with #.	778DA450 or #2005771344
SUN Solaris	32-bit host ID	Enter `hostid`.	170a3472
Windows	Ethernet address	Enter `lmutil lmhostid`.	0800200055327
	Disk serial number	Type either command: • `DIR C: |more` • `vol C:` Then look for `Volume Serial Number is`, and remove the dash (-) from the middle of it. **Warning!** Be sure to obtain the host ID of the physical (C:) drive.	`DISK_SERIAL_NUM=1CA25283`
Linux	Ethernet address	Enter `lmutil lmhostid`.	0800200055327

a. Genesys License Manager does not currently support the Ethernet address retrieval on HPUX.

Appendix

B Genesys FEATURE Names

Table 4 lists the Genesys applications that require technical licenses along with their corresponding FEATURE names, which must be specified in the license data file.

Table 4: FEATURE Names by Application

Genesys Application Name	FEATURE Name	Description	Comments
Agent Interaction Java	ISDK_FACTORY	License for access to Agent-facing functionality of AIL.	One license per AIL instance
	ISDK_QUEUE	License to enable usage of the Routing service.	One license per AIL instance
Call Concentrator	CConCopies	Call Concentrator licenses	One license per instance
Classification Server	ics_nlp_content_analysis	Intelligent content analysis license	Feature license
Configuration Import Wizard	ConfigurationImport	Configuration Import Wizard licenses	One license per configuration environment
Configuration Server	CLDistributed	Configuration Server license to provide support for a distributed configuration environment	One license per configuration environment
CPD Server	occ_port	CPD Server license to use Dialogic ports	One license per port

Table 4: FEATURE Names by Application (Continued)

Genesys Application Name	FEATURE Name	Description	Comments
CSTA Connector for BroadSoft BroadWorks	csta_connector_bw_sdn	CSTA Connector for BroadSoft BroadWorks seat licenses to support basic contact center operations and register seat-related DNs	One license per seat per CSTA Connector for BroadSoft BroadWorks redundancy cluster. Refer to the num-sdn-licenses and num-of-licenses option descriptions in your CSTA Connector Deployment Guide
Genesys Desktop	ISDK_FACTORY	Genesys Desktop license to enable Desktop instances	One license per configuration environment
	DESKTOP_AGENT	Genesys Desktop license to enable all agent-related features	One license per concurrent user
	DESKTOP_SUPERVISOR	Genesys Desktop license to enable both supervisor-related and agent-related features	One license per concurrent user
Genesys Desktop .NET Toolkit	ISDK_FACTORY	GIS license required to support GIS Agent Interaction Interface.	One license per GIS instance
	ISDK_QUEUE	GIS license to enable usage of the Routing service.	One license per GIS instance
	GIS	The number of running instances of GIS.	One license per server instance
	GIS_INTERACTIONSERVICE	GIS licenses required to support client connections to GIS Interaction service.	One license per concurrent client connection

Table 4: FEATURE Names by Application (Continued)

Genesys Application Name	FEATURE Name	Description	Comments
Genesys Info Mart [a]	gim_etl_voice	Voice media technical license	One license per application instance
	gim_etl_redundancy	Redundancy technical license	One license per application instance of Genesys Info Mart High Availability
	gim_etl_ha_option	High Availability technical license	One license per application instance of Genesys Info Mart High Availability
Genesys Integration Server (GIS)	GIS	The number of running instances of GIS	One license per Server instance
	ISDK_FACTORY	GIS license required to support GIS Agent Interaction Interface	One license per GIS instance
	ISDK_QUEUE	GIS license to enable usage of the Routing service.	One license per GIS instance
	GIS_STATSERVICE (Not applicable to GIS GSAP)	GIS licenses required to support client connections to GIS Statistics service	One license per concurrent client connection
	GIS_INTERACTIONSERVICE	GIS licenses required to support client connections to GIS Interaction service	One license per concurrent client connection
	GIS_CONFIGSERVICE (Not applicable to GIS GSAP)	GIS licenses required to support client connections to GIS Configuration service	One license per concurrent client connection

Table 4: FEATURE Names by Application (Continued)

Genesys Application Name	FEATURE Name	Description	Comments
Genesys Interface Server (7.1 and earlier only)	GIS	The number of running instances of GIS.	One license per server instance
	ISDK_FACTORY	GIS license required to support client connections to GIS Agent Interaction Interface	One license per configuration environment
	ISDK_QUEUE	GIS license to enable usage of the Routing Service.	One license per configuration environment
	GIS_STATSERVICE	GIS licenses required to support client connections to GIS Statistics Interface	One license per concurrent client connection
	GIS_INTERACTIONSERVICE	GIS licenses required to support client connections to GIS Interaction Interface	One license per concurrent client connection
	GIS_CONFIGSERVICE	GIS licenses required to support client connections to GIS Configuration Interface	One license per concurrent client connection
Genesys Agent Scripting	ISDK_FACTORY	Genesys Agent Scripting license required by the Agent Interaction library component of Agent Scripting	One license per application instance
G*plus* Adapter 7.x for PeopleSoft CRM	ISDK_FACTORY	PeopleSoft CRM G*plus* Adapter license required by the Agent Interaction library component of the G*plus* Adapter	One license per Adapter instance

Table 4: FEATURE Names by Application (Continued)

Genesys Application Name	FEATURE Name	Description	Comments
Interaction Server	ics_multi_media_agent_seat	Interaction Server seat	License per seat
	ics_email_webform_channel	Genesys E-mail seat	License per seat
	ics_custom_media_channel	Open Media Interactions	License per seat
	ics_live_web_channel	Genesys Web Media seat	License per seat
	iwd_jms_cp	iWD JMS Capture Point	One license per configuration environment
IVR Server	tserver_ivr_max_ports_in_front [one word]	IVR-In-Front licenses for IVR Server to support basic contact center operations and register DNs associated with an IVR Server operating in IVR-In-Front mode	Refer to the num-sdn-licenses and num-of-licenses option descriptions in your *IVR Interface Option IVR Server System Administrator's Guide.*
	tserver_ivr_max_ports_behind [one word]	IVR-Behind-Switch licenses for IVR Server to support basic contact center operations and register DNs associated with an IVR Server operating in IVR-Behind-Switch mode	
	tserver_nts	IVR Network T-Server deployment license for IVR Server operating in IVR Network T-Server mode	One license for all IVR Servers
	tserver_nts_call_treatments	IVR Network T-Server Routing license for IVR Server operating in IVR Network T-Server mode, for GenSpec XML call parking and treatments	One license for each concurrent call that is receiving call treatments
	tserver_iscc	IVR Server licenses to support Inter Server Call Control (ISCC, or multi-site routing) transactions	One license per T-Server primary/backup pair

Table 4: FEATURE Names by Application (Continued)

Genesys Application Name	FEATURE Name	Description	Comments
Load Distribution Server	lds	LDS licenses	One license per configuration environment
.NET Server (7.1 version of GIS GSAP) (No specific license is needed for the .NET Toolkit as it is a client of .NET Server/GIS Services.)	ISDK_FACTORY	Genesys .NET Server licenses to support client connections to the .NET Server Agent Interaction interface.	One license per configuration environment
	ISDK_QUEUE	Genesys.NET Server license to enable usage of Routing Service.	One license per configuration environment
	DOT_NET_SERVER	The number of running instances of Genesys .NET Server	One license per server instance
	GIS_INTERACTIONSERVICE	Genesys .NET Server licenses required to support client connections to the .NET Server Interaction interface	One license per concurrent client connection
Network T-Server	tserver_sdn	Network T-Server licenses to support basic contact center operations and register seat-related DNs	Refer to the num-sdn-licenses and num-of-licenses option descriptions in your *T-Server Deployment Guide.* Note: Starting with release 7.2, T-Server no longer requires technical DN licenses in order to operate.
	tserver_tdn	Network T-Server licenses to support basic contact center operations and register technical DNs	
	tserver_iscc	Network T-Server licenses to support Inter Server Call Control (ISCC, or multi-site routing) transactions	One license per T-Server primary/backup pair
	tserver_nts	Network T-Server for GenSpec deployment license	One license for all Network T-Servers for GenSpec
	tserver_nts_calltreatments	Network T-Server for GenSpec license for call parking and treatments	One license per port

Table 4: FEATURE Names by Application (Continued)

Genesys Application Name	FEATURE Name	Description	Comments
Outbound Contact Server	occ_preview	Outbound Contact Server license to run campaigns in Preview dialing mode	One license per Outbound seat
	occ_full	Outbound Contact Server license to run campaigns in any of the following dialing modes: Preview, Predictive, and Progressive	One license per Outbound seat
Solution Control Server	MLSNMP	Solution Control Server license to provide built-in support for Simple Network Management Protocol (SNMP) integration	One license per configuration environment
	MLDistributed	Solution Control Server license to provide support for a distributed management environment	One license per configuration environment
	ha_redundancy	Solution Control Server license to provide a switchover between a primary and a backup server in any redundant pair	One license per configuration environment

Table 4: FEATURE Names by Application (Continued)

Genesys Application Name	FEATURE Name	Description	Comments
T-Server	tserver_sdn	T-Server licenses to support basic contact center operations and register seat-related DNs	Refer to the num-sdn-licenses and num-of-licenses option descriptions in your *T-Server Deployment Guide*. Note: Starting with release 7.2, T-Server no longer requires technical DN licenses in order to operate.
	tserver_tdn	T-Server licenses to support basic contact center operations and register technical DNs	
	tserver_iscc	T-Server licenses to support Inter Server Call Control (ISCC or multi-site routing) transactions.	One license per T-Server primary/backup pair
	cti_ha_option	T-Server licenses to support hot standby redundancy type	One license per redundant pair
T-Server for CSTA Connector	tserver_cc_sdn	T-Server for CSTA Connector seat licenses to support basic contact center operations and register seat-related DNs	One license per seat per T-Server for CSTA Connector primary/backup pair. Refer to the num-sdn-licenses and num-of-licenses option descriptions in your T-Server Deployment Guide.
	tserver_iscc	T-Server for CSTA Connector licenses to support Inter Server Call Control (ISCC, or multisite routing) transactions	One license per T-Server primary/backup pair.
	cti_ha_option	T-Server for CSTA Connector licenses to support hot standby redundancy type	One license per redundant pair.
Unified Communication (UC) Connector	ucc_seats	This license enables the connection to the Genesys solution through UC Connector.	One license per user knowledge worker seat.

Table 4: FEATURE Names by Application (Continued)

Genesys Application Name	FEATURE Name	Description	Comments
Universal Callback Server	vcb_full	License to process callback request in any of the supported modes (autodialing mode with optional CPD Server, preview dialing mode)	One license is held for 60 minutes upon receiving a callback request or a request for license lock.
	vcb_preview	License to process callback request in preview dialing mode only (use of automatic dialing modes is not allowed)	One license is held for 60 minutes upon receiving a callback request or a request for license lock.

Table 4: FEATURE Names by Application (Continued)

Genesys Application Name	FEATURE Name	Description	Comments
Universal Routing Server	`router_seats`	Universal Routing Server licenses	• The value of router_seats corresponds to the maximum number of concurrently enabled places for routing of interactions. • This comprises agent places and also IVR ports in cases when they are represented as places for the purpose of routing. • Each URS instance has the whole amount of router_seats licenses to its disposal.
	`router_ha_option`	Universal Routing `High Availability` mode	One license per configuration environment HA for URS includes ability to: • Run with `Hot Standby` redundancy type • Set URS option `pickup_calls` to `true` **Note**: If there is no HA license for URS, `Hot Standby` is downgraded to `Warm Standby` and `pickup_calls` option to `false`.
Voice Treatment Server	`VTPort`	Voice Treatment Server licenses	One license per Voice Treatment Port

a. Starting in 7.5, Genesys Info Mart no longer requires technical licenses.

Appendix

C Ordering Licenses

Before installing License Manager, you need to decide how many instances of License Manager you require, and on which host computers they are to run. Then you need to order the appropriate license data files. To help you, this chapter provides information about:

Selecting License Server Configuration

More than one License Manager can run on more than one server, with different (or no) Genesys products running on each. You can also install License Manager on the same machine as one of the Genesys applications, such as T-Server.

The licensing system supports these server configurations:

- Single server
- Three redundant servers
- Multiple, independent servers

Use the configuration that meets the level of redundancy you need to achieve for your system.

Single-Server Configuration

For this configuration, install one License Manager for an environment of any size; one license server handles all product licenses with one license data file for all products. This configuration is easy to maintain; however, if the license server goes down, licenses become unavailable for all products in case of

application restart. Therefore, the license server becomes a single point of failure for the licensing system (see Figure 13).

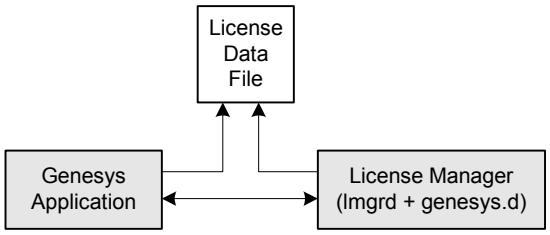


Figure 13: Single-Server Configuration

Three-Server Redundant Configuration

With a three-server redundant configuration, three license servers are used for product licenses, so that licenses are available if any two of the three servers are running (see Figure 14).

Note: Technically, Genesys supports three-server redundant configuration, however, it is not recommended because of unreliable implementation within Flex. For an alternative solution, See "Multiple, Independent Servers Configuration" on page 73. For more information, contact your Genesys Representative.

In this configuration, the license servers communicate with each other during runtime, refer to a copy of the same license file, and grant licenses based on a "quorum" of at least two servers. That means, the license servers can grant the licenses even when one of the three is unavailable.

Note: You must locate a copy of the license file on each license server's node.

Although more difficult to maintain, this configuration increases license availability. Locate the servers on the same subnet and in close physical proximity to each other to minimize the impact of various network problems.

When one server goes down, the other two servers become two points of failure. Use the Genesys Management Layer to minimize the down time of the failed license server.

Note: When you stop one of the license servers in this configuration, wait approximately four minutes before restarting it.

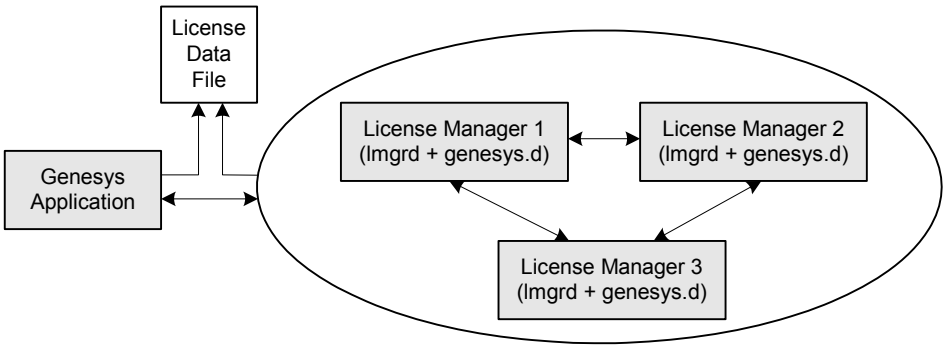


Figure 14: Three-Server Redundant Configuration

Note: When you stop one of the license servers in this configuration, wait approximately four minutes before restarting it.

Multiple, Independent Servers Configuration

With this configuration, two or more license servers are used for product licenses (see Figure 15).

The license servers do not communicate with each other. The overall amount of licenses is split into multiple files. Each license server controls one of the files and must run on its own machine.

To improve redundancy, any license server can grant licenses to any application. At startup, an application sends a license request to every server, one by one, until the license is granted. The licenses are available if any one license server is currently running. However, the number of available licenses is limited to the number stated in the license file of that particular license server.

Note: Two license servers cannot grant licenses to the same application simultaneously.

This configuration provides for:

- Load sharing between multiple license servers.
- License availability when a local license server goes down.
- Less system administration than with the three-server redundant configuration.

Warning! Termination of a license server at one site can cause licenses to become unavailable for applications running at other sites.

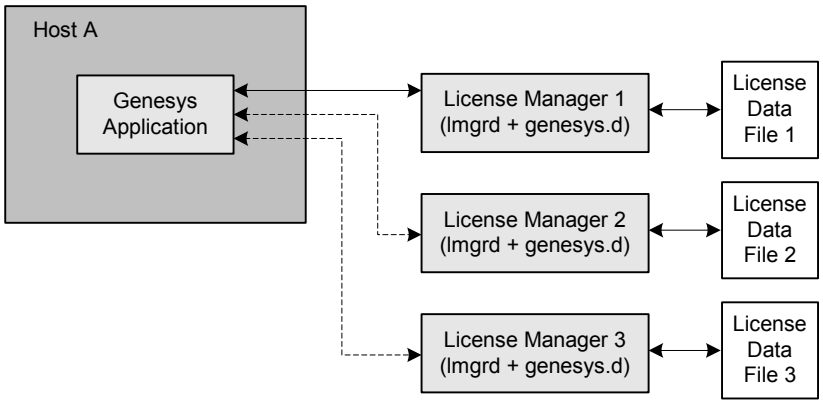


Figure 15: Multiple, Independent Server Configuration

For Windows, you must specify the license server locations as a semi-colon-separated list, for example:

```
server1;server2;server3
```

For UNIX, you must specify the license server locations as a colon- separated list, for example:

```
server1:server2:server3
```

You can represent the servers as either:

- The full path to and the file name of the license file (`/opt/mlink/license/license.dat`)
- The host name and port of a license server, in the `port@host` format (`7260@ctiserver`)
- The host name of a license server, in the `@host` format; the default port number of 7260 is implied (`@ctiserver`)

You can specify the license server locations via a startup command line or the `license-file` application's configuration option. For more information, see "Starting Licensed Applications" on page 56.

Providing Required Information

To set up a Genesys license, first request a license by e-mail. A license order kit, which is available from your Genesys sales or VAR representative, lists all information currently required to obtain a license.

Table 5 helps you gather information for the order kit.

Table 5: Information for License Order Kit

Item	Recommendation
Company name	Self-explanatory
Sellable item and version	The name of the Genesys product you have purchased, as it appears in the list of sellable items. For the version number, supply the first two digits (for example, 7.0).
Quantity of sellable items	As applicable to a particular sellable item, the number of countable units in your contact center that the Genesys product you have purchased is to serve. For example, the quantity for Enterprise Routing Solution is determined by the number of agent seats. Your Genesys account representative usually provides this information to Genesys Order Management, where it is verified. If you don't have exact information, Genesys personnel retrieve it from our database when processing your request.
Application name and version	For those applications that require technical licenses. (See "Technical Licenses" on page 10.) For the version number, supply the first two digits (for example, 7.0).
Type of technical licenses	Contact your Genesys sales or VAR representative to determine what technical licenses you need. Also see "License Server Manager" on page 29 for technical and compatibility information.
Host name of the license server	Although you can later change the host name specified in your license data file, having the host name in the file when you receive it from Genesys helps you identify which computer the file is generated for. This information also helps Genesys avoid or identify errors against future license-file modifications. To determine this for either a UNIX or a Windows machine, go to the command prompt and type `hostname`.
Host ID of the license server **a**	Determine the host ID and provide it in the format specified in Appendix A, "Determining Host IDs," on page 59.
Type and version of the operating system for the license server	Self-explanatory

Table 5: Information for License Order Kit (Continued)

Item	Recommendation
Type of the license server configuration	Specify one of the following: single server; three redundant servers; or multiple, independent servers. If you plan to use either the three redundant servers or multiple, independent servers configuration, provide all information listed in this table for each server. With the multiple independent-servers configuration, define how you would like to divide licenses among the servers. See "Selecting License Server Configuration" on page 71 for more information.
Purpose of the license request	Specify what type of installation you plan to use the licenses for: demo, evaluation, testing, production, or development.
Deployment mode	Required if you have purchased more than one Genesys solution(s) or option(s). Specify `separate` if dedicated agents handle interactions processed by different solutions or options. Specify `blended` if the same group of agents handles interactions processed by two or more solutions or options.
Media Layer resources	Specify the: • Type and version of your switch. • Number of agent-seat-related DNs (such as Extensions and Positions,) and how they are distributed among agents and places. • Number of other (technical) DNs (such as, ACD Queues, Virtual Queues, Routing Points, Virtual Routing Points, and so forth). If you don't specify this number, a license for 999,999 DNs is issued. Note: Starting with release 7.2, technical DN licenses are no longer required.

a. You can use RAID 1 (Redundant Array of Inexpensive Disks) architecture on the computer that is a host to license server. License Manager continues to operate normally when one of the hard-disk drives that are configured as part of the RAID 1 fails. In this case, the Volume Serial Number stays the same unless the array is destroyed because of reconfiguration or a failure of both disks.

Requesting Licenses

To request licenses, contact your Genesys sales or VAR representative or use contact information listed in this section:

U.S. Contact Information:

E-mail your request to `License@genesyslab.com`. Include the required information in the e-mail message (see page 74).

If you need consultation, call +650-466-1100. Tell the operator that the purpose of the call is to clarify license information.

When ordering a license, expect to receive it by e-mail within 24-48 hours.

APAC Contact Information:

E-mail your request to `License@genesys.com`. Include the required information in the e-mail message (see page 74).

If you need consultation, call +650-466-1100. Tell the operator that the purpose of the call is to clarify license information.

When ordering a license, expect to receive it by e-mail within 24-48 hours.

EMEA Contact Information:

E-mail your request to emea.licensing@genesys.com. Include the required information in the e-mail message (see page 74).

If you need consultation, call +44-1189-74-7000. Tell the operator that the purpose of the call is to clarify license information.

Japan Contact Information:

E-mail your request to `order@genesyslab.co.jp`. Include the required information in the e-mail message (see page 74).

Using Temporary Licenses

Genesys issues permanent or temporary licenses. A temporary license is exactly the same as a permanent one except that it has a specified expiration date. For instance, the sample license file shown on page 46 is a temporary file because it has an expiration date of 24-jun-2004. Permanent license files show the date 01-jan-00 but, in fact, never expire.

Do not mistake permanent license files with temporary licenses that had an expiration date in the year 2000. Unlike permanent licenses, temporary Genesys licenses, that is, licenses that expire, require a four-digit year field for the expiration date. Temporary licenses with an expiration date in the year 2000 showed a four-digit year, for example, 01-aug-2000. Permanent licenses will continue to read 01-jan-00, but since the two-digit year does *not* represent a real date, the licenses do not expire.

Renewing Temporary Licenses

Temporary licenses always expire on the indicated date. If you are working with a temporary license, keep its expiration date in mind and order a new license before the temporary license expires.

To receive a temporary license, supply Genesys with the same information as for a permanent license and follow the same request process.

Appendix

D License Failure Scenarios

This appendix provides basic information about Genesys application behavior when applications encounter a failure or change in the licensing system. Use this information for troubleshooting licensing violation.

Typically, a licensing failure occurs because of:

- Incorrect configuration
- Incorrectly ordered or generated license files

When you experience a licensing failure, begin your troubleshooting by checking:

1. Application log messages (that is, finding licensing-related log events in logs of all components requiring technical licenses).
2. License server debug log messages.

This appendix includes:

Genesys Log Messages

In addition to using Flex diagnostics (as specified in the vendor's documentation) to troubleshoot, use Genesys application log messages.

1. Activate the applications's licensing log.

> Note: You can set the log level only at application level, but not selectively for individual services like licensing. At the minimum, configure the Standard log level to activate licensing log messages.

2. To generate licensing log messages that help you troubleshoot problems, set these log levels:

a. Standard: License log messages listed in Step 3 are issued.

b. All: Additional, more detailed, license log messages are issued.

Note: The additional licensing log messages issued at `debug` level are application specific.

3. The following three messages are issued at Standard log level:

a. `GCTI_LICENSE_FAIL`

```
07100|STANDARD|GCTI_LICENSE_FAIL|Licensing violation is
identified, the violation type %s
```

Possible reasons for the violation are usually provided along with the message.

Here are some examples of the licensing violation messages:

- `Std 07100 Licensing violation is identified, the violation type GLMR_LICENSE_SERVER_NOT_AVAILABLE.`
- `Std 07100 Licensing violation is identified, the violation type Cannot find SERVER hostname in network database.`
- `Std 07100 Licensing violation is identified, the violation type Cannot find license file.`
- `Std 07100 Licensing violation is identified, the violation type GLMR_LICENSE_NO_LICENSE_AVAILABLE.`

b. `GCTI_LICENSE_CHECKED_OUT`

```
07101|STANDARD|GCTI_LICENSE_CHECKED_OUT|Feature %s: %d
licenses checked out
```

Here are two examples of the licensing checkout messages:

- `Std 07101 Feature 'tserver_sdn': 3 licenses checked out.`
- `Std 07101 Feature 'tserver_sdn': 5 licenses checked out.`

Note: Messages from 07102 to 07104 reflect notifications about license server status.

c. `GCTI_LICENSE_RESTORED`

```
07105|STANDARD|GCTI_LICENSE_RESTORED|License status restored
after violation with type '%s'
```

Notes:

- Message 07105 is a clearance event for alarms triggered by message 07100.
- Some applications might send additional standard messages on licensing issues; for example, message 05066:
  `05066|STANDARD|Initialization of %s, reason %s`

License Server Debug Log Messages

Activate and analyze the debug log for Flex and/or Genesys vendor daemon.

See the chapter on "The Options File" and the appendix on "The Debug Log File" in the vendor's documentation for details on how to activate the license server debug log.

Troubleshooting List

Each problem described in the following sections is presented in three parts:

1. Symptom: Description of problem.
2. Possible Cause: Discussion of what might cause problem.
3. Solution: Instructions on how to solve problem.

Scan the list of problems to determine if the problem you are experiencing is discussed:

When appropriate, implement the suggested solution. If you cannot resolve the problem on your own, contact Genesys Technical Support.

License File Problems

Symptom:

When I run my Flex licensed application (or vendor daemon), I get the following error: `bad code` or `inconsistent encryption code`.

Possible Cause and Solution:

Refer to the vendor's documentation for information on possible reason for the error and recommendations on how to resolve it.

Symptom:

Genesys application did not start.

Possible Cause:

- Invalid license file (for example, unauthorized changes).
- Expired license.
- Old `FEATURE` version in license file.
- `FEATURE` line missing in license file.
- Wrong host name setup on the `Command Line Arguments` on the `Start Info` tab or in Application object's licensing options.
- Wrong port setup on the `Command Line Arguments` on the `Start Info` tab or in Application object's licensing options.

Solution:

- Check log file of application; proper error message should be logged. Make sure you have license for required feature. Otherwise, an application cannot start or a certain function won't work.
- Contact Genesys Technical Support if you need additional help in investigating error codes.

Symptom:

I ran T-Server and received the error message that there were no more `tserver_sdn` licenses available.

The following is an example of a message reporting that licenses are not available:

```
Std 20007 All 3 seat licenses are in use already, registration
rejected.
```

In this case, a T-Server client prints an error such as:

```
No More Licenses
Possible Cause:
```

Given that T-Server clients can register only the number of DNs granted by the license, it's likely that too few DN licenses available. (Other T-Servers may have already checked out all available licenses.) In other words, fewer licenses remain than are configured for the given T-Server instance.

Solution:

Check the T-Server log to see how many licenses T-Server checked out (look for the `GCTI_LICENSE_CHECKED_OUT` message described on page 80). Configure correct number of DN licenses for each T-Server instance.

Note: T-Server checks out all remaining licenses if its `num-sdn-licenses` option is set to `max`.

License Server Problems

Note: This section applies to all applications: for example, Universal Routing Server and T-Server.

Symptom:

I tried to start an application, but the application exited.

Possible Cause:

- You did not start license server.
- Flex, Genesys daemon, or both are not running or are not reachable.
- Firewall or connection problems are occurring (see "Connection Problems" on page 83 or "Firewall Problems" on page 84).

If you cannot connect to license server, the application generates `GCTI_LICENSE_FAIL` and exits.

Solution:

Ensure that license server is running before you start the application.

Note: To increase the reliability of license server on Windows, run it as a Windows Service.

Host ID Problems

Symptom:

When I run the license server on my computer, I get the following message: wrong host ID.

Possible Cause and Solution:

Refer to the vendor's documentation for information on possible reasons for the error and recommendations on how to resolve it.

Connection Problems

Symptom:

The Flex licensed application (or `lmstat`) cannot connect to the server to check out a license.

Possible Cause and Solution:

Refer to the vendor's documentation for information on possible reasons for the error and recommendations on how to resolve it.

Firewall Problems

Symptom:

The Flex licensed application (or `lmstat`) cannot connect to the server to check out a license.

Possible Cause:

You have not configured the firewall to allow connection to the license server host and port.

Solution:

Indicate in the license file the port of the Genesys daemon and the port of the license manager, and configure your particular firewall to allow this connection (see "Firewall Support" on page 50).

Exceeding the Number of Licenses

Symptom:

I configured a certain number of DNs for automatic T-Server registration, which started correctly, but T-Server clients could not register all configured DNs.

Possible Cause:

- More DNs are configured in the Configuration Database than are granted by license control.

  License control for DNs in T-Server is performed when clients register for DNs, which are limited by the license file and the values of `num-sdn-licenses` or `num-of-licenses` specified in the configuration of the given T-Server. The error can result from either:
  - Incorrect values specified for the `num-sdn-licenses` or `num-of-licenses` options in this T-Server configuration (for example, 3 instead of 30).
  - Incorrect values specified for the `num-sdn-licenses` or `num-of-licenses` options in another T-Server configuration (for example, 30 instead of 3).

`Note:` Invalid values (for example, negative values) are substituted with the default values, which are `max` for both options.

Solution:

- Check the T-Server or client log file for message `No more licenses.` Ensure T-Server is running with sufficient DNs.
- Verify that the number of DNs is correct. If too few licenses are available for a given instance of T-Server, either redistribute them (from other T-Servers) or buy new licenses to accommodate the number of DNs and T-Servers you are using.
- Contact Genesys Technical Support for error analysis.

Configuration and Reconfiguration of Number of DNs

Symptom:

After I increased/decreased the `num-sdn-licenses` or `num-of-licenses` option value, I received a Standard error message, `GTCI_LICENSE_FAIL`.

Possible Cause:

You do not have the appropriate license; otherwise, T-Server allows you to increase the license option value. When you change the value of one of the license configuration options, T-Server adapts to the new value of licenses.

Solution:

- Make sure you always have sufficient licenses for T-Server. Order additional licenses, if required.
- In the case where you have decreased the values for the license configuration options, no action is required. The system will continue to operate, and it will adjust to the new values after next T-Server restart.
- If necessary, contact Genesys Technical Support for error analysis.

Related Documentation Resources

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

Genesys

- *Genesys Technical Publications Glossary,* which ships on the Genesys Documentation Library DVD, provides a comprehensive list of the Genesys and computer-telephony integration (CTI) terminology and acronyms used in this document.
- *Genesys Migration Guide*, which ships on the Genesys Documentation Library DVD, provides documented migration strategies for Genesys product releases. Contact Genesys Technical Support for more information.
- Release Notes and Product Advisories, which are available on the Genesys Technical Support website at http://genesyslab.com/support.

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

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

Consult these additional resources as necessary:

- *Genesys Hardware Sizing Guide*,which provides information about Genesys hardware sizing guidelines for the Genesys releases.
- *Genesys Interoperability Guide,* which provides information on the compatibility of Genesys products with various Configuration Layer Environments; Interoperability of Reporting Templates and Solutions; and G*plus* Adapters Interoperability.

.

- *Genesys Database Sizing Estimator Worksheets* which provide a range of expected database sizes for various Genesys products.

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

Genesys product documentation is available on the:

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

Document Conventions

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

Document Version Number

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

80fr_ref_02-2010_v8.0.001.00

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

Screen Captures Used in This Document

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

Type Styles

Table 6 describes and illustrates the type conventions that are used in this document.

Table 6: Type Styles

Type Style	Used For	Examples
Italic	• Document titles • Emphasis • Definitions of (or first references to) unfamiliar terms • Mathematical variables Also used to indicate placeholder text within code samples or commands, in the special case where angle brackets are a required part of the syntax (see the note about angle brackets on page 89).	Please consult the *Genesys Migration Guide* for more information. Do *not* use this value for this option. A *customary and usual* practice is one that is widely accepted and used within a particular industry or profession. The formula, $x + 1 = 7$ where x stands for . . .
Monospace font (Looks like `teletype` or `typewriter text`)	All programming identifiers and GUI elements. This convention includes: • The *names* of directories, files, folders, configuration objects, paths, scripts, dialog boxes, options, fields, text and list boxes, operational modes, all buttons (including radio buttons), check boxes, commands, tabs, CTI events, and error messages. • The values of options. • Logical arguments and command syntax. • Code samples. Also used for any text that users must manually enter during a configuration or installation procedure, or on a command line.	Select the `Show variables on screen` check box. In the `Operand` text box, enter your formula. Click `OK` to exit the `Properties` dialog box. T-Server distributes the error messages in `EventError` events. If you select `true` for the `inbound-bsns-calls` option, all established inbound calls on a local agent are considered business calls. Enter `exit` on the command line.
Square brackets ([ ])	A particular parameter or value that is optional within a logical argument, a command, or some programming syntax. That is, the presence of the parameter or value is not required to resolve the argument, command, or block of code. The user decides whether to include this optional information.	`smcp_server -host [/flags]`
Angle brackets (< >)	A placeholder for a value that the user must specify. This might be a DN or a port number specific to your enterprise. **Note:** In some cases, angle brackets are required characters in code syntax (for example, in XML schemas). In these cases, italic text is used for placeholder values.	`smcp_server -host <confighost>`

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