GENESYS
AN ALCATEL-LUCENT COMPANY

Framework 8.0

Deployment Guide

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Preface

Welcome to the *Framework 8.0 Deployment Guide*. This document describes the configuration, installation, starting, and stopping procedures relevant to the Genesys Framework.

This document is valid only for the 8.0 release(s) of this product.

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

This preface contains the following sections:

- About Genesys Framework, page 17
- Intended Audience, page 18
- Making Comments on This Document, page 18
- Contacting Genesys Technical Support, page 19
- Changes in This Document, page 19

For information about related resources and about the conventions that are used in this document, see the supplementary material starting on page 303.

About Genesys Framework

The Genesys Framework, a mandatory part of any Genesys-based interaction management system, provides functions required for the normal operation of any Genesys solution.

In brief, you will find the following information in this manual:

- How to install and use Wizard Manager
- How to configure all Framework components with wizards or manually
- How to install Framework components
- How to configure redundancy—that is, backup and primary servers—for Framework components, including DB Server and Configuration Server

- How to start and stop Framework components with the Management Layer or manually
- How to log in to a Genesys GUI application

Intended Audience

This document is intended primarily for system integrators, system administrators, contact center managers, and operations personnel. It has been written with the assumption that you have a basic understanding of:

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

You should also be familiar with Genesys Framework architecture and functions, as described in Chapter 2 on page 27, the *Framework 8.0 Management Layer User's Guide,* and *Framework 8.0 Architecture Help.*

Making Comments on This Document

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

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

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India	000-800-100-7136 (toll-free) +91-(022)-3918-0537	support@genesyslab.com.au
Japan	+81-3-6361-8950	support@genesyslab.co.jp
Before contacting technical support, refer to the *Genesys Technical Support Guide* for complete contact information and procedures.		

Changes in This Document

Changes in Version 8.0.301.00

This document has been updated for new and changed functionality in this release of Management Framework, as described in the Release Notes for Management Framework components.

In addition, detailed information about the following topics has been moved to the *Genesys 8.0 Security Deployment Guide*:

- User authentication and authorization—This information was previously included in Chapter 3, “Planning the Installation” of this document.
- Encrypting the Configuration Database password—This information was previously included in Chapter 5, “Setting Up the Configuration Layer” of this document.

Changes in Version 8.0.201.00

This document has been updated for new and changed functionality in this release of Management Framework, as described in the Release Notes for Management Framework components.

In addition, information about setting up the User Interaction Layer, including installing Genesys Administrator, has been moved to the new document *Framework 8.0 Genesys Administrator Deployment Guide*. This information was previously included in Chapter 7, “Setting up the User Interaction Layer”, of this document.

Chapter

1 Framework Overview

This chapter lists major Framework functions and highlights new features added in each release.

This chapter contains the following sections:

- Major Functions, page 21
- New in This Release, page 22

Major Functions

The Genesys Framework, a mandatory part of any Genesys-based interaction management system, provides functions required for the normal operation of any Genesys solution:

- **Configuration** centralizes processing and storage of all the data required for Genesys solutions to work within a particular environment.
- **Access Control** sets and verifies users' permissions for access to, and manipulation of, solution functions and data.
- **Solution Control** starts and stops solutions and monitors their status.
- **Alarm Processing** defines and manages conditions critical to the operation of solutions.
- **Troubleshooting** hosts a user-oriented, unified logging system with advanced storage, sorting, and viewing capabilities.
- **Fault Management** automatically detects and corrects situations that might cause operational problems in solutions.
- **External Interfaces** enable communication with a variety of telephony systems and database management systems (DBMS).
- **Attached Data Distribution** supports the distribution of business data attached to interactions, within and across solutions.

New in This Release

Before you familiarize yourself with the Genesys Framework architecture and functionality, note the following major changes that were implemented in the 8.0 release of Framework, and the sources that describe them in detail:

General Features

- **Integration with Genesys Voice Platform:** Objects for the Voice Platform Solution (VPS) are now stored in the Configuration Database. Users of VPS can manage their objects through Genesys Administrator, or through Configuration Manager and Solution Control Interface.
- **Genesys Administrator GUI:** This web-based alternate interface is new in release 8.0 and provides the following:
  - It combines the functionality of Configuration Manager, Solution Control Interface, and other Genesys GUIs.
  - It includes functionality for deploying Genesys Installation Packages on any host in your network.
  - It provides Role-Based Access Control, that enhances object permissions by controlling what users can do to parts of objects. This functionality is available only in Genesys Administrator.

  For more information about Genesys Administrator, refer to the *Framework 8.0 Genesys Administrator Deployment Guide.*
- **Hierarchical multi-tenancy:** Multi-tenant configurations can be expanded to multiple levels, where each Tenant object is a parent, child, or both. See "Hierarchical Multi-Tenant" on page 40.
- **Improved failure detection:**
  - Local Control Agent can now use heartbeat detection to detect unresponsive Genesys applications that support this functionality. Users can then configure appropriate actions, including alarms if required. In Management Framework, DB Server, Message Server, and SNMP Master Agent support this functionality. For more information, refer to the *Framework 8.0 Management Layer User's Guide*.
  - DB Server is able to detect database failures, and tries to reconnect accordingly.
- **User inactivity timeout:** Wizard Manager now supports the user inactivity timeout feature introduced in release 7.6.
- **Decreased network traffic:** All Management Framework clients of Configuration Server now subscribe for only necessary notifications. In addition, Solution Control Interface now connects to DB Server only when needed, relieving the computer of unnecessary processes.

- **Last login:** When logging in, the data and time when they last logged in is displayed to the user. This system security enhancement alerts users to unauthorized access to their system by someone else using a valid user's account. Refer to the *Genesys 8.0 Security Deployment Guide* for more information about this feature.
- **Configurable minimum length of password:** Configuration Server can now be configured to require that passwords used to access all applications within a Tenant be of a minimum length. Refer to the *Genesys 8.0 Security Deployment Guide* for more information about this feature.
- **Support for PostgreSQL:** Genesys software now supports the PostgreSQL Database Management System. For more information, refer to the *Genesys Supported Operating Environment Reference Manual*, a link to which appears on page 304.
- **Improved usability:** Several enhancements have been made to Genesys GUIs to assist the users, such as tooltips when using interface controls, user-defined color codes to indicate platform status, and the ability to easily undo changes in text fields and return to the last saved values.

Configuration Layer

- **New types of Application, Script, and Switch configuration objects:** Users can now define new types of configuration objects, as follows:
  - `Application` types—`Advisors`, `Capture Point`, `Customer View`, `ESS Extensible Services`, `Genesys Administrator`, `iWD Manager`, `iWD Runtime Node`, `Interaction Workspace`, `Orchestration Server`, `Rules ESP Server`, `SMS Server`
  - `Script` types—`ESS Dial Plan`, `Interaction Workflow Trigger`, `Outbound Schedule`
  - `Switch` types—`Avaya TSAPI`, `Cisco UCCE`, `Huawei NGN`
- **New values of Media Type Business Attributes:** Users can now define new values, as follows:
  - `smssession`
  - `mms`
  - `mmssession`
- **Expanded length of flexible option values:** Users are no longer limited to 255 characters when defining option values of configuration objects. They can now enter up to 4 KB of text.
- **External authentication messaging support:** When a user attempts to log in, Configuration Server relays messages from the RADIUS or LDAP external authentication server to the user. Refer to the *Framework 8.0 External Authentication Reference Manual*.

- **Improved external authentication monitoring:** New log events allow users to better monitor the connection between Configuration Server and the RADIUS or LDAP external authentication server. Refer to the *Framework 8.0 External Authentication Reference Manual*.
- **Improved search functionality:** By selecting an object in the list of search results in Configuration Manager, users can open the folder containing that object, or show its dependent objects.
- **Improved control of disabled users:** Users who have been disabled in Genesys Administrator or Configuration Manager cannot log in to Genesys applications. In a single-tenant environment, you cannot disable Resources (and therefore all users). However, you can disable the Users folder and individual users.
- **Emergency mode access to Configuration Database:** In Configuration Manager, this variant of Read-only mode permits only users who are members of the Super Administrators predefined access group to make changes to the Configuration database. Refer to *Framework 8.0 Configuration Manager Help*.

Management Layer

See the *Framework 8.0 Management Layer User's Guide* for information about the following new features that are specific to the Management Layer:

- **Graceful shutdown:** Users can now shut down applications and solutions gracefully. During the process, applications may be in the new `SUSPENDING` or `SUSPENDED` state before they are finally stopped. Refer to “Starting and Stopping with the Management Layer” on page 167, and to *Framework 8.0 Solution Control Interface Help* and *Framework 8.0 Genesys Administrator Help*.
- **Improved failure detection:** In a Distributed Solution Control Server environment, any Solution Control Server can detect the failure of a remote site controlled by another Solution Control Server.
- **Read-only access to alarms information:** In Solution Control Interface, a user can be granted read-only access to alarm interface, allowing them to monitor system status, including alarms, but prohibiting them from clearing alarms.
- **Extended log life:** Users can configure logs to have more files (segments) before expiring. Refer to the *Framework 8.0. Configuration Options Reference Guide* for more information about the `expiry` option.
- **Enhanced hiding of data in logs:** In addition to hiding all sensitive or confidential information that might appear in logs, users can now configure the log so that only part of the information is hidden. Refer to the *Genesys 8.0 Security Deployment Guide*.
- **Command Line Utility:** Users can now use the `mlcmd.exe` command-line utility to query or change the status of applications and solutions.

User Interaction Layer

This new layer contains components that support user interactions with the management environment. See "User Interaction Layer" on page 32. For this release, this layer contains one component—the Genesys Administrator GUI.

Retired Features

Framework no longer supports the Management Framework Deployment Manager. It is replaced by the deployment functionality of the new web-based Genesys Administrator. See "Deployment using Genesys Administrator" on page 69.

Chapter

2 Framework Architecture

This chapter describes the architecture and functionality of Framework 8.0 and its layers.

This chapter contains the following sections:

- High-Level Framework Architecture, page 27
- Configuration Layer, page 28
- Management Layer, page 30
- User Interaction Layer, page 32
- Media Layer, page 33
- Services Layer, page 35
- Framework Connections, page 36

High-Level Framework Architecture

The Genesys Framework consists of five layers (see Figure 1 on page 28):

- The **Configuration Layer** processes and stores all the data required for running Genesys solutions in a particular environment; it notifies clients of any configuration changes. The Configuration Layer also controls user access to a solution's functions and data.
- The **Management Layer** controls the startup and status of solutions, logging of maintenance events, generation and processing of alarms, and management of application failures.
- The **User Interaction Layer** provides a comprehensive user interface to configure, monitor, and control the management environment.
- The **Media Layer** enables Genesys solutions to communicate across media, including traditional telephony systems, Voice over IP (VOIP), e-mail, and the Web. This layer also provides the mechanism to distribute interaction-related business data within and across solutions.

- The **Services Layer** generates the statistical data used for interaction processing and contact center reporting and enables solutions to communicate with various database management systems (DBMSs).

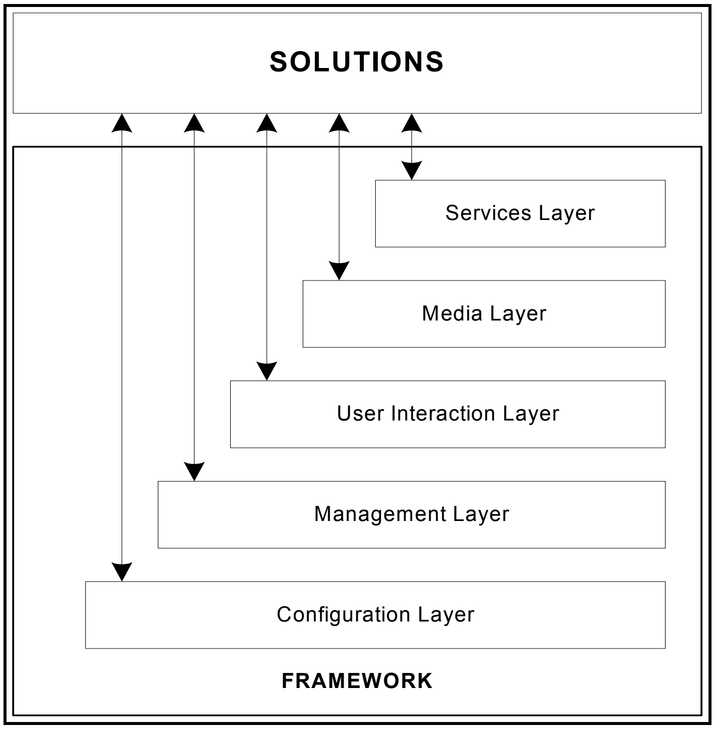


Figure 1: Framework Architecture

In sophisticated configurations using the Management Layer functionality, each layer depends on the layers below it to work properly.

Also note that a Genesys installation depends on License Manager, a third-party application not shown on the diagram, for license control.

Configuration Layer

Configuration Layer Functions

The Configuration Layer provides:

- Centralized configuration data processing and storage for one-time entry of any information about contact center entities that any number of applications require to function in a particular business environment.
- An advanced, configuration-data-distribution mechanism, so applications can read their configuration upon startup and be notified of updates at runtime without service interruptions.
- Comprehensive data-integrity control functions that prevent entry of illogical configuration data that might cause solution malfunction.

- Advanced reconnection management which ensures that applications have up-to-date data after reestablishing connection to Configuration Server.
- Access control functions to regulate user access to solution functions and data, based on the access privileges set for each item.
- Wizards to help users through the automated process of solution deployment.
- Universal, open, Simple Object Access Protocol (SOAP) interface to the configuration, so that a broad range of third-party applications can read and write the information.

Warning! SOAP functionality is restricted to certain environments.

- Support for geographically distributed environments.
- Integration with external data sources.
- Import and export of configuration data to and from the Configuration Database.

Configuration Layer Architecture

Figure 2 shows the structure of the Configuration Layer.

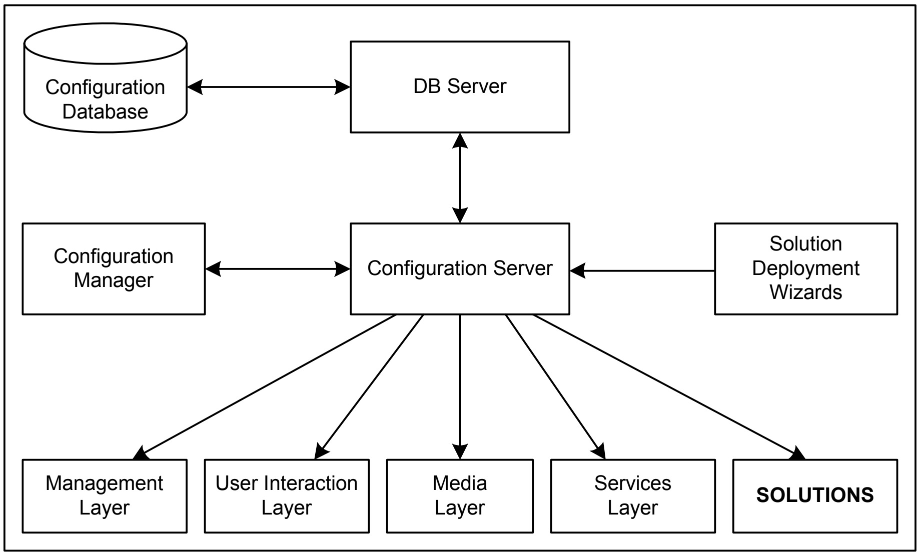


Figure 2: The Configuration Layer Architecture

- Configuration Server provides centralized access to the Configuration Database, based on permissions that super administrators can set for any user to any configuration object. Configuration Server also maintains the common logical integrity of configuration data and notifies applications of changes made to the data. Optionally, you can run Configuration Server in Proxy mode to support a geographically distributed environment. (The geographically distributed architecture is more complex than shown in the diagram. See “Architecture” on page 240 for details.)

- Configuration Manager provides a user-friendly interface for manipulating the contact center configuration data that solutions use and for setting user permissions for solution functions and data.
- The Configuration Database stores all configuration data. DB Server—a Services Layer component—is the access point to the Configuration Database.

Warning! Never add, delete, or modify any data in the Configuration Database, except through applications developed by Genesys, or through applications instrumented with the Genesys Configuration Server application programming interface (API). If you have compelling reasons for accessing the database directly, consult Genesys Technical Support before you do so.

- Solution Deployment Wizards automate deployment and upgrade. These wizards also handle solution-specific data integrity.
- Configuration Conversion Wizard (not shown in the diagram) provides a user-friendly interface for migrating Genesys configuration data to the 8.0 data format.
- Configuration Import Wizard (not shown in the diagram) makes it easier to integrate data from external data sources into the Genesys Configuration Database. It provides a user-friendly interface to automatically import agent data from Lightweight Directory Access Protocol (LDAP) and Microsoft Active Directory databases and switch configuration data from various switches. The Wizard capabilities also include import and export of configuration data to and from Extensible Markup Language (XML) files, generation of custom reports from the Configuration Database, and comparison of two configuration sets (including import of configuration differences).

Management Layer

Management Layer Functions

The Management Layer provides:

- Centralized solution control and monitoring, displaying the real-time status of every configured `Solution` object, and activating and deactivating solutions and single applications, including user-defined solutions.
- Centralized logging that records applications maintenance events. The unified log format enables easy selection of required log records and centralized log storage for convenient access and solution-level

troubleshooting. Centralized logging also allows you to track individual interactions, audit activities in your contact center, and store alarm history.

- Flexible alarm signaling that triggers alarms based on application maintenance events, system performance parameters, or Simple Network Management Protocol (SNMP) thresholds. Alarms are communicated to Solution Control Interface and can be written to system logs. You can configure the system to convert alarms into SNMP traps and send them as e-mails to a specified Internet address. (The latter automatically enables paging notifications.) The Management Layer automatically associates alarms with the solutions they affect and stores alarms as active conditions in the system until they are either removed by another maintenance event or cleared by the user.
- Fault-management functions, consisting of detection, isolation, and correction of application failures. For nonredundant configurations, the Management Layer automatically restarts applications that fail. For redundant configurations, this layer supports a switchover to the standby applications and also automatically restarts applications that fail.
- Remote deployment of Genesys components.
- Built-in SNMP support for both alarm processing and SNMP data exchange with an SNMP-compliant network management system (NMS). As a result, you can integrate a third-party NMS with a Genesys system to serve as an end-user interface for control and monitoring function and for alarm signaling function.
- Individual host monitoring, including CPU and memory usage records and information about running processes and services.
- Support for geographically distributed environments.

Management Layer Architecture

Figure 3 shows the structure of the Management Layer.

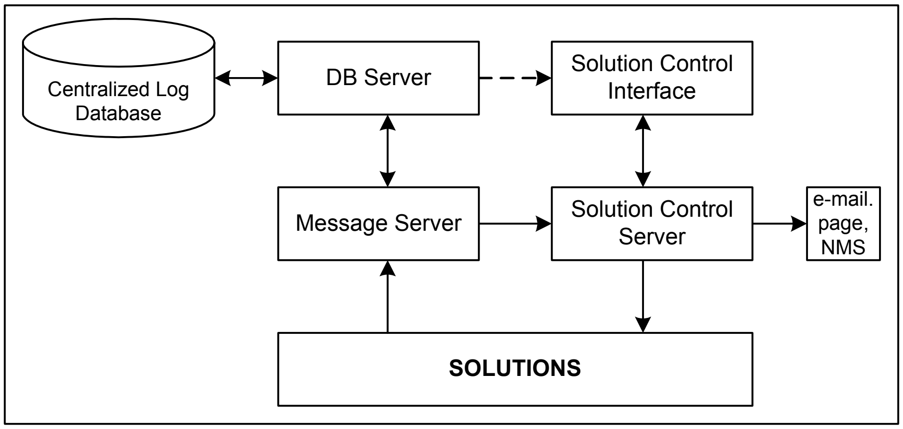


Figure 3: Management Layer Architecture

- Local Control Agent (not shown in the diagram), located on every host that the Management Layer controls and/or monitors, is used to start and stop applications, detect application failures, and communicate application roles in redundancy context.
- A remote deployment agent (not shown in the diagram), referred to as the *Genesys Deployment Agent*, part of the Local Control Agent Installation Package, deploys Genesys Installation Packages as directed by Genesys Administrator—a User Interaction layer component.
- Message Server provides centralized processing and storage of every application's maintenance events. Events are stored as log records in the Centralized Log Database where they are available for further centralized processing. Message Server also checks for log events configured to trigger alarms. If it detects a match, it sends the alarm to Solution Control Server for immediate processing.
- Solution Control Server is the processing center of the Management Layer. It uses Local Control Agents to start solution components in the proper order, monitor their status, and provide a restart or switchover in case of application failure.
- Solution Control Interface displays the status of hosts and all installed Genesys solutions and information about each active alarm, enables the user to start and stop solutions or single applications (including third-party applications), and also allows advanced selection and viewing of maintenance logs.
- The Centralized Log Database (also called the *Log Database*) stores all application log records, including interaction-related records, alarm history records, and audit records. DB Server—a Services Layer component—serves as an access point to the Centralized Log Database.
- Genesys SNMP Master Agent (an optional component not shown in the diagram) provides an interface between the Management Layer and an SNMP-compliant NMS.

User Interaction Layer

Functions

The User Interaction Layer provides centralized web-based functionality and interfaces for the following:

- Deployment of Genesys components to any computer on the network using the Genesys Deployment Agent (a Management Layer component).
- Configuration, monitoring, and control of applications and solutions.

Currently, Genesys Administrator is the only component in the User Interaction layer.

Architecture

Figure 4 shows the structure of the User Interaction Layer (only Genesys Administrator for now), and how it fits into a Genesys environment.

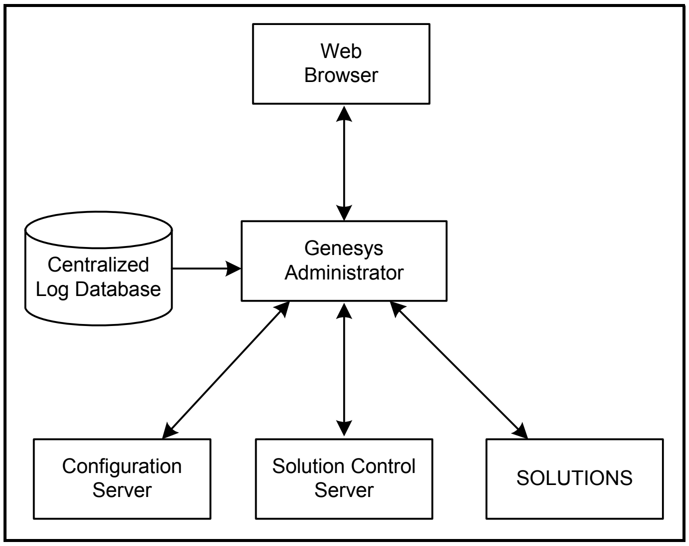


Figure 4: User Interaction Layer Architecture

- The browser-based Genesys Administrator includes a comprehensive user interface to configure, monitor, and control the management environment.
- Genesys Administrator:
  - Communicates with the Configuration Server (a Configuration Layer component) to exchange configuration information.
  - Communicates with the Solution Control Server (a Management Layer component) to exchange status, operations, and control information.
  - Reads logs from the Centralized Log Database (a Management Layer component).
- Depending on the solutions deployed in the system, Genesys Administrator may also communicate with other back end servers to retrieve solution-specific information.

Media Layer

Media Layer Functions

The Media Layer provides:

- Interfaces to communication media.
- Distribution of interaction-related business data within and across solutions.

Media Layer Architecture

Figure 5 shows the structure of the Media Layer.

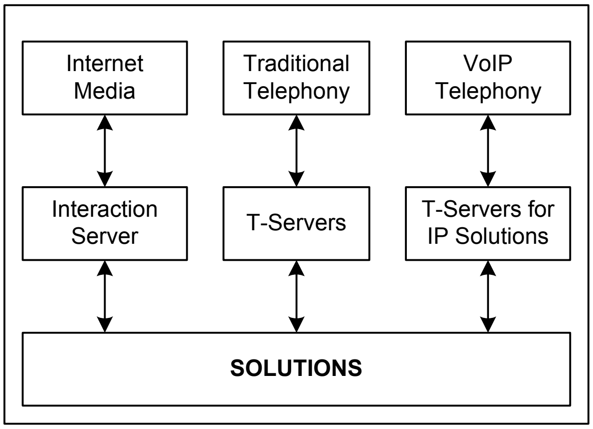


Figure 5: Media Layer Architecture

- Interaction Server provides an interface with Internet media like e-mail and web communications. T-Server provides an interface with traditional telephony systems.
- T-Servers provide an interface with traditional telephony systems.
- T-Servers for IP Solutions provide an interface with VoIP telephony systems.

All of these servers communicate interaction-processing requests from the Genesys solutions to the media devices and distribute interaction-processing events in the opposite direction. They also maintain the current state of each interaction and all the business data collected about each interaction during processing stages. These servers distribute attached data to all the applications that participate in processing the interaction. They can also transfer that data across multiple interaction-processing sites.

Another Media Layer component, Load Distribution Server (LDS), not shown in the diagram, increases system scalability and availability. Mediating between T-Servers and T-Server clients, LDS enables an *N*+1 architecture, where *N* is the number of clients that handle the load, in situations where the total traffic of a large installation exceeds the capacity of a single client.

Services Layer

Services Layer Overview

The Services Layer provides:

- Interfaces for Genesys solutions to various DBMSs.
- Conversion of events related to management of single interactions into statistical data, which is then used for interaction processing and contact center reporting.

Services Layer Architecture

Figure 6 shows the structure of the Services Layer.

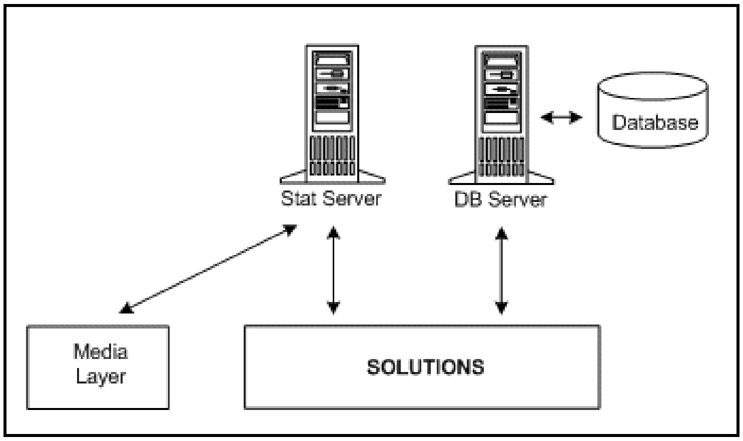


Figure 6: Services Layer Architecture

- Stat Server tracks real-time states of interaction management resources and collects statistics about contact center performance. Genesys solutions use the statistical data to more “intelligently” manage real-time interactions. Through Genesys Reporting, you can use the data to generate real-time and historical contact center reports.
- DB Server provides the interface between Genesys applications and the DBMS holding the operational databases for solutions.

Framework Connections

Figure 7 shows connections that Framework components establish to each other and to solutions.

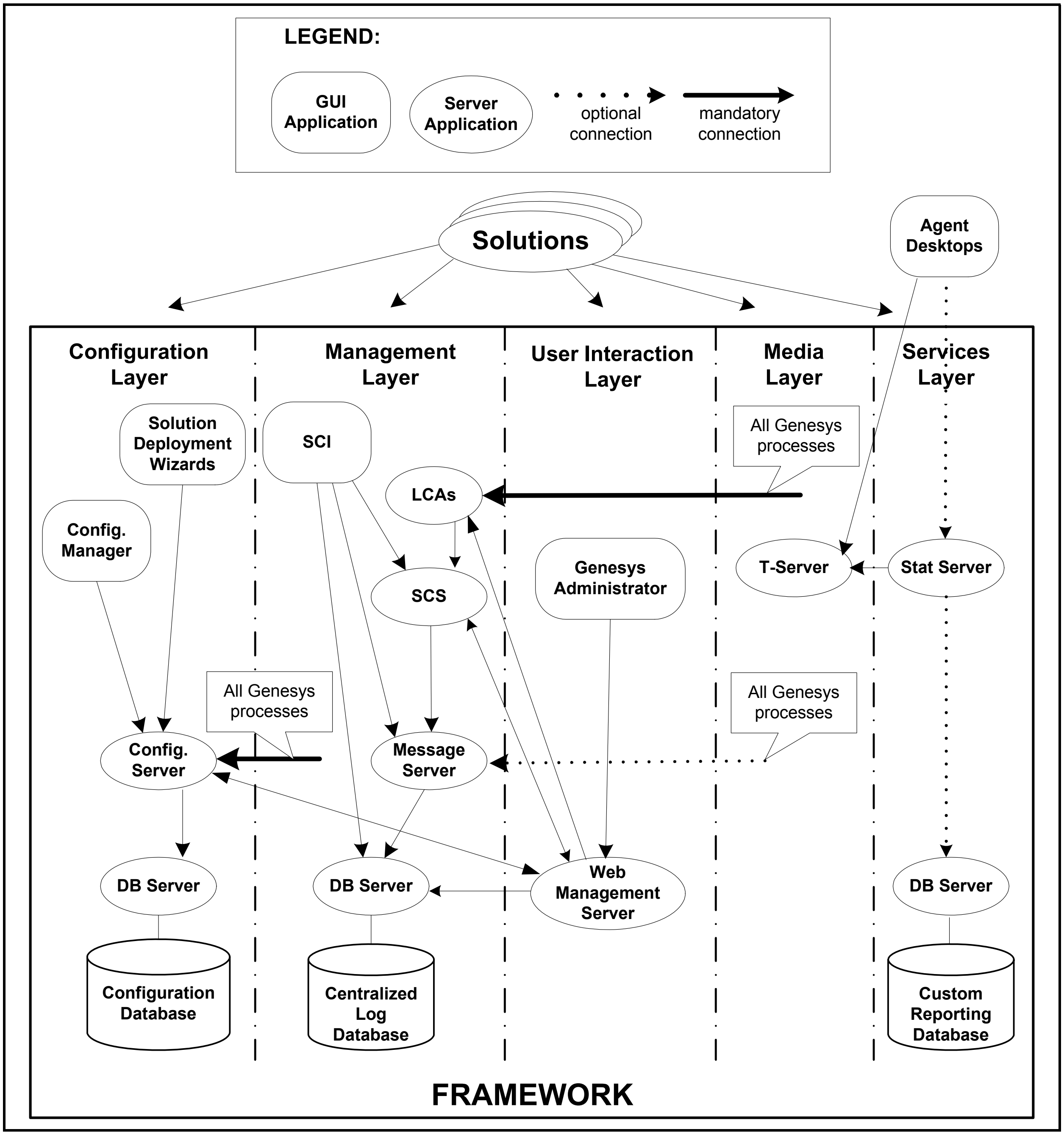


Figure 7: Detailed Framework Architecture

Chapter

3 Planning the Installation

This chapter describes the main tasks that you should complete, and the considerations you should take, when planning your Framework installation.

This chapter contains the following sections:

- Initial Considerations, page 37
- Network Locations for Framework Components, page 42
- Solution Availability, page 53
- Security Considerations, page 59

Initial Considerations

Major Planning Steps

Achieving optimal performance with your Genesys installation requires comprehensive planning. How well Genesys Framework 8.0 components function in a particular environment depends on a number of variables, including amount of computer memory, network location of the applications, and the specific tasks the applications perform. This document describes various characteristics of Framework 8.0 components and looks at how they interact with each other and the applications they serve. It provides basic data and makes recommendations that will help you select the optimal components for your specific needs, choose a computer for each component, and define the optimal location for each component on the network.

Start your deployment planning by identifying the existing telephony resources in your contact center environment. Then follow the deployment recommendations for each architecture layer given in “Network Locations for Framework Components” on page 42.

Consider whether you can benefit from:

- Using the Management Layer (see “Management Layer” on page 46).

- Having redundant configurations (see “Application Failures” on page 58).
- Installing an additional Configuration Server in Proxy mode (see “Solution Availability” on page 53).
- Installing a number of Solution Control Servers in Distributed mode (see “Solution Availability” on page 53).
- Using Load Distribution Server (refer to LDS documentation for information).

In addition, review “Solution Availability” on page 53 and “Security Considerations” on page 59, which are common aspects of any Genesys installation.

Finally, prepare an installation worksheet based on the sample given in Appendix E, “Installation Worksheet,” on page 293.

Telephony Network Description

Certain information is required to deploy Framework 8.0, so prepare a description of your telephony and media network as discussed in this section. You will use data from this description when supplying configuration parameters to Deployment Wizards or when configuring objects for your contact center using Genesys Administrator or Configuration Manager.

You must have the following information available for every switch that you plan to use in your interaction management solution:

1. Switch type, which usually corresponds to the switch vendor, brand name, and model number.
2. Version of the switch software.
3. Type of CTI Link (TCP/IP, X.25, or ISDN).
4. Version of the CTI Link software.
5. Information required to connect to the CTI Link (for example, for TCP/IP connection, host name and port number), including password, service id, and other parameters required for switch security.
6. Types and numbers of telephony devices, also called Directory Numbers or DNs. You may have to configure specific types of DNs (for example, Routing Points) on the switches to support functions of the interaction management solutions.
7. Login codes to be assigned to agents for runtime associations between agents and their working places.
8. Information about how the switch DNs are arranged into working places.
9. Information about how DNs that belong to a particular switch can be reached from other switches in a multi-site installation.

In addition, describe your contact center resources:

1. For every person who must access any interaction management application, define the following parameters: a unique employee ID, unique user name, and password. The role of a person in the contact center defines the set of access privileges for this person in the system. For more information, see “Security Considerations” on page 59.
2. For agents, define Login codes in every switch at which they might be working.
3. For agents, define skills that might be considered as criteria for effective interaction processing.
4. Note how agents are arranged into groups.
5. Decide how to arrange the working places into groups.

Guidelines for Naming Hosts

To ensure that the operating systems properly interpret host names, follow these guidelines when naming the host computers in your system:

1. If possible, use the host’s DNS name.
2. If it is not possible to use the DNS name, use the host’s IP address, in the format `x.x.x.x`. However, verify the availability of that IP address by using the command `ping <IP address>` on the command-line before starting the installation process.

Licensing Your Applications

Genesys licenses its applications using the FLEXlm License Manager, produced by Macrovision. At startup, all licensed Genesys servers establish a client connection to License Manager, providing a computer host ID or IP address along with various information about the application. If the application has a valid license, License Manager allows the application to start and run properly. Note that the Management Layer can control and monitor License Manager as a third-party application but not as a Genesys server application.

To find more information about how Framework and other Genesys components are licensed, refer to the *Genesys Licensing Guide*.

Configuration Environment Types

Genesys provides its software to two types of companies:

- Companies that own their telephony equipment and use it for their own needs.
- Companies (such as service providers) that make their telephony equipment available to other companies.

Two types of the Genesys configuration environment address the difference in the needs of these two types of companies—enterprise and hierarchical multi-tenant.

You establish a particular configuration environment when you create the Configuration Database structure during the Configuration Layer installation.

For more information about the two configuration environments and resulting differences in configuration objects, refer to *Framework 8.0 Configuration Manager Help.*

Enterprise

The *enterprise* (also referred to as *single-tenant*) *configuration environment* serves the needs of a single company that owns its telephony equipment and uses it for its own needs. In an enterprise configuration environment, all configuration information is visible to all users—employees of the company—given that they have sufficient permissions.

Hierarchical Multi-Tenant

The *hierarchical multi-tenant configuration environment* serves the needs of a company—typically, a service provider—making its telephony equipment available to other companies. So, this configuration environment also serves the needs of every company using the service. In this environment, configuration information about the resources that are managed exclusively by the service provider is visible on the service provider side only. Only personnel from the service provider company can register the entities that provide the technical foundation for setting up the CTI services, such as switching offices, data network hosts, and CTI applications. These resources may be shared by some or all of the companies using the service (“Tenants”). The resources of the individual companies, such as user accounts, agent groups, outbound campaigns, and so forth, are configured separately by the personnel of these companies. This configuration is visible only to that company's users.

This general structure can be extended to an unlimited number of layers. The service provider can provide its services not only to companies that use its services directly (as existed prior to release 8.0), but to other companies, such as resellers, who in turn sell those services to other companies. The customers of these resellers can, in turn, be direct users and perhaps other resellers. This hierarchical layering can be from one to an unlimited number of levels. Tenants that provide services to other tenants are called *parent tenants*; those that use these services are called *child tenants*. Therefore, a single Tenant object can be a parent, a child, or both.

Notes: Prior to release 8.0, the hierarchical multi-tenant environment was known as the multi-tenant environment, because the latter was limited to one layer of hierarchy. In release 8.0 and later, the two terms are used interchangeably, but always refer to a hierarchical multi-tenant environment.

Large Configuration Environments

A single instance of Configuration Server can support over 500,000 objects with a start-up time of less than 5 minutes. This configuration would require at least 1 GB of RAM for storage.

Genesys defines a *large configuration environment* as one in which the Configuration Database stores 50,000 or more configuration objects. Genesys strongly recommends that you consider these *guidelines* when operating within a large configuration environment:

- Use Genesys Administrator, Configuration Manager and other Configuration Server clients with special care, to prevent loading problems. For example, create user accounts with different configuration access capabilities, so that contact center staff can log in to Genesys Administrator and Configuration Manager and perform only those tasks they are required to perform over the configuration objects for which they have permissions. This saves Genesys Administrator and Configuration Manager from loading all the objects from the Configuration Database.
- Consider using Configuration Unit and Folder objects when creating a large number of configuration objects. The recommended number of configuration objects per folder is up to 4,000. Anything larger significantly increases Configuration Manager time for loading configuration objects.
- When creating configuration objects of the `Script` type (for example, routing strategies), keep in mind that both the number of `Script` objects and the script size significantly affect the time it takes Configuration Manager to load the `Script` configuration objects. If you create large scripts, reduce the number of `Script` objects in a subfolder to achieve an acceptable loading speed. For instance, for the script-type configuration objects approximately 150 KB in size, limiting the number of script-type objects to 30 per subfolder guarantees an acceptable loading speed.
- When creating a large number of configuration objects of the `Agent Login` type, assign them to Person configuration objects as you create the logins. When the Configuration Database contains too many unassigned agent logins, Genesys Administrator and Configuration Manager takes a long time to open the `Agent Login` browse dialog box from the `Person Properties` dialog box. To guarantee an acceptable loading speed, keep the number of unassigned agent login objects below 1000 per Tenant object.
- For all configuration objects, do not store large amounts of data as text properties in an object's Annex, unless it is explicitly required by Genesys applications.

Network Locations for Framework Components

This section provides basic data and makes recommendations that will help you select the optimal components for your specific needs, choose a computer for each component, and define the optimal location for each component on the network.

A separate section presents the information for each layer of Framework 8.0.

Configuration Layer

The Configuration Layer is a mandatory part of any Genesys CTI installation. You cannot configure and run any other layers of Framework 8.0—or any solutions—unless Configuration Layer components are running.

Configuration Database

The Configuration Database stores all configuration data.

Warnings! Never add, delete, or modify any data in the Configuration Database except through applications developed or those instrumented with Genesys Configuration Server API. If you have compelling reasons for accessing the database directly, consult Genesys Technical Support before you do so.

Configuration Server treats its information and checks integrity constraints in a case-sensitive manner. Therefore, your SQL database must be installed and configured in case-sensitive mode. Refer to your SQL Server Administrator documentation for additional information.

When planning your installation, follow these recommendations for the Configuration Database:

- The size of the Configuration Database depends on the size of the contact center, or—more precisely—on the number of entities in the contact center that you specify as configuration data objects. If data storage capacity is limited, consider allocating 10 KB of space for every object in the contact center as a general guideline. Otherwise, allocating 300 MB accommodates a Configuration Database for a typical enterprise installation.
- Treat the Configuration Database as a mission-critical data storage. Ensure that only the properly qualified personnel gain access to the DBMS that contains the Configuration Database itself. Information about access to the

database is stored in the configuration file of Configuration Server. To protect this file, place it in a directory that is accessible only to the people directly involved with Configuration Layer maintenance.

- Consider encrypting the database access password via Configuration Server.
- As with any mission-critical data, regularly back up the Configuration Database. Base the frequency of scheduled backups on the rate of modifications in a particular configuration environment. Always back up the database before making any essential modifications, such as the addition of a new site or solution.
- Switch Configuration Server to Read-Only mode before performing any maintenance activities related to the Configuration Database.
- Save the records of all maintenance activities related to the Configuration Database.
- Users of the Configuration Database should have at least the following privileges for all tables in the database:
  - Select
  - Insert
  - Update
  - Delete

DB Server

DB Server provides the interface between Configuration Server and the DBMS holding the Configuration Database.

When planning your installation, follow these recommendations for DB Server:

- The Configuration Layer requires a dedicated DB Server that should not be used for any other purposes. This DB Server has a special installation and startup procedure. Refer to the DB Server sections of Chapter 5 on page 77 and Chapter 8 on page 165 for more information about installing and starting the Configuration DB Server.
- Locate DB Server on the computer on which the DBMS client runs.
- Install DB Server on a multiprocessor computer to optimize its performance. As the DBMS itself, DB Server can spawn child processes that benefit from multiprocessor capabilities.
- Provide sufficient RAM to run DB Server processes. To ensure adequate performance, do not run DB Server processes in Swap mode.

Configuration Server

Configuration Server provides centralized access to the Configuration Database, based on permissions that you can set for any user to any configuration object. Configuration Server also maintains the common logical integrity of configuration data and notifies applications of changes made to the data.

When planning your installation, follow these recommendations for Configuration Server:

- Genesys solutions installed in a particular environment can have only one Configuration Database managed though one Configuration Server at a time.
- Because Configuration Server keeps *all* configuration data in its memory, allocate memory for this server based on the expected size of the Configuration Database.
- Although you can install Configuration Server anywhere on the network because it does not generate heavy traffic, the most logical location for it is on the computer running DB Server.

Note: If you are using Configuration Server in high-availability (HA) mode, Genesys recommends that you configure redundant DB Servers for both Configuration Servers, or else move DB Server to a host other than the one on which primary or backup Configuration Server is running.

- When you install Configuration Server on a UNIX host computer, increase the swap area of the host to at least 600 MB to accommodate a large Configuration Database.

Configuration Server Proxy

To support geographically distributed installations, Configuration Server can operate in *Proxy* mode. In this document, a Configuration Server 8.0 that operates in Proxy mode, and that provides similar functionality to Configuration Server Proxy 6.x and 7.x, is called *Configuration Server Proxy 8.0.* For more information about Configuration Server Proxy, see “Solution Availability” on page 53.

When planning your installation, follow these recommendations for Configuration Server Proxy:

- Genesys solutions installed in a particular environment can have only one Configuration Database managed though one Configuration Server at a time.
- Configuration Server Proxy 8.0 keeps all configuration data in its memory which improves data processing performance. Proxy 8.0 consumes approximately the same amount of RAM as Configuration Server Proxy 6.x and 7.x, and Configuration Server 8.0.
- You can install Configuration Server Proxy anywhere on the network because it does not generate heavy traffic.

- When you install Configuration Server Proxy on a UNIX host computer, increase the swap area of the host to at least 600 MB to accommodate a large Configuration Database.

Configuration Manager

Configuration Manager provides a user-friendly interface for manipulating the contact center configuration data that solutions use and for setting user permissions for solution functions and data.

Note: Starting in release 8.0, Genesys Administrator performs most of the same functions as Configuration Manager.

When planning your installation, follow this recommendation for Configuration Manager:

- Install and run as many instances of Configuration Manager on the network as needed.

  Note: You can launch multiple instances of Configuration Manager on the same computer and connect them to different Configuration Servers or to the same Configuration Server. You can also open as many object `Property` dialog boxes as you need from a single instance of Configuration Manager.

Genesys Security Pack on UNIX

Genesys Security Pack on UNIX, an optional component of the Configuration Layer, provides the components, such as shared libraries, which are used for generation of certificates and their deployment on UNIX computers on which Genesys components are installed. For more information, refer to the *Genesys 8.0 Security Deployment Guide.*

Configuration Import Wizard

Use the Configuration Import Wizard (CIW), an optional component of the Configuration Layer, to import the following data into the Genesys Configuration Database:

- Agent data from Lightweight Directory Access Protocol (LDAP) and Microsoft Active Directory databases.
- Switch configuration data from various switches.

You can also use CIW to import and export configuration data to and from Extensible Markup Language (XML) files, generate custom reports from the Configuration Database, and compare two configuration sets (including import of the configuration differences). For more information about CIW, refer to the *Framework 8.0 Imported Configuration Data Formats Reference Manual.*

When working with CIW, Genesys recommends that you allow up to 1 GB memory for import and export operations to and from a large Configuration Database.

Management Layer

The exact configuration of the Management Layer depends on which of the following management functions you would like to use:

- Solution and application control and monitoring
- Centralized logging
- Alarm signaling
- Application failure management

Genesys recommends that you use all these capabilities to optimize solution management.

Management Layer Capabilities—Required Components

If you intend to use one or more of the Management Layer capabilities, plan to install the components required for each capability, as outlined in this section.

Note: Starting in release 8.0, Genesys Administrator performs most of the same functions as Solution Control Interface. See *Framework 8.0 Genesys Administrator Help* for details.

Solution and Application Control and Monitoring

Install these components to control and monitor solutions and applications:

- Local Control Agent
- Solution Control Server
- Solution Control Interface

Refer to the *Framework 8.0 Management Layer User's Guide* for descriptions of and recommendations for these components.

Centralized Logging

Install these components to use centralized logging:

- Centralized Log Database
- DB Server (as a client of Configuration Server)
- Message Server

- Solution Control Interface (optional)

Note: Although Solution Control Server is not required, it is a source of log events vital for solution maintenance. For example, Solution Control Server generates log events related to detection and correction of application failures. As such, it is useful for centralized logging.

Refer to the *Framework 8.0 Management Layer User's Guide* for descriptions of and recommendations for these components.

Alarm Signaling

Install these components to provide alarm signaling:

- Message Server
- Solution Control Server
- Solution Control Interface
- Genesys SNMP Master Agent, if SNMP alarm signaling is required. See also "Built-in SNMP Support" on page 47.

Note: You do not need to install the Genesys application called G-Proxy to provide the alarm-signaling functions of the Management Layer.

Refer to the *Framework 8.0 Management Layer User's Guide* for descriptions of and recommendations for these components.

Application Failure Management

Install these components to detect and correct application failures:

- Local Control Agent
- Solution Control Server
- Solution Control Interface

Refer to the *Framework 8.0 Management Layer User's Guide* for descriptions of and recommendations for these components.

See the section "Application Failures" on page 58 and for information about the application-failure management mechanism.

Built-in SNMP Support

Install the following components to integrate Genesys Framework 8.0 with an SNMP-compliant third-party NMS (network management system):

- Local Control Agent
- Solution Control Server
- Genesys SNMP Master Agent or a third-party SNMP master agent compliant with the AgentX protocol

- Message Server if SNMP alarm signaling is required

Refer to the *Framework 8.0 Management Layer User's Guide* for descriptions of and recommendations for these components.

Management Layer Components

This section provides recommendations for planning and installing the Management Layer components.

Local Control Agent

When planning your installation, follow these recommendations for Local Control Agent:

- Install an instance of LCA on each computer running a monitored application, whether a Genesys daemon or a third-party application. LCA is installed at the port number you specify in the `LCA Port` property of the corresponding `Host` object in the Configuration Database. If you do not specify a value for `LCA Port,` the LCA default port number is `4999.`By default, LCA runs automatically on computer startup.

Note: On Windows operating systems, the installation script always installs LCA as a Windows Service. If you are changing the LCA port number in the host configuration after the installation, you must also change the port number in the `ImagePath` in the application folder, which you can find in the Registry Editor. Refer to "Notes on Configuring the LCA Port" on page 112 for instructions.

- On UNIX platforms, LCA must be added to the `r/c` files during the installation, so that LCA can start automatically on computer startup. In practice, this means that the person installing LCA must have sufficient permissions.
- If you will be using Genesys Administrator to deploy Genesys applications and solutions to any hosts in your network, you must install and run the latest instance of LCA on each target host. This will install a remote deployment agent (referred to as the *Genesys Deployment Agent*), which is used by Genesys Administrator to carry out the deployment on that host.

Message Server

When planning your installation, follow these recommendations for Message Server:

- Genesys recommends the use of one Message Server and of one Log Database for all but large installations. If you are working within a large installation and think about evenly dividing the total log-event traffic among number of Message Servers, each serving any number of clients, keep the following facts in mind:

  - Although any number of Message Servers can store log records in the same Log Database, one Message Server cannot store log records to more than one Log Database.
  - Because any number of Message Servers can send log records to Solution Control Server, Solution Control Interface can display alarms based on log records from a few Message Servers.

- If you want an application to generate alarms, you must configure it to send log events to Message Server. Use the same Message Server for both the centralized logging and alarm signaling.
- If you want Message Server to provide alarms, you must connect it to Solution Control Server. This means that you must configure a connection to every Message Server in the SCS `Application` object's `Properties` dialog box.
- As with any other daemon application, you can deploy redundant Message Servers.
- To optimize the performance of the connection with DB Server, configure the number of messages that the Message Server sends to DB Server before receiving a response. The smaller the number of messages, the greater the decrease in performance. See the "Message Server" section of the *Framework 8.0 Configuration Options Reference Manual* for more information.

Solution Control Server

When planning your installation, follow these recommendations for Solution Control Server:

- Given that you can install and use more than one SCS that is operating in `Distributed` mode within a given configuration environment, consider deploying a few Solution Control Servers in this mode for large or geographically distributed installations. In these installations, each server controls its own subset of `Host`, `Application`, and `Solution` objects. Distributed Solution Control Servers communicate with each other through the dedicated Message Server.
- As with any other daemon application, you can deploy redundant Solution Control Servers. Redundancy support for SCS is implemented through direct communication between the backup SCS and the LCA of the host on which the primary SCS runs. To set up HA port synchronization between primary and backup Solution Control Servers, see "Synchronizing HA Ports Between Redundant Solution Control Servers" on page 227.

Note: You cannot perform a manual switchover for Solution Control Server.

Solution Control Interface

Note: Starting with release 8.0, most of the functionality provided by SCI can be accessed from Genesys Administrator.

When planning your installation, follow these recommendations for SCI:

- Install and run as many instances of SCI on the network as needed.

  Note: Launch only one instance of SCI per host computer.

- Keep in mind that although you can configure SCI to work with more than one Solution Control Server and more than one Log Database, SCI can only work with one SCS and one Log Database at a time.
- Use SCI for advanced viewing and handling of the log.
- Use SCI to view active alarms and define what solutions the alarms might affect.

DB Server for Log Database

When planning your installation, follow these recommendations for DB Server:

- Locate DB Server on the same computer on which the DBMS client runs.
- Install DB Server on a multiprocessor computer to optimize its performance. As with the DBMS itself, DB Server can spawn child processes that benefit from multiprocessor capabilities.

Centralized Log Database

As with any historical database, the size of the Centralized Log Database grows with time. So, when you are planning your installation, keep in mind that:

- The maximum allowable record size is 1 KB.
- The size of the Centralized Log Database depends on:
  - The number of applications in the system.
  - The log level you have set for the network output for each application.
  - The required time the log records should be kept in the database. Table 1 provides general timing recommendations.

With these limits in mind, follow these recommendations for the Centralized Log Database:

- For efficient online log viewing, allocate temporary database space of at least 30 percent of the expected Centralized Log Database size.
- Limit permissions to modify the Centralized Log Database content to Message Server(s) only.

- Define how long the log records are to be kept in the database before they become obsolete. Use the Log Database Maintenance Wizard to delete obsolete records or configure the removal of obsolete records using the DBMS mechanisms.
- Users of the Centralized Log Database should have at least the following privileges for all tables in the database:
  - Select
  - Insert
  - Update
  - Delete
- Make a trade-off between how long the log records are to be kept and the ability to access them efficiently. If both a considerable period of record storage and quick online access to the log records are important, back up the more dated records in a separate database.

Table 1: Recommended Log Storage Time

Logging Level	Supported Call Volume	Recommended Storage Time
STANDARD	100 calls/sec	10 days
INTERACTION	10 calls/sec	1 day
TRACE	5 calls/sec	1 day

SNMP Master Agent

When planning your installation, Genesys recommends that you use SNMP Master Agent only if both of these conditions apply:

- You want to access the Management Layer functions via an NMS interface; or you have another SNMP-enabled Genesys application and want to access its features via an NMS interface.
- You don’t have another AgentX-compatible SNMP master agent in place.

User Interaction Layer

Starting in release 8.0, the web-based Genesys Administrator provides most of the functionality provided by Configuration Manager and Solution Control Interface. Install Genesys Administrator, preferably, in close proximity with Configuration Server. You can then install as many web browsers as required, on which you can access Genesys Administrator.

Media Layer

For every switch that you plan to make a part of your interaction management solution, install at least one T-Server application.

T-Server

T-Server provides an interface between traditional telephony systems and Genesys applications.

When planning your installation, follow these recommendations for T-Server:

- At the premise level, always associate one switch with one T-Server.
- Allocate memory for T-Server based on the number of interactions you expect to be simultaneously processed at a given site during the busiest hour and the typical amount of business data attached to the interactions. Allocate at least 500 bytes per interaction plus memory space for a “typical” amount of attached data.
- Provide sufficient RAM to run T-Server processes. To ensure adequate performance, do not run T-Server processes in Swap mode.
- Do not install real-time third-party applications on the computer running T-Server.
- Consider using a dedicated subnetwork for T-Server connection to the link.
- Do not enable IP routing between the link subnet and the network when T-Server is installed on a computer with two or more network cards (one of which is used for link connection and the others for connection to the rest of the network).

Services Layer

Although the Services Layer components are considered elements of Framework 8.0, it is logical to install them when you install the solution that they will serve. When deploying these, consider the following recommendations.

DB Server

DB Server provides the interface between Genesys applications and the DBMS holding the operational databases for solutions.

When planning your installation, follow these recommendations for DB Server:

- Do *not* use the DB Server that provides access to the Configuration Layer to access any databases other than the Configuration Database. (See “DB Server” on page 43.)

- Consider dividing database-related traffic evenly among any number of DB Servers, each serving up to 255 clients.
- Locate DB Servers on the computer on which the DBMS client runs.
- Install DB Server on a multiprocessor computer, to optimize its performance. As the DBMS itself, DB Server can spawn child processes that benefit from multiprocessor capabilities.
- Provide sufficient RAM to run DB Server processes. To ensure adequate performance, do not run DB Server processes in Swap mode.

Stat Server

Stat Server tracks real-time states of interaction management resources and collects statistics about contact center performance. Genesys solutions use the statistical data to more “intelligently” manage interactions. Use Genesys Reporting to generate real-time and historical contact center reports based on data that Stat Server collects.

For specific recommendations on Stat Server installation, refer to Stat Server documentation.

Solution Availability

This section describes the events that affect the availability of Genesys solutions.

Think of the *availability* of an interaction management solution as the amount of time that the solution is available to process enterprise interactions. Two major categories of events affect availability: changes in the operating conditions and failures. The first category combines the various operational and maintenance activities that require temporary shutdown and restart of the entire system or of one of its components. The second category deals with the temporary inability of the solution to perform its required functions because of operator errors or software faults.

Given the complexity of the solution architecture, remember that:

- Any interaction management solution relies on functionality provided by a number of components, each performing a specific task. The overall availability of a solution depends on the availability of each of the components involved.
- Interaction management solutions do not operate in isolation. On the contrary, they essentially bring together various business resources, such as telephony switches, call-processing telephony terminations, database management systems, and Internet communication servers. As such, the inability of an interaction management solution to perform its required function may be the result of the unavailability of an external component or system.

- Genesys solutions, which consist of software components only, operate on hardware platforms that require maintenance and that are subject to failures. For example, running redundant processes on the same host may work in the presence of a software failure; however, it offers no protection if the computer itself or a communication link to it fails. The availability of a solution can never be greater than the availability of the underlying hardware platform.

The Genesys Framework is designed to minimize the impact on solution availability associated with operational and maintenance activities. Because the Configuration Layer updates solutions about any configuration changes at runtime, uninterrupted solution operations are guaranteed regardless of the number or frequency of changes made to the contact center environment. Dynamic reconfiguration is a standard feature of every Genesys 6.x, 7.x, and 8.0 component and does not require you to make any special adjustments to enable configuration settings.

Solution availability can also be affected by accidental operator errors, unauthorized actions, or actions that are carried out in a less than skillful manner. The data integrity rules implemented in the Configuration Layer greatly reduce errors of the first type. The basic integrity rules common across all solutions are supported by Configuration Server, and therefore enforced regardless of the type of client application through which the data is managed. More advanced integrity rules specific to a particular solution are implemented in the solution wizards. Genesys recommends that you use wizards for the initial deployment of solutions and major configuration updates in the course of solution operation.

Genesys Framework 8.0 also provides a comprehensive set of access control functions that help minimize the risk of failures associated with unskilled or unauthorized operator actions. For more information about these functions, see “Security Considerations” on page 59.

Finally, to reduce the impact on solution operations, schedule all operational and maintenance activities that directly affect system behavior for off-peak hours, when solutions operate at minimum loads.

Faults—accidental and unplanned events causing a system to fail—present the biggest challenge to solution availability. The functions that detect, isolate, and correct various types of faults are partly incorporated into every Genesys component and partly implemented in the Management Layer of the Genesys Framework. Refer to the *Framework 8.0 Management Layer User’s Guide* for more information about the various fault-detection mechanisms implemented in Genesys software.

Communication Session Failures

In a distributed interaction management solution, components must communicate continuously with each other and with some external resources.

A communication session with a required resource can fail for any of these reasons:

- Failure of the resource itself
- Problem with the hardware where the resource is located
- Network connectivity problem between the two points
- Forced termination of the connection that has not shown any activity for a specified amount of time

Any time a solution component cannot communicate with a required resource, the solution may not be able to perform its required function.

After a failure is detected, the fault correction procedure normally consists of repeated attempts to regain access to either the resource in question or to a redundant resource, if one is available.

Each underlying communication protocol is typically equipped with functions that monitor open communication sessions. When a failure is detected, the communication software signals an abnormal condition to the interacting processes. This detection mechanism is fully supported in the Genesys solutions, whose connection layer translates system messages into appropriate events on the application level.

However, communication protocols do not always provide adequate detection times. The TCP/IP stack, for example, may take several minutes to report a failure associated with a hardware problem (such as when a computer goes down or a cable is disconnected). This delay presents a serious challenge to the availability of any interaction management solution.

Advanced Disconnect Detection Protocol

All but a few Genesys interfaces use the TCP/IP stack. To compensate for the manner in which this stack operates, Genesys components use the Advanced Disconnect Detection Protocol (ADDP), which periodically polls the opposite process when no actual activity occurs at a given connection. If a configurable timeout expires without a response from the opposite process, the connection is considered lost and an appropriate event is sent to the application.

Genesys recommends enabling ADDP on the links between any pair of Genesys components. ADDP helps detect a connection failure on both the client and the server side. For most connections, enabling detection on the client side only is sufficient and it reduces network traffic. However, Genesys strongly recommends that you use detection on both sides for all connections between Configuration Server and its clients (including Solution Control Interface), as well as between any two T-Servers.

To enable ADDP between two applications, specify `addp` as the `Connection Protocol` when configuring the connection between applications; also, set values for the `Local Timeout`, `Remote Timeout`, and `Trace Mode` properties. For more information, refer to *Framework 8.0 Configuration Manager Help.*

For complete instructions on configuring ADDP between two applications, refer to Appendix A on page 263. For instructions on configuring ADDP between the primary and backup T-Servers, refer to the Deployment Guide for your specific T-Server.

After a communication session failure is detected, the application makes repeated attempts to regain access to the required resource. If a redundant process is not configured, the reaction is a repeated attempt to restore the communication session with the same process. If a redundant process is configured, the application makes alternate attempts to restore the failed communication session and to establish a session with the redundant process. This way, if the session has terminated because of a failure of the opposite process, the application eventually connects to the standby process configured to provide the same type of service.

Note: Beginning with release 7.5, backwards compatibility of the Keep-Alive Protocol (KPL) is no longer supported. If you used KPL for 6.5 clients in previous versions of Genesys, consider using ADDP instead.

Configuration History Log

The Configuration History Log is a database that contains historical information about client sessions and changes to configuration objects. It enables a client to restore a session that was terminated by a service interruption, and request any changes to configuration objects that occurred during that service interruption.

The History Log is installed with default parameters when you install Configuration Server. For Configuration Server in any mode (primary, backup, or Proxy), configure the History Log parameters on the `Options` tab of the Configuration Server `Application` object in Configuration Manager. Refer to the *Framework 8.0 Configuration Options Reference Manual* for detailed descriptions of the configuration options that relate to the History Log.

At startup, Configuration Server checks whether there is a pre-existing History Log database with the same name as that defined in the configuration file. If it does not find a match, it creates a new one. If it does find a match, Configuration Server backs up that file, appending the `.bak` file extension. When requested by a client that is recovering from a service interruption, Configuration Server does the following:

- Restores the client’s session according to a client session record.
- Returns a set of data records to the client that exceeds the client’s last known data record identifier.

History Log functionality is mandatory, and cannot be turned off permanently.

No maintenance is required for the History Log database, because it is maintained automatically by Configuration Server. Based on the expiration parameters, Configuration Server purges information from the database, both at startup and during normal operations.

Errors

Errors that occur when writing to the History Log database generate Log Event 22138. If persistent or fatal errors occur as a result of a corrupt History Log database, remove the corrupt file and, optionally, replace it with the backup file created during Configuration Server startup. Then, restart Configuration Server.

Note: Genesys strongly recommends that you associate an alarm with this Log Event, and that you inform Genesys Technical Support if you encounter any errors or corruption.

Minimizing Performance Impacts

Depending partially on the size of the updates, the History Log can affect the performance of Configuration Server. There are three ways that you can minimize these performance impacts:

- Save the History Log in memory rather than on the hard drive, by setting the `all` option to `:memory:` for the Configuration Server `Application` object.
- Turn off the History Log functionality temporarily by setting the `active` option to `false` for the Configuration Server `Application` object. The functionality will be turned back on either when you manually reset the option (to `true`), or when you restart Configuration Server.

  Warning! When History Log functionality is turned off, current activities are not recorded. Therefore, clients that are disconnected during this time cannot retrieve the updates necessary to restore their sessions.

- Limit the ensured integrity of the internal history database to only in cases of Configuration Server failure. Default History Log operation ensures the integrity of the internal history database if both Configuration Server and the operating system fail. However, this is CPU-intensive. Instead, you can limit the scope of this protection to failure of Configuration Server only by setting the `failsafe-store-processing` option to `false`. If the operating system fails, the history database may not be wholly preserved. However, this operation has less impact on system performance.

Refer to the *Framework 8.0 Configuration Options Reference Manual* for more information about this configuration option.

Software Exceptions

A *software exception* is an interruption in the normal flow of a program caused by an internal defect. An operating system generates exceptions in response to illegal operations that a software program attempts to perform. After generating an exception, the operating system terminates the process, which may make unavailable all solutions that use the functionality of this component.

Genesys provides an exception-handling function that monitors the exceptions the operating system generates. The function attempts to prevent application termination by skipping the program block from which the exception originated. In most cases, this action amounts to losing one processing step with respect to a single interaction in favor of preventing an application failure.

Although the function attempts to prevent application termination, it still reports the exception with the highest priority marking. This ensures that operators know about the exception and can take appropriate measures.

You can configure the number of times during which the function tries to prevent an application from failing if it continues to generate the same exception. If this threshold is exceeded, the exception-handling function abandons the recovery procedure, allowing the operating system to terminate the application. This termination can then be detected and corrected by external fault-management functions.

By default, the exception-handling function is enabled in any daemon application; six exceptions occurring in 10 seconds will not cause an application to terminate. To change these parameters or disable the exception handling, use a corresponding command-line parameter when starting an application.

Application Failures

A complete application failure may be a result of either an internal defect (for example, an infinite loop) or an external event (for example, a power failure). It may manifest as either a process nonresponse or termination. Typically, if a solution component stops working, the solution is no longer available to process customer interactions.

Because the application that fails cannot perform any functions, you must use an external mechanism for both detection and correction of faults of this type. In release 8.0, the Management Layer is this mechanism.

For information about the architecture and components in the Management Layer, see the *Framework 8.0 Management Layer User's Guide.*

Database Failures

Starting in release 8.0, any DB Server can detect a connection failure with the corresponding database and attempt to reconnect. To detect the failure, DB Server clients monitor the responses they receive from the DBMS. If a response is not received within the interval specified by the configuration option `db-request-timeout`, the client process stops executing. This is understood by DB Server as a failure of the DBMS, and it tries to reconnect.

The option `db-request-timeout` is configured in the DB Server `Application` object via the `Query Timeout` field for Database Access Point (DAP) `Application` objects for the database. The timeout set in the DAP overrides the timeout set in DB Server, but applies only to client processes that connect to the database through this DAP.

Refer to the *Framework 8.0 Configuration Options Reference Manual* for more information about using the option `db-request-timeout` to implement this feature.

Remote Site Failures

Starting in release 8.0, each Solution Control Server in a Distributed Solution Controls Server environment can detect the failure of a remote site controlled by another Solution Control Server. Refer to the *Framework 8.0 Management Layer User's Guide* for more information.

Common Log Options

Starting with release 7.0, Local Control Agent supports the unified set of log options (*common log options*) to allow precise configuration of log output. For a complete list of unified log options and their descriptions, see the "Common Log Options" chapter of the *Framework 8.0 Configuration Options Reference Manual*.

Security Considerations

This section outlines some of the security capabilities provided in Configuration Layer for your data, both from access by unauthorized users and during its transfer between components.

For more information about these and other security features, and for full implementation instructions, refer to the *Genesys 8.0 Security Deployment Guide.*

User Authentication

User authentication refers to ensuring that the user is actually who he or she claims to be. In Genesys software, this is implemented by the Configuration Server. The data that a Genesys solution requires for operating in a particular environment, as well as the applications and the solutions, is represented as Configuration Database objects. Any person who needs access to this data or these applications must have an account in this database.

Logging In

At startup, every Genesys GUI application opens a `Login` dialog box for users to supply a `User Name` and `Password`, which are used for authentication. The authentication procedure succeeds only if a Person with the specified `User Name` and `Password` is registered in the Configuration Database. Otherwise, the working session is stopped.

Last Logged In

Starting in release 8.0, you can configure Configuration Server so that some Genesys GUI applications display the date and time of the previous login for the currently logged-in user. Each user can then detect if someone else had accessed the system using their credentials.

Forced Re-Login for Inactivity

You can configure some Genesys GUIs, including Configuration Manager, Solution Control Interface, and Wizard Manager, to automatically force a logged-in user to log in again if he or she has not interacted with any element of the interface for a set period of time. In some interfaces, open windows are also minimized, and are restored only when the user logs back in.

This functionality is configured in each interface, and is therefore specific to that interface. By default, this functionality is not active, and must be activated on an instance-by-instance basis for those GUI applications that are to use the feature.

Note: The inactivity feature survives reconnection timeouts. In other words, if the interface application becomes disconnected from Configuration Server after the forced re-login timeout has expired but before the user has logged in again, the user must still log in before he or she can access the system.

User Authorization

User authorization refers to ensuring that an authenticated user is entitled to access the system, either all or parts thereof, and defines what the user can do to or with the data that they can access.

The security mechanism implemented in Configuration Server allows the system administrator to define, for each valid user account, a level of access to sets of objects. The access privileges of valid user accounts define what the user can and cannot do within the corresponding set of objects.

Starting in release 8.0, an additional layer of security is available through Genesys Administrator, called Role-Based Access Control. This enables the system administrator (or a designated individual) to define access to objects based on what is to be done (viewed, modified, deleted) to the objects.

This section provides an overview of the various mechanisms in place to ensure data is accessed by only authorized users. For detailed information about how Genesys software implements user authorization, refer to the *Genesys 8.0 Security Deployment Guide*.

Access Permissions

The level of access to sets of objects granted by the system administrator is defined by a combination of elementary permissions. Each user must be assigned at least one permission; without it, the user has no access to any data.

Access control for daemon applications is different from that for GUI applications. Access permissions for GUI applications are determined by the profile of the person who is currently logged in.

Access Groups

Access Groups are groups of Users who need to have the same set of permissions for Configuration Database objects. By adding individuals to Access Groups—and then setting permissions for those groups—access control is greatly simplified.

Genesys provides preconfigured default Access Groups. You can also create your own Access Groups to customize your own security environment.

Master Account and Super Administrators

The Configuration Database contains a predefined User object, otherwise known as the *Master Account* or *Default User*. The Default User, named `default` and with a password of `password`, is not associated with any Access Group. The Master Account always exists in the system and has a full set of permissions with respect to all objects in the Configuration Database. You must use this account when you log in to the Configuration Layer for the first time since the Configuration Database initialization. Genesys recommends changing the default name and password of the Master Account, storing them securely, and using this account only for emergency purposes or whenever it is specifically required.

Changing Default Permissions

The default permissions that the Configuration Layer sets provide users with a broad range of access privileges. You can always change those default settings to match the access needs of a particular contact center environment.

Note: Genesys does not recommend changing the default access control setting unless absolutely necessary. Remember, the more complex the security system is, the more difficult it becomes to manage the data and the more it affects the performance of the Configuration Layer software.

Genesys provides two mechanisms to help you manage changes to your permissions—propagation and recursion. Refer to the *Genesys 8.0 Security Deployment Guide* for details about these mechanisms and how to use them.

New Users

Starting with release 7.6, Configuration Server does not assign a new user to an Access Group when the user is created. In effect, the new user has no privileges, and cannot log in to any interface or use a daemon application. The new user must be explicitly added to appropriate Access Groups by an Administrator or by existing users with access rights to modify the user's account. Refer to *Framework 8.0 Configuration Manager Help* for more information about adding a user to an Access Group.

By default, this behavior applies to all new users added by Configuration Server release 7.6 or later. Users created before release 7.6 keep their existing set of permissions and Access Group assignments. If you want new users to be added automatically to pre-defined Access Groups, as was the behavior prior to release 7.6, you must manually disable this feature by using the Configuration Server configuration option `no-default-access`.

For more information about this feature, including how it works and how to modify it, refer to the *Genesys 8.0 Security Deployment Guide.*

Login Security Banner

Starting in release 7.6, you can create your own security banner to be displayed to a user logging in to Configuration Manager, Solution Control Interface, or any Framework Wizard. You define the content of the banner, typically the terms of use of the application. Users must accept the terms to proceed, or they can reject the terms to close the application without access.

The user-defined security banner is specified during the installation of each instance of a GUI application, such as Configuration Manager and Solution Control Interface, and during the installation of any Framework Wizard.

Refer to the *Genesys 8.0 Security Deployment Guide* for more details about the security banner.

Genesys Security Using the TLS Protocol

Starting with release 7.5, Genesys supports the optional use of the Transport Layer Security (TLS) protocol to secure data transfer between its components. TLS is supported on Windows and UNIX platforms.

To enable secure data transfer between Genesys components that support this functionality, you must configure additional parameters in the `Host` objects and `Application` objects that represent these components. Certificates and corresponding private keys are generated using standard Public Key Infrastructure (PKI) tools, such as OpenSSL and Windows Certification services.

For detailed information about Genesys Security Using the TLS Protocol, refer to the *Genesys 8.0 Security Deployment Guide.*

Multiple Ports

To provide flexibility in configuring a system with the Genesys Security using the TLS Protocol feature, you can configure multiple ports on a given server with either secure or unsecured connections. You specify the additional ports in the `Server Info` of the server's `Application` object.

Each port can have one of the following listening modes:

- `unsecured`—The port is not secured by TLS. This is the default status of a port.
- `secured`—The port is secured by TLS.
- `auto-detect`—This status applies only to ports on the Configuration Server, and is used only when configuring secure connections to the Configuration Server. If an application that is trying to connect to an `auto-detect` port has security settings specified in its configuration, Configuration Server checks the validity of those settings. Depending on the results, the client will be connected in secure or unsecured mode.

Refer to the *Genesys 8.0 Security Deployment Guide* and *Framework 8.0 Configuration Manager Help* for more information about multiple ports.

Multiple Ports on Configuration Server

When you install Configuration Server, the listening port that you specify during installation is stored in the configuration file as the `port` option. When Configuration Server first starts with an initialized database, it reads the `port` option in the configuration file. The value of the `port` option is also propagated to the Configuration Database, where it is stored as part of the Configuration Server `Application` object. As additional ports are configured, they are also stored in the Configuration Database as part of the Configuration Server

Application object. On subsequent startups of Configuration Server— that is, on all startups after the first—Configuration Server reads the port information from the Configuration Server Application object, ignoring the port option in the configuration file.

If necessary, you can specify an additional unsecured listening port in the Configuration Server command line during subsequent startups. This additional port is not written to the Configuration Server Application object, and does not survive a restart of Configuration Server. Use this option only when regular ports cannot be opened. See -cfglib_port on page 172 for more information about this option.

Secure Connections

In addition to configuring secure ports on your server applications, you must configure your client applications, both server and user interface types, to connect to these ports. Use Genesys Administrator or Configuration Manager to configure these connections.

There are only two exceptions to this standard procedure, as follows:

- Configuring secure connections to the Configuration Server—You must configure a Configuration Server port as an auto-detect port.
- Configuring a secure connection between DB Server and Configuration Server—You must configure the secure connection in the configuration files of the two components.

Refer to the *Genesys 8.0 Security Deployment Guide* for detailed instructions for configuring secure connections.

European Data Protection Directive Disclaimer

The Genesys suite of products is designed to make up part of a fully functioning contact center solution, which may include certain non-Genesys components and customer systems. Genesys products are intended to provide customers with reasonable flexibility in designing their own contact center solutions. As such, it is possible for a customer to use the Genesys suite of products in a manner that complies with the European Data Protection Directive (EDPD). However, the Genesys products are merely tools to be used by the customer and cannot ensure or enforce compliance with the EDPD. It is solely the customer's responsibility to ensure that any use of the Genesys suite of products complies with the EDPD. Genesys recommends that the customer take steps to ensure compliance with the EDPD as well as any other applicable local security requirements.

Chapter

4 Deployment Overview

This chapter lists the prerequisites for installing the Genesys Framework, and prescribes the deployment order. This chapter also describes the Genesys Installation Wizard and the Genesys Configuration Wizards, and how to access them.

This chapter contains the following sections:

- Prerequisites, page 65
- Deployment Sequence, page 67
- Deployment using Genesys Administrator, page 69
- Genesys Wizards, page 70

Prerequisites

Before you deploy Framework, investigate aspects of its size, security, availability and performance, as applied to the specific environment of your contact center. See Chapter 3 on page 37 for recommendations on these issues. Ensure that applications that require licenses are licensed properly (see the *Genesys Licensing Guide*).

Review the prerequisites for your Framework installation as described in this section. For prerequisites for Genesys Administrator, refer to the *Framework 8.0 Genesys Administrator Deployment Guide*.

Databases

Genesys recommends that you or your database administrator create database(s) in your database management system (DBMS) before you start Genesys installation. For the Framework installation, you must create two databases:

- Configuration Database—Mandatory for any Genesys installation.

- Centralized Log Database—Required only if you are using the Management Layer's centralized-logging function.

Genesys also recommends that you or your database administrator back up your Genesys database(s) on a regular basis.

Refer to "Network Locations for Framework Components" on page 42 for recommendations on database sizing. Refer to your DBMS documentation for instructions on how to create a new database. Refer to Appendix E on page 293 for the list of database parameters you must use in Genesys installation.

Note: Consider using the Genesys Database Initialization Wizard when creating database structures for the Configuration Database and Centralized Log Database during the Framework 8.0 deployment process.

Hardware and Network Environment

Genesys recommends that you or your IT specialist assign host computers to Genesys software before you start Genesys installation. Keep in mind the following restrictions:

- Do not install all the Genesys server applications on the same host computer.
- When installing a few server applications on the same host computer, prevent them (except for Configuration Server and Configuration Server Proxy) from using the swap area.

Refer to "Network Locations for Framework Components" on page 42 for recommendations on server locations.

Refer to the *Genesys Supported Operating Environment Reference Manual* for the list of operating systems and database systems supported in Genesys releases 7.x. Refer to the *Genesys Supported Media Interfaces Reference Manual* for the list of supported switch and PBX versions. For the location of both of these documents, refer to "Related Documentation Resources" on page 303.

For UNIX operating systems, also review the list of patches Genesys uses for software product builds and upgrade your patch configuration if necessary. A description of patch configuration is linked to installation `read_me.html` files for the Genesys applications that operate on UNIX.

Internet Browsers

To view all elements of the Configuration Manager interface, you need Internet Explorer version 6.0 or later.

To view all elements of Genesys Administrator, you need any combination of Internet Explorer 6.x or 7.x and Mozilla Firefox 2.0 or 3.0. Refer to the *Framework 8.0 Genesys Administrator Deployment Guide* for information about requirements for the Genesys Administrator web server.

Licensing

Before configuring and installing Framework components, note that Genesys applications require licenses. Genesys recommends that you configure and install License Manager and license files at this point. For information about which products require what types of licenses and on the installation procedure for License Manager, refer to the *Genesys Licensing Guide* document available on the Genesys Documentation Library DVD.

If you are planning to deploy redundant configurations for any Genesys servers, you must have a special high-availability (HA) license. Otherwise, the Management Layer does not perform a switchover between the primary and backup servers.

Deployment Sequence

The various Framework components are distributed on a number of product CDs. This document covers the deployment of Framework components shipped on the following CDs:

- Management Framework
- Media
- HA Proxy
- Real-Time Metrics Engine

The Framework deployment process involves the configuration and installation of one or more components of the same type within each architecture layer, as outlined here.

1. Configuration Layer:
   - DB Server (providing access to the Configuration Database)
   - Configuration Database
   - Configuration Server
   - Configuration Manager
   - Configuration Server Proxy (optional)
   - Wizard Manager (optional; no configuration is required)
   - Database Initialization Wizard (optional; no configuration is required)
   - Configuration Import Wizard (optional; no configuration is required)
2. User Interaction Layer:
   - Genesys Administrator

Note: Genesys Administrator can be installed at any time, so long as the the Configuration Layer is installed. Placing Genesys Administrator at this point in the sequence is only a suggestion.

3. Management Layer:
   - DB Server (as a client of Configuration Server, providing access to the Centralized Log Database and other databases)
   - Message Server
   - Centralized Log Database
   - Local Control Agent (required for each computer running Genesys server applications or monitored third-party server applications)
   - Solution Control Server (SCS)
   - Solution Control Interface (SCI)
   - Genesys SNMP (Simple Network Management Protocol) required to support Microsoft Operational Manager (MOM) technology and optional to support Master Agent or a third-party AgentX protocol-compliant SNMP master agent
4. Media Layer:
   - T-Server
   - HA Proxy for a specific type of T-Server (if applicable)

Note: Configuration and installation instructions for T-Servers apply to Network T-Servers as well. You can find detailed deployment information about T-Server and HA Proxy in the *latest version of the Framework T-Server Deployment Guide* for your specific T-Server.

5. Services Layer
   - DB Server
   - Stat Server

Use the sample worksheet in Appendix 19, "Installation Worksheet" on page 293 as you prepare for and perform the Framework installation.

Note: Although Interaction Server, SMCP (Simple Media Control Protocol) T-Server, and Services Layer components are all parts of the Framework architecture, configuring them directly depends on their usage in a Genesys solution. Therefore, you must install them during deployment of a specific solution.

In addition to installed Framework components, the following resources must be registered as Configuration Database objects (or *configuration objects*) at the time of the Framework deployment:

- Hosts

- Switching Offices
- Switches
- Agent Logins
- DNs
- Access Groups
- Skills
- Persons
- Agent Groups
- Places
- Place Groups

Note: You will find detailed information about configuring telephony objects in the latest version of the *Framework T-Server Deployment Guide* for your specific server.

The configuration and installation procedures depend on whether you employ Wizard Manager for configuration. Whichever method you choose, you must first install and configure components of the Configuration Layer, as described in Chapter 5 on page 77.

You can choose the manual installation procedure or use the Deployment Tool introduced in release 8.0 to install Configuration and Management Layer components.

Warning! Never add, delete, or modify any data in the Configuration Database except through applications developed by Genesys or those instrumented with Genesys Configuration Server API. If you have compelling reasons for accessing the database directly, consult Genesys Technical Support before you do so.

Deployment using Genesys Administrator

Genesys Administrator contains deployment functionality to help users deploy Genesys applications and solutions to any host in their network. This functionality replaces Framework Management Deployment Manager.

The deployment functionality in Genesys Administrator copies all of the necessary software components to the target host, and installs them. If a corresponding object does not already exist on that host, Genesys Administrator creates a new one during the installation.

For information about using Genesys Administrator to deploy Management Layer components, see “Deploying the Management Layer Using Genesys Administrator” on page 117.

For information about using Genesys Administrator to deploy other Genesys applications and solutions, refer to the on-line *Framework 8.0 Genesys Administrator Help* file and your product-specific documentation.

Genesys Wizards

You can deploy Genesys Framework in one of two ways, but both use Genesys wizards. You can manually install Framework with help from the Genesys Installation Wizard, or you can use the Genesys Configuration Wizards to help you install it.

This section describes the Genesys Installation Wizard and the Genesys Configuration Wizards, and how to access them.

Genesys Installation Wizard

The Genesys Installation Wizard is the standard interface for manually installing all 8.0 components on Windows platforms, with the exception of Genesys Configuration Wizards. When you install a component from the appropriate `setup.exe` file, the Installation Wizard is automatically invoked to guide you through the process.

Warning! If you are using Genesys Configuration Wizards to deploy a component, do not use the *Genesys Installation Wizard.*

Genesys Installation Wizard uses a standard design for installation pages and provides a consistent look across all installations for Genesys products.

Names of all components start with the word *Genesys* in both `Add or Remove Programs` and Windows `Services` windows; also, the Genesys logo appears next to components names in these windows. In the Windows `Registry`, Services names are nicknames.

Uninstalling Genesys Components

There are no uninstall shortcuts in the `Start > Programs` menu; instead, uninstall components from the standard Windows `Add or Remove Programs` window.

Genesys Configuration Wizards

Genesys product CDs that contain installation packages for a set of Genesys 8.0 components also contain Configuration Wizards that facilitate component deployment. Genesys Configuration Wizards help users set up Genesys products, including the configuration of solutions, applications, and options required to provide desired functionality.

Note: Configuration Wizards for HA Proxy components are combined with wizards for appropriate T-Servers and delivered on the Media CD.

From a security standpoint, Configuration Server treats Configuration Wizards as regular graphical user interface (GUI) applications. When Configuration Wizards are invoked from a GUI application, the account that you used to log in to that application controls your actions in the wizards. Since the wizards are designed to change configuration, rather than to review existing configuration, you must have modification-level permissions (create, change, delete) with respect to the configuration objects that need to be created or configured through the wizards.

Wizard Manager

The primary application that invokes Configuration Wizards for Genesys Framework 8.0 and Genesys solutions is Wizard Manager. This application is designed solely for deployment and upgrade tasks. Wizard Manager launches Configuration Wizards in the order required for the requested task. Some Genesys GUI applications can also invoke wizards designed to facilitate elementary configuration tasks. For example, the wizards invoked from Solution Control Interface (SCI) allow a user to define a new alarm condition or modify the logging process of a specific application. All applications from which you can launch Configuration Wizards are clients of Configuration Server. Therefore, the computers on which such applications are installed must have network connectivity with the computer on which Configuration Server runs.

Wizard Manager does not operate on UNIX, only on Windows. However, you must use this tool to configure the Framework components, regardless of whether the components are run on UNIX or Windows.

To install all the wizards that are on a particular CD, run the `setup.exe` program located in the root directory of the CD. This also installs the Wizard Manager. Only one instance of Wizard Manager is installed on your computer, even though you install wizards from multiple applications. You can access all installed Configuration Wizards from this single instance of Wizard Manager.

To install Wizard Manager and the Management Framework Configuration Wizard, run `setup.exe` from the root directory of the Management Framework 8.0 CD. To install the Configuration Wizards for T-Server applications, run `setup.exe` from the root directory of the Media 8.0 CD. Wizards that you invoke from other Genesys graphical user interface (GUI) applications are installed during the installation of those applications.

Warning! When you install wizards on a given computer, close all Genesys GUI applications that run on it.

Configuration Wizard Tasks

Genesys Configuration Wizards do not physically install applications on computers, but they do accomplish two tasks:

1. Prepare the configuration data for the Genesys environment and store the prepared data in the Configuration Database.
2. Customize the installation package to the environment, so that the installation script does not ask for parameters you have already submitted during the configuration process. To achieve this, wizards record all required data into an INI file, which becomes a part of the customized installation. This data is then used during the actual setup process to correctly install the application on a desired computer.

Warning! It is your responsibility to provide wizards with correct directories for installations. See "Specifying Directories for Installations" for recommendations.

Configuration Wizards configure both Windows and UNIX applications, and prepare installation packages for these operating systems. After a wizard creates a customized installation package, the user has to run setup manually on a computer designated for a particular application.

Specifying Directories for Installations

After you have entered all required data about an application, the wizard prompts you to insert the CD where the installation package can be found and to specify a location to which the wizard should copy the customized installation. Keep in mind that when you are specifying:

1. The CD drive where the product CD is inserted, type or select only the first letter of the CD drive as opposed to the full path to the product installation on the CD.
2. A destination location to copy the installation package for an application installation on another computer than the computer running the wizard, specify a disk location accessible from a remote computer.

Copying Installations to Remote Computers

Often an application should be installed on another computer than the computer running the wizard. If this is the case, specify a temporary folder on the wizard's host computer as the destination location and then copy the customized installation package from this folder to a temporary directory on the host computer for the application.

When the application's future host computer is a UNIX box, follow the recommendations in this section for copying the customized installation packages from the wizard's Windows computer to the target UNIX computer.

General Recommendations for UNIX

When copying to a UNIX box, note the following:

- Use a sharing application, such as `Samba,` to make disks on computers running UNIX visible from computers running Windows.
- Use an ftp server.

Using FTP Servers Running on UNIX

To use an FTP Server running on UNIX:

1. Using the command prompt, locate the folder on the Windows-based computer to which the wizard copied the customized installation package.
2. Run the ftp client on Windows.
   Type the `ftp` command, followed by the actual host name of the UNIX-based computer in the command prompt:
   ```
   ftp <server_host_name>
   ```
3. Define the `BIN` mode of transfer.
   Type the following command in the command prompt:
   ```
   bin
   ```
4. Define the folder on the remote UNIX-based computer to which the package is to be copied.
   Type the `cd` command followed by the actual folder name in the command prompt:
   ```
   cd <folder_name>
   ```
5. To avoid a request for transfer confirmation for each file in the package, turn off the Interactive mode.
   Type the following command in the command prompt:
   ```
   prompt
   ```
6. Transfer the files.
   Type the following command in the command prompt:
   ```
   mput *
   ```

After the customized installation package is transferred, manually run the setup. The instructions for installing Framework components begin on page 79.

Using FTP Servers Running on Windows

To use an FTP Server running on Windows:

1. Locate the folder on the UNIX-based computer to which the package is to be copied.
2. Run the ftp client on UNIX. Type the `ftp` command followed by the actual host name of the Windows-based computer in the command prompt:
   ```
   ftp <server_host_name>
   ```
3. Define BIN mode of transfer.
   Type the following command in the command prompt:
   ```
   bin
   ```

4. Define the folder on the remote Windows-based computer from which the package is to be copied.
   Type the `cd` command, followed by the actual folder name in the command prompt:

   ```
   cd <folder_name>
   ```

5. To avoid a request for transfer confirmation for each file in the package, turn off Interactive mode.
   Type the following command in the command prompt:

   ```
   prompt
   ```

6. Transfer the files.
   Type the following command in the command prompt:

   ```
   mget *
   ```

After the customized installation package is transferred, manually run the setup. The instructions for installing Framework components begin on page 79.

Application State Disabled

An application prepared by wizards but not yet physically installed is marked as disabled in Configuration Manager. *Disabled* means that the application has been created and configured as an object in the Configuration Layer, that its installation package has been customized and copied over to a location on the wizard's host computer, but that the application has not been physically set up on the computer on which it is to run. When a user runs the actual setup using the customized installation package, the corresponding `Application` object in the Configuration Layer is automatically enabled.

Preparing Installations for Redundant Applications

Warning! When configuring redundant applications, do *not* select the redundancy type `Not Specified` unless using a switchover mechanism other than that provided by the Management Layer. It is acceptable, however, to leave the redundancy type `Not Specified` for nonredundant applications (that is, applications that do not have backup servers associated with them).

When you choose to install redundant applications, two possibilities exist. If the host computers on which redundant applications are to run have operating systems of the same type, the wizard copies one installation package, which can be used to install both primary and backup applications. If the host computers have operating systems of different types, the wizard prepares a separate installation package for each application in the redundant pair.

Installing and Starting Configuration Wizards

Note: You should install the Configuration Wizards from every product CD before you deploy the Genesys components from those CDs.

To configure Genesys components through Configuration Wizards, install the wizards directly from your Genesys product CD. This will also install the Wizard Manager, or add the new wizards to an already existing Wizard Manager. Wizard Manager operates only on Windows.

Note: Genesys recommends that you install wizards on the same host computer on which Configuration Manager is installed.

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

To install Management Framework wizards:

1. In the root directory of either the Management Framework 8.0 or Media 8.0 product CD, double-click `setup.exe` to start the installation.
2. Specify the destination directory in which you want to install the wizards.
3. Specify the `Program Folder` to which you want to add the wizards.

When the setup program is finished, Wizard Manager is ready to run.

Note: Before starting Wizard Manager, make sure that the Configuration Layer components are installed, configured, and running. (See Chapter 5 on page 77.)

Now start Wizard Manager from the Windows `Start > Programs` menu. Click `Log into the Configuration Layer,` and specify the necessary parameters in the `Login` dialog box as described in “Login Procedure” on page 287. Provide the same application name as if you were logging in to Configuration Manager.

Using Wizard Manager on Windows

Wizard Manager guides you through the deployment process for Genesys components, and the configuration process for Configuration Database objects.

When you start Wizard Manager, the Framework page opens. The left panel in Wizard Manager contains links to the configuration wizards for specific solutions. Before you deploy any solutions with Wizard Manager, click `Framework` in the left panel to run the Management Framework Configuration Manager, and configure the Framework as follows:

1. Configure the Management Layer.

2. Create Tenants, if you are setting up a multi-tenant environment.
3. Create Switch objects and deploy the T-Servers associated with them.
4. Configure the Switch objects— DNs and Places.
5. Create other required Framework configuration objects, such as Agent Logins, Agents, and Place Groups.

After this configuration process is complete, the Framework instance is configured and registered in the Configuration Database. You can now use Wizard Manager to deploy any solution by using the appropriate Configuration Wizard.

Chapter

5 Setting Up the Configuration Layer

This chapter describes how to set up the Framework Configuration Layer, which is a mandatory part of any Genesys installation and the first step of the Framework 8.0 deployment. Before deploying other Framework components manually, follow the steps described in the following topics:

- Task Summary, page 78
- Installing DB Server, page 79
- Configuring DB Server, page 83
- Starting Configuration DB Server, page 85
- Installing Configuration Server, page 86
- Initializing the Configuration Database, page 91
- Configuring Configuration Server, page 95
- Encrypting the Configuration Database Password, page 96
- Starting Configuration Server, page 97
- Installing Configuration Manager, page 98
- Starting Configuration Manager, page 99
- Changing Configuration Server Port Assignments, page 100
- Configuring Hosts, page 101
- Enabling Management Layer Control of Configuration Layer, page 104
- Next Steps, page 109

Before you install Framework components:

- Consult “Network Locations for Framework Components” on page 42 for recommendations on the network locations of these components.
- Create a new database following the instructions in your DBMS documentation.

Warning! During installation on UNIX, all files are copied into a user-specified directory. The installation creates no subdirectories within this directory, so be careful not to install different products into the same directory.

Task Summary

The following table summarizes the steps for setting up the Configuration Layer.

Task Summary: Setting Up the Configuration Layer

Task	Related Procedure and Information
1. Set up the Configuration DB Server.	1. To install DB Server, use one of the following procedures, as appropriate: • To install on UNIX, use the procedure "Installing Configuration DB Server on UNIX" on page 79. • To install on Windows, use the procedure "Installing Configuration DB Server on Windows" on page 82. 2. To configure DB Server, see "Configuring DB Server" on page 83. 3. Start DB Server, using the procedure "Starting Configuration DB Server" on page 85.
2. Install Configuration Server.	Use one of the following procedures, as appropriate: • To install on UNIX, use the procedure "Installing Configuration Server in Master mode on UNIX" on page 86. • To install on Windows, use the procedure "Installing Configuration Server in Master mode on Windows" on page 89.
3. Initialize the Configuration Database.	See "Initializing the Configuration Database" on page 91.
4. Configure Configuration Server.	See "Configuring Configuration Server" on page 95.
5. (Optional) Encrypt the password for the Configuration Database. **Note:** This task can be carried out now or at a later time, as required.	See "Encrypting the Configuration Database Password" on page 96.
6. Start Configuration Server.	Use the procedure "Starting Configuration Server" on page 97.

Task Summary: Setting Up the Configuration Layer (Continued)

Task	Related Procedure and Information
7. Set up and start Configuration Manager.	Use the following procedures: 1. "Installing Configuration Manager on Windows" on page 98 2. "Starting Configuration Manager" on page 100
8. Change the listening port of Configuration Server in the Configuration Database.	Use the procedure "Changing the Configuration Server listening port using Configuration Manager" on page 101.
9. Create Hosts for each computer in your network.	Use the procedure "Creating a Host object in Configuration Manager" on page 103.
10.(Optional) Enable the Management Layer to control the Configuration Layer.	See "Enabling Management Layer Control of Configuration Layer" on page 104.

Installing DB Server

This section describes the installation of the DB Server that serves the Configuration Layer. This DB Server provides Configuration Server with access to the Configuration Database, and is often referred to as the *Configuration DB Server*. Consequently, this DB Server must start before any other component does, meaning that you must configure it through a local configuration file.

Although DB Server is installed before Configuration Server, decide on the host and port for Configuration Server prior to DB Server installation.

Warning! Do not use the DB Server that provides access to the Configuration Database for access to any other database.

Procedure: Installing Configuration DB Server on UNIX

Purpose: To install the DB Server that will provide access to the Configuration Database.

Start of procedure

1. On the Management Framework 8.0 product CD in the appropriate `services_layer/dbserver/<operating_system>` directory, locate a shell script called `install.sh`.
2. Run this script from the command prompt by typing `sh` and the file name. For example: `sh install.sh`. Then, press `Enter`.
3. To specify the `hostname` for this DB Server, do one of the following:
   - Type the name of the host, and press `Enter`.
   - Press `Enter` to select the current host.
4. Type `y` to specify that this DB Server will be dedicated to providing access to the Configuration Database, and press `Enter`.

   Warning! Do not use the DB Server that provides access to the Configuration Database for access to any other database.

5. Specify the full path of the destination directory, and press `Enter`.
6. If the target installation directory has files in it, do one of the following:
   - Type `1` to back up all the files in the directory, and press `Enter`. Specify the path to which you want the files backed up, and press `Enter`.
   - Type `2` to overwrite only the files in this installation package, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

     Use this option only if the application already installed operates properly.
   - Type `3` to erase all files in this directory before continuing with the installation, and press `Enter`. Then, type `y` to confirm your selection, and press `Enter`.
7. Do one of the following:
   - Type `y` to configure DB Server (during installation), and press `Enter`. Go to Step 8 to specify values for the configuration file. For information about the DB Server configuration options and their values, refer to the *Framework 8.0 Configuration Options Reference Manual.*
   - Type `n` to not configure DB Server (during installation), and press `Enter`. In this case, you have finished installing DB Server—do not continue to the next step in this procedure. Before you can start DB Server, however, you must create a configuration file and set the configuration options in it. That procedure is described in “Configuring DB Server” on page 83.
8. Enter the Configuration Server `hostname`, and press `Enter`.
9. Enter the Configuration Server `network port`, and press `Enter`.

10. To specify the `hostname` for this DB Server, do one of the following:
    - Type the name of the host, and press `Enter`.
    - Press `Enter` to select the default, which is the host selected in Step 3.
11. To specify the `network port` for this DB Server, do one of the following:
    - Type the number of the network port, and press `Enter`.
    - Press `Enter` to select the default port (`4040`).
12. To specify the `management network port` for this DB Server, do one of the following:
    - Type the number of the management port, and press `Enter`.
    - Press `Enter` to select the default port (`4041`).

    The installation extracts the files from the package and displays the names of the database client processes for different types of SQL servers.
13. Type the number corresponding to the `database type` and the `database client bit-type` (if applicable), and press `Enter`.

    If you do not know the bit-type, you can configure it later using the appropriate `<DBMS type>_name` configuration option. Refer to the *Framework 8.0 Configuration Options Reference Manual* for more information about these options.

When the installation process is finished, a message indicates that installation was successful. The process places DB Server in the directory specified during the installation process. The installation script also writes a sample configuration file, `dbserver.conf.sample,` in the directory in which DB Server is installed.

If you chose to configure DB Server during installation, a copy of the sample configuration file, `dbserver.conf.sample,` is created and saved as `dbserver.conf,` and the parameters specified in Steps 8 through 13 are written to this file.

End of procedure

Next Steps

- If you chose to configure DB Server after installation, you must manually rename the sample file as `dbserver.conf`, and modify the configuration options before you start DB Server. See “Configuring DB Server” on page 83.

  For information about DB Server configuration options and their values, refer to the *Framework 8.0 Configuration Options Reference Manual.*

Procedure: Installing Configuration DB Server on Windows

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Purpose: To install the DB Server that will provide access to the Configuration Database.

Start of procedure

1. On the Management Framework 8.0 product CD in the `services_layer/dbserver/windows` directory, locate and double-click `setup.exe` to start the Genesys Installation Wizard.
2. Use the `About` button on the wizard's `Welcome` page to review the `read_me` file. The file also contains a link to the server's Release Notes file.
3. On the `Welcome` page, click `Next` to start the installation.
4. On the `DB Server Run Mode` page, select `DB Server as an independent server` to install DB Server so it runs independently of Configuration Server so that it provides access to the Configuration Database. Click `Next`.
5. On the `Database Engine Option` page, select the appropriate database engine, and then click `Next`.
6. On the `DB Server Parameters` page, specify `the DB Server Host, DB Server Port,` and `Management Port,` and then click `Next`.
7. On the `Connection Parameters to the Genesys Configuration Server` page, specify the `Host name` and `Port of Configuration Server,` and then click `Next`.

   Even if DB Server will be running independent of Configuration Server, these parameters are required to start DB Server via the Management Layer.
8. On the `Choose Destination Location` page, the wizard displays the destination directory, as specified in the `Working Directory` property of the server's `Application` object. If the path configured as `Working Directory` is invalid, the wizard generates a path to the destination directory in the `C:\Program Files\GCTI\<Product Name>` format.

   If necessary, use the:

   - `Browse` button to select another destination folder. In this case, the wizard will update the `Application` object's `Working Directory` in the Configuration Database.
   - `Default` button to reinstate the path specified in `Working Directory`.

   Click `Next` to proceed.

9. On the Ready to Install page, click:
   - Back to update any installation information.
   - Install to proceed with the installation. Installation Status displays the installation progress.
10. On the Installation Complete page, click Finish.

    As a result of the installation, the wizard adds Application icons to the:
    - Windows Start menu, under Programs > Genesys Solutions > Framework.
    - Windows Add or Remove Programs window, as a Genesys server.
    - Windows Services list, as a Genesys service, with Automatic startup type.

End of procedure

For information about the DB Server configuration file, see the following section, "Configuring DB Server". For information about DB Server configuration options and their values, refer to the *Framework 8.0 Configuration Options Reference Manual.*

Configuring DB Server

Starting with release 6.0, DB Server can run either as an independent server or as a client of Configuration Server. The DB Server dedicated to the Configuration Database must run as an independent server and reads its configuration settings from a local configuration file. Any DB Server used for handling data other than configuration data must run as a client of Configuration Server and reads its configuration settings from the Configuration Database.

DB Server Configuration File

The configuration file contains the DB Server, Log, and Local Control Agent (LCA) sections. It can also contain additional DB Server sections for any additional ports.

The name of the DB Server section is dbserver. This section contains configuration information about DB Server, including settings and the type of DBMS with which DB Server operates.

The dbserver section contains configuration options for one port. If there is more than one port configured for DB Server, configuration options for the additional ports is contained in additional DB Server sections called dbserver-n, where n is a nonzero consecutive integer. Each dbserver-n section contains the configuration options for one port.

The name of the Log section is `log`. This section contains configuration information about the log.

The name of the LCA section is `lca`. If configured, this section contains an option that enables the Management Layer to control the DB Server dedicated to the Configuration Database.

You can find a sample DB Server configuration file in the *Framework 8.0 Configuration Options Reference Manual.*

Configuring DB Server on UNIX

Procedure: Configuring Configuration DB Server on UNIX

Purpose: To configure the DB Server providing access to the Configuration Database.

Prerequisites

- You manually installed DB Server on UNIX, as described in the procedure "Installing Configuration DB Server on UNIX" on page 79.
- You chose not to configure DB Server during the installation process (that is, you entered `n` in Step 7 on page 80).

Start of procedure

1. From the directory in which DB Server is installed, open the sample configuration file (`dbserver.conf.sample`) in a text editor.
2. Set the configuration options to work with the Configuration Database. Consult the relevant chapters in the *Framework 8.0 Configuration Options Reference Manual* for option descriptions and values. See "DB Server Configuration File" on page 83 for a description of the DB Server configuration file.
3. Save the sample configuration file as `dbserver.conf`.

End of procedure

Configuring DB Server Logging

If you plan to use the centralized logging and auditing functionality of the Management Layer, be sure to specify appropriate log options in the DB Server configuration file before you start using DB Server. Most importantly, enable the network log output (for example, create a new option in the `log` section called `standard` and set its value to `network`). See the

Framework 8.0 Configuration Options Reference Manual for more information.

Starting Configuration DB Server

Although DB Server is started before Configuration Server, you *must specify* the `host` and `port` parameters of Configuration Server in the command line for DB Server to start. Specify `cfg_dbserver` as a value for the `-app` command-line parameter (the DB Server application name).

Note: For information about starting DB Server as a client of Configuration Server, see Chapter 8, "Starting and Stopping Framework Components," on page 165. That chapter also provides a complete description of the command-line parameters used for startup.

Procedure: Starting Configuration DB Server

Prerequisites

- DB Server is installed.
- The DB Server configuration file is configured. DB Server uses this file for startup.

Start of procedure

1. To start DB Server on UNIX, go to the directory in which DB Server is installed, and do one of the following:
   - To use only the required command-line parameters, type the following command line:

     ```
     sh run.sh
     ```
   - To specify the command line yourself, or to use additional command-line parameters, type the following command line:

     ```
     multiserver -host <Configuration Server host>
     -port <Configuration Server port> -app cfg_dbserver
     [<additional parameters and arguments as required>]
     ```
2. To start DB Server on Windows, do one of the following:
   - Use the Windows `Start > Programs` menu.
   - To use only the required command-line parameters, go to the directory in which DB Server is installed, and double-click the `startServer.bat` file.

- To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which DB Server is installed, and type the following command line:

  ```
  multiserver.exe -host <Configuration Server host>
  -port <Configuration Server port> -app <DB Server Application>
  [<additional parameters and arguments as required>]
  ```
- Use Windows Service Manager. Refer to "Starting and Stopping with Windows Services Manager" on page 181 for more information.

End of procedure

Installing Configuration Server

If you want Configuration Server to operate with the Configuration Database, you must install Configuration Server in *Master* mode. This Configuration Server must be configured through a local configuration file.

Notes:

The procedures given in this section are for installing a primary Configuration Server. To install a Proxy Configuration Server, refer to "Setting Up Configuration Server Proxy" on page 242 for relevant installation instructions. To install a backup Configuration Server, refer to "Redundant Configuration Servers" on page 192.

Refer to the *Framework 8.0 External Authentication Reference Manual* for information about Configuration Server's External Authentication feature and for relevant installation instructions.

Procedure: Installing Configuration Server in Master mode on UNIX

Start of procedure

1. On the Management Framework 8.0 product CD, locate and open the installation directory appropriate for your environment:
   - For an enterprise (single-tenant) environment, the installation directory is `configuration_layer/configserver/single/<operating_system>`
   - For a multi-tenant environment, the installation directory is `configuration_layer/configserver/multi/<operating_system>`

   The installation script, called `install.sh,` is located in the appropriate directory.

2. Type the file name at the command prompt, and press `Enter`.
3. For the installation type, type `1` to select `Configuration Server Master Primary`, and press `Enter`.
4. For the external authentication option, type the number corresponding to the type of external authentication that will be used (LDAP, Radius, both, or neither), and press `Enter`.

   Tip: If you select LDAP, be prepared with the URL to access the LDAP Server. For more information about LDAP configuration, see the *Framework 8.0 External Authentication Reference Manual.*

5. Specify the full path of the destination directory, and press `Enter`.
6. If the target installation directory has files in it, do one of the following:
   - Type `1` to back up all the files in the directory, and press `Enter`. Specify the path to where you want the files backed up, and press `Enter`.
   - Type `2` to overwrite only the files in this installation package, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

     Use this option only if the application already installed operates properly.
   - Type `3` to erase all files in this directory before continuing with the installation, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

   The list of file names will appear on the screen as the files are copied to the destination directory.
7. For the product version to install, do one of the following:
   - Type `32` to select the 32-bit version, and press `Enter`.
   - Type `64` to select the 64-bit version, and press `Enter`.
8. To configure the Configuration Server during, or after, installation, do one of the following:
   - Type `y` to configure Configuration Server during installation (`now`), and press `Enter`. Go to Step 9 to specify values for the configuration file. For information about the Configuration Server configuration options and their values, refer to the *Framework 8.0 Configuration Options Reference Manual.*
   - Type `n` to not configure Configuration Server during installation. In this case, you have finished installing Configuration Server—do not continue to the next step in this procedure. Before you can start Configuration Server, however, you must create a configuration file and set the configuration options in it. Go to “Configuring Configuration Server” on page 95.
9. For the `[confserv]` section:

   a. Specify a value for the Configuration Server `port`, and press `Enter`.

   b. Specify a value for the Configuration Server `management port,` and press `Enter`.

10. For the `[soap]` section, do one of the following:
    - Specify a value for the SOAP `port,` and press `Enter`.
    - If you are not using SOAP functionality, press `Enter` to leave this field blank.

11. For the `[dbserver]` section:

    a. Specify the name of the DB Server `host`, and press `Enter`.

    b. Specify a value for the DB Server `port,` and press `Enter`.

    c. Type the number corresponding to the database engine that this Configuration Server uses (`dbengine`), and press `Enter`.

    d. Specify the name or alias of the DBMS that handles Configuration Database (`dbserver`), and press `Enter`.

    e. To specify the name of the Configuration Database (`dbname`), do one of the following:
       - If you are using an Oracle database engine (that is, you typed 3 in Step c), press `Enter`. This value is not required for Oracle.
       - If you are using any other database engine, specify the name of the Configuration Database, and press `Enter`.

    f. Specify the Configuration Database `username,` and press `Enter`.

    g. To specify the Configuration Database `password,` do one of the following:
       - Specify the password, and press `Enter`.
       - Press `Enter` if there is no password; that is, the password is empty, with no spaces.

When the installation process is finished, a message indicates that installation was successful. The process places Configuration Server in the directory specified during the installation process. The installation script also writes a sample configuration file, `confserv.sample,` in the directory in which Configuration Server is installed.

If you chose to configure the Configuration Server during installation, the sample configuration file, `confserv.sample`, is renamed `confserv.conf,` and the parameters specified in Steps 9 through 11 are written to this file.

End of procedure

Next Steps

- If you chose to configure the Configuration Server after installation, you must manually rename the sample file as `confserv.conf` and modify the configuration options before you start Configuration Server. See "Configuring Configuration Server" on page 95.

Procedure: Installing Configuration Server in Master mode on Windows

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Start of procedure

1. On the Management Framework 8.0 product CD, locate and open the installation directory appropriate for your environment:
   - For an enterprise (single-tenant) environment, the installation directory is `configuration_layer/configserver/single/windows`
   - For a multi-tenant environment, the installation directory is `configuration_layer/configserver/multi/windows`
2. Locate and double-click `setup.exe` to start the Genesys Installation Wizard.
3. Use the `About` button on the wizard's `Welcome` page to review the `read_me` file. The file also contains a link to the server's Release Notes file.
4. On the `Welcome` page, click `Next`.
5. On the `Configuration Server Run Mode` page, select `Configuration Server Master Primary`.
6. On the `Configuration Server Parameters` page:
   a. Specify the `Server Port` and `Management Port` for Configuration Server.
   b. Click `Next`.
7. On the `Database Engine Option` page, select the database engine that the Configuration Server uses, and click `Next`.
8. On the `DB Server Parameters` page:
   a. Specify the `DB Server Host` name and `DB Server Port`.
   b. Specify the Database `Server Name` and `Database Name`.
   c. Specify the Database `User Name` and `Password`.
9. On the `Configuration Server External Authentication` page, select the type of external authentication that the Configuration Server uses, or select `None` if Configuration Server is not using external authentication.
10. On the `Choose Destination Location` page, the wizard displays the destination directory specified in the `Working Directory` property of the server's `Application` object. If the path configured as `Working Directory` is invalid, the wizard generates a path to `C:\Program Files\GCTI\<Singletenant or Multitenant> Configuration Server`.

If necessary, use the:

- Browse button to select another destination folder. In this case, the wizard will update the Application object's Working Directory in the Configuration Database.
- Default button to reinstate the path specified in Working Directory.

Click Next to proceed.

11. On the Ready to Install information page, click one of the following:
    - Back to update any installation information.
    - Install to proceed with the installation.
12. On the Installation Complete page, click Finish.

    As a result of the installation, the wizard adds Application icons to the:
    - Windows Start menu, under Programs > Genesys Solutions > Framework.
    - Windows Add or Remove Programs window, as a Genesys server.
    - Windows Services list, as a Genesys service, with Automatic startup type.

End of procedure

For more information about the Configuration Server configuration file, see "Configuring Configuration Server" on page 95. For information about Configuration Server configuration options and their values, refer to the relevant chapters in the *Framework 8.0 Configuration Options Reference Manual.*

Procedure: Populating History Change Adapter tables

Note: HCA tables are applicable only if you are using Genesys Info Mart 7.2 or earlier. Users of Genesys Info Mart 7.5 or later do not require HCA.

Purpose: To populate HCA tables with Virtual Agent Group information immediately after database migration.

Prerequisites

- You have Genesys Info Mart 7.2 or earlier installed in your environment.
- You have activated the History of Changes Adapter functionality in Configuration Server.
- You have created Virtual Agent Groups in Configuration Server.

Start of procedure

1. Stop the Primary Configuration Server.
2. Start Configuration Server using these command line options:

   ```
   -hca -s mm/dd/yyyy
   ```

   where `mm/dd/yyyy` is the creation date that you are setting for the records in the HCA tables. The format is month/day/year.

   Starting Configuration Server with these command line options will refresh data about existing configuration objects in HCA tables and add data about Virtual Agent Groups. It will not affect historic data already stored in HCA tables. See the *Genesys Info Mart Deployment Guide* for your version of Genesys Info Mart.
3. After the HCA tables are populated and Configuration Server has exited (automatically), restart Configuration Server in normal operational mode.

End of procedure

Initializing the Configuration Database

After you created a database in your DBMS (see “Prerequisites” on page 65), you can populate the tables of the Configuration Database manually (using your DBMS tools) or using the Database Initialization Wizard.

DBMS Adjustment

If you install DB Server and Configuration Database separately, you must install and configure an SQL Server client for your database type. Please refer to the *Framework 8.0 DB Server User's Guide* for recommendations on environment settings for your database client.

Procedure: Initializing the Configuration Database

Warning! Configuration Server treats its information and checks integrity constraints in a case-sensitive manner. Therefore, your SQL database must be installed and configured in case-sensitive mode. Refer to your SQL Server Administrator documentation for additional information.

Start of procedure

1. In the directory in which Configuration Server is installed, open the `sql_scripts` folder.
2. Open the folder that matches your database type.
3. Load and execute the initialization script that corresponds to your DBMS.

   Table 2 lists the DBMS and their corresponding initialization script names for an enterprise or multi-tenant environment.

   Tip: Genesys recommends using the DB2 Command-Line Processor to run Genesys SQL scripts. See the procedure “Running Genesys SQL scripts using the DB2 Command-Line Processor” on page 93.

Table 2: Configuration Database Initialization Scripts

DBMS	Enterprise Script Name	Multi-Tenant Script Name
DB2	init_single_db2.sql	init_multi_db2.sql
Informix	init_single_ifx.sql	init_multi_ifx.sql
Microsoft SQL	init_single_mssql.sql	init_multi_mssql.sql
Oracle	init_single_ora.sql	init_multi_ora.sql
PostgreSQL	init_single_postgre.sql	init_multi_postgre.sql
Sybase	init_single_syb.sql	init_multi_syb.sql

4. Load and execute the script that loads the CfgLocale table into the initialized database, depending on your database type.

   Table 3 lists DBMS and their corresponding localization data script names for an enterprise or multi-tenant environment.

   Tip: Genesys recommends using the DB2 Command-Line Processor to run Genesys SQL scripts. See the procedure “Running Genesys SQL scripts using the DB2 Command-Line Processor” on page 93

Table 3: Configuration Database CfgLocale Scripts

DBMS	Script Name
DB2	CfgLocale_db2.sql
Informix	CfgLocale_ifx.sql
Microsoft SQL	CfgLocale_mssql.sql
Oracle	CfgLocale_ora.sql

Table 3: Configuration Database CfgLocale Scripts (Continued)

DBMS	Script Name
PostgreSQL	CfgLocale_postgre.sql
Sybase	CfgLocale_syb.sql

Warning! Never add, delete, or modify any data in the Configuration Database except through applications developed by Genesys, or through applications instrumented with the Genesys Configuration Server application programming interface (API). If you have compelling reasons for accessing the database directly, consult Genesys Technical Support before you do so.

End of procedure

Procedure: Running Genesys SQL scripts using the DB2 Command-Line Processor

Start of procedure

1. Start the Command-Line Processor.
2. Type `quit` at the DB2 prompt to exit the `DB2.exe` process.
3. Specify the database connection parameters by typing the following command line, substituting values in brackets with the actual values:

   ```
   db2 connect to <database name> user <user> using <password>
   ```
4. Execute the script by typing the following command line, substituting the value in brackets with the actual value:

   ```
   db2 -f <script name including full path>
   ```

   For example, to execute the initialization script for the enterprise version of the Configuration Database, type (all on one line):

   ```
   db2 -f
   C:\GCTI\ConfigurationServer\sql_scripts\db2\init_single_db2.sql
   ```

End of procedure

About the Initialized Configuration Database

The Configuration Database contains the following predefined objects, which allow initial access to the database through Configuration Manager:

- A Person object with user name set to default, and password set to password.

  Use this *Master Account* to log in to the Configuration Layer for the first time. A user logged on through this Master Account has all possible privileges with respect to objects in the Configuration Database.

  The Master Account is not alterable in any way, and you should not use it to perform regular contact center administrative tasks. Rather, it exists as a guarantee that, no matter what happens to the regular accounts, you will always be able to access the Configuration Database.

  Genesys recommends changing the default user name and password of the Master Account during the first session, securing these login parameters, and using the Master Account for emergency purposes only. For regular operations, create a real working account and add it to the access group Super Administrators. (By default, this Access Group has the same privileges as the Master Account.) Use this real working account for any subsequent sessions.

Note: For instructions on creating new configuration objects, and working with existing configuration objects, refer to *Framework 8.0 Configuration Manager Help or Framework 8.0 Genesys Administrator Help*.

- An application template object for Configuration Manager.
- An application template object for Configuration Server.
- A Configuration Manager Application object with the name set to default.

  When you run Configuration Manager for the first time, you must specify this name in the Application property under Details in the Login dialog box. Consider changing the name of this application during the first session.
- A Configuration Server Application object with the name set to confserv.
- The default Access Groups objects: Users, Administrators, and Super Administrators. For more information, refer to “Security Considerations” on page 59.
- Folders for all types of objects managed by the Configuration Layer.
- An Installation Configuration Utility Application object with the name set to ITCUtility. This utility supports configuration updates during installation processes for Genesys components. No additional configuration is needed.

The Configuration Database also contains a number of other predefined objects (for example, Alarm Conditions) that help you set up some Genesys functionality as you deploy other Framework and solution components.

Configuring Configuration Server

Configuration Server Configuration File

At a minimum, the configuration file contains the Configuration Server, Configuration Database, Log, and History of Changes Adapter sections, and possibly an additional section called SOAP.

The Configuration Server section contains the configuration options that define Configuration Server. The name of the section corresponds to the name of the Configuration Server `Application` object. For the initial installation of Configuration Server, it is called `confserv` by default. You can choose to rename this Configuration Server later. In all other cases, or if you rename the initial Configuration Server, the name of this section will be different. The `server` configuration option in this section specifies the name of the Configuration Database section.

By default, the Configuration Database section does not have a name. The section name must be the same as the value of the `server` configuration option that you specified in the Configuration Server section. The Configuration Database section contains information about the Configuration Database and about the DB Server used to access this database.

Note: If you plan to use one or more DB Servers as a backup, you must also configure the same number of Configuration Database sections in the configuration file. The `server` configuration option within a given Configuration Database section must specify the name for the subsequent Configuration Database section.

The name of the Log section is `log`. This section contains configuration information about the log.

The name of the History of Changes Adapter (change tracking) section is `hca`. This section controls Configuration Server's change-tracking functionality.

The name of the SOAP section is `soap`. This section contains information about the Simple Object Access Protocol (SOAP) port that clients can use to access Configuration Server. If you work with SOAP, you must add a `[soap]` section to the Configuration Server configuration file before you start Configuration Server.

You can find a sample Configuration Server configuration file in the *Framework 8.0 Configuration Options Reference Manual.*

Procedure:
Configuring Configuration Server on UNIX

Prerequisites

- You manually installed Configuration Server on UNIX, as described in "Installing Configuration Server in Master mode on UNIX" on page 86.
- You chose not to configure Configuration Server during the installation process (that is, you entered `n` in Step 8 on page 87).

Start of procedure

1. From the directory in which Configuration Server is installed, open the sample configuration file (`confserv.sample`) in a text editor.
2. Set the configuration options to work with the Configuration Database and DB Server. Consult the relevant chapters in the *Framework 8.0 Configuration Options Reference Manual* for option descriptions and values. See "Configuring Configuration Server" on page 95 for a description of the Configuration Server configuration file.
3. Save the configuration file as `confserv.conf`.

End of procedure

Configuring Configuration Server Logging

If you plan to use the centralized logging and auditing functionality of the Management Layer, specify appropriate log options in the Configuration Server configuration file before you start using Configuration Server. Most importantly, enable the network log output (for example, create a new option called `standard` and set its value to `network`). See the *Framework 8.0 Configuration Options Reference Manual* for more information.

Encrypting the Configuration Database Password

Starting in release 6.5, you can use Configuration Server to encrypt your password for accessing the Configuration Database so that it does not appear in plain text in the Configuration Server logs. This improves the security of your configuration data.

You can encrypt the password at any time, either during installation, or later. However, keep in mind that the Configuration Server must be stopped during the encryption process.

For detailed information about encrypting the Configuration Database password, refer to the *Genesys 8.0 Security Deployment Guide*.

Starting Configuration Server

For descriptions of the command-line parameters specific to Configuration Server, refer to "Configuration Server" on page 172.

Note: Use the `-c` command line option to point Configuration Server to a configuration file with the name other than the default name (`confserv.conf` on UNIX or `confserv.cfg` on Windows). For example, `confserv -c <configuration file name>`.

Procedure: Starting Configuration Server

Prerequisites

- Configuration Database is initialized.
- DB Server is installed and running.
- Configuration Server is installed.
- The Configuration Server configuration file is configured. Configuration Server uses this file for startup.

Start of procedure

1. To start Configuration Server on UNIX, go to the directory in which Configuration Server is installed and do one of the following:
   - To use only the required command-line parameters, type the following command line:
     ```
     sh run.sh
     ```
   - To specify the command line yourself, or to use additional command-line parameters, type the following command line:
     ```
     confserv [<additional parameters and arguments as required>]
     ```
2. To start Configuration Server on Windows, do one of the following:
   - Use the `Start > Programs` menu.
   - To use only the required command-line parameters, go to the directory in which Configuration Server is installed, and double-click the `startServer.bat` file.

- To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which Configuration Server is installed, and type the following command line:

  ```
  confserv.exe [<additional parameters and arguments as required>]
  ```
- Use Windows Services Manager. Refer to “Starting and Stopping with Windows Services Manager” on page 181 for more information.

End of procedure

Installing Configuration Manager

Configuration Manager is a GUI application and operates only on Windows.

Procedure:
Installing Configuration Manager on Windows

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Prerequisites

- Configuration Server is installed and running.
- If you want to implement a security banner with Configuration Manager, make sure that you have the necessary files prepared before you start installing Configuration Manager. Refer to the *Genesys 8.0 Security Deployment Guide* for detailed information about the security banner.

Start of procedure

1. On the Management Framework 8.0 product CD, locate and open the installation directory

   `configuration_layer_interfaces/configmanager/windows`
2. Locate and double-click `setup.exe` to start the Genesys Installation Wizard.
3. On the `Welcome` page, click `About` to review the `read_me` file. The file also contains a link to the server’s Release Notes file.
4. On the `Welcome` page, click `Next` to continue with the installation.
5. On the `Security Banner Configuration` page, choose whether you want to configure a security banner for this Configuration Manager application.

Refer to the *Genesys 8.0 Security Deployment Guide* for detailed information about the security banner. Do one of the following:

- If you do not want to configure a security banner for this application, clear the Enable Security Banner check box, and click Next.
- If you want to configure a security banner for this application:
  - **i.** Select Enable Security Banner.
  - **ii.** Follow the instructions in the procedure "Installing and configuring the Security Banner" in the *Genesys 8.0 Security Deployment Guide.* When you are finished that procedure, return here and finish this procedure.

6. On the Choose Destination Location page, the wizard displays the destination directory.

If necessary, click:

- Browse to select another destination folder.
- Default to reinstate that selection.

Click Next to proceed.

7. On the Ready to Install page, click:

- Back to update any installation information.
- Install to proceed with the installation. Installation Status displays the installation progress.

8. On the Installation Complete page, click Finish.

As a result of the installation, the wizard adds Application icons to the:

- Windows Start menu, under Programs > Genesys Solutions > Framework.
- Windows Add or Remove Programs window, as a Genesys application.

End of procedure

Starting Configuration Manager

The first time you run Configuration Manager, some objects already defined in the Configuration Database will appear. At a minimum, the user name used to log in to Configuration Manager will be visible under the Persons folder. The instance of Configuration Manager defined under applications and the application Template that has been used to create this instance will also appear.

Procedure: Starting Configuration Manager

Prerequisites

- Configuration Server is installed and running.
- Configuration Manager is installed.

Start of procedure

1. In Windows, do one of the following:
   - In Windows Start menu, select Programs > Genesys Solutions > Framework > Configuration Manager > Start Configuration Manager.
   - Go to the directory in which Configuration Manager is installed and click Sce.exe.
2. Enter information in the Login dialog box as described in Appendix C on page 287.

End of procedure

Changing Configuration Server Port Assignments

When you install Configuration Server, you specify values for the listening port and management port, and specify the SOAP port in the configuration file.

Changing these port assignments depends on the type of port. To change the value of the management port or SOAP ports, you must update the configuration file with the revised information, and restart Configuration Server.

Changing the value of the listening port is more complex. As described in “Multiple Ports on Configuration Server” on page 63, Configuration Server reads its listening port assignment from the configuration file once, at initial start. For subsequent starts, it reads the port value from the Configuration Database. Therefore, you must change the value in the Configuration Database by modifying the Port property of the Configuration Server Application object.

Procedure: Changing the Configuration Server listening port using Configuration Manager

Purpose: To change the listening port for a Configuration Server that has been started once.

Prerequisites

- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, go to `Environment > Applications, and` double-click the Configuration Server `Application` object for which you want to change the listening port. The `Properties` dialog box for that Configuration Server `Application` object appears.
2. On the `Server Info` tab, in the `Ports` section, highlight the port number that you want to change and click `Edit Port`.
3. On the `Port Info` tab of the `Port Properties` dialog box, enter the new port number in the `Communication Port` text box. If necessary, use the `Browse` button beside the text box to identify an available port number or verify that the new port number is available.
4. Click `OK` to close the `Port Properties` dialog box to save the configuration changes.
5. Click `OK` to close the Configuration Server `Application` object `Properties` dialog box.

End of procedure

Configuring Hosts

`Host` objects represent computers in a network. Before you set up the Management Layer (see Chapter 6 on page 111), you must configure a `Host` object for each computer on the data network on which you are going to run the Genesys daemon processes (usually server applications).

You can create and configure Host objects using Genesys Administrator or Configuration Manager.

Procedure: Creating a Host object using Genesys Administrator

Prerequisites

- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning` > `Environment` > `Hosts`.
2. Click `New`.
3. On the `Configuration` tab:
   - **a.** Enter the name of the host, exactly as it is defined in the system configuration.

   Warning! The host `Name` must be exactly the same as the host name defined in the system configuration.

   - **b.** Enter the IP address of the host.
   - **c.** Select the type of operating system from the `OS Type` drop-down list, and enter its version, if known.
   - **d.** Enter the Local Control Agent (LCA) port number, or accept the default (`4999`), to enable the Management Layer to control applications running on this host. This is also the port that applications installed on this host use to connect to LCA. Refer to "Notes on Configuring the LCA Port" on page 112 for additional information about configuring the LCA port value.
4. To customize the Advanced Disconnect Detection Protocol (ADDP) functionality that will be enabled between Solution Control Server (SCS) and LCA, on the `Options` tab:
   - **a.** In the `View` drop-down list, select `Advanced View (Annex)`.
   - **b.** To specify the ADDP timeout between LCA and SCS, add a section `addp`, add the option `addp-timeout`, and specify a value.
   - **c.** To enable LCA polling messages to SCS, in the section `addp`, add the option `addp-remote-timeout`, and specify a value.

   Refer to "Configuring ADDP Between Solution Control Server and Local Control Agent" on page 116 for more information. For detailed information about the configuration options themselves, refer to the *Framework 8.0 Configuration Options Reference Manual*.
5. Click `Save and Close`.

For more information about setting configuration options using Genesys Administrator, refer to *Framework 8.0 Genesys Administrator Help*. For more information about specific configuration options, refer to the *Framework Configuration Options Reference Manual*.

End of procedure

Procedure:
Creating a Host object in Configuration Manager

Prerequisites

- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the `Environment > Hosts` folder and select `New > Host`.
2. On the `General` tab:
   a. Enter the name of the host, exactly as it is defined in the system configuration.

   Warning! The host `Name` must be exactly the same as the host name defined in the system configuration.

   b. Enter the IP address of the host.
   c. Select the type of operating system from the `OS Type` drop-down list, and enter its version, if known.
   d. Enter the Local Control Agent (LCA) port number, or accept the default (`4999`), to enable the Management Layer to control applications running on this host. This is also the port that applications installed on this host use to connect to LCA. Refer to “Notes on Configuring the LCA Port” on page 112 for additional information about configuring the LCA port value.
3. To customize the Advanced Disconnect Detection Protocol (ADDP) functionality that will be enabled between Solution Control Server (SCS) and LCA, on the `Annex` tab in the `addp` section:
   - To change the ADDP timeout between LCA and SCS, specify the `addp-timeout` parameter.
   - To enable LCA polling messages to SCS, specify the `addp-remote-timeout` parameter.

   Refer to “Configuring ADDP Between Solution Control Server and Local Control Agent” on page 116 for more information. For detailed information about the configuration options themselves, refer to the *Framework 8.0 Configuration Options Reference Manual*.

4. Click OK.

End of procedure

Enabling Management Layer Control of Configuration Layer

To enable the Management Layer to control (start, stop, and monitor) Configuration Server and DB Server, you must modify the respective applications. The procedures in this section describe how to do this.

The following task summary summarizes the steps required to enable Management Layer control of Configuration Layer.

Task Summary: Enabling Management Layer Control of Configuration Layer

Task	Related Procedures and Information
1. Modify the Configuration Server Application object.	The Configuration Server Application object is preconfigured in the Configuration Database. Use one of the following procedures, as applicable: • "Modifying a Configuration Server Application object using Genesys Administrator" on page 105 • "Modifying a Configuration Server Application object using Configuration Manager" on page 105
2. Create an Application object for the Configuration DB Server Application object, if one does not already exist.	Use one of the following procedures, as appropriate: • "Configuring a DB Server Application object using Genesys Administrator" on page 106 • "Configuring a DB Server Application object using Configuration Manager" on page 107
3. In the Configuration DB Server Application configuration file, specify the DB Server port through which LCA will communicate with DB Server.	Specify the lcaport option in the lca section of the DB Server configuration file. Refer to the *Framework 8.0 Configuration Options Reference Manual.*
4. Modify the DB Server Application object.	Use one of the following procedures, as appropriate: • "Modifying a DB Server Application object using Genesys Administrator" on page 108 • "Modifying a DB Server Application object using Configuration Manager" on page 108.

Procedure: Modifying a Configuration Server Application object using Genesys Administrator

Purpose: To enable Management Layer control of Configuration Server.

Prerequisites

- Configuration Server is installed and running, and its `Application` object is created.
- A `Host` object exists for the computer on which this Configuration Server will be running. See "Configuring Hosts" on page 101.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning` > `Environment` > `Applications`, and click the Configuration Server `Application` object (named `confserv)` to open its properties.
2. On the `Configuration` tab, open the `Server Info` section.
3. Select the host on which this Configuration Server runs.
4. Define the `Working Directory` and `Command Line` properties for the primary Configuration Server, if not already entered.
5. Click `Save and Close` to save the changes.

End of procedure

Procedure: Modifying a Configuration Server Application object using Configuration Manager

Purpose: To enable Management Layer control of Configuration Server.

Prerequisites

- Configuration Server is installed and running, and its `Application` object is created.
- A `Host` object exists for the computer on which this Configuration Server will be running. See "Configuring Hosts" on page 101.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, open the Properties dialog box of the Configuration Server Application object (named confserv).
2. Select the Server Info tab.
3. Click Browse to select the host on which this Configuration Server runs.
4. On the Start Info tab, define the Working Directory and Command Line properties for the primary Configuration Server, if not already entered.
5. Click OK to save the changes.

End of procedure

Procedure: Configuring a DB Server Application object using Genesys Administrator

Prerequisites

- A Host object exists for the computer on which this Configuration DB Server will be running. See "Configuring Hosts" on page 101.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and click New.
2. In the General section of the Configuration tab:
   a. Enter a descriptive name in the Name text box. If you later want Management Layer to control this DB Server, use the name cfg_dbserver.
   b. Select the appropriate template, as follows:
      i. Click the search icon in the Application Template field to open a Browse dialog box that lists the available application templates. If a DB Server template file is not listed, close the dialog box and either import the DBServer_<current-version>.apd file from the Management Framework 8.0 product CD or use the procedure "Creating a new application template using Genesys Administrator" on page 265 to create a new template, and repeat this step.
      ii. In the Browse dialog box, select the DB Server template file.
      iii. Click OK.
3. In the Server Info section:
   a. Select the Host object on which this DB Server runs.

b. Specify the Listening Port that DB Server clients must use to connect to this DB Server.

c. Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line arguments text box blank.

d. Enter appropriate values for the other mandatory fields (those indicated by red asterisks).

e. Select Auto-Restart, if required.

4. Click Save and Close to save the configuration.

End of procedure

Procedure: Configuring a DB Server Application object using Configuration Manager

Prerequisites

- A Host object exists for the computer on which this Configuration DB Server will be running. See “Configuring Hosts” on page 101.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the Environment > Applications folder and select New > Application, which opens the Browse dialog box that lists the available application templates. If a DB Server template file is not listed, either import the DBServer_<current-version>.apd file from the Management Framework 8.0 product CD or use the procedure “Creating a new application template using Configuration Manager” on page 267 to create a new template, and repeat this step.
2. In the Browse dialog box, select the DB Server template file, which opens the Properties dialog box for the new DB Server Application object.
3. On the General tab, enter a descriptive name in the Name text box. If you later want Management Layer to control this DB Server, use the name cfg_dbserver.
4. On the Server Info tab:
   - Specify the Host object on which this DB Server runs.
   - Specify the port that DB Server clients must use to connect to DB Server.
   - Leave the rest of the fields at their default values.
5. On the Start Info tab, type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank.

6. On the Start Info tab, select Auto-Restart if required.
7. Click OK to save the configuration.

End of procedure

Procedure: Modifying a DB Server Application object using Genesys Administrator

Purpose: To enable Management Layer to control DB Server.

Prerequisites

- DB Server is installed and running, and its Application object (called cfg_dbserver) exists.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and double-click the DB Server Application object cfg_dbserver to open its properties.
2. In the Server Info section of the Configuration tab, enter the appropriate information in the Working Directory, Command Line, and Command Line Arguments text boxes. For information about command-line parameters, see Chapter 8 on page 165.
3. Click Save and Close to save the configuration.

End of procedure

Procedure: Modifying a DB Server Application object using Configuration Manager

Purpose: To enable Management Layer to control DB Server.

Prerequisites

- DB Server is installed and running, and its Application object (called cfg_dbserver) exists.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, open the Properties dialog box for the cfg_dbserver Application object.
2. On the Start Info tab, enter the appropriate information in the Working Directory, Command Line, and Command Line Arguments text boxes. For information about command-line parameters, see Chapter 8 on page 165.
3. Click OK to save the configuration.

End of procedure

Next Steps

After you have successfully installed and configured the Configuration Layer components, as described in this chapter, consider whether you would like to do the following:

- Configure a user inactivity timeout to disable logged-in users after a period of inactivity. Refer to the *Genesys 8.0 Security Deployment Guide.*
- Configure redundant DB Servers or Configuration Servers. Refer to Chapter 9 on page 183.
- Configure one or more Configuration Server Proxies. Refer to Chapter 10 on page 239.

Continuing the Installation of Your System

If you will be using Genesys Administrator, you can deploy it at this point, following the instructions in the *Framework 8.0 Genesys Administrator Deployment Guide*. Then, you can deploy the Management Layer, as described in Chapter 6 on page 111.

Chapter

6 Setting Up the Management Layer

This chapter describes how to configure and install components of the Management Layer.

This chapter contains the following sections:

- Overview, page 111
- Deploying Local Control Agent, page 112
- Deploying the Management Layer Using Genesys Administrator, page 117
- Deploying the Management Layer Using Wizard Manager, page 118
- Manually Deploying Management Layer, page 123
- Next Steps, page 157

Overview

The *Management Layer* controls the startup and status of solutions, logging of maintenance events, generation and processing of alarms, and management of application failures.

To enable the Management Layer's solution-control and fault-management capabilities, you must install Local Control Agent (LCA) on each host running a Genesys server application.

Note: An application started by LCA inherits the environment variables from LCA. Therefore, when an application (such as DB Server) requires that particular environment variables be set, the same environment variables must be set for the account that runs LCA.

To enable the Management Layer's centralized-logging and alarm-signaling capabilities, you must configure a connection to Message Server for each Genesys server application.

You can deploy Management Layer in one of three ways:

- Use Genesys Administrator, as described in "Deploying the Management Layer Using Genesys Administrator" on page 117.
- Use Wizard Manager, as described in "Deploying the Management Layer Using Wizard Manager" on page 118. Wizard Manager assists you in deploying all the required Management Layer components in the proper order.
- Manually, as described in "Manually Deploying Management Layer" on page 123.

Note: The Local Control Agent can only be installed manually.

Deploying Local Control Agent

To enable the Management Layer to control the startup and status of applications and solutions, and manage application failures, you must install an instance of Local Control Agent on every computer that is to run either Genesys server applications or third-party server applications you want to control with Management Layer.

Installing LCA also installs and activates a remote deployment agent, called the *Genesys Deployment Agent*, on that computer. See "Deployment using Genesys Administrator" on page 69 for more information.

Notes on Configuring the LCA Port

1. The LCA port must be set to a value of `2000` or greater. When the LCA port is specified within the range of `1-1999`, LCA starts on port number `4999` (default value).
2. If the LCA port value is changed in the Host configuration while Solution Control Server (SCS) is connected to LCA, SCS does not disconnect from and reconnect to LCA; instead, the new LCA port value takes effect after LCA restarts.
3. If you change the LCA port value for the LCA installed as a Windows Service, you must also change the LCA port number in the LCA startup parameters in the Registry Editor. The LCA Registry Key is located at:

   ```
   (HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\
   lca_service\ImagePath).
   ```

   The value must have the following format:

   ```
   "<full path>\lca.exe" <LCA port number> -service <lca_service_name>
   ```

   Change the LCA port number to the current value.

Specifying the Genesys Deployment Agent Port

When you install LCA, the Installation Wizard configures the port used by the Genesys Deployment Agent as follows:

- On UNIX, you are prompted to provide a port number, in the same way that you are prompted for other parameters during installation. See Step 10 on page 114.
- On Windows, the port number `5000` is automatically assigned.

If the port number was already specified during a previous installation of LCA on this host, it is not prompted for again or changed during LCA installation.

You can change this value at any time. Refer to *Framework 8.0 Genesys Administrator Deployment Guide* for more information about remote deployment using Genesys Administrator, including instructions for changing the port number.

Installing Local Control Agent

This section describes how to install LCA on UNIX or on Windows.

Note: All running LCA processes must be stopped before installing another LCA.

Procedure:
Manually Installing Local Control Agent on UNIX

Start of procedure

1. Stop all LCA processes that are running. If there are any LCA processes that are running when you begin the installation, the installation process will stop, and not restart until you have stopped those processes (see Step 4).
2. On the Management Framework 8.0 product CD in the appropriate `management_layer/lca/<operating_system>` directory, locate a shell script called `install.sh`.
3. Type the file name at the command prompt, and press `Enter`.
4. Type `Enter`. This action will have one of the two following results.
   - If there are any LCA processes still running, you will exit from the installation and have to stop these processes before you can restart it.
   - Otherwise, you will continue with the installation.
5. To specify the hostname for this LCA, do one of the following:
   - Type the name of the host, and press `Enter`.
   - Press `Enter` to select the current host.

6. Enter the Configuration Server host name, and press `Enter`.
7. Enter the Configuration Server network port, and press `Enter`.
8. Enter the Configuration Server user name, and press `Enter`.
9. Enter the Configuration Server password, and press `Enter`.
10. If prompted, enter the number of the port used by the Genesys Deployment Agent, and press `Enter`.

    Note: This prompt appears only if the port for the Genesys Deployment Agent is not already configured

11. To specify the destination directory, do one of the following:
    - Press `Enter` to accept the default.
    - Enter the full path of the directory, and press `Enter`.
12. If the target installation directory has files in it, do one of the following:
    - Type `1` to back up all the files in the directory, and press `Enter`. Specify the path to which you want the files backed up, and press `Enter`.
    - Type `2` to overwrite only the files in this installation package, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

      Use this option only if the application already installed operates properly.
    - Type `3` to erase all files in this directory before continuing with the installation, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

    The list of file names will appear on the screen as the files are copied to the destination directory.
13. For the product version to install, do one of the following:
    - Type `32` to select the 32-bit version, and press `Enter`.
    - Type `64` to select the 64-bit version, and press `Enter`.
14. If you are authorized to modify startup (RC) files, you are prompted to add LCA to the startup files. Do one of the following:
    - Press `Enter` to add LCA to the startup files.
    - Type `n` to leave LCA out of the startup files, and press `Enter`.

End of procedure

Procedure: Manually Installing Local Control Agent on Windows

Start of procedure

1. Stop all LCA processes that are running.
2. On the Management Framework 8.0 product CD in the appropriate `management_layer\lca\windows` directory, locate and double-click `setup.exe` to start the Genesys Installation Wizard.
3. Use the `About` button on the wizard's `Welcome` page to review the `read_me` file. The file also contains a link to the server's Release Notes file.
4. Click `Next` to start the installation.
5. On the `Connection Parameters to the Genesys Configuration Server` page, specify the host name, port, user name, and password for Configuration Server, and then click `Next`.
6. On the `Choose Destination Location` page, the wizard displays the default folder `C:\Program Files\GCTI\Local Control Agent`.

   If necessary, use the:
   - `Browse` button to select another destination folder.
   - `Default` button to reinstate the default folder, `C:\Program Files\GCTI\Local Control Agent`.
7. On the `Ready to Install` page, click:
   - `Back` to update any installation information.
   - `Install` to proceed with the installation.
8. On the `Installation Complete` page, click `Finish`.

   As a result of the installation, the wizard adds `Application` icons to the:
   - Windows `Start` menu, under `Programs > Genesys Solutions > Management Layer`.
   - Windows `Add or Remove Programs` window, as a Genesys server.
   - Windows `Services` list, as a Genesys service, with `Automatic` startup type.

Note: Because the Management Layer functionality requires LCA to be always running while its host computer is up, LCA is installed as a Windows Service with the autostart capability. See "Notes on Configuring the LCA Port" on page 112 for information about how to change the LCA port number.

In addition, if the port used by the Genesys Deployment Agent was not previously configured, it is set to `5000` automatically. See “Specifying the Genesys Deployment Agent Port” on page 113.

End of procedure

LCA Log Options

If you do not specify any log options for LCA, the default values apply. To specify log options for LCA, create the `lca.cfg` configuration file and locate it in the same directory as the LCA executable. The LCA configuration file must have the following format:

```
[log]
<log option name> = <log option value>
<log option name> = <log option value>
...
```

A sample LCA configuration file is available in the *Framework 8.0 Configuration Options Reference Manual*.

Configuring ADDP Between Solution Control Server and Local Control Agent

Advanced Disconnection Detection Protocol (ADDP) is enabled automatically between Solution Control Server (SCS) and Local Control Agent (LCA). By default, SCS generates polling messages to LCA. If SCS does not receive messages from LCA within this interval, SCS sends a polling message. A lack of response to the polling message from LCA within the same time period is interpreted as a loss of connection.

If you want to change the ADDP timeout between SCS and LCA, configure the `addp-timeout` option. If you also want to enable LCA polling messages to SCS, configure the `addp-remote-timeout` option. Both of these options are set in the `Annex` of the `Host` object configured for the computer on which LCA runs. For detailed instructions on specifying these options, refer to the procedures “Creating a Host object using Genesys Administrator” on page 102 or “Creating a Host object in Configuration Manager” on page 103, or to the *Framework 8.0 Configuration Options Reference Manual*.

To avoid false disconnect states that might occur because of delays in the data network, Genesys recommends setting the ADDP timeouts to values equal to or greater than ten seconds.

Refer to the *Framework 8.0 Configuration Options Reference Manual* for detailed descriptions of these options.

Deploying the Management Layer Using Genesys Administrator

You can deploy the Management Layer to any host on your network using the Deployment Wizard in Genesys Administrator. Genesys Administrator copies all of the necessary software components to the host, and installs them. For each component to be installed, Genesys Administrator uses a corresponding Application object of the specified name, or if one does not exist, creates a new object. You can then configure the object as required.

Note: To use the Deployment Wizard, you must deploy LCA to all target hosts, which also installs the Genesys Deployment Agent on those hosts. You then must start the Genesys Deployment Agent on each of those hosts.

Procedure: Deploying Management Layer components using Genesys Administrator

Purpose: To install Log DB Server, Message Server, Solution Control Server, and Genesys SNMP Master Agent on specified hosts in the network, using existing corresponding Application objects or creating new ones as required.

Prerequisites

- Configuration Layer must be installed and running.
- Each destination location must have a Host object configured in the Configuration Database.
- The latest LCA Installation Package (IP) and Genesys Deployment Agent must be deployed and running on the target host. This installs the Genesys Deployment Agent, at that location. See “Specifying the Genesys Deployment Agent Port” on page 113.
- The IPs to be installed must be located on an Installation CD or in a shareable folder in your network.
- You are logged in to Genesys Administrator.

Start of procedure

1. Go to Deployment > Repository > Installation Packages.
2. Do one of the following, as appropriate:
   - If the IP has been imported into an IP Repository, navigate to that repository, using the Repository drop-down list if necessary.

- Otherwise, import the component IP into an IP Repository, following the detailed instructions in *Framework 8.0. Genesys Administrator Help*.

Note: If you are deploying more than one component, you can continue with this procedure in one of the following ways:

- Proceed to the next step and complete the procedure for this component, and then return and repeat both steps for each component.
- Repeat this step for all components and then proceed to the next step, repeating it for all components.

3. Install the IP on the specified Host. Refer to *Framework 8.0. Genesys Administrator Help* for detailed instructions.

End of procedure

Next Steps

Complete the configuration of the deployed components. In addition to what was configured during deployment, you must also, for example, do the following:

- In your DBMS, create a database which will serve as the Log Database.
- Configure at least one Database Access Point for the Log Database.
- Initialize the Log Database.
- Configure connections between components, and between components and the Log Database, as required.

Review the section “Manually Deploying Management Layer” on page 123 to ensure that you have completed all necessary configuration and initialization tasks for each deployed component

Deploying the Management Layer Using Wizard Manager

You can deploy the Management Layer using Wizard Manager. Wizard Manager helps you deploy all the required Management Layer components in the proper order.

Wizard Manager does not operate on UNIX, only on Windows. However, you can use this tool to configure the Framework components, regardless of whether the components are run on UNIX or Windows.

Deploying Management Layer Components on Windows

When you deploy Management Layer components on Windows, Wizard Manager configures and installs the necessary components. The components are set up and ready to run.

Deploying Management Layer Components on UNIX

When you deploy Management Layer components on UNIX, Wizard Manager configures the components but does not physically install them. Instead, Wizard Manager prepares a customized installation package for each component. You must copy the appropriate package to the host computer for each component, and then manually install each component on its host computer using the customized installation package.

This section describes how to install Management Layer components on UNIX.

Procedure:
Wizard Manager—Installing Log DB Server on UNIX

Purpose: To install the Log DB Server corresponding to the `Application` object configured in Wizard Manager.

Prerequisites

- The Log DB Server installation package has been created using Wizard Manager.
- The Configuration Layer components are installed and running.

Start of procedure

1. Copy the Log DB Server installation package from the location you specified in Wizard Manager to the host computer for Log DB Server.
2. In the directory to which the DB Server installation package was copied, locate a shell script called `install.sh`.
3. Run this script from the command prompt by typing the file name.
4. When prompted, specify the `Host Name` of the computer on which DB Server is to be installed.
5. Type `n` when asked whether this DB Server will provide access to the Configuration Database.
6. Specify the destination directory into which DB Server is to be installed, with the full path to it.

7. The installation displays the names of the DB client processes for different types of SQL servers. Type the number of the DB client process name that should be configured.

Note: Message Server can only write logs to a PostgreSQL DBMS if the corresponding DB Server also supports PostgreSQL.

8. If asked which version of the product to install, either the 32- or the 64-bit, choose the one appropriate to your environment.

As soon as the installation process is finished, a message appears announcing that installation was successful. The process places DB Server in the directory specified during the installation.

End of procedure

Procedure: Wizard Manager—Installing Message Server on UNIX

Purpose: To install the Message Server corresponding to the `Application` object configured in Wizard Manager.

Prerequisites

- The Message Server installation package has been created using Wizard Manager.
- The Configuration Layer components are installed and running.

Start of procedure

1. Copy the Message Server installation package from the location you specified in Wizard Manager to the host computer for Message Server.
2. In the directory to which the Message Server installation package was copied, locate a shell script called `install.sh`.
3. Run this script from the command prompt by typing the file name.
4. When prompted, specify the `Host Name` of the computer on which Message Server is to be installed.
5. Specify the destination directory into which Message Server is to be installed, with the full path to it.
6. If asked which version of the product to install, either the 32-bit or the 64-bit, choose the one appropriate to your environment.

As soon as the installation process is finished, a message appears announcing that installation was successful. The process places Message Server in the directory specified during the installation.

End of procedure

Procedure: Initializing the Log Database

Purpose: Enable a newly created database to serve as the Centralized Log Database. You can also use the Database Initialization Wizard for this purpose.

Note: Message Server can only write logs to a PostgreSQL DBMS if the corresponding DB Server also supports PostgreSQL.

Prerequisites

- A DBMS is installed, and a blank database has been created.
- Message Server is installed and running.

Start of procedure

1. In your DBMS interface, go to the directory in which Message Server is installed and open the `scripts` folder.
2. Open the folder that matches your database type.
3. Load and execute the script that corresponds to your DBMS.

   Table 4 lists database types and their corresponding script names.

Table 4: Log Database Initialization Scripts

DBMS	Script Name
DB2	init_db2.sql
Informix	init_informix.sql
Microsoft SQL	init_mssql.sql
Oracle	init_oracle.sql
PostgreSQL	init_postgre.sql
Sybase	init_sybase.sql

4. Save the initialized database.

End of procedure

DBMS Adjustment

You must install and configure an SQL Server client for your database type. Refer to the *Framework 8.0 DB Server User's Guide* for recommendations on environment settings for your database client.

Procedure: Wizard Manager—Installing Solution Control Server on UNIX

Purpose: To install the Solution Control Server corresponding to the `Application` object configured in Wizard Manager.

Prerequisites

- The Solution Control Server installation package has been created using Wizard Manager.
- The Configuration Layer components are installed and running.

Start of procedure

1. Copy the SCS installation package from the location you specified in Wizard Manager to the host computer for SCS.
2. In the directory to which the SCS installation package was copied, locate a shell script called `install.sh.`
3. Run this script from the command prompt by typing the file name.
4. When prompted, specify the `Host Name` of the computer on which Solution Control Server is to be installed.
5. Specify the destination directory into which SCS is to be installed, with the full path to it.
6. If asked which version of the product to install, either the 32-bit or the 64-bit, choose the one appropriate to your environment.
7. If you plan to use functionality that requires a license, answer `y` when asked that question, and then be prepared to give either the full path to the license file or the License Manager port and host.

As soon as the installation process is finished, a message appears announcing that installation was successful. The process places Solution Control Server in the directory with the name specified during the installation.

End of procedure

Installing SNMP Master Agent

If you agreed to configure Simple Network Management Protocol (SNMP) support while running the Management Layer Wizard, the wizard creates an application of the `SNMP Master Agent` type in the Configuration Database. With current implementation, you may use either Genesys SNMP Master Agent or a third-party SNMP master agent that is compliant with the AgentX protocol.

In the first case, the Management Framework CD contains the installation package; in the second case, you must obtain the installation package from a third-party vendor. Therefore, the wizard does not suggest that you copy an installation package to the SNMP Master Agent host computer. Instead, manually install the SNMP master agent of your choice:

- If installing Genesys SNMP Master Agent, follow the instructions for “Deploying SNMP Master Agent” on page 151.
- If installing a third-party SNMP master agent, follow the instructions in the relevant third-party documentation.

Regardless of your choice, review the *Framework 8.0 Configuration Options Reference Manual* to decide whether your environment requires configuring any configuration options for your SNMP master agent application.

For more information about SNMP functionality built into the Management Layer and on Genesys SNMP Master Agent, see the *Framework 8.0 Management Layer User’s Guide.*

Note: You must have a special license to enable the SNMP functionality. Refer to the *Genesys Licensing Guide* for more information.

Manually Deploying Management Layer

This sections contains instructions describing how to manually deploy Management Layer.

Task Summary

The following table summarizes the steps for manually deploying Management Layer using Genesys Administrator or Configuration Manager.

Note: Message Server can only write logs to a PostgreSQL DBMS if the corresponding DB Server also supports PostgreSQL.

Task Summary: Manually Deploying Management Layer

Task	Related Procedures and Information
1. Deploy a DB Server for the Log Database.	1. Configure a Client DB Server `Application` object for the Log Database using one of the following procedures, as appropriate: • "Configuring a Log DB Server Application object using Genesys Administrator" on page 126 • "Configuring a Log DB Server Application object using Configuration Manager" on page 127 2. Install the DB Server Application using one of the following procedures, as appropriate: • "Manually installing Log DB Server on UNIX" on page 128 • "Manually installing Log DB Server on Windows" on page 130
2. Configure a Database Access Point (DAP) for the Log DB Server.	Use one of the following procedures, as appropriate: • "Configuring a Database Access Point for the Log DB Server using Genesys Administrator" on page 132 • "Configuring a Database Access Point for the Log DB Server using Configuration Manager" on page 134
3. Deploy Message Server.	1. Configure a Message Server `Application` object using one of the following procedures, as appropriate: • "Configuring a Message Server Application object using Genesys Administrator" on page 136 • "Configuring a Message Server Application object using Configuration Manager" on page 138 2. Install the Message Server Application using one of the following procedures, as appropriate: • "Manually installing Message Server on UNIX" on page 139 • "Manually installing Message Server on Windows" on page 140
4. Create and initialize the Log Database.	1. Create an empty database in your DBMS. 2. Initialize the empty database so that it can be used as the Log Database. Use the procedure "Initializing the Log Database" on page 121.

Task Summary: Manually Deploying Management Layer (Continued)

Task	Related Procedures and Information
5. Deploy Solution Control Server.	1. Configure a Solution Control Server `Application` object using one of the following procedures, as appropriate: • “Configuring a Solution Control Server Application object using Genesys Administrator” on page 142 • “Configuring a Solution Control Server Application object using Configuration Manager” on page 143 2. Install the Solution Control Server Application using one of the following procedures, as appropriate: • “Manually installing Solution Control Server on UNIX” on page 144 • “Manually installing Solution Control Server on Windows” on page 145
6. Deploy Solution Control Interface.	1. Configure a Solution Control Interface `Application` object using one of the following procedures, as appropriate: • “Configuring a Solution Control Interface Application object using Genesys Administrator” on page 147 • “Configuring a Solution Control Interface Application object using Configuration Manager” on page 148 2. Install the Solution Control Interface Application using the procedure “Manually installing Solution Control Interface” on page 149.
7. Deploy Genesys SNMP Master Agent	1. Configure a Genesys SNMP Master Agent `Application` object using one of the following procedures, as appropriate: • “Configuring an SNMP Master Agent Application object using Genesys Administrator” on page 151 • “Configuring an SNMP Master Agent Application object using Configuration Manager” on page 153 2. Install the Genesys SNMP Master Agent Application using one of the following procedures, as appropriate: • “Manually installing SNMP Master Agent on UNIX” on page 154 • “Manually installing SNMP Master Agent on Windows” on page 155

Deploying Log DB Server

Log DB Server runs as a client of Configuration Server. You must also configure a corresponding Database Access Point through which Log DB Server accesses the Log Database. For other applications to access the Log Database, you must configure both DB Server and Database Access Points as

Application objects. For Database Access Point configuration instructions, see "Configuring Database Access Points" on page 131.

Procedure:
Configuring a Log DB Server Application object using Genesys Administrator

Purpose: To configure a Log DB Server to access the Log Database.

Prerequisites

- A database must exist to which Log DB Server will provide access.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and select New in the toolbar. This opens a Browse dialog box that lists available application templates. If a DB Server template file is not listed, do one of the following:
   - Import the DBServer_<current-version>.apd file from the Management Framework 8.0 product CD.
   - Create a new template using the procedure "Creating a new application template using Genesys Administrator" on page 265, and repeat this step.
2. In the Browse dialog box, select the DB Server template file. The Configuration tab for the new DB Server Application object appears in the Details panel.
3. In the General section, enter a descriptive name in the Name field—for example, LogDBServer.
4. In the Server Info section:
   a. In the Host field, click the magnifying glass icon to select the Host object on which this DB Server is running.
   b. For each listening port that an application must use to connect to Log DB Server:
      i. In the Connections filed, click Add.
      ii. Enter the port properties in the Port Info dialog box.
      iii. Click OK.
   c. For the Working Directory, Command Line, and Command Line Arguments fields, do one of the following:
      - Enter the appropriate information in the three text boxes. For information about command-line parameters, see Chapter 8 on page 165.

- Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install Log DB Server, but only if the Installation Package can connect to Configuration Server.

5. On the Options tab:

a. In the drop-down list in the top-right corner, select Options if not already selected.

b. In the dbserver section:

i. Change the value of the dbprocess_name option to the value of the option <DBMS you are using>_name. For example, if you are using Microsoft SQL Server DBMS, set the value of dbprocess_name to ./dbclient_msql.

ii. Change the value of the management-port option to the management port number for this DB Server.

6. Click Save or Apply in the toolbar to save the new object. The new object will appear in the list of applications.

End of procedure

Procedure: Configuring a Log DB Server Application object using Configuration Manager

Purpose: To configure a Log DB Server to access the Log Database

Prerequisites

- A database must exist to which Log DB Server will provide access.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the Environment > Applications folder and select New > Application, which opens the Browse dialog box that lists the available application templates. If a DB Server template file is not listed, do one of the following:

- Import the DBServer_<current-version>.apd file from the Management Framework 8.0 product CD.
- Create a new template using the procedure “Creating a new application template using Configuration Manager” on page 267, and repeat this step.

2. In the Browse dialog box, select the DB Server template file, which opens the Properties dialog box for the new DB Server Application object.
3. On the General tab, enter a descriptive name in the Name text box—for example, LogDBServer.
4. On the Server Info tab:
   a. Click the Browse button next to the Host drop-down list, and select the host on which this DB Server will run.
   b. Specify the listening port(s) and select whether or not each is secure. Refer to the *Genesys 8.0 Security Deployment Guide* for detailed information about specifying ports and securing connections to them.
   c. Leave the rest of the fields at their default values.
5. On the Start Info tab, do one of the following:
   - Enter the appropriate information in the Working Directory, Command Line, and Command Line Arguments text boxes. For information about command-line parameters, see Chapter 8 on page 165.
   - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install Log DB Server, but only if the Installation Package can connect to Configuration Server.
6. On the Options tab, in the dbserver section:
   - Change the value of the dbprocess_name option to the value corresponding to the <DBMS you are using>_name option. For example, if you are using Microsoft SQL Server DBMS, set the value dbprocess_name to ./dblient_msql.
   - Change the value of the management-port option to the number of the management port for this DB Server.
7. Click OK.

End of procedure

Procedure:
Manually installing Log DB Server on UNIX

Warning! During installation on UNIX, all files are copied into the directory you specify. The install process does not create any subdirectories within this directory, so do not install different products into the same directory.

Prerequisites

- The Log DB Server Application object exists.

Start of procedure

1. On the Management Framework 8.0 product CD in the appropriate `services_layer/dbserver/<operating_system>` directory, locate a shell script called `install.sh`.
2. Run this script from the command prompt by typing `sh` and the file name—for example, `sh install.sh`. Then, press `Enter`.
3. To specify the host name for this DB Server, do one of the following:
   - Type the name of the host, and press `Enter`.
   - Press `Enter` to select the current host.
4. Type `n` to specify that this DB Server will provide access to databases other than the Configuration Database (in this case, the Log Database), and press `Enter`.
5. When prompted, specify the:
   - Host name of the computer on which Configuration Server is running.
   - Network port used by client applications to connect to Configuration Server.
   - User name used to log in to the Configuration Layer.
   - Password used to log in to the Configuration Layer.
6. The installation displays the list of `Application` objects of the specified type configured on this `Host` object. Type the number corresponding to the DB Server `Application` object you configured in the procedure "Configuring a Log DB Server Application object using Configuration Manager" on page 127.
7. Specify the destination directory into which this server is to be installed, with the full path to it.
8. If the target installation directory has files in it, do one of the following:
   - Type `1` to back up all the files in the directory, and press `Enter`. Specify the path to which you want the files backed up, and press `Enter`.
   - Type `2` to overwrite only the files in this installation package, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

     Use this option only if the application already installed operates properly.
   - Type `3` to erase all files in this directory before continuing with the installation, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.
9. The installation displays a list of database types. Type the number corresponding to the database you are using.

Note: Some items in the list have _32 or _64 at the end of the name, indicating a 32-bit or 64-bit database. Make sure to choose the one appropriate to your environment.

As soon as the installation process is finished, a message appears indicating that installation was successful. The process places the DB Server application in the directory specified during the installation.

End of procedure

Procedure: Manually installing Log DB Server on Windows

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Prerequisites

- The Log DB Server Application object exists.

Start of procedure

1. On the Management Framework 8.0 product CD in the appropriate services_layer\dbserver\windows directory, locate and double-click setup.exe to start the Genesys Installation Wizard.
2. Use the About button on the wizard's Welcome page to review the read_me file. The file also contains a link to the server's Release Notes file.
3. Click Next to start the installation.
4. On the Maintenance Setup Type page, select Install new instance of the application.
5. On the DB Server Run Mode page, select DB Server as a client of Configuration Server to install DB Server as a client, so that it provides access to the Log Database. Click Next.
6. On the Connection Parameters to the Genesys Configuration Server page, specify the host name, port, user name, and password of Configuration Server, and then click Next.
7. On the Select Application page, select the name of the DB Server Application object that you configured on page 127, and click Next.
8. On the Choose Destination Location page, the wizard displays the destination directory if you specified one in the Working Directory property of the server's Application object during configuration. If you

entered a period (.) in this property field when configuring the object, or if the path that you specified in this property is invalid, the wizard generates a path to the destination directory in the C:\Program Files\GCTI\<Product Name> format.

If necessary, use the:

- Browse button to select another destination folder. In this case, the wizard will update the Application object's Working Directory property in the Configuration Database.
- Default button to reinstate the path specified in the Working Directory property.

Click Next to proceed.

9. On the Ready to Install page, click:
   - Back to update any installation information.
   - Install to proceed with the installation.
10. On the Installation Complete page, click Finish.

    As a result of the installation, the wizard adds Application icons to the:

    - Windows Start menu, under Programs > Genesys Solutions > Framework.
    - Windows Add or Remove Programs window, as a Genesys server.
    - Windows Services list, as a Genesys service, with Automatic startup type.

End of procedure

Configuring Database Access Points

Most Genesys applications access various databases through a daemon process called DB Server. For example, the Log Database Access Point (DAP) provides the connection to the Log Database through the Log DB Server. Some Genesys applications use Java Database Connectivity (JDBC) to access databases. To cover the variety of ways the applications in the Genesys installation can be interfaced with databases, the Configuration Layer uses the concept of a Database Access Point.

A *Database Access Point* (DAP) is an object of the Application type that describes both the parameters required for communication with a particular database—either DB Server or JDBC parameters—and the parameters of the database itself. The DAP application you configure for the Management Layer uses DB Server to connect to the Log Database. If, according to your configuration, a database can be accessed through multiple DB Servers simultaneously, register as many DAPS as there are DB Servers.

Procedure: Configuring a Database Access Point for the Log DB Server using Genesys Administrator

Prerequisites

- Log DB Server is installed and running.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning > Environment > Applications`, and select `New` in the toolbar. This opens a `Browse` dialog box that lists available application templates. If a Database Access Point template file is not listed, do one of the following:
   - Import the `Database_Access_Point_<current-version>.apd` file from the Management Framework 8.0 product CD.
   - Create a new template using the procedure "Creating a new application template using Genesys Administrator" on page 265, and repeat this step.
2. In the `Browse` dialog box, select the DAP template file. The `Configuration` tab for the new DAP `Application` object appears in the Details panel.
3. In the `General` section, enter a descriptive name in the `Name` field—for example, `LogDAP`.

   A DAP can have the same name as the database itself. However, it is recommended that you make their names unique if you are using multiple access points for the same database.
4. In `Host` field of the `Server Info` section, click the magnifying glass icon to select the `Host` object to which this DAP is assigned.
5. In the `DB Info` section, provide the following information about the Log Database:
   - `Connection Type`—The type of connection to the DBMS. Select `Default`.

     Note: Do not select a `Connection Type` of `JDBC` for Database Access Points.

   - `Query Timeout`—The period of time for which client processes using this DAP expect a response from the DBMS. If they do not receive a response within this period, they stop executing. DB Server interprets this as a failure of the DBMS and tries to reconnect to the DBMS. The timeout set in this DAP overrides that set in the DB Server `Application` object, but applies only to client processes using this DAP.

For more information about how DB Server uses this value, see "Database Failures" on page 58.

Note: The `Query Timeout` field sets the value of the configuration option `db-request-timeout` and stores it in the Annex of the DAP.

- `DB Server`—The `Application` object corresponding to the database to which this DAP will provide access.

Note: A DAP has the same listening ports as the DB Server to which it provides access.

- `DBMS Name`—The name or alias identifying the DBMS that handles the database. The value of this option is communicated to DB Server so that it connects to the correct DBMS:
  - — For DB2, set this value to the name or alias-name of the database specified in the db2 client configuration.
  - — For Informix, this value is the name of SQL server, specified in the `sqlhosts` file.
  - — For Microsoft SQL, set this value to the SQL server name (usually the same as the host name of the computer on which Microsoft SQL runs).
  - — For Oracle, the value is the name of the Listener service.
  - — For PostgreSQL, set this value to the SQL server name (usually the same as the host name of the computer on which PostgreSQL runs).
  - — For Sybase, this value is the server name stored in the Sybase interface file.
- `DBMS Type`—The type of DBMS that handles the database. You must set a value for this property.
- `Database Name`—The name of the database to be accessed, as it is specified in the DBMS that handles this database. You must set a value for this property unless `oracle` or `db2` is specified as the `DBMS Type`. For Sybase, Informix, Microsoft SQL, and PostgreSQL, this value is the name of the database where the client will connect.
- `User Name`—The user name established in the SQL server to access the database. You must set a value for this property.
- `User Password`—The password established in the SQL server to access the database.
- `Re-enter Password`—Confirmation for the value entered for `Password`.
- `Case Conversion`—Case conversion method for key names of key-value lists coming from DB Server. This value specifies whether and how a client application converts the field names of a database table when receiving data from DB Server. If you select `upper,` field names are

converted into uppercase; if you select `lower`, field names are converted into lowercase; and if you select `any`, field names are not converted. This setting does not affect the values of key-value lists coming from DB Server. That is, actual data is being presented exactly as in the database tables.

Note: For the Case Conversion option, use the default value (`any`) unless directed to do otherwise by Genesys Technical Support.

6. Click `Save` or `Apply` in the toolbar to save the new object. The new object will appear in the list of applications.

End of procedure

Procedure:
Configuring a Database Access Point for the Log DB Server using Configuration Manager

Prerequisites

- Log DB Server is installed and running.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the `Environment > Applications` folder and select `New > Application`, which opens the `Browse` dialog box that lists the available application templates. If a DAP template file is not listed, do one of the following:
   - Import the `Database_Access_Point_<current-version>.apd` file from the Management Framework product CD.
   - Create a new template using the procedure "Creating a new application template using Configuration Manager" on page 267, and then repeat this step.
2. In the `Browse` dialog box, select the DAP template file, and click `OK`, which opens the `Properties` dialog box for the new DAP `Application` object.
3. On the `General` tab:
   - Enter a descriptive name—for example, `LogDAP`.

     A DAP can have the same name as the database itself. However, it is recommended that you make their names unique if you are using multiple access points for the same database.
   - In the `DB Server` field, use the `Browse` button to select the `Application` object corresponding to the Log DB Server that you just installed.

Note: Do not select the `JDBC Connection` check box when you configure Database Access Points.

4. On the `DB Info` tab, specify information about the database as follows:
   - `DBMS Name`—The name or alias identifying the DBMS that handles the database. The value of this option is communicated to DB Server so that it connects to the correct DBMS:
     - For DB2, set this value to the name or alias-name of the database specified in the db2 client configuration.
     - For Informix, this value is the name of SQL server, specified in the `sqlhosts` file.
     - For Microsoft SQL, set this value to the SQL server name (usually the same as the host name of the computer on which Microsoft SQL runs).
     - For Oracle, the value is the name of the Listener service.
     - For PostgreSQL, set this value to the SQL server name (usually the same as the host name of the computer on which PostgreSQL runs).
     - For Sybase, this value is the server name stored in the Sybase interface file.
   - `DBMS Type`—The type of DBMS that handles the database. You must set a value for this property.
   - `Database Name`—The name of the database to be accessed, as it is specified in the DBMS that handles this database. You must set a value for this property unless `oracle` or `db2` is specified as the `DBMS Type`. For Sybase, Informix, Microsoft SQL, and PostgreSQL, this value is the name of the database where the client will connect.
   - `User Name`—The user name established in the SQL server to access the database. You must set a value for this property.
   - `Password`—The password established in the SQL server to access the database.
   - `Re-enter Password`—Confirmation for the value entered for `Password`.
   - `Case Conversion`—Case conversion method for key names of key-value lists coming from DB Server. This value specifies whether and how a client application converts the field names of a database table when receiving data from DB Server. If you select `upper,` field names are converted into uppercase; if you select `lower,` field names are converted into lowercase; and if you select `any,` field names are not converted. This setting does not affect the values of key-value lists coming from DB Server. That is, actual data is being presented exactly as in the database tables.

Note: For the Case Conversion field, use the default value (`any`) unless directed to do otherwise by Genesys Technical Support.

- Query Timeout—The period of time for which client processes using this DAP expect a response from the DBMS. If they do not receive a response within this period, they stop executing. DB Server interprets this as a failure of the DBMS and tries to reconnect to the DBMS. The timeout set in this DAP overrides that set in the DB Server Application object, but applies only to client processes using this DAP.

  For more information about how DB Server uses this value, see "Database Failures" on page 58.

Notes: The Query Timeout field sets the value of the configuration option db-request-timeout and stores it in the Annex of the DAP. The DAP Annex is not visible in Configuration Manager.

Note: Do not configure any properties on the JDBC Info tab when configuring a DAP application for the Management Layer.

5. On the Server Info tab:
   - Click the Browse button next to the Host drop-down list, and select the host on which this Log DB Server will run.
   - Specify the listening port(s) and select whether or not each is secure. Refer to the *Genesys 8.0 Security Deployment Guide* for detailed information on specifying ports and securing connections to them.

End of procedure

To interface an Application object with a database through a certain Database Access Point, add this access point to the list of the application's Connections.

Deploying Message Server

This section describes how to configure and install a Message Server Application object.

Procedure: Configuring a Message Server Application object using Genesys Administrator

Prerequisites

- A Database Access Point for the Log DB Server is configured.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and select New in the toolbar. This opens a Browse dialog box that lists the available application templates. If a Message Server template file is not listed, do one of the following:
   - Import the Message_Server_<current-version>.apd file from the Management Framework 8.0 product CD.
   - Create a new template using the procedure "Creating a new application template using Genesys Administrator" on page 265, and repeat this step.
2. In the Browse dialog box, select the Message Server template file. The Configuration tab for the new Message Server Application object appears in the Details panel.
3. In the General section:
   a. Enter a descriptive name in the Name field—for example, MsgServer.
   b. Add a connection to the Log Database DAP. In the Connections field:
      i. Click Add.
      ii. Enter the properties of the connection in the Connection Info dialog box.
      iii. Click OK.
4. In the Server Info section:
   a. In the Host field, click the magnifying glass icon to select the Host object on which this Message Server is running.
   b. For each listening port that an application must use to connect to Message Server:
      i. In the Listening Ports field, click Add.
      ii. Enter the port properties in the Port Info dialog box.
      iii. Click OK.
   c. For the Working Directory, Command Line, and Command Line Arguments fields, do one of the following:
      - Enter the appropriate information in the three text boxes. For information about command-line parameters, see Chapter 8 on page 165.
      - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install Message Server, but only if the Installation Package can connect to Configuration Server.
5. If you want Message Server to direct log events to the Log Database, on the Options tab:
   a. In the drop-down list in the top-right corner, select Options if not already selected.

b. In the `dbserver` section, change the value of the `db_storage` option to `true`.

Note: Message Server can only write logs to a PostgreSQL DBMS if the corresponding DB Server also supports PostgreSQL.

6. Click `Save` or `Apply` in the toolbar to save the new object. The new object will appear in the list of applications.

End of procedure

Procedure: Configuring a Message Server Application object using Configuration Manager

Prerequisites

- A Database Access Point for the Log DB Server is configured.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the `Environment > Applications` folder and select `New > Application`, which opens the `Browse` dialog box that lists the available application templates. If a Message Server template is not listed, do one of the following:
   - Import the `Message_Server_<current-version>.apd` file from the Management Framework product CD.
   - Create a new template using the procedure “Creating a new application template using Configuration Manager” on page 267, and then repeat this step.
2. In the `Browse` dialog box, select the Message Server template file, which opens the `Properties` dialog box for the new Message Server `Application` object.
3. On the `General` tab, enter a descriptive name in the `Name` text box.
4. On the `Server Info` tab:
   - Click the `Browse` button next to the `Host` drop-down list, and select the host on which this Message Server will run.
   - Specify the listening port(s).
   - Leave the rest of the fields at their default values.
5. On the `Start Info` tab, do one of the following:
   - Enter the appropriate information in each of the `Working Directory`, `Command Line`, and `Command Line Arguments` text boxes. For

information about command-line parameters, see Chapter 8 on page 165.

- Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install Message Server, but only if the Installation Package can connect to Configuration Server.

6. On the Connections tab, add a connection to the Database Access Point for the Log Database.
7. If you want Message Server to direct log events to the Log Database, do the following:
   a. On the Options tab, double-click the messages section.
   b. Change the value of db_storage to true.
   c. Click OK.

Note: Message Server can only write logs to a PostgreSQL DBMS if the corresponding DB Server also supports PostgreSQL.

4. Click OK.

End of procedure

If you want to use centralized logging and alarm signaling for Configuration Server, Configuration Server Proxy, and the Configuration DB Server, add a connection to the Message Server Application object to the Connections tab of the respective Application objects.

Procedure:
Manually installing Message Server on UNIX

Prerequisites

- A Message Server Application object exists.

Start of procedure

1. On the Management Framework 8.0 product CD in the appropriate management_layer/message_server/<operating_system> directory, locate a shell script called install.sh.
2. Type the file name at the command prompt, and press Enter.
3. To specify the host name for this Message Server, do one of the following:
   - Type the name of the host, and press Enter.
   - Press Enter to select the current host.
4. Enter the Configuration Server host name, and press Enter.

5. Enter the Configuration Server network port, and press `Enter`.
6. Enter the Configuration Server user name, and press `Enter`.
7. Enter the Configuration Server password, and press `Enter`.
8. The installation displays the list of `Application` objects of the specified type configured on this `Host` object. Type the number corresponding to the Message Server `Application` object you configured on page 138, and press `Enter`.
9. To specify the destination directory, do one of the following:
   - Press `Enter` to accept the default.
   - Enter the full path of the directory, and press `Enter`.
10. If the target installation directory has files in it, do one of the following:
    - Type `1` to back up all the files in the directory, and press `Enter`. Specify the path to which you want the files backed up, and press `Enter`.
    - Type `2` to overwrite only the files in this installation package, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

      Use this option only if the application already installed operates properly.
    - Type `3` to erase all files in this directory before continuing with the installation, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

    The list of file names will appear on the screen as the files are copied to the destination directory.
11. For the product version to install, do one of the following:
    - Type `32` to select the 32-bit version, and press `Enter`.
    - Type `64` to select the 64-bit version, and press `Enter`.

End of procedure

Procedure:
Manually installing Message Server on Windows

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Prerequisites

- A Message Server `Application` object exists.

Start of procedure

1. On the Management Framework 8.0 product CD in the appropriate `management_layer\message_server\windows` directory, locate and double-click `setup.exe` to start the Genesys Installation Wizard.
2. Use the `About` button on the wizard's `Welcome` page to review the `read_me` file. The file also contains a link to the server's Release Notes file.
3. Click `Next` to start the installation.
4. On the `Connection Parameters to the Genesys Configuration Server` page, specify the host name, port, user name, and password of Configuration Server, and then click `Next`.
5. On the `Select Application` page, select the name of the Message Server `Application` object that you configured on page 138, and then click `Next`.
6. On the `Choose Destination Location` page, the wizard displays the destination directory if specified in the `Working Directory` property of the server's `Application` object during configuration. If you entered a period (`.`) in this field when configuring the object, or if the path specified in this property is invalid, the wizard generates a path to the destination directory in the `C:\Program Files\GCTI\<Product Name>` format.

   If necessary, use the:

   - `Browse` button to select another destination folder. In this case, the wizard will update the `Application` object's `Working Directory` property in the Configuration Database.
   - `Default` button to reinstate the path specified in the `Working Directory` property.

   Click `Next` to proceed.
7. On the `Ready to Install` page, click:
   - `Back` to update any installation information.
   - `Install` to proceed with the installation.
8. On the `Installation Complete` page, click `Finish`.

   As a result of the installation, the wizard adds `Application` icons to the:

   - Windows `Start` menu, under `Programs > Genesys Solutions > Management Layer`.
   - Windows `Add or Remove Programs` window, as a Genesys server.
   - Windows `Services` list, as a Genesys service, with `Automatic` startup type.

End of procedure

Initializing the Log Database

Use the procedure “Initializing the Log Database” on page 121 for full instructions on how to initialize a newly created database so that it can serve as the Log Database.

Deploying Solution Control Server

This section describes how to configure and install Solution Control Server.

Procedure:
Configuring a Solution Control Server Application object using Genesys Administrator

Prerequisites

- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning > Environment > Applications`, and select `New` in the toolbar. This opens a `Browse` dialog box that lists available application templates. If a Solution Control Server template file is not listed, do one of the following:
   - Import the `Solution_Control_Server_<current-version>.apd` file from the Management Framework 8.0 product CD.
   - Create a new template using the procedure “Creating a new application template using Genesys Administrator” on page 265, and repeat this step.
2. In the `Browse` dialog box, select the Solution Control Server template file. The `Configuration` tab for the new Solution Control Server `Application` object appears in the Details panel.
3. In the `General` section:
   a. Enter a descriptive name in the `Name` field—for example, `SCS`.
   b. If you want to enable alarm signaling, add a connection to the Message Server. In the `Connections` field:
      i. Click `Add`.
      ii. Enter the properties of the connection in the `Connection Info` dialog box.
      iii. Click `OK`.
4. In the `Server Info` section:
   a. In the `Host` field, click the magnifying glass icon to select the `Host` object on which this Solution Control Server is running.

b. For each listening port that an application must use to connect to Solution Control Server:

   i. In the Listening Ports field, click Add.

   ii. Enter the port properties in the Port Info dialog box.

   iii. Click OK.

c. For the Working Directory, Command Line, and Command Line Arguments fields, do one of the following:

   - Enter the appropriate information in the three text boxes. For information about command-line parameters, see Chapter 8 on page 165.
   - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install Solution Control Server, but only if the Installation Package can connect to Configuration Server.

5. Click Save or Apply in the toolbar to save the new object. The new object will appear in the list of applications.

End of procedure

Procedure:
Configuring a Solution Control Server Application object using Configuration Manager

Prerequisites

- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the Environment > Applications folder and select New > Application, which opens the Browse dialog box that lists the available application templates. If a Solution Control Server template is not listed, do one of the following:
   - Import the solution_Control_Server_<current-version>.apd template file from the Management Framework CD.
   - Create a new template by using the procedure “Creating a new application template using Configuration Manager” on page 267, and then repeat this step.
2. In the Browse dialog box, select the Solution Control Server template file, which opens the Properties dialog box for the new Solution Control, Server Application object.
3. On the General tab, enter a descriptive name in the Name text box.

4. On the Server Info tab:
   - Click the Browse button next to the Host drop-down list, and select the host on which Solution Control Server will run.
   - Specify the listening port(s), and select whether or not each is secure. Refer to the *Genesys 8.0 Security Deployment Guide* for detailed information on specifying ports and securing them.
   - Leave the rest of the fields at their default values.
5. On the Start Info tab, do one of the following:
   - Enter the appropriate information in each of the Working Directory, Command Line, and Command Line Arguments text boxes. For information about command-line parameters, see Chapter 8 on page 165.
   - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install Solution Control Server, but only if the Installation Package can connect to Configuration Server.
6. If you want to enable alarm signaling, on the Connections tab, add a connection to the Message Server.
7. Click OK.

End of procedure

Procedure:
Manually installing Solution Control Server on UNIX

Prerequisites

- A Solution Control Server Application object exists.

Start of procedure

1. On the Management Framework 8.0 product CD in the appropriate management_layer/solution_control_server/<operating_system> directory, locate a shell script called install.sh.
2. Type the file name at the command prompt, and press Enter.
3. To specify the host name for this SCS, do one of the following:
   - Type the name of the host, and press Enter.
   - Press Enter to select the current host.
4. Enter the Configuration Server host name, and press Enter.
5. Enter the Configuration Server network port, and press Enter.
6. Enter the Configuration Server user name, and press Enter.

7. Enter the Configuration Server password, and press `Enter`.
8. The installation displays the list of `Application` objects of the specified type configured on this `Host` object. Type the number corresponding to the SCS `Application` object you just configured, and press `Enter`.
9. To specify the destination directory, do one of the following:
   - Press `Enter` to accept the default.
   - Enter the full path of the directory, and press `Enter`.
10. If the target installation directory has files in it, do one of the following:
    - Type `1` to back up all the files in the directory, and press `Enter`. Specify the path to which you want the files backed up, and press `Enter`.
    - Type `2` to overwrite only the files in this installation package, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

      Use this option only if the application already installed operates properly.
    - Type `3` to erase all files in this directory before continuing with the installation, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

    The list of file names will appear on the screen as the files are copied to the destination directory.
11. For the product version to install, do one of the following:
    - Type `32` to select the 32-bit version, and press `Enter`.
    - Type `64` to select the 64-bit version, and press `Enter`.
12. To decide whether you require a license, refer to the *Genesys Licensing Guide* for information about licensing requirements. Then, do one of the following:
    - Type `y` if you require a license, and press `Enter`.
    - Type `n` if you do not require a license, and press `Enter`.
13. If you typed `y` in the previous step, enter the license location format, press `Enter`, and enter the required parameters.

End of procedure

Procedure: Manually installing Solution Control Server on Windows

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Prerequisites

- A Solution Control Server Application object exists.

Start of procedure

1. On the Management Framework 8.0 product CD in the appropriate management_layer\solution_control_server\windows directory, locate and double-click setup.exe to start the Genesys Installation Wizard.
2. Use the About button on the wizard's Welcome page to review the read_me file. The file also contains a link to the server's Release Notes file.
3. Click Next to start the installation.
4. On the Connection Parameters to the Genesys Configuration Server page, specify the host name, port, user name, and password of Configuration Server, and then click Next.
5. On the Select Application page, select the name of the Solution Control Server Application object that you just configured, and then click Next.
6. On the Run-time License Configuration page, select whether you are using a license. Refer to the *Genesys Licensing Guide* for information about licensing requirements, and then click Next.
7. If you selected Use License in Step 6, on the Access to License page, enter the license access type and required parameters.
8. On the Choose Destination Location page, the wizard displays the destination directory if specified in the Working Directory property of the server's Application object during configuration. If you entered a period (.) in this field when configuring the object, or if the path specified in the Working Directory property is invalid, the wizard generates a path to the destination directory in the C:\Program Files\GCTI\<Product Name> format.

   If necessary, use the:

   - Browse button to select another destination folder. In this case, the wizard will update the Application object's Working Directory property in the Configuration Database.
   - Default button to reinstate the path specified in the Working Directory property.

   Click Next to proceed.
9. On the Ready to Install page, click:
   - Back to update any installation information.
   - Install to proceed with the installation.
10. On the Installation Complete page, click Finish.

    As a result of the installation, the wizard adds Application icons to the:

    - Windows Start menu, under Programs > Genesys Solutions > Management Layer.
    - Windows Add or Remove Programs window, as a Genesys server.

- Windows `Services` list, as a Genesys service, with `Automatic` startup type.

End of procedure

If you plan to use SNMP functionality, deploy SNMP Master Agent (see "Deploying SNMP Master Agent" on page 151). For information about SNMP functionality built into the Management Layer, refer to the *Framework 8.0 Management Layer User's Guide.*

Deploying Solution Control Interface

This section describes how to configure and install Solution Control Interface (SCI).

Note: If you configure more than one instance of Solution Control Server, and/or more than one Log Database exist in your system, you can configure SCI connections to any combination of these instances. However, note that at runtime, SCI works with only one Solution Control Server and one Log Database. If you have defined connections to more than one SCS and/or Log Database, then at startup SCI prompts you to select the SCS and the Log Database for the current working session.

Procedure: Configuring a Solution Control Interface Application object using Genesys Administrator

Prerequisites

- At least one Solution Control Server is installed.
- If you want to display log messages, a DAP `Application` object for the Log Database exists.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning > Environment > Applications,` and select `New` in the toolbar. This opens a `Browse` dialog box that lists available application templates. If a Solution Control Interface template file is not listed, do one of the following:
   - Import the `Solution_Control_Interface_<current-version>.apd` file from the Management Framework 8.0 product CD.

- Create a new template using the procedure “Creating a new application template using Genesys Administrator” on page 265, and repeat this step.

2. In the Browse dialog box, select the Solution Control Interface template file. The Configuration tab for the new Solution Control Interface Application object appears in the Details panel.
3. In the General section:
   - a. Enter a descriptive name in the Name field—for example, SCI.
   - b. In the Connections field:
     - i. Add a connection to the Solution Control Server Application object that you just created.
     - ii. If you want to display log messages in SCI, add a connection to the Log Database Access Point Application object configured on page 132.

   As you add server applications to your system, you can add connections to them as required.

Note: Starting with release 7.0.1, you can enable the ADDP protocol for SCI connections to SCS. Use the procedure “Configuring Advanced Disconnect Detection Protocol using Genesys Administrator” on page 270. Enable ADDP-related logging on the server side.

4. Click Save or Apply in the toolbar to save the new object. The new object will appear in the list of applications.

End of procedure

Procedure: Configuring a Solution Control Interface Application object using Configuration Manager

Prerequisites

- At least one Solution Control Server is installed.
- If you want to display log messages, a DAP Application object for the Log Database exists.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the Environment > Applications folder and select New > Application, which opens the Browse dialog box

that lists the available application templates. If an SCI template is not listed, do one of the following:

- Import the `solution_Control_Interface_<current-version>.apd` template file from the Management Framework product CD.
- Create a new template by using the procedure "Creating a new application template using Configuration Manager" on page 267, and then repeat this step.

2. In the `Browse` dialog box, select the SCI template file and click `OK,` which opens the `Properties` window for the SCI `Application` object.
3. On the `General` tab, enter a descriptive name.

Note: Starting with release 7.0.1, you can enable the ADDP protocol for SCI connections to SCS. Use the procedure "Configuring Advanced Disconnect Detection Protocol using Configuration Manager" on page 273. Enable ADDP-related logging on the server side.

4. On the `Connections` tab:
   - Add a connection to the Solution Control Server `Application` object configured on page 143.
   - If you want to display log messages in SCI, add a connection to the Log Database Access Point `Application` object configured on page 134.

   As you add server applications to your system, you can add connections to them as required.
5. Click `OK` to save your changes and close the `Properties` dialog box.

End of procedure

Procedure: Manually installing Solution Control Interface

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Note: Solution Control Interface operates only on Windows.

Prerequisites

- The Solution Control Interface `Application` object exists.

- If you want to implement a security banner with SCI, make sure that you have the necessary files prepared before you start installing SCI. Refer to the *Genesys 8.0 Security Deployment Guide* for detailed information about the security banner.

Start of procedure

1. On the Management Framework 8.0 product CD, in the appropriate `management_layer\solution_control_interface\windows` directory, locate and double-click `setup.exe` to start the Genesys Installation Wizard.
2. Use the `About` button on the wizard's `Welcome` page to review the `read_me` file. The file also contains a link to the server's Release Notes file.
3. Click `Next` to start the installation.
4. On the `Security Banner Configuration` page, choose whether you want to configure a security banner for this SCI application. Refer to the *Genesys 8.0 Security Deployment Guide* for detailed information about the security banner. Do one of the following:
   - If you do not want to configure a security banner for this application, clear the `Enable Security Banner` checkbox, and click `Next`.
   - If you want to configure a security banner for this application:
     i. Select `Enable Security Banner`.
     ii. Follow the instructions in the procedure "Installing and configuring the Security Banner" in the *Genesys 8.0 Security Deployment Guide.* When you are finished that procedure, return here and finish this procedure.
5. On the `Choose Destination Location` page, the wizard displays the destination directory, as specified in the `Working Directory` property of the server's `Application` object. If the specified path is invalid, the wizard generates a path to the destination directory in the `C:\Program Files\GCTI\<Product Name>` format.

   If necessary, use the:
   - `Browse` button to select another destination folder. In this case, the wizard will update the `Application` object's `Working Directory` property in the Configuration Database.
   - `Default` button to reinstate the path specified in the `Working Directory` property.

   Click `Next` to proceed.
6. On the `Ready to Install` page, click:
   - `Back` to update any installation information.
   - `Install` to proceed with the installation.
7. On the `Installation Complete` page, click `Finish`.

As a result of the installation, the wizard adds Application icons to the:

- Windows Start menu, under Programs > Genesys Solutions > Management Layer.
- Windows Add or Remove Programs window, as a Genesys application.

End of procedure

Deploying SNMP Master Agent

For the Management Layer to communicate with an SNMP master agent, provided by either a third-party or Genesys, you must configure an Application object of the SNMP Agent type in the Configuration Database, and configure a connection to this Application object in Solution Control Server.

If you do not want to use a redundant configuration or your SNMP master agent application does not support redundant configuration, configure your SNMP master agent as a stand-alone application. This section provides instructions for deploying a stand-alone SNMP Master Agent application.

Note: Depending on the solutions for which you want to enable SNMP monitoring, you may need to install several instances of SNMP Master Agent, using the same approach given in this section.

Generally, you have to install and configure one instance of Genesys SNMP Master Agent on each computer on which you will be using SMNP functionality.

For more information about Genesys SNMP Master Agent, refer to the *Framework 8.0 Management Layer User's Guide.*

Procedure: Configuring an SNMP Master Agent Application object using Genesys Administrator

Purpose: To enable SNMP functionality.

Prerequisites

- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and select New in the toolbar. This opens a Browse dialog box

that lists available application templates. If an SNMP Master Agent template file is not listed, do one of the following:

- Import the `SNMP_Master_Agent_<current-version>.apd` file from the Management Framework 8.0 product CD.
- Create a new template using the procedure “Creating a new application template using Genesys Administrator” on page 265, and repeat this step.

2. In the `Browse` dialog box, select the SNMP Master Agent template file. The `Configuration` tab for the new SNMP Master Agent `Application` object appears in the Details panel.
3. In the `General` section, enter a descriptive name in the `Name` field—for example, `SNMP_MA`.
4. In the `Server Info` section:
   a. In the `Host` field, click the magnifying glass icon to select the `Host` object on which this SNMP Master Agent is running.
   b. For each listening port that an application must use to connect to SNMP Master Agent:
      i. In the `Listening Ports` field, click `Add`.
      ii. Enter the port properties in the `Port Info` dialog box.
      iii. Click `OK`.
   c. For the `Working Directory, Command Line, and Command Line Arguments` fields, do one of the following:
      - Enter the appropriate information in the three text boxes. For information about command-line parameters, see Chapter 8 on page 165.
      - Type a period (`.`) in the `Working Directory` and `Command Line` text boxes, and leave the `Command Line Arguments` text box blank. The information will be filled in automatically when you install SNMP Master Agent, but only if the Installation Package can connect to Configuration Server.
5. Click `Save` or `Apply` in the toolbar to save the new object. The new object will appear in the list of applications.
6. Add a connection from Solution Control Server to this SNMP Master Agent, as follows:
   a. Open the Solution Control Server `Application` object `Configuration` tab.
   b. In the `General` section, add the connection to the SNMP Master Agent object just created. In the `Connections` field:
      i. Click `Add` to open the `Connection Info` dialog box.
      ii. Enter the properties of the connection.
      iii. Click `OK`.

c. Click Save or Apply in the toolbar to save the configuration changes.

End of procedure

Procedure:
Configuring an SNMP Master Agent Application object using Configuration Manager

Purpose: To enable SNMP functionality.

Prerequisites

- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the Environment > Applications folder and select New > Application, which opens the Browse dialog box that lists the available application templates. If an SNMP Master Agent template is not listed, do one of the following:
   - Import the SNMP_Master_Agent_<current-version>.apd template file from the Management Framework product CD.
   - Create a new template using the procedure "Creating a new application template using Configuration Manager" on page 267, and then repeat this step.
2. In the Browse dialog box, select the SNMP Master Agent template file, which opens the Properties dialog box for the new SNMP Master Agent Application object.
3. On the General tab, enter a descriptive name.
4. On the Server Info tab:
   - Click the Browse button next to the Host drop-down list, and select the host on which this SNMP Master Agent will run.
   - Specify the listening port(s) that SNMP Master Agent must use for communications with NMS.
   - Leave the rest of the fields at their default values.
5. On the Start Info tab, do one of the following:
   - Enter the appropriate information in each of the Working Directory, Command Line, and Command Line Arguments text boxes. For information about command-line parameters, see Chapter 8 on page 165.
   - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install SNMP

Master Agent, but only if the Installation Package can connect to Configuration Server.

6. Click OK to save the configuration.
7. Add a connection from Solution Control Server to this SNMP Master Agent, as follows:
   a. Open the Solution Control Server Application object Properties dialog box.
   b. Select the Connections tab and click Add to open the Connection Info Properties dialog box.
   c. Use the Browse button next to the Server field to select the SNMP Master Agent object just created.
   d. Click OK to save the connection and close the Connection Info Properties dialog box.
   e. Click OK to close the Solution Control Server Properties dialog box.

End of procedure

Procedure: Manually installing SNMP Master Agent on UNIX

Purpose: To enable SNMP functionality.

Prerequisites

- An SNMP Master Agent Application object exists.

Start of procedure

1. On the Management Framework 8.0 product CD, in the appropriate `management_layer/snmp_master_agent/<operating_system>` directory, locate a shell script called `install.sh`.
2. Type the file name at the command prompt, and press Enter.
3. To specify the host name for this SMNP Master Agent, do one of the following:
   - Type the name of the host, and press Enter.
   - Press Enter to select the current host.
4. Enter the Configuration Server host name, and press Enter.
5. Enter the Configuration Server network port, and press Enter.
6. Enter the Configuration Server user name, and press Enter.
7. Enter the Configuration Server password, and press Enter.

8. The installation displays the list of `Application` objects of the specified type configured on this `Host` object. Type the number corresponding to the SNMP Master Agent `Application` object you configured on page 153, and press `Enter`.
9. To specify the destination directory, do one of the following:
   - Press `Enter` to accept the default.
   - Enter the full path of the directory, and press `Enter`.
10. If the target installation directory has files in it, do one of the following:
    - Type `1` to back up all the files in the directory, and press `Enter`. Specify the path to which you want the files backed up, and press `Enter`.
    - Type `2` to overwrite only the files in this installation package, and press `Enter`. Type `y` to confirm your selection, and press `Enter`.

      Use this option only if the application already installed operates properly.
    - Type `3` to erase all files in this directory before continuing with the installation, and press `Enter`. Type `y` to confirm your selection, and press `Enter`.

    The list of file names will appear on the screen as the files are copied to the destination directory.
11. For the product version to install, do one of the following:
    - Type `32` to select the 32-bit version, and press `Enter`.
    - Type `64` to select the 64-bit version, and press `Enter`.

End of procedure

Procedure: Manually installing SNMP Master Agent on Windows

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Purpose: To enable SNMP functionality.

Prerequisites

- An SNMP Master Agent `Application` object exists.

Start of procedure

1. On the Management Framework 8.0 product CD in the appropriate management_layer\snmp_master_agent\windows directory, locate and double-click setup.exe to start the Genesys Installation Wizard.
2. Use the About button on the wizard's Welcome page to review the read_me file. The file also contains a link to the server's Release Notes file.
3. Click Next to start the installation.
4. On the Connection Parameters to the Genesys Configuration Server page, specify the host name, port, user name, and password of Configuration Server, and then click Next.
5. On the Select Application page, select the name of the SNMP Master Application object that you configured on page 153, and then click Next.
6. On the Choose Destination Location page, the wizard displays the destination directory if specified in the Working Directory property of the server's Application object during configuration. If you entered a period (.) in this field when configuring the object, or if the specified path is invalid, the wizard generates a path to the destination directory in the C:\Program Files\GCTI\<Product Name> format.

   If necessary, use the:

   - Browse button to select another destination folder. In this case, the wizard will update the Application object's Working Directory property in the Configuration Database.
   - Default button to reinstate the path specified in the Working Directory property.

   Click Next to proceed.
7. On the Ready to Install page, click:
   - Back to update any installation information.
   - Install to proceed with the installation.
8. On the Installation Complete page, click Finish.

   As a result of the installation, the wizard adds Application icons to the:

   - Windows Start menu, under Programs > Genesys Solutions > Management Layer.
   - Windows Add or Remove Programs window, as a Genesys server.
   - Windows Services list, as a Genesys service, with Automatic startup type.

End of procedure

Next Steps

After you successfully install and configure the Management Layer components as described in this chapter, consider whether you would like to configure the following:

- Force logged-in users to log in again after a period of inactivity. Refer to “Forced Re-Login for Inactivity” on page 60.
- Redundant Message Servers, Solution Control Servers, or SNMP Master Agents. Refer to Chapter 9 on page 183.
- Distributed Solution Control Servers. Refer to Chapter 10 on page 239.

Continuing the Installation of Your System

Once the Management Layer is set up, you can then deployed:

- Genesys Administrator, if you are going to use it and you have not deployed it already. To do so, use the instructions in the *Framework 8.0 Genesys Administrator Deployment Guide*.
- The rest of the Framework components and the contact center environment, as described in Chapter 7 on page 159.

Chapter

7 Setting Up the Rest of Your System

Now that you deployed the Configuration Layer and, if required, the Management Layer, you can deploy the rest of the Framework components and the contact center environment. This chapter provides a brief overview of this process.

This chapter contains the following sections:

- Recommended Order, page 159
- Media Layer, page 161
- Telephony Objects, page 161
- Contact Center Objects, page 161
- Services Layer, page 164
- Next Steps, page 164

Recommended Order

Note: If you are using Genesys Configuration Wizards, this section does not apply to you. Configuration Wizards automatically use the recommended order.

Manual deployment of the other Framework 8.0 components and contact center environment objects involves:

- Configuring the components via Configuration Manager. If you have installed Genesys Administrator, you might use this instead of Configuration Manager to configure some types of objects. Refer to *Framework 8.0 Genesys Administrator Help* for more information.
- Manually installing the configured components.

Before you proceed, make sure that the Configuration Layer and Management Layer components are installed, configured, and running (see Chapter 5 on page 77 and Chapter 6 on page 111, respectively). To help you prepare accurate configuration information and become familiar with the configuration process, read Chapter 3, "Planning the Installation," on page 37 for help with object-configuration information.

Follow this order for the manual deployment of the other Framework 8.0 components and contact center environment objects:

1. Media Layer:
   - T-Server
   - HA Proxy for a specific type of T-Server (if applicable)

   Note: Deployment instructions for T-Server and HA Proxy (if applicable) are located in the latest version of the *Framework T-Server Deployment Guide* for your specific T-Server.

2. Telephony Objects:
   - Switching Offices
   - Switches
   - Agent Logins
   - DNs

   Note: Configuration instructions for telephony objects are located in the latest version of the *Framework T-Server Deployment Guide* for your specific T-Server.

3. Contact Center Objects:
   - Access Groups
   - Skills
   - Persons
   - Agent Groups
   - Places
   - Place Groups
4. Services Layer:
   - Stat Server
   - DB Server for solutions

Genesys recommends registering only those entities that you plan to use in the current configuration. The more data in the Configuration Database, the longer it takes for the CTI setup to start up, and the longer it takes to process configuration data. Remember that adding configuration objects to the Genesys Configuration Database does not cause any interruption in the contact center operation.

Depending on how much work it is to configure all applications and objects, consider registering more Person objects first, with a set of privileges that lets them perform configuration tasks.

Warning! When configuring redundant applications, do *not* select the redundancy type `Not Specified` unless using a switchover mechanism other than that provided by the Management Layer. It is acceptable, however, to leave the redundancy type `Not Specified` for nonredundant applications (that is, applications that do not have backup servers associated with them).

Media Layer

Component (T-Server and HA Proxy, if applicable) configuration and installation for the Media Layer is covered in the *latest version of the Framework T-Server Deployment Guide* for your specific T-Server. Also covered in that Guide is information about deploying components for redundant and multi-site configurations.

Telephony Objects

The configuration of Configuration Database objects for the telephony equipment used in the contact center is described in the *latest version of the Framework T-Server Deployment Guide* for your specific T-Server.

Contact Center Objects

Configure Configuration Database objects for the contact center personnel and related entities.

Access Groups

Before deciding what kind of Access Groups you must configure, look at the default Access Groups the Configuration Layer supports and the default access control settings in general.

The default security system may cover all of your needs. If a more complex access control system makes sense for your contact center, Genesys recommends managing it through Access Groups and folders rather than at the level of individuals and objects.

To define an Access Group and its permissions:

1. Identify groups of people that are handling specific activities in the customer interaction network.
2. Create the required `Access Group` objects.
3. Set Access Group privileges with respect to the object types, using the folders' `Security` tabs.

In addition, to simplify the security settings, make sure that permissions are set and changed recursively using the permission propagation mechanism.

Skills

Define agent skills that might be considered as criteria for interaction processing. Skills are configured as independent configuration objects; any Agent can be associated with more than one configured Skill. Therefore, it may be more practical to register Skills before the Agents are configured.

Persons

There are two major categories of Persons: Agents and Nonagents. The latter category includes all Persons other than agents that need access to the CTI applications; for example, Center Administrators, Data Network and Telephony Network personnel, designers of interaction-processing algorithms, or Supervisors.

The characteristics of your business environment and your current priorities completely determine the order of registering Persons. Most often, you will want to first configure a few registered Nonagents with a high level of access to help you set up the Configuration Database.

Assign Agent Logins and Skills when registering Agents.

Note: You create Agent Logins when you are configuring the Switch object. Refer to the latest version of the *Framework T-Server Deployment Guide* for your specific T-Server for instructions.

If a few Agents have a certain Skill of the same level, consider using a wizard that adds the Skill to multiple Person objects after you create them. To launch the wizard, select two or more Person objects that have the `Is Agent` check box selected, right-click, and select `Manage Skills`. Refer to *Framework 8.0 Configuration Manager Help* for more information.

Remember that the Configuration Layer requires that you assign a unique user name to each Person, including agents. Consider using employee IDs configured in Person objects as default user names and passwords.

Starting in release 7.6, new Persons by default are not automatically assigned to any access group, by default. They must be assigned to one or more Access Groups explicitly. Users created in release 7.5 or earlier keep their existing set of permissions and Access Group assignments. If you want new users to be added automatically to predefined Access Groups, as was the behavior in release 7.5 and earlier, you must manually disable this feature using the configuration option `no-default-access`. Refer to the chapter "No Default Access for New Users" in the *Genesys 8.0 Security Deployment Guide* for more information about this feature, and how to use or disable it.

Some GUI applications also use Ranks to determine what functionality is made available to the currently logged on Person. Unless Agents are required to use rank-dependent applications in their work, you do not have to assign any specific Ranks to them.

Ranks, as well as access privileges, are more important when registering non-agents. When registering non-agents, consider the role they have in the customer interaction business. Do these Persons need to monitor agents' performance? Will they need to configure the telephony resources? Are they going to design routing strategies? Having answers to these questions makes it easier to correctly set up the access privileges with respect to configuration objects, and Ranks with respect to different applications objects.

Remember that Ranks with respect to applications are not the same as access privileges with respect to the configuration objects. You must explicitly define Ranks. Access privileges are assigned by default, according to whether the Person is an agent or not.

Genesys does not recommend changing the default access-control setting, unless absolutely necessary. Remember, the more complex the security system implemented, the more difficult it becomes to administer the database, and the more it affects the performance of the Configuration Layer software.

Note: See also the Security Considerations section of Chapter 3, "Planning the Installation," on page 37.

Agent Groups

Agent Groups are an indispensable element of almost every contact center. Remember that you can assign an agent to more than one group at a time. If you create agent groups based on Skills, use the `Find` command or the `Dependency` tab of a Skill to quickly identify all the agents that have the Skill in question.

Places

If you use Genesys CTI applications to distribute calls to individual agents or agent groups that are not limited by the switch ACD configuration, set up Places and assign individual DNs to them. Because a typical Place consists of more than one DN, prepare the actual layout of the numbering plan to correctly configure the Places, and assign DNs to them.

Place Groups

Define Place Groups and assign individual Places to them only if they will be used for distributing calls to groups of Places and, therefore, you will need to collect availability information and real-time statistics for such groups.

Services Layer

Genesys recommends that you configure and install components of the Services Layer when you deploy the solution they will serve.

Stat Server

The configuration and installation procedures for Stat Server are described in the documentation for Stat Server 7.x.

DB Server for Solutions

The configuration and installation procedures for a DB Server being used to access databases other than the Configuration Database and Log Database are identical to those for the DB Server for the Log Database (see “Deploying Log DB Server” on page 125). The procedures are also described in the *Framework 8.0 DB Server User’s Guide.*

Next Steps

After you have completed all of this configuration, the Framework instance is configured and registered in the Configuration Database. You can now use Wizard Manager to deploy any solution by using the appropriate Configuration Wizard.

Chapter

8 Starting and Stopping Framework Components

This chapter provides instructions on how to start and stop most Framework components by using either the Management Layer or manual procedures.

This chapter contains the following sections:

- Introduction, page 165
- Starting and Stopping with the Management Layer, page 167
- Starting with Startup Files, page 169
- Starting Manually, page 170
- Stopping Manually, page 181
- Starting and Stopping with Windows Services Manager, page 181

Note: This chapter applies to all Framework components except Genesys Administrator. For information about this component, refer to the *Framework 8.0 Genesys Administrator Deployment Guide*.

Introduction

You can start and stop most Framework components by using the Management Layer, a startup file, a manual procedure, or the Services Manager.

With all these methods, command-line parameters are usually required for a server application in addition to an executable file name.

Common command-line parameters are as follows:

`-host` The name of the host on which Configuration Server is running.

`-port` The communication port that client applications must use to connect to Configuration Server.

`-app` The exact name of an application as configured in the Configuration Database.

`-l` The license address. Use for the server applications that check out technical licenses. Can be either of the following:

- Full path to and the exact name of the license file used by an application. For example, `-l /opt/mlink/license/license.dat`.
- 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`.

`-v` The version of a Framework component.
Note that specifying this parameter does not start an application, but returns its version number instead. Either uppercase (`V`) or lowercase (`v`) letter can be used.

`-nco X/Y` The Nonstop Operation feature is activated; `X` exceptions occurring within `Y` seconds do not cause an application to exit. If the specified number of exceptions is exceeded within the specified number of seconds, the application exits or, if so configured, the Management Layer restarts the application. If you do not specify a value for the `-nco` parameter, the default value (6 exceptions handled in 10 seconds) applies. To disable the Nonstop Operation feature, specify `-nco 0` when starting the application.

`-lmspath` The full path to log messages files (the common file named `common.lms` and the application-specific file with the extension `*.lms`) that an application uses to generate log events. This parameter is used when the common and application-specific log message files are located in a directory other than the application's working directory, for example, when the application's working directory differs from the directory to which the application is originally installed. Note that if the full path to the executable file is specified in the startup command line (for instance, `c:\gcti\multiserver.exe`), the path specified for the executable file is used for locating the `*.lms` files, and the value of the `lmspath` parameter is ignored.

Warning! An application that does not find its `*.lms` file at startup cannot generate application-specific log events and send them to Message Server.

Note: In the command-line examples in this document, angle brackets indicate variables that you must replace with appropriate values.

Starting and Stopping with the Management Layer

You can use Genesys Administrator or Solution Control Interface (SCI) to start and stop applications via the Management Layer.

Note: To operate with the Management Layer, Genesys Administrator must be configured as described in the *Framework 8.0 Genesys Administrator Deployment Guide*.

Before starting an `Application` with the Management Layer, make sure the `Application's` startup parameters are correctly specified in the `Application's` properties. In the `Server Info` section of the `Application's Configuration` tab (in Genesys Administrator), or on the `Start Info` tab (in Configuration Manager), check that the following entries are correct:

- `Working Directory`—The directory in which the application is installed and/or is to run
- `Command Line`—The name of the executable file
- `Command Line Arguments`—The command-line parameters

The command-line parameters common to Framework server components are described on page 165.

After you correctly specify the command-line parameters, you can start and stop the following Framework components from Genesys Administrator or SCI:

- Configuration Server (the `Command Line Arguments` are not required for the primary Configuration Server)

  Note: For the Management Layer to start Configuration Server, you must modify the Configuration Server application in the Configuration Database, using the procedure “Modifying a Configuration Server Application object using Configuration Manager” on page 105.

- Configuration Server Proxy
- DB Server

  Note: For the Management Layer to start the DB Server dedicated to the Configuration Database, you must create and modify a DB Server Application object in the Configuration Database, as described in “Enabling Management Layer Control of Configuration Layer” on page 104.

- Message Server

- SNMP Master Agent
- T-Server
- HA Proxy
- Stat Server

The Management Layer can also restart failed applications; to enable the autorestart functionality for a particular application, select the corresponding check box in the applications's properties.

Note that when an application is started (or restarted) via the Management Layer, it inherits environment variables from Local Control Agent (LCA), which executes the startup command. Therefore, you must also set the environment variables required for the application (such as DB Server) for the account that runs LCA.

Warning! Stopping an application via the Management Layer is not considered an application failure. Therefore, the Management Layer does not restart applications that it has stopped unless you have configured an appropriate alarm condition and alarm reaction for them.

Stop vs. Graceful Shutdown

When you stop an application or a solution, the application or solution shuts down, ceasing all processing immediately. This may have a detrimental effect on the rest of the system.

Starting in release 8.0, you can stop an application or a solution gracefully, known as a g*raceful shutdown* or *graceful stop*. Applications refuse any new requests, but continue to process their current requests. A solution gracefully shuts down all of its composite applications, then stops.

Note: Because a number of solutions can share the same applications, some solution components may continue to have *Started* status after you stop the solution.

Only applications and solutions that support the graceful stop functionality can be stopped gracefully. Applications and solutions that do not support this functionality shut down ungracefully.

If you are unsure if the application supports graceful shutdown, you can use the configuration option `suspending-wait-timeout` to configure a timeout. If the status of the application changes to *Suspending* within this time, the application supports graceful shutdown. If the status does not change to *Suspending* within the timeout, the application does not support graceful shutdown, and the application will then stop ungracefully after the timeout expires. Refer to the *Framework 8.0 Configuration Options Reference Manual* for a detailed description of this configuration option and how to use it.

Refer to *Framework 8.0 Genesys Administrator Help Framework* or *8.0 Solution Control Interface Help* for more information about stopping gracefully, and about configuring the timeout.

Starting with Startup Files

Startup files are files named (or have an extension of) `run.sh` (on UNIX) or `startServer.bat` (on Windows) and which installation scripts create and place into the applications' directories during installation. For additional information about how to use startup files, refer to the *Framework 8.0 Management Layer User's Guide.*

Note: You must manually modify the `run.sh` file created for a redundant server before you can use it to start the server. Refer to Chapter 9 on page 183 for more information.

Procedure:
Starting an application using its startup file

Prerequisites

- The startup parameters in the startup file are correct.
- The required applications that should be running for this application to start are installed and running. See the appropriate sections in "Starting Manually" on page 170 to identify which applications should be running for a particular application to start.

Start of procedure

1. To start the application on UNIX, go to the directory in which the application is installed and type the following command line:
   ```
   sh run.sh
   ```
2. To start the application on Windows, do one of the following:
   - Double-click the `startServer.bat` icon in the directory in which the application is installed.
   - From the MS-DOS window, go to the directory in which the application is installed and type `startServer.bat` at the command line.

End of procedure

Starting Manually

When using a manual procedure to start an application, specify the startup parameters in the command prompt, whether starting on UNIX or Windows. In the command prompt, command-line parameters must follow the name of the executable file. On the `Shortcut` tab of the `Program Properties` dialog box, command-line parameters must also follow the name of the executable file.

The command-line parameters common to Framework server components are described on page 165.

General Limitation

When an application is installed on a UNIX operating system and the application name, as configured in the Configuration Database, contains spaces (for example, T-Server Avaya), you must surround the application name by quotation marks (" ") in the command line, as follows:

```
-app "T-Server Avaya"
```

Specify the rest of the command-line parameters as for any other application.

DB Server

The DB Server startup procedure depends on the database to which this DB Server provides access. If DB Server provides access to the Configuration Database, it must operate as an independent server; that is, DB Server must read all configuration information from its configuration file. When you start DB Server with the application name `cfg_dbserver`, DB Server reads all configuration information from its configuration file.

If DB Server provides access to a database other than the Configuration Database—for example, to the Log Database—it must operate as a client of Configuration Server; that is, DB Server must be started with an application name other than `cfg_dbserver,` as configured in the Configuration Database. When you start DB Server with an application name specified in the Configuration Database, DB Server reads all configuration information from Configuration Database. During operation, DB Server constantly receives updates on configuration changes from Configuration Server.

Whether you start DB Server as an independent server or as a client of Configuration Server, DB Server requires that you specify the Configuration Server host and port in the startup command line.

The command-line parameters common to Framework server components are described on page 165.

In addition, you can use these command-line parameters when starting DB Server:

`-c`	DB Server reads its configuration settings from a configuration file with the specified name. If you set this parameter, its value overrides the default name of the

configuration file (`dbserver.conf` on UNIX or `dbserver.cfg` on Windows).

`-cfg` DB Server for the Configuration Database starts with an application name other than `cfg_dbserver`, but still reads its configuration from a configuration file. When you specify this parameter, the Management Layer can restart DB Server that is configured as an application even when Configuration Server is not available. Use this parameter for starting a backup DB Server for the Configuration Database. This parameter does not require any value. For more information, see Chapter 9 on page 183.

Procedure: Starting DB Server manually

Prerequisites

- The DBMS server is running.

Start of procedure

1. To start DB Server on UNIX, go to the directory in which DB Server is installed and do one of the following:

- To use only the required command-line parameters, type the following command line:

```
sh run.sh
```

- To specify the command line yourself, or to use additional command-line parameters, type the following command line:

```
multiserver -host <Configuration Server host> -port
<Configuration Server port> -app <DB Server Application>
[<additional parameters and arguments as required>]
```

2. To start DB Server on Windows, do one of the following:

- Use the `Start > Programs` menu.
- To use only the required command-line parameters, go to the directory in which DB Server is installed, and double-click the `startServer.bat` file.
- To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which DB Server is installed, and type the following command line:

```
multiserver.exe -host <Configuration Server host>
-port <Configuration Server port> -app <DB Server Application>
[<additional parameters and arguments as required>]
```

End of procedure

Configuration Server

Configuration Server does not require any of the common command-line parameters for startup. To verify the database object integrity, you can specify the following additional command-line parameters that are specific to Configuration Server:

`-checkdb` An instance of Configuration Server starts, verifies the database object integrity, and terminates; all log messages are written in the log output.

`-checkerrors` An instance of Configuration Server starts, verifies the database object integrity, and terminates; error log messages are written in the log output.

You can also use the following command-line parameters when starting Configuration Server:

`-c` Configuration Server reads its configuration settings from a configuration file with the specified name. If you set this parameter, its value overrides the default name of the configuration file (`confserv.conf` on UNIX or `confserv.cfg` on Windows).

`-s` Configuration Server reads its configuration settings from a configuration section with the specified name. The section must be configured within Configuration Server's configuration file; the section name must be the same as the name of the Configuration Server application configured in the Configuration Database. Use this parameter to start a backup Configuration Server.

`-p` Forces an instance of Configuration Server to start, encrypt the database password in the configuration file, and terminate. Refer to "Encrypting the Configuration Database Password" on page 96 for instructions on encrypting the Configuration Database password.

`-cfglib_port` Configuration Server opens the listening port specified in the command line. The port is opened in unsecured mode. This port is not written to the Configuration Server `Application` object, and does not survive a restart of Configuration Server. Do not use this option as a part of normal startup. Use it only as a last resort when regular secure ports cannot be accessed because of a configuration problem, such as incorrect or expired certificates, or when a duplicate port (not necessarily secure) is specified in the configuration and therefore cannot be opened.

Procedure: Starting Configuration Server manually

Prerequisites

- The DB Server that provides access to the Configuration Database is installed and running.

Start of procedure

1. To start Configuration Server on UNIX, go to the directory in which Configuration Server is installed, and do one of the following:
   - To use only the required command-line parameters, type the following command line:
     ```
     sh run.sh
     ```
   - To specify the command line yourself, or to use additional command-line parameters, type the following command line:
     ```
     confserv [<additional parameters and arguments as required>]
     ```
2. To start Configuration Server on Windows, do one of the following:
   - Use the `Start > Programs` menu.
   - To use only the required command-line parameters, go to the directory in which Configuration Server is installed, and double-click the `startServer.bat` file.
   - To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which Configuration Server is installed, and type the following command line:
     ```
     confserv.exe [<additional parameters and arguments as required>]
     ```

End of procedure

Configuration Server Proxy

The command-line parameters common to Framework server components are described on page 165.

Note: Configuration Server Proxy does not support additional command-line parameters specific to Configuration Server.

Procedure: Starting Configuration Server Proxy manually

Prerequisites

- The DB Server that provides access to the Configuration Database is installed and running.
- The Master Configuration Server is installed and running.
- License Manager is installed and running.

Start of procedure

1. To start Configuration Server Proxy on UNIX, go to the directory in which Configuration Server Proxy is installed and do one of the following:
   - To use only the required command-line parameters, type the following command line:
     ```
     sh run.sh
     ```
   - To specify the command line yourself, or to use additional command-line parameters, type the following command line:
     ```
     confserv [<additional parameters and arguments as required>]
     ```
2. To start Configuration Server Proxy on Windows, do one of the following:
   - Use the `Start > Programs` menu.
   - To use only the required command-line parameters, go to the directory in which Configuration Server Proxy is installed and double-click the `startServer.bat` file.
   - To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which Configuration Server Proxy is installed, and type the following command line:
     ```
     confserv.exe [<additional parameters and arguments as required>]
     ```

End of procedure

Configuration Manager

Procedure: Starting Configuration Manager manually

Prerequisites

- The DB Server that provides access to the Configuration Database is installing and running.
- Configuration Server is installed and running.

Note: Configuration Manager runs only on Windows.

Start of procedure

1. To start Configuration Manager on Windows, do one of the following:
   - From the Windows `Start` menu, select `Programs > Genesys Solutions > Framework > Configuration Manager > Start Configuration Manager`.
   - Go to the directory in which Configuration Manager is installed and double-click the `Sce.exe` icon.
2. Log in to Configuration Manager as described in Appendix C on page 287.

End of procedure

License Manager

For information about starting License Manager, see the *Genesys Licensing Guide,* which is available on the Genesys Documentation Library DVD.

Message Server

The command-line parameters common to Framework server components are described on page 165.

Procedure: Starting Message Server manually

Prerequisites

- The DB Server that provides access to the Configuration Database is installed and running.
- If you plan to use centralized logging, the DB Server that provides access to the Log Database must be installed and running.

Start of procedure

1. To start Message Server on UNIX, go to the directory in which Message Server is installed, and do one of the following:
   - To use only the required command-line parameters, type the following command line:

     ```
     sh run.sh
     ```

- To specify the command line yourself, or to use additional command-line parameters, type the following command line:

  ```
  MessageServer -host <Configuration Server host> -port
  <Configuration Server port> -app <Message Server Application>
  [<additional parameters and arguments as required>]
  ```

2. To start Message Server on UNIX, do one of the following:
   - Use the `Start > Programs` menu.
   - To use only the required command-line parameters, go to the directory in which Message Server is installed, and double-click the `startServer.bat` file.
   - To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which Message Server is installed, and type the following command line:

     ```
     MessageServer.exe -host <Configuration Server host> -port
     <Configuration Server port> -app <Message Server Application>
     [<additional parameters and arguments as required>]
     ```

End of procedure

Local Control Agent

With default settings, Local Control Agent starts automatically every time a computer is started or rebooted. You can start LCA from the `Start > Programs` menu on Windows.

For instructions on changing the default LCA port value, refer to Step 2 in the procedure “Creating a Host object in Configuration Manager” on page 103.

Solution Control Server

The command-line parameters common to Framework server components are described on page 165.

Procedure: Starting Solution Control Server manually

Prerequisites

- The DB Server that provides access to the Configuration Database is installed and running.
- Configuration Server is installed and running.
- If you are starting SCS in Distributed mode, or if HA support or SNMP functionality is required, License Manager must be installed and running.

Start of procedure

1. To start SCS on UNIX, go to the directory in which SCS is installed, and do one of the following:
   - To use only the required command-line parameters, type the following command line:

     ```
     sh run.sh
     ```
   - To specify the command line yourself, or to use additional command-line parameters, type the following command line:

     ```
     scs -host <Configuration Server host> -port <Configuration
     Server port> -app <Solution Control Server Application>
     [<additional parameters and arguments as required>]
     ```
2. To start SCS on Windows, do one of the following:
   - Use the `Start > Programs` menu.
   - To use only the required command-line parameters, go to the directory in which SCS is installed, and double-click the `startServer.bat` file.
   - To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which SCS is installed, and type the following command line:

     ```
     scs.exe -host <Configuration Server host> -port <Configuration
     Server port> -app <Solution Control Server Application>
     [<additional parameters and arguments as required>]
     ```

End of procedure

Optional Command-line Parameter

This parameter can be used on UNIX or on Windows:

`-f <SCS Configuration file>`

SCS gets Configuration Server's settings from the SCS configuration file. Because the SCS configuration file contains a list of Configuration Servers to which it should try to connect, this option allows SCS to connect to Configuration Server which is running in the Primary mode.

SCS Configuration File

For Windows, use the filename extension `.cfg`. For UNIX, use the extension `.conf`.

Here is a sample of the contents:

```
[backup_configserver]
host=<backup CS host name>
port=<backup CS port>
```

```
name=<SCS application name>
server=primary_configserver

[primary_configserver]
host=<primary CS host name>
port=<primary CS port>
name=<SCS application name>
server=backup_configserver
```

Solution Control Interface

Procedure:
Starting Solution Control Interface manually

Prerequisites

- The DB Server that provides access to the Configuration Database is installing and running.
- Configuration Server is installed and running.
- Solution Control Server is installed and running.
- If you plan to use centralized logging, the DB Server that provides access to the Log Database must be installed and running.

Note: SCI runs only on Windows.

Start of procedure

1. To start SCI on Windows, do one of the following:
   - From the Windows `Start` menu, select `Programs > Genesys Solutions > Management Layer > Solution Control Interface Manager > Start Solution Control Interface.`
   - Go to the directory in which SCI is installed and double-click the `Sci.exe` icon.
2. Log in to SCI as described in Appendix C on page 287.

End of procedure

SNMP Master Agent

The command-line parameters common to Framework server components are described on page 165.

Procedure: Starting Genesys SNMP Master Agent manually

Prerequisites

- The DB Server that provides access to the Configuration Database is installing and running.
- Configuration Server is installed and running.
- If you plan to use SNMP alarm signaling, Message Server must be installed and running.

Start of procedure

1. To install SNMP Master Agent on UNIX, go to the directory in which SNMP Master Agent is installed, and do one of the following:
   - To use only the required command-line parameters, type the following command line:

     ```
     sh run.sh
     ```
   - To specify the command line yourself, or to use additional command-line parameters, type the following command line:

     ```
     gsnmpmasteragent -host <Configuration Server host> -port
     <Configuration Server port> -app <SNMP Master Agent Application>
     [<additional parameters and arguments as required>]
     ```
2. To install SNMP Master Agent on Windows, do one of the following:
   - Use the `Start > Programs` menu.
   - To use only the required command-line parameters, go to the directory in which SNMP Master Agent is installed, and double-click the `startServer.bat` file.
   - To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which SNMP Master Agent is installed, and type the following command line:

     ```
     gsnmpmasteragent.exe -host <Configuration Server host> -port
     <Configuration Server port> -app <SNMP Master Agent Application>
     [<additional parameters and arguments as required>]
     ```

End of procedure

Genesys Administrator

Information about starting and stopping Genesys Administrator is located in the *Framework 8.0 Genesys Administrator Deployment Guide*.

Before starting Genesys Administrator, be sure that the following components are running:

- DB Server that provides access to the Configuration Database
- Configuration Server

HA Proxy

Details on starting and stopping HA Proxy, if applicable, are located in the latest version of the *Framework T-Server Deployment Guide* for your specific T-Server.

If one or more HA Proxy components are required for T-Server connection to its switch, start HA Proxy before starting T-Server.

Before starting HA Proxy, be sure that the following components are running:

- DB Server that provides access to the Configuration Database
- Configuration Server

T-Server

Details on starting and stopping T-Server are located in the latest version of the *Framework T-Server Deployment Guide* for your specific T-Server.

Before starting T-Server, be sure that the following components are running:

- DB Server that provides access to the Configuration Database
- Configuration Server
- License Manager

Note: If an HA Proxy component is required for T-Server connection to its switch, you must start HA Proxy before starting T-Server.

Stat Server

Details on starting and stopping Stat Server are located in the documentation for your release of Stat Server.

Before starting Stat Server, be sure that the following components are running:

- The DB Server that provides access to the Configuration Database
- Configuration Server

Note: For Stat Server to operate correctly, T-Server must also be running.

Stopping Manually

Server Applications

Procedure: Stopping server applications manually

Start of procedure

1. To stop a server application on UNIX, use one of the following commands:
   - `Ctrl+C`
   - `kill <process number>`
2. To stop a server application on Windows, do one of the following:
   - Type `Ctrl+C` in the application's console window.
   - Click `End Task` in the Windows Task Manager.

End of procedure

GUI Applications

Procedure: Stopping GUI applications manually

Start of procedure

1. To stop a Windows-based GUI application, such as Configuration Manager or Solution Control Interface, select `File > Exit` in the main window.
2. To stop a web-based GUI application, such as Genesys Administrator, click `Logout` in the main page.

End of procedure

Starting and Stopping with Windows Services Manager

Starting with release 7.1.0, the Genesys setup procedures on Windows operating systems automatically install Genesys daemon applications as Windows Services, with the autostart capability.

When starting an application installed as a Windows Service, make sure that the startup parameters of the application are correctly specified in the ImagePath in the application folder that you can find in the Registry Editor.

The ImagePath must have the following value data:

```
<full path>\<executable file name> -service <Application Name as
Service> -host <Configuration Server host> -port <Configuration
Server port> -app <Application Name> -l <license address>
```

where the command-line parameters common to Framework server components are described on page 165 and where

`-service`	Name of the application running as a Windows service (typically, it matches the application name specified in the `-app` command-line parameter).

Framework components installed as Windows services with autostart capability are automatically started each time a computer on which they are installed is rebooted.

You can start Framework components installed as Windows Services with manual start capability by clicking on `Start` in Services Manager.

Note: Use the `Windows Services` window to change the startup mode from Automatic to Manual and vice versa.

You can stop any Framework components installed as Windows Services, regardless of the start capability, with the `Stop` button in Services Manager.

Chapter

9 Setting Up Redundant Components

This chapter provides instructions for configuring primary and backup Framework Servers.

This chapter contains the following sections:

- Introduction, page 183
- Redundant Configuration DB Servers, page 184
- Redundant Configuration Servers, page 192
- Redundant Client DB Servers, page 208
- Redundant Message Servers, page 214
- Redundant Solution Control Servers, page 221
- Redundant SNMP Master Agents, page 230

Introduction

The high availability architecture implies the existence of redundant applications, a primary and a backup, monitored by a management application.

The Configuration Layer and Management Layer support the `warm standby` redundancy type between redundant pairs of components within those layers. Both components in the pair must be configured with the `warm standby` redundancy type. The redundant architecture is described in *Framework 8.0 Architecture Help*. Redundancy types are described in the *Genesys 8.0 Security Deployment Guide*.

Configuration Layer and Management Layer also support switchovers between redundant client applications, regardless of the redundancy type specified by those applications.

Note: This chapter assumes that the primary server is already installed and operating. This chapter provides only instructions for installing the backup server and configuring the primary and backup servers to operate as a redundant pair.

Redundant Configuration DB Servers

This section describes how to set up redundant Configuration DB Servers—that is, DB Servers that are dedicated to provide access to the Configuration Database and that are not clients of Configuration Server.

To set up redundant DB Servers that provide access to databases other than the Configuration Database (such as the Log Database) and that are not clients of Configuration Server (such as Log DB Server), refer to "Redundant Client DB Servers" on page 208.

Note: In this section only, the term *DB Server* denotes a Configuration DB Server, not a Client DB Server.

Redundancy

Redundant DB Servers support only the `warm standby` redundancy type.

Setting Up Redundant Configuration DB Servers

The procedures in this section describe how to install and set up redundant Configuration DB Servers.

Installation Recommendations

If you are installing the primary and backup DB Servers on the same host computer, it is recommended that you:

- Install them in different directories.
- Specify a different port number for each server.

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.

Task Summary

The following table summarizes the steps required to set up redundant Configuration DB Servers.

Task Summary: Setting Up Redundant Configuration DB Servers

Task	Related Procedures and Information
1. Install and configure the backup DB Server.	To install DB Server, use one of the following procedures, as appropriate: • "Installing Configuration DB Server on UNIX" on page 79 • "Installing Configuration DB Server on Windows" on page 82 To configure DB Server, refer to "Configuring DB Server" on page 83.
2. Configure an `Application` object for the backup DB Server.	Use one of the following procedures, as appropriate: • "Configuring a backup Configuration DB Server Application object using Genesys Administrator" on page 186 • "Configuring a backup Configuration DB Server Application object using Configuration Manager" on page 187
3. Create an `Application` object for the primary DB Server if one does not already exist.	Use one of the following procedures, as appropriate: • "Configuring a DB Server Application object using Genesys Administrator" on page 106 • "Configuring a DB Server Application object using Configuration Manager" on page 107
4. Modify the `Application` object for the primary DB Server to work with backup DB Server.	Use one of the following procedures, as appropriate: • "Modifying a primary Configuration DB Server Application object using Genesys Administrator" on page 188 • "Modifying a primary Configuration DB Server Application object using Configuration Manager" on page 188
5. Modify the configuration files for the primary DB Server and the backup DB Server as described in "Modifying the Configuration Files" on page 189.	Use the instructions in "Modifying the Configuration Files" on page 189.
6. Modify the backup DB Server start file.	Use the procedure "Modifying a backup Configuration DB Server start file" on page 190.
7. Synchronize options and ports between the redundant Configuration DB Servers, if required.	Refer to "Synchronizing Options and Ports Between Primary and Backup Servers" on page 274 for more information and detailed instructions.

Procedure:
Configuring a backup Configuration DB Server Application object using Genesys Administrator

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning` > `Environment` > `Applications`, and click `New`.
2. In the `General` section of the `Configuration` tab:
   a. Enter a descriptive name other than `cfg_dbserver` in the `Name` text box.
   b. Select the appropriate template, as follows:
      i. Click the search icon in the `Application Template` field to open a `Browse` dialog box that lists the available application templates. If a DB Server template file is not listed, close the dialog box and import the `DBServer_<current-version>.apd` file from the Management Framework 8.0 product CD.
      ii. In the `Browse` dialog box, select the DB Server template file.
      iii. Click `OK`.
3. In the `Server Info` section:
   a. Select the `Host` object on which this DB Server runs.
   b. Specify the `Listening Port` that DB Server clients must use to connect to this DB Server.
   c. In the `Working Directory`, `Command Line`, and `Command Line Arguments` text boxes, do one of the following:
      - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see “Starting a Backup Configuration DB Server” on page 191.
      - Type a period (.) in the `Working Directory` and `Command Line` text boxes, and leave the `Command Line Arguments` text box blank. The information will be filled in automatically when you install the backup DB Server, but only if the Installation Package can connect to the primary Configuration Server.
   d. Enter appropriate values for the other mandatory fields (those indicated by red asterisks).
   e. Select `Auto-Restart`.

4. Click Save and Close to save the configuration.

End of procedure

Procedure: Configuring a backup Configuration DB Server Application object using Configuration Manager

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the Environment > Applications folder and select New > Application, which opens the Browse dialog box that lists the available application templates. If a DB Server template file is not listed, import the DBServer_<current-version>.apd file from the Management Framework 8.0 product CD.
2. In the Browse dialog box, select the DB Server template file, which opens the Properties dialog box for the new DB Server Application object.
3. On the General tab, specify an application name other than cfg_dbserver.
4. On the Server Info tab, specify:
   a. The host on which the backup DB Server is running.
   b. The port that DB Server clients must use to connect to DB Server.
5. On the Start Info tab:
   a. In the Working Directory, Command Line, and Command Line Arguments text boxes, do one of the following:
      - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see “Starting a Backup Configuration DB Server” on page 191.
      - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install the backup DB Server, but only if the Installation Package can connect to the primary Configuration Server.

   b. Select the Auto-Restart check box.
6. Click OK.

End of procedure

Procedure: Modifying a primary Configuration DB Server Application object using Genesys Administrator

Purpose: To enable the primary Configuration DB Server to work with the backup Configuration DB Server.

Prerequisites

- The primary and backup Configuration DB Server `Application` objects exist.
- You are logged in to Genesys Administrator.

Start of procedure

1. Log in to Genesys Administrator.
2. Go to `Provisioning` > `Environment` > `Applications`, and double-click the DB Server `Application` object `cfg_dbserver` to open its properties.
3. In the `Server Info` section of the `Configuration` tab:
   a. Select the `Application` object corresponding to the backup DB Server you want to use as the backup server.
   b. Select `Warm Standby` as the redundancy type.
4. Click `Save and Close` to save the configuration.

End of procedure

Procedure: Modifying a primary Configuration DB Server Application object using Configuration Manager

Purpose: To enable the primary Configuration DB Server to work with the backup Configuration DB Server.

Prerequisites

- The primary and backup Configuration DB Server `Application` objects exist.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, open the `Properties` dialog box of the DB Server `Application` object that you want to configure as the primary server.
2. On the `Server Info` tab:
    a. Use the `Browse` button to locate and select the `Application` object corresponding to the backup DB Server you want to use as the Backup Server.
    b. Select `Warm Standby` as the redundancy type.
3. On the `Start Info` tab, select `Auto-Restart` if required.
4. Click `OK` to save the configuration changes.

End of procedure

Modifying the Configuration Files

The configuration file for the backup DB Server must be the same as that for the primary DB Server, with the following exceptions:

- The `host` value can be different if the backup DB Server is installed on a different host computer other than the primary server.
- The `port` value must be unique.

The configuration file for the backup DB Server may or may not have been created during installation, depending on the option you chose. In either case, refer to “Configuring DB Server” on page 83 for instructions on configuring a DB Server configuration file.

Use the procedure “Adding LCA port information to the configuration files” on page 189 to allow both servers to be controlled by the Management Layer, and for switchover to occur when necessary.

Procedure:
Adding LCA port information to the configuration files

Purpose: To allow the Management Layer to control both servers, and to allow switchover to occur when necessary.

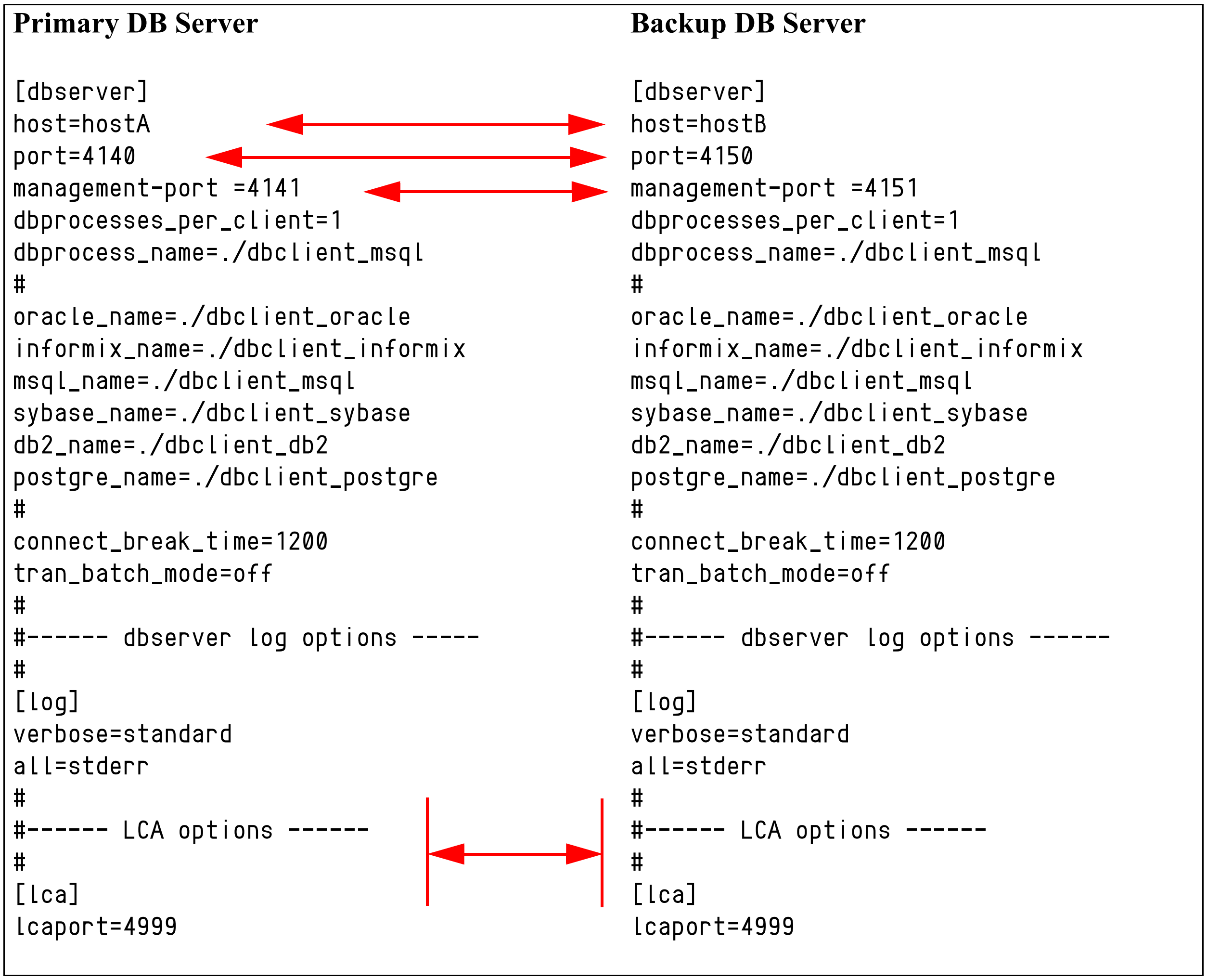
Start of procedure

1. Modify the configuration file for the primary DB Server, if necessary.
    a. Create the `lca` section (if it does not already exist), and configure the `lcaport` option in this section.
    b. Save and close the file.

2. Modify the configuration file for the backup DB Server.
   a. Create the `lca` section and configure the `lcaport` option in this section.
   b. Save and close the file.

End of procedure

Sample configuration files are shown side-by-side in Figure 8. The arrows show the areas affected by the notes in this section.



Primary DB Server

```
[dbserver]
host=hostA
port=4140
management-port =4141
dbprocesses_per_client=1
dbprocess_name=./dbclient_msql
#
oracle_name=./dbclient_oracle
informix_name=./dbclient_informix
msql_name=./dbclient_msql
sybase_name=./dbclient_sybase
db2_name=./dbclient_db2
postgre_name=./dbclient_postgre
#
connect_break_time=1200
tran_batch_mode=off
#
#------ dbserver log options -----
#
[log]
verbose=standard
all=stderr
#
#------ LCA options ------
#
[lca]
lcaport=4999
```

Backup DB Server

```
[dbserver]
host=hostB
port=4150
management-port =4151
dbprocesses_per_client=1
dbprocess_name=./dbclient_msql
#
oracle_name=./dbclient_oracle
informix_name=./dbclient_informix
msql_name=./dbclient_msql
sybase_name=./dbclient_sybase
db2_name=./dbclient_db2
postgre_name=./dbclient_postgre
#
connect_break_time=1200
tran_batch_mode=off
#
#------ dbserver log options ------
#
[log]
verbose=standard
all=stderr
#
#------ LCA options ------
#
[lca]
lcaport=4999
```

Figure 8: Sample Configuration Files for Primary and Backup DB Servers.

Procedure:
Modifying a backup Configuration DB Server start file

Purpose: To modify the backup Configuration DB Server start file `run.sh` (on UNIX) or `startserver.bat` (on Windows) so the application can be started correctly.

Start of procedure

1. In a text editor, open the start file `run.sh` (on UNIX) or `startserver.bat` (on Windows).
2. Change the argument for the `-app` parameter to the correct name of the backup DB Server application.
3. Add the following at the end of the command line:
   ```
   -cfg -c <backup_db_server_config_file_name> -cfg
   ```
4. Save and close the file.

End of procedure

Starting a Backup Configuration DB Server

When starting a backup DB Server, use the following command-line parameters:

`-c`	To specify the name of the configuration file that contains configuration information for the backup DB Server
`-app`	To specify the name of the backup DB Server application (see Step on page 185).

For a description of the command-line parameters specific to DB Server, refer to “DB Server” on page 170.

Procedure:
Starting a backup Configuration DB Server

Prerequisites

- The `run.sh` file (on UNIX) or `startserver.bat` file (on Windows) of the backup DB Server has been modified accordingly (see the procedure “Modifying a backup Configuration DB Server start file” on page 190).

Start of procedure

1. To start the backup DB Server on UNIX, do one of the following:
   - To start from Genesys Administrator or SCI, refer to “Starting and Stopping with the Management Layer” on page 167.
   - To start manually, go to the directory in which the backup DB Server is installed, and do one of the following:
     — To use only the required command-line parameters, type the following command line:
     ```
     sh run.sh
     ```

— To specify the command line yourself, or to use additional command-line parameters, type the following command line:

```
multiserver -host <Configuration Server host>
-port <Configuration Server port>
-app <backup DB Server Application> -cfg
-c <backup DB Server configuration file>
```

2. To start the backup DB Server on Windows, do one of the following:
   - To start as a Windows Service, refer to “Starting and Stopping with Windows Services Manager” on page 181.
   - To start from Genesys Administrator or SCI, refer to “Starting and Stopping with the Management Layer” on page 167.
   - To start manually, do one of the following:
     — Use the `Start > Programs` menu.
     — To use only the required command-line parameters, go to the directory in which the backup DB Server is installed, and double-click the file `startServer.bat`
     — To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which the backup DB Server is installed, and type the following command line:

```
multiserver.exe -host <Configuration Server host>
-port <Configuration Server port>
-app <backup DB Server Application>
-cfg -c <backup DB Server configuration file>
```

End of procedure

Redundant Configuration Servers

Redundancy

Redundant Configuration Servers support only the `warm standby` redundancy type.

Both the primary and backup Configuration Servers operate with the same Configuration Database. The backup Configuration Server does not accept client connections or make changes to the data until its role is switched to primary. When the backup Configuration Server starts, it establishes a connection to the primary Configuration Server. During the operation, the primary Configuration Server sends notifications about all changes made in the Configuration Database to the backup Configuration Server.

If there are any Configuration Server Proxies connected to the primary Configuration Server when it fails, those Proxy servers connect to the backup Configuration Server when it assumes the primary role.

Setting Up Redundant Configuration Servers

The procedures in this section describe how to install and set up redundant Configuration Servers.

Warnings!

- To ensure proper redundancy, Genesys recommends running the primary and backup Configuration Servers on separate computers.
- When both the primary and backup Configuration Servers are running, do not remove the backup Configuration Server `Application` object from the configuration.
- You are responsible for ensuring that the configuration options of the primary and backup Configuration Servers are the same, with some exceptions: the log options in the primary Configuration Server can differ from those in the backup Configuration Server configuration.

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.

Task Summary

The following table summarizes the steps required to set up redundant Configuration Servers.

Task Summary: Setting Up Redundant Configuration Servers

Task	Related Procedures and Information
1. Configure an `Application` object for the backup Configuration Server.	Use one of the following procedures, as appropriate: • "Configuring a backup Configuration Server Application object using Genesys Administrator" on page 194 • "Configuring a backup Configuration Server Application object using Configuration Manager" on page 195
2. Install a backup Configuration Server.	Use one of the following procedures, as appropriate: • To install on UNIX, use the procedure "Installing a backup Configuration Server on UNIX" on page 197. • To install on Windows, use the procedure "Installing a backup Configuration Server on Windows" on page 200.

Task Summary: Setting Up Redundant Configuration Servers (Continued)

Task	Related Procedures and Information
3. Modify the primary Configuration Server `Application` object to work with the backup Configuration Server.	Use one of the following procedures, as appropriate: • "Modifying a primary Configuration Server Application object using Genesys Administrator" on page 202 • "Modifying a primary Configuration Server Application object using Configuration Manager" on page 202
4. If you installed the backup Configuration Server on UNIX and chose to configure it after installation, create and modify the configuration file for the backup Configuration Server.	Use the procedure "Creating the Configuration File for a Backup Configuration Server" on page 203.
5. If you installed the backup Configuration Server on UNIX, modify the `run.sh` file.	Use the procedure "Modifying a backup Configuration Server start file" on page 204.
6. Synchronize options and ports between the redundant Configuration Servers, if required.	Refer to "Synchronizing Options and Ports Between Primary and Backup Servers" on page 274 for more information and detailed instructions.
7. Synchronize high-availability (HA) ports between the redundant Configuration Servers.	Refer to "Synchronizing HA Ports Between Redundant Configuration Servers" on page 205.

Procedure:
Configuring a backup Configuration Server Application object using Genesys Administrator

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and click New.
2. In the General section of the Configuration tab:
   a. Enter a descriptive name other than confserv in the Name text box.
   b. Select the appropriate template, as follows:
      i. Click the search icon in the Application Template field to open a Browse dialog box that lists the available application templates. If a Configuration Server template file is not listed, close the dialog box and import the Configuration_Server_<current-version>.apd file from the Management Framework 8.0 product CD.
      ii. In the Browse dialog box, select the Configuration Server template file.
      iii. Click OK.
3. In the Server Info section:
   a. Select the Host object on which this Configuration Server runs.
   b. Specify the Listening Ports that Configuration Server clients must use to connect to this Configuration Server.
   c. In the Working Directory, Command Line, and Command Line Arguments text boxes, do one of the following:
      - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see "Starting a Backup Configuration Server" on page 206.
      - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install the backup Configuration Server, but only if the Installation Package can connect to the primary Configuration Server.
   d. Enter appropriate values for the other mandatory fields (those indicated by red asterisks).
4. Click Save and Close to save the configuration.

End of procedure

Procedure: Configuring a backup Configuration Server Application object using Configuration Manager

Prerequisites

- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the Environment > Applications folder and select New > Application, which opens the Browse dialog box that lists the available application templates. If a Configuration Server template is not listed, import the Configuration_Server_<current-version>.apd template file from the Management Framework product CD.
2. In the Browse dialog box, select the Configuration Server template file, which opens the Properties dialog box for the new backup Configuration Server Application object.
3. On the General tab of the Properties dialog box, enter a name for the backup Configuration Server Application object. The application template provides information for the application Type and Version.
4. On the Server Info tab, specify:
   a. the host on which the backup Configuration Server is to be installed.
   b. the communication ports that clients must use to connect to this Configuration Server.
5. On the Start Info tab, in the Working Directory, Command Line, and Command Line Arguments text boxes, do one of the following:
   - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see “Starting a Backup Configuration Server” on page 206.
   - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install the backup Configuration Server, but only if the Installation Package can connect to the primary Configuration Server.
6. Click OK to create the Application object for the backup Configuration Server.
7. Open the Properties dialog box of the backup Configuration Server Application object.
8. Click the Security tab.
9. In the Log On As group section, make sure that This Account is selected, and that the account name matches the name of the Master Account.
10. Click OK to save any configuration changes.

End of procedure

Procedure:
Installing a backup Configuration Server on UNIX

Note: Refer to "Installing Configuration Server" on page 86 for general comments about installing Configuration Server.

Prerequisites

- The backup Configuration Server `Application` object exists.

Start of procedure

1. On the Management Framework 8.0 product CD, locate and open the appropriate installation directory for your environment:
   - For an enterprise (single-tenant) environment, the installation directory is `configuration_layer/configserver/single/<operating_system>`
   - For a multi-tenant environment, the installation directory is `configuration_layer/configserver/multi/<operating_system>`

   The installation script, called `install.sh`, is located in the appropriate directory.
2. Type the file name at the command prompt, and press `Enter`.
3. For the installation type, type `2` to select `Configuration Server Master Backup`, and press `Enter`.
4. For the external authentication option, type the number corresponding to the type of External Authentication that will be used (LDAP, Radius, both, or neither), and press `Enter`.

   Tip: If you select LDAP, be prepared with the URL to access the LDAP Server. For more information about LDAP configuration, see the *Framework 8.0 External Authentication Reference Manual*.
5. For the host name of this backup Configuration Server, do one of the following:
   - Specify the host name, and press `Enter`.
   - Press `Enter` to select the host on which this backup Configuration Server is being installed.
6. Specify the primary Configuration Server, as follows:

   a. Specify the primary `Configuration Server Hostname`, and press `Enter`.

   b. Specify a value for the `port` for the primary Configuration Server, and press `Enter`.

   c. Specify the `User name` of the primary Configuration Server, and press `Enter`.

d. Specify the `Password` for the primary Configuration Server, and press `Enter`.

7. Type the number corresponding to the `Application` object for the backup Configuration Server that you created, and press `Enter`.

8. Specify the full path of the destination directory, and press `Enter`.

9. If the target installation directory has files in it, do one of the following:
   - Type `1` to back up all the files in the directory, and press `Enter`. Specify the path to where you want the files backed up, and press `Enter`.
   - Type `2` to overwrite only the files in this installation package, and press `Enter`. Then, type `y` to confirm your selection, and press `Enter`.

     Use this option only if the application already installed operates properly.
   - Type `3` to erase all files in this directory before continuing with the installation, and press `Enter`. Then, type `y` to confirm your selection, and press `Enter`.

   The list of file names will appear on the screen as they are extracted and written to the destination directory.

10. For the product version to install, do one of the following:
    - Type `32` to select the 32-bit version, and press `Enter`.
    - Type `64` to select the 64-bit version, and press `Enter`.

11. Do one of the following:
    - Type `y` to configure the backup Configuration Server during installation (`now`), and press `Enter`. Go to Step 12 to specify values for the configuration file. For information about Configuration Server configuration options and their values, refer to the *Framework 8.0 Configuration Options Reference Manual.*
    - Type `n` to not configure backup Configuration Server during installation. In this case, you have finished installing Configuration Server; do not continue to the next step in this procedure. Before you can start Configuration Server, however, you must create a configuration file and set the configuration options in it. See “Configuring Configuration Server” on page 95.

12. For the `[confserv]` section:

    a. Specify a value for the backup Configuration Server `port`, and press `Enter`.

    b. Specify a value for the backup Configuration Server `management port`, and press `Enter`.

13. For the `[soap]` section, do one of the following:
    - Specify a value for the SOAP `port`, and press `Enter`.
    - Press `Enter` to leave this field blank if you are not using SOAP functionality.

14. For the [dbserver] section:
    a. Specify the name of the DB Server host, and press Enter.
    b. Specify a value for the DB Server port, and press Enter.
    c. Type the number corresponding to the database engine that this Configuration Server uses (dbengine), and press Enter.
    d. Specify the name or alias of the DBMS that handles the Configuration Database (dbserver), and press Enter.
    e. To specify the name of the Configuration Database (dbname), do one of the following:
        - If you are using an Oracle database engine (that is, you typed 3 in Step c), press Enter. This value is not required for Oracle.
        - If you are using any other database engine, specify the name of the Configuration Database, and press Enter.
    f. Specify the Configuration Database username, and press Enter.
    g. To specify the Configuration Database password, do one of the following:
        - Specify the password, and press Enter.
        - Press Enter if there is no password; that is, the password is empty, with no spaces.

End of procedure

When the installation process is finished, a message indicates that installation was successful. The process places the backup Configuration Server in the directory specified during the installation process. The installation script also writes a sample configuration file, confserv.sample, in the directory in which the backup Configuration Server is installed.

If you chose to configure the backup Configuration Server during installation, the sample configuration file, confserv.sample, is renamed confserv.conf, and the parameters specified in Steps 12 through 14 are written to this file.

Next Steps

If you chose to configure the backup Configuration Server after installation, you must manually rename the sample file as confserv.conf and modify the configuration options before you start the backup Configuration Server. See “Configuring Configuration Server” on page 95.

Procedure: Installing a backup Configuration Server on Windows

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Note: Refer to "Installing Configuration Server" on page 86 for general comments about installing Configuration Server.

Prerequisites

- The backup Configuration Server Application object exists.

Start of procedure

1. On the Management Framework 8.0 product CD, locate and open the appropriate installation directory for your environment:
   - For an enterprise (single-tenant) environment, the installation directory is configuration_layer/configserver/single/windows
   - For a multi-tenant environment, the installation directory is configuration_layer/configserver/multi/windows

   The installation script, called setup.exe, is located in the appropriate directory.
2. Double-click setup.exe to start the Genesys Installation Wizard.
3. Use the About button on the wizard's Welcome page to review the read_me file. The file also contains a link to the server's Release Notes file.
4. Click Next on the Welcome page to proceed with the installation.
5. On the Maintenance Setup Type page, select Install new instance of the application and click Next.
6. On the Configuration Server Run Mode page, select Configuration Server Master Backup and click Next.
7. On the Configuration Server Parameters page:
   a. Specify the Server Port and Management Port for Configuration Server.
   b. Click Next.
8. On the Database Engine Option page, select the database engine used by Configuration Server, and click Next.
9. On the DB Server Parameters page:
   a. Specify the DB Server Host name and DB Server Port.
   b. Specify the Database Server Name and Database Name.

  c. Specify the Database User Name and Password.
  d. Click Next.

10. On the Configuration Server External Authentication page, select the type of external authentication Configuration Server uses, or select None if Configuration Server is not using external authentication. Click Next.
11. On the Connection Parameters to the Genesys Configuration Server page:
    a. Specify the Host name and Port of the primary Configuration Server.
    b. Specify the User name and Password for the primary Configuration Server.
    c. Click Next.
12. In the upper pane of the Select Application page, select the backup Configuration Server Application object that you just configured, and click Next.
13. On the Choose Destination Location page, the wizard displays the destination directory, if specified in Step 5 on page 196 in the Working Directory property of the server's Application object. If you entered a period (.) in this property, or if the specified path is invalid, the wizard generates a path to the destination directory in the C:\Program Files\GCTI\<Product Name> format.

    If necessary, click:

    - Browse to select another destination folder. In this case, the wizard will update the Application object's Working Directory in the Configuration Database.
    - Default to reinstate the path specified in the Working Directory property.

    Click Next to proceed.
14. On the Ready to Install information page, click:
    - Back to update any installation information.
    - Install to proceed with the installation.
15. On the Installation Complete page, click Finish.

    As a result of the installation, the wizard adds Application icons to the:

    - Windows Add or Remove Programs window, as a Genesys server.
    - Windows Services list, as a Genesys service, with Automatic startup type.

End of procedure

For more information about the Configuration Server configuration file, see "Configuring Configuration Server" on page 95. For information about Configuration Server configuration options and their values, refer to the relevant chapters in the *Framework 8.0 Configuration Options Reference Manual.*

Procedure:
Modifying a primary Configuration Server Application object using Genesys Administrator

Purpose: To enable the primary Configuration Server to work with the backup Configuration object.

Prerequisites

- The primary and backup Configuration Server `Application` objects exist.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning` > `Environment` > `Applications`, and click the Configuration Server `Application` object (named `confserv)` to open its properties.
2. On the `Configuration` tab, open the `Server Info` section.
3. Use the `Browse` button next to the `Backup Server` property to locate the backup Configuration Server `Application` object you want to use as the backup server.
4. Select `Warm Standby` as the `Redundancy Type.`
5. Select `Auto-Restart.`
6. Click `Save and Close` to save the changes.

End of procedure

Procedure:
Modifying a primary Configuration Server Application object using Configuration Manager

Purpose: To enable the primary Configuration Server to work with the backup Configuration object.

Prerequisites

- The primary and backup Configuration Server `Application` objects exist.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, open the Properties dialog box of the Configuration Server Application object that you want to configure as a primary server.
2. Click the Server Info tab.
3. Use the Browse button next to the Backup Server property to locate the backup Configuration Server Application object you want to use as the backup server.
4. Select Warm Standby as the Redundancy Type.
5. Click the Start Info tab.
6. Select Auto-Restart.
7. Click the Security tab.
8. In the Log On As group section, select This Account. Make sure that the account name matches the name of the Master Account.
9. Click OK to save the configuration changes.

End of procedure

Creating the Configuration File for a Backup Configuration Server

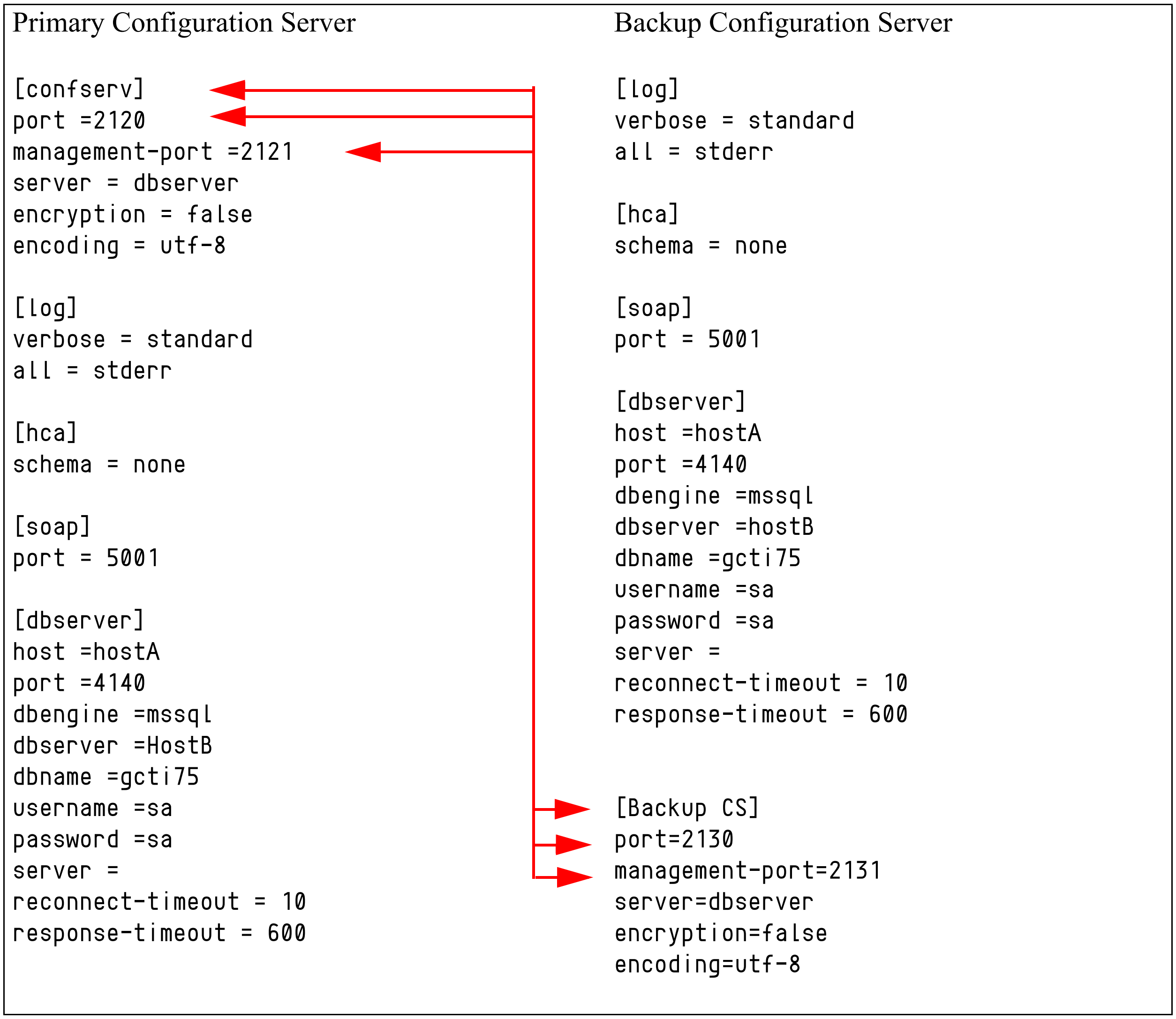
The configuration file for the backup Configuration Server must be the same as that for the primary Configuration Server with the following exceptions:

- The name of the section in the backup Configuration Server configuration file must match the name of the backup Configuration Server Application object.
- The values for the port and management-port options in the backup Configuration Server configuration file must be those values specified as Communication Port and Management Port values, respectively, during installation of the backup Configuration Server.
- The log options can be different.

Specify the same database and the same user account for accessing this database, for both the primary and backup Configuration Servers. Note that specifying multiple DB Server sections that describe backup DB Servers is acceptable for the backup Configuration Server, as long as these sections are identical to similar sections in the configuration file of the primary Configuration Server.

The No Default Access for New Users feature must be configured the same in both the primary and backup Configuration Servers. In other words, both Configuration Servers must have the feature either configured or not.

Sample configuration files are shown side-by-side in Figure 9. The arrows show the differences described in this section.



Primary Configuration Server

```
[confserv]
port =2120
management-port =2121
server = dbserver
encryption = false
encoding = utf-8

[log]
verbose = standard
all = stderr

[hca]
schema = none

[soap]
port = 5001

[dbserver]
host =hostA
port =4140
dbengine =mssql
dbserver =HostB
dbname =gcti75
username =sa
password =sa
server =
reconnect-timeout = 10
response-timeout = 600
```

Backup Configuration Server

```
[log]
verbose = standard
all = stderr

[hca]
schema = none

[soap]
port = 5001

[dbserver]
host =hostA
port =4140
dbengine =mssql
dbserver =hostB
dbname =gcti75
username =sa
password =sa
server =
reconnect-timeout = 10
response-timeout = 600


[Backup CS]
port=2130
management-port=2131
server=dbserver
encryption=false
encoding=utf-8
```

Figure 9: Sample Configuration Files for Primary and Backup Configuration Servers

Procedure:
Modifying a backup Configuration Server start file

Purpose: To enable the backup Configuration Server application to be started. This procedure is required only for backup Configuration Servers installed on UNIX platforms.

Start of procedure

1. In a text editor, open the `run.sh` file.

2. Add the following at the end of the command line in the file:

   ```
   -s <section name> -c <configuration file name>
   ```

End of procedure

Synchronizing HA Ports Between Redundant Configuration Servers

When Configuration Servers operate in a high-availability (HA) environment, the backup Configuration Server must be ready to take on the primary role when required. This requires that both Configuration Servers are running and that they must have the same information. When you configure redundant Configuration Servers to operate with the `warm standby` redundancy type, the primary Configuration Server uses the connection to the backup to deliver synchronization updates. Genesys recommends that you enable the Advanced Disconnect Detection Protocol (ADDP), described on page 273, for this connection.

Currently, Genesys Administrator does not support this functionality.

Note: Starting with release 7.5, you can configure multiple ports for any application of type `server`. When multiple ports are configured for a server in a `warm standby` redundancy pair, the number of ports, their `Port IDs`, and the `Listening Mode` settings of the primary and backup servers must match respectively.

Procedure: Synchronizing HA ports between redundant Configuration Servers

Purpose: To enable Configuration Manager to synchronize options between primary and backup Configuration Servers automatically.

Start of procedure

1. Decide in advance what port on the primary Configuration Server you want to use as the port to which the backup Configuration Server connects. If you want to use a new port, do the following:
   a. On the `Server Info` tab of the properties of both the primary and backup servers, create a new port with the same `Port ID`.
   b. In the `Port Properties` dialog box of each server, click `OK` to save the new configuration.
   c. In the `Application Properties` dialog box of each server, click `Apply`.

2. If you want to use a new or existing port other than the default port of the primary server, do the following:
   a. In the `Application Properties` dialog box of the primary server, select the port to which the backup server will connect, and click `Edit`.
   b. In the `Port Properties` dialog box, select the `HA sync` check box, and click `OK`. The `Port` section of the `Application Properties` dialog box now displays this port as a port for an HA synchronization connection.

Note: If the `HA sync` check box is not selected, the backup server will connect to the *default* port of the primary server.

3. Click `Apply` to save the configuration changes.

End of procedure

Starting a Backup Configuration Server

When starting a backup Configuration Server, specify the following values in the startup command line:

`-s`	The name of the Configuration Server section within the configuration file for the backup Configuration Server
`-c`	The name of the configuration file that contains configuration information for the backup Configuration Server.

Note: Make sure the name of the Configuration Server section is exactly the same as the name of the `Application` object for the backup Configuration Server.

For a description of the command-line parameters specific to Configuration Server, refer to the section “Configuration Server” on page 172.

Procedure: Starting a backup Configuration Server

Prerequisites

- If the backup Configuration Server is installed on UNIX, make sure that the `run.sh` file has been modified accordingly (see the procedure “Modifying a backup Configuration Server start file” on page 204).

Start of procedure

1. To start the backup Configuration Server on UNIX, do one of the following:
   - To start from Genesys Administrator or SCI, refer to "Starting and Stopping with the Management Layer" on page 167.
   - To start manually, go to the directory in which the backup Configuration Server is installed, and do one of the following:
     - To use only the required command-line parameters, type the following command line:

       ```
       sh run.sh
       ```
     - To specify the command line yourself, or to use additional command-line parameters, type the following command line:

       ```
       confserv -s <section name> -c <configuration file name>
       [<additional parameters as required>]
       ```

   Note: Make sure the name of the Configuration Server section is exactly the same as the name of the `Application` object for the backup Configuration Server.

2. To start the backup Configuration Server on Windows, do one of the following:
   - To start as a Windows Service, refer to "Starting and Stopping with Windows Services Manager" on page 181.
   - To start from Genesys Administrator or SCI, refer to "Starting and Stopping with the Management Layer" on page 167.
   - To start manually, do one of the following:
     - Use the `Start > Programs` menu.
     - To use only the required command-line parameters, go to the directory in which the backup Configuration Server is installed, and double-click the file `startServer.bat`
     - To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which the backup Configuration Server is installed, and type the following command line:

       ```
       confserv.exe -s <section name> -c <configuration file name>
       [<additional parameters as required>]
       ```

   Note: Make sure the name of the Configuration Server section is exactly the same as the name of the `Application` object for the backup Configuration Server.

End of procedure

Redundant Client DB Servers

This section describes how to set up redundant Client DB Servers—that is, DB Servers that provide access to databases other than the Configuration Database (such as the Log Database), and that are clients of Configuration Server (such as Log DB Server).

To set up redundant Configuration DB Servers that are dedicated to provide access to the Configuration Database, and that are not clients of Configuration Server, refer to “Redundant Configuration DB Servers” on page 184.

Note: In this section only, the term *DB Server* denotes a Client DB Server, not a Configuration DB Server.

Redundancy

Redundant DB Servers support only the `warm standby` redundancy type.

Setting Up Redundant Client DB Servers

The procedures in this section describe how to install and set up redundant Client DB Servers.

Installation Recommendations

If you are installing the primary and backup DB Servers on the same host computer:

- Install them in different directories.
- Specify a different port number for each server.

Prerequisites

Set up redundant Client DB Servers, such as Log DB Servers, only after you have installed and run the following:

- Configuration Layer components as described in Chapter 5 on page 77.
- Management Layer components as described in Chapter 6 on page 111.

Task Summary

The table on the next page summarizes the steps required to install and set up redundant Client DB Servers.

Task Summary: Setting Up Redundant Client DB Servers

Task	Related Procedures and Information
1. If the backup DB Server is to reside on a remote Host, you can deploy it to that Host using Genesys Administrator.	Use the procedure "Deploying Management Layer components using Genesys Administrator" on page 117.
2. Configure an Application object for the backup DB Server.	Use one of the following procedures, as appropriate: • "Configuring a backup Client DB Server Application object using Genesys Administrator" on page 209. • "Configuring a backup Client DB Server Application object using Configuration Manager" on page 211.
3. If you did not deploy the backup DB Server in Step 1, install the backup DB Server.	Use one of the following procedures, as appropriate: • To install on UNIX, use the procedure "Manually installing Log DB Server on UNIX" on page 128. • To install on Windows, use the procedure "Manually installing Log DB Server on Windows" on page 130.
4. Modify the Application object for the primary DB Server.	Use one of the following procedures, as appropriate: • "Modifying a primary Client DB Server Application object using Genesys Administrator" on page 212. • "Modifying a primary Client DB Server Application object using Configuration Manager" on page 212.
5. Synchronize options and ports between the redundant Client DB Servers, if required.	Refer to "Synchronizing Options and Ports Between Primary and Backup Servers" on page 274 for more information and detailed instructions.

Procedure: Configuring a backup Client DB Server Application object using Genesys Administrator

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- Management Layer components are installed and running as described in Chapter 6 on page 111.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications.
2. If the Application object for this backup DB Server does not already exist, create it as follows:
   a. Click New.
   b. In the General section of the Configuration tab:
      i. Enter a descriptive name in the Name text box.
      ii. Select the appropriate template, as follows:
         - Click the search icon in the Application Template field to open a Browse dialog box that lists the available application templates. If a DB Server template file is not listed, close the dialog box and import the DBServer_<current-version>.apd file from the Management Framework 8.0 product CD.
         - In the Browse dialog box, select the DB Server template file.
         - Click OK.
3. In the Server Info section of the Configuration tab, enter the following information as required:
   a. Select the Host object on which this backup DB Server runs.
   b. Specify the Listening Port that DB Server clients must use to connect to this DB Server.
   c. In the Working Directory, Command Line, and Command Line Arguments text boxes, do one of the following:
      - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see “Starting a Backup Client DB Server” on page 213.
      - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when the backup DB Server starts, but only if the Installation Package can connect to the primary Configuration Server.
   d. Enter appropriate values for the other mandatory fields (those indicated by red asterisks).
   e. Select Auto-Restart, if required.
4. Click Save and Close to save the configuration.

End of procedure

Procedure:
Configuring a backup Client DB Server Application object using Configuration Manager

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- Management Layer components are installed and running as described in Chapter 6 on page 111.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the `Environment > Applications` folder and select `New > Application`, which opens the `Browse` dialog box that lists the available application templates. If a DB Server template is not listed, import the `DBServer_<current-version>.apd` template file from the Management Framework product CD.
2. In the `Browse` dialog box, select the DB Server template file, which opens the `Properties` dialog box for the new DB Server `Application` object.
3. On the `General` tab, enter a descriptive name in the `Name` text box—for example, `LogDBS_backup`.
4. On the `Server Info` tab, specify:
   a. The host on which the backup DB Server is running.
   b. The port that DB Server clients must use to connect to DB Server.
5. On the `Start Info` tab:
   a. In the `Working Directory`, `Command Line`, and `Command Line Arguments` text boxes, do one of the following:
      - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see "Starting a Backup Client DB Server" on page 213.
      - Type a period (`.`) in the `Working Directory` and `Command Line` text boxes, and leave the `Command Line Arguments` text box blank. The information will be filled in automatically when the backup DB Server starts, but only if the Installation Package can connect to the primary Configuration Server.

   b. Select the `Auto-Restart` check box.
6. Click `OK` to save the configuration data.

End of procedure

Procedure: Modifying a primary Client DB Server Application object using Genesys Administrator

Purpose: To enable the primary Client DB Server to work with the backup Client DB Server.

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- Management Layer components are installed and running as described in Chapter 6 on page 111.
- The primary and backup Client DB Server `Application` objects exist.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning > Environment > Applications`, and double-click the DB Server `Application` object `cfg_dbserver` to open its properties.
2. In the `Server Info` section of the `Configuration` tab:
   a. Select the `Application` object corresponding to the backup DB Server you want to use as the backup server.
   b. Select `Warm Standby` as the redundancy type.
   c. Select `Auto-Restart` if required.
3. Click `Save and Close` to save the configuration.

End of procedure

Procedure: Modifying a primary Client DB Server Application object using Configuration Manager

Purpose: To enable the primary Client DB Server to work with the backup Client DB Server.

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.

- Management Layer components are installed and running as described in Chapter 6 on page 111.
- The primary and backup Client DB Server `Application` objects exist.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, open the `Properties` dialog box of the DB Server `Application` object that you want to configure as the primary server.
2. On the `Server Info` tab:
   a. Use the `Browse` button to locate and select the `Application` object corresponding to the backup DB Server you want to use as the backup server.
   b. Select `Warm Standby` as the redundancy type.
3. On the `Start Info` tab, select `Auto-Restart` if required.
4. Click `OK` to save the configuration changes.

End of procedure

Starting a Backup Client DB Server

When starting a backup Client DB Server, be sure to use the command line parameter `-app` to specify the name of the backup DB Server application. For a description of the command-line parameters specific to DB Server, refer to “DB Server” on page 170.

Procedure:
Starting a backup Client DB Server

Start of procedure

1. To start the backup DB Server on UNIX, do one of the following:
   - To start from Genesys Administrator or SCI, refer to “Starting and Stopping with the Management Layer” on page 167.
   - To start manually, go to the directory in which the backup DB Server is installed, and do one of the following:
     — To use only the required command-line parameters, type the following command line:

```
sh run.sh
```

  - — To specify the command line yourself, or to use additional command-line parameters, type the following command line:

    ```
    multiserver -host <Configuration Server host>
    -port <Configuration Server port>
    -app <DB Server Application>
    ```

2. To start the backup DB Server on Windows, do one of the following:
   - To start as a Windows Service, refer to "Starting and Stopping with Windows Services Manager" on page 181.
   - To start from Genesys Administrator or SCI, refer to "Starting and Stopping with the Management Layer" on page 167.
   - To start manually, do one of the following:
     - — Use the `Start > Programs` menu.
     - — To use only the required command-line parameters, go to the directory in which the backup DB Server is installed, and double-click the `startServer.bat` file.
     - — To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which the backup DB Server is installed, and type the following command line:

       ```
       multiserver.exe -host <Configuration Server host>
       -port <Configuration Server port> -app <DB Server
       Application>
       ```

End of procedure

Redundant Message Servers

Redundancy

Redundant Message Servers support only the `warm standby` redundancy type, with the addition that the data is synchronized between the primary and backup servers.

Setting Up Redundant Message Servers

The procedures in this section describe how to install and set up redundant Message Servers.

Installation Recommendations

If you are installing the primary and backup Message Servers on the same host computer:

- Install them in different directories.

- Specify a different port number for each server.

Prerequisites

Set up redundant Message Servers only after you install and run the Configuration Layer components as described in Chapter 5 on page 77.

Task Summary

The following table summarizes the steps required to set up redundant Message Servers.

Task Summary: Setting Up Redundant Message Servers

Task	Related Procedures and Information
1. (Optional) If the backup Message Server is to reside on a remote Host, you can deploy it to that Host using Genesys Administrator.	Use the procedure “Deploying Management Layer components using Genesys Administrator” on page 117.
1. Configure an `Application` object for the backup Message Server.	Use one of the following procedures, as appropriate: • “Configuring a backup Message Server Application object using Genesys Administrator” on page 216. • “Configuring a backup Message Server Application object using Configuration Manager” on page 217.
2. If you did not deploy the backup Message Server in Step 1, install it now.	Use one of the following procedures, as appropriate: • To install on UNIX, use the procedure “Manually installing Message Server on UNIX” on page 139. • To install on Windows, use the procedure “Manually installing Message Server on Windows” on page 140.
3. Modify the primary Message Server `Application` object.	Use one of the following procedures, as appropriate: • “Modifying a primary Message Server Application object using Genesys Administrator” on page 218. • “Modifying a primary Message Server Application object using Configuration Manager” on page 219.
4. If you installed the backup Message Server on UNIX, modify the `run.sh` file.	Use the procedure “Modifying a backup Message Server start file” on page 219.
5. Synchronize options and ports between the redundant Message Servers, if required.	Refer to “Synchronizing Options and Ports Between Primary and Backup Servers” on page 274 for more information and detailed instructions.

Procedure: Configuring a backup Message Server Application object using Genesys Administrator

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications.
2. If the Application object for this backup Message Server does not already exist, create it as follows:
   a. Click New.
   b. In the General section of the Configuration tab:
      i. Enter a descriptive name in the Name text box.
      ii. Select the appropriate template, as follows:
         - Click the search icon in the Application Template field to open a Browse dialog box that lists the available application templates. If a Message Server template file is not listed, close the dialog box and import the Message_Server_<current-version>.apd file from the Management Framework 8.0 product CD.
         - In the Browse dialog box, select the Message Server template file.
         - Click OK.
3. In the Server Info section of the Configuration tab, enter the following information, as required:
   a. In the Host field, click the magnifying glass icon to select the Host object on which this Message Server is running.
   b. For each listening port that an application must use to connect to this Message Server:
      i. In the Listening Ports field, click Add.
      ii. Enter the port properties in the Port Info dialog box.
      iii. Click OK.
   c. For the Working Directory, Command Line, and Command Line Arguments fields, do one of the following:
      - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see “Starting a Backup Message Server” on page 220.

  - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install Message Server, but only if the Installation Package can connect to Configuration Server.

  d. Select the Auto-Restart check box.

4. Click Save and Close in the toolbar to save the new object.

End of procedure

Procedure: Configuring a backup Message Server Application object using Configuration Manager

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the Environment > Applications folder and select New > Application, which opens the Browse dialog box that lists the available application templates. If a Message Server template is not listed, import the Message_Server_<current-version>.apd file from the Management Framework product CD.
2. In the Browse dialog box, select the Message Server template file, which opens the Properties dialog box for the new Message Server Application object.
3. On the General tab, enter a descriptive name in the Name text box—for example, MS_backup.
4. On the Server Info tab, specify:
   a. The host on which the backup Message Server is to be installed.
   b. The communication ports that clients must use to connect to this Message Server.
5. On the Start Info tab:
   a. In the Working Directory, Command Line, and Command Line Arguments text boxes, do one of the following:
      - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see “Starting a Backup Message Server” on page 220.

    - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install the backup Message Server, but only if the Installation Package can connect to the primary Configuration Server.

   b. Select the Auto-Restart check box.

6. Click OK to create the Application object for the backup Message Server.
7. Open the Properties dialog box of the backup Message Server Application object that you just created.
8. On the Security tab, select This Account, making sure that the account name matches the name of the Master Account.
9. Click OK to save the configuration changes.

End of procedure

Procedure: Modifying a primary Message Server Application object using Genesys Administrator

Purpose: To enable the primary Message Server to work with the backup Message Server.

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- The primary and backup Message Server Application objects exist.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and double-click the primary Message Server Application object to open its properties.
2. In the Server Info section of the Configuration tab:
   a. Select the Application object corresponding to the backup Message Server you want to use as the backup server.
   b. Select Warm Standby as the redundancy type.
   c. Select Auto-Restart if required.
3. Click Save and Close to save the configuration.

End of procedure

Procedure: Modifying a primary Message Server Application object using Configuration Manager

Purpose: To enable the primary Message Server to work with the backup Message Server.

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- The primary and backup Message Server `Application` objects exist.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, open the `Properties` dialog box of the Message Server `Application` object that you want to configure as the primary server.
2. On the `Server Info` tab:
   a. Use the `Browse` button to locate and select the `Application` object corresponding to the backup Message Server you want to use as the backup server.
   b. Select `Warm Standby` as the redundancy type.
3. On the `Start Info` tab, select `Auto-Restart`.
4. On the `Security` tab, select `This Account`, making sure that the account name matches the name of the Master Account.
5. Click `OK` to save the configuration changes.

End of procedure

Procedure: Modifying a backup Message Server start file

Purpose: To enable the backup Message Server application to be started properly. This procedure is required only for backup Message Servers installed on UNIX platforms.

Start of procedure

1. In a text editor, open the `run.sh` file.

2. Add the following at the end of the command line in the file:

   ```
   -host <configuration server host> -port <configuration server port>
   -app <application object name>
   ```

End of procedure

Starting a Backup Message Server

When starting a backup Message Server, be sure to use the following command-line options:

`-host`	The name of the host on which Configuration Server is running.
`-port`	The communication port that client applications must use to connect to Configuration Server.
`-app`	The exact name of the backup Message Server `Application` object as configured in the Configuration Database.

If you installed the backup Message Server on UNIX, make sure that you modified the `run.sh` file accordingly (see the procedure “Modifying a backup Message Server start file” on page 219). For a description of the command-line parameters specific to Message Server, refer to “Message Server” on page 175.

Procedure: Starting a backup Message Server

Start of procedure

1. To start the backup Message Server on UNIX, do one of the following:
   - To start from Genesys Administrator or SCI, refer to “Starting and Stopping with the Management Layer” on page 167.
   - To start manually, go to the directory in which Message Server is installed, and do one of the following:
     - To use only the required command-line parameters, type the following command line:

       ```
       sh run.sh
       ```

     - To specify the command line yourself, or to use additional command-line parameters, type the following command line:

       ```
       MessageServer -host <Configuration Server host> -port
       <Configuration Server port> -app <backup Message Server
       Application> [<additional parameters and arguments as
       required>]
       ```

2. To start the backup Message Server on Windows, do one of the following:
   - To start as a Windows Service, refer to “Starting and Stopping with Windows Services Manager” on page 181.

- To start from Genesys Administrator or SCI, refer to "Starting and Stopping with the Management Layer" on page 167.
- To start manually, do one of the following:
  - Use the `Start > Programs` menu.
  - To use only the required command-line parameters, go to the directory in which Message Server is installed, and double-click the `startServer.bat` file.
  - To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which Message Server is installed, and type the following command line:

    ```
    MessageServer.exe -host <Configuration Server host> -port
    <Configuration Server port> -app <backup Message Server
    Application> [<additional parameters and arguments as
    required>]
    ```

End of procedure

Redundant Solution Control Servers

Redundancy

Redundant Solution Control Servers support only the `warm standby` redundancy type, with the addition that the data is synchronized between the primary and backup servers.

Setting Up Redundant Solution Control Servers

The procedures in this section describe how to install and set up redundant Solution Control Servers.

Installation recommendations

If you are installing the primary and backup Solution Control Servers on the same host computer:

- Install them in different directories.
- Specify a different port number for each server.

Prerequisites

Set up redundant Solution Control Servers only after you install and run the Configuration Layer components as described in Chapter 5 on page 77.

Task Summary

The following table summarizes the steps required to set up redundant Solution Control Servers.

Task Summary: Setting Up Redundant Solution Control Servers

Task	Related Procedures and Information
1. (Optional) If the backup Solution Control Server is to reside on a remote Host, you can deploy it to that Host using Genesys Administrator.	Use the procedure “Deploying Management Layer components using Genesys Administrator” on page 117.
1. Configure an `Application` object for the backup Solution Control Server.	Use one of the following procedures, as appropriate: • “Configuring a backup Solution Control Server Application object using Genesys Administrator” on page 223 • “Configuring a backup Solution Control Server Application object using Configuration Manager” on page 224
2. If you did not deploy the backup Solution Control Server in Step 1, install it now.	Use one of the following procedures, as appropriate: • To install on UNIX, use the procedure “Manually installing Solution Control Server on UNIX” on page 144. • To install on Windows, use the procedure “Manually installing Solution Control Server on Windows” on page 145.
3. Modify the primary Solution Control Server `Application` object.	Use one of the following procedures, as appropriate: • “Modifying a primary Solution Control Server Application object using Genesys Administrator” on page 225 • “Modifying a primary Solution Control Server Application object using Configuration Manager” on page 226
4. If you installed the backup Solution Control Server on UNIX, modify the `run.sh` file.	Use the procedure “Modifying a backup Solution Control Server start file” on page 227.
5. Synchronize HA ports between the redundant Solution Control Servers.	Refer to “Synchronizing HA Ports Between Redundant Solution Control Servers” on page 227 for more information and detailed instructions.

Procedure:
Configuring a backup Solution Control Server Application object using Genesys Administrator

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning > Environment > Applications`.
2. If the `Application` object for this backup Solution Control Server does not already exist, create it as follows:
   a. Click `New`.
   b. In the `General` section of the `Configuration` tab:
      i. Enter a descriptive name in the `Name` text box.
      ii. Select the appropriate template, as follows:
         - Click the search icon in the `Application Template` field to open a `Browse` dialog box that lists the available application templates. If a Solution Control Server template file is not listed, close the dialog box and import `Solution_Control_Server_<current-version>.apd` from the Management Framework 8.0 product CD.
         - In the `Browse` dialog box, select the Solution Control Server template file.
         - Click `OK`.
3. In the `Server Info` section of the `Configuration` tab, enter the following information, as required:
   a. In the `Host` field, click the magnifying glass icon to select the `Host` object on which this Solution Control Server is running.
   b. For each listening port that an application must use to connect to this Solution Control Server:
      i. In the `Listening Ports` field, click `Add`.
      ii. Enter the port properties in the `Port Info` dialog box.
      iii. Click `OK`.
   c. For the `Working Directory`, `Command Line`, and `Command Line Arguments` fields, do one of the following:

- Enter the appropriate information in each of the text boxes. For information about command-line parameters, see “Starting a Backup Solution Control Server” on page 228.
- Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install Solution Control Server, but only if the Installation Package can connect to Configuration Server.

d. Select the Auto-Restart check box.

4. Click Save and Close in the toolbar to save the new object.

End of procedure

Procedure: Configuring a backup Solution Control Server Application object using Configuration Manager

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the Environment > Applications folder and select New > Application, which opens the Browse dialog box that lists the available application templates. If a Solution Control Server template is not listed, import the Solution_Control_Server_<current-version>.apd template file from the Management Framework CD.
2. In the Browse dialog box, select the Solution Control Server template file, which opens the Properties dialog box for the new Solution Control, Server Application object.
3. On the General tab, enter a descriptive name in the Name text box—for example, SCS_backup.
4. On the Server Info tab, specify:
   a. The host on which the backup Solution Control Server is to be installed.
   b. The communication ports that clients must use to connect to this Solution Control Server.

5. On the Start Info tab:
   a. In the Working Directory, Command Line, and Command Line Arguments text boxes, do one of the following:
      - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see "Starting a Backup Solution Control Server" on page 228.
      - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install the backup Solution Control Server, but only if the Installation Package can connect to the primary Configuration Server.
   b. Select the Auto-Restart check box.
6. Click OK to create the Application object for the backup Solution Control Server.
7. Open the Properties dialog box of the backup Solution Control Server Application object.
8. On the Security tab, select This Account, making sure that the account name matches the name of the Master Account.
9. Click OK to save the configuration changes.

End of procedure

Procedure: Modifying a primary Solution Control Server Application object using Genesys Administrator

Purpose: To enable the primary Solution Control Server to work with the backup Solution Control Server.

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- The primary and backup Solution Control Server Application objects exist.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and double-click the primary Solution Control Server Application object to open its properties.

2. In the `Server Info` section of the `Configuration` tab:
   a. Select the `Application` object corresponding to the backup Solution Control Server you want to use as the `Backup Server`.
   b. Select `Warm Standby` as the redundancy type.
   c. Select `Auto-Restart` if required.
3. Click `Save and Close` to save the configuration.

End of procedure

Procedure: Modifying a primary Solution Control Server Application object using Configuration Manager

Purpose: To enable the primary Solution Control Server to work with the backup Solution Control Server.

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- The primary and backup Solution Control Server `Application` objects exist.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, open the `Properties` dialog box of the Solution Control Server `Application` object that you want to configure as the primary server.
2. On the `Server Info` tab:
   a. Use the `Browse` button to locate and select the `Application` object corresponding to the backup Solution Control Server you want to use as the backup server.
   b. Select `Warm Standby` as the redundancy type.
3. On the `Start Info` tab, select `Auto-Restart`.
4. On the `Security` tab, select `This Account`, making sure that the account name matches the name of the Master Account.
5. Click `OK` to save the configuration changes.

End of procedure

Procedure: Modifying a backup Solution Control Server start file

Purpose: To enable the backup Solution Control Server application to be started properly. This procedure is required only for backup Solution Control Servers installed on UNIX platforms.

Start of procedure

1. In a text editor, open the `run.sh` file.
2. Add the following at the end of the command line in the file:

```
-host <configuration server host> -port <configuration server port>
-app <Solution Control Server application object name>
```

End of procedure

Synchronizing HA Ports Between Redundant Solution Control Servers

When Solution Control Servers operate in a high-availability (HA) environment, the backup SCS must be ready to take on the primary role when required. This requires that both Solution Control Servers are running and that they must have the same information. When you configure redundant Solution Control Servers to operate with the `warm standby` redundancy type, the primary SCS uses the connection to the backup to deliver synchronization updates. Genesys recommends that you enable the Advanced Disconnect Detection Protocol (ADDP), described on page 273, for this connection.

Currently, Genesys Administrator does not support this functionality.

Note: Starting with release 7.5, you can configure multiple ports for any application of type `server`. When multiple ports are configured for a server in a `warm standby` redundancy pair, the number of ports, their `Port IDs`, and the `Listening Mode` settings of the primary and backup servers must match respectively.

Procedure: Synchronizing HA ports between redundant Solution Control Servers

Purpose: To enable Configuration Manager to synchronize the options between primary and backup Solution Control Servers automatically.

Start of procedure

1. Decide in advance the port on the primary SCS that you want to use as the port to which the backup SCS connects. If you want to use a new port, do the following:
   - **a.** On the `Server Info` tab of the properties of both the primary and backup servers, create a new port with the same `Port ID`.
   - **b.** In the `Port Properties` dialog box of each server, click `OK` to save the new configuration.
   - **c.** In the `Application Properties` dialog box of each server, click `Apply`.
2. If you want to use a new or existing port other than the default port of the primary server, do the following:
   - **a.** In the `Application Properties` dialog box of the primary server, select the port to which the backup server will connect, and click `Edit`.
   - **b.** In the `Port Properties` dialog box, select the `HA sync` check box, and click `OK`. The `Port` section of the `Application Properties` dialog box now displays this port as a port for an HA synchronization connection.

> **Note:** If the `HA sync` check box is not selected, the backup server will connect to the *default* port of the primary server.

3. Click `Apply` to save the configuration changes.

End of procedure

Starting a Backup Solution Control Server

When starting a backup SCS, be sure to use the following command-line options:

`-host`	The name of the host on which Configuration Server is running.
`-port`	The communication port that client applications must use to connect to Configuration Server.
`-app`	The exact name of the backup SCS `Application` object as configured in the Configuration Database.

If you installed the backup SCS on UNIX, make sure that you modified the `run.sh` file accordingly (see the procedure “Modifying a backup Solution Control Server start file” on page 227). For a description of the command-line parameters specific to SCS, refer to “Solution Control Server” on page 176.

Procedure: Starting a backup Solution Control Server

Start of procedure

1. To start the backup SCS on UNIX, do one of the following:
   - To start from Genesys Administrator or SCI, refer to "Starting and Stopping with the Management Layer" on page 167.
   - To start manually, go to the directory in which the backup SCS is installed, and do one of the following:
     - — To use only the required command-line parameters, type the following command line:

       ```
       sh run.sh
       ```
     - — To specify the command line yourself, or to use additional command-line parameters, type the following command line:

       ```
       scs -host <Configuration Server host> -port <Configuration
       Server port> -app <backup Solution Control Server
       Application> [<additional parameters and arguments as
       required>]
       ```
2. To start the backup Message Server on Windows, do one of the following:
   - To start as a Windows Service, refer to "Starting and Stopping with Windows Services Manager" on page 181.
   - To start from Genesys Administrator or SCI, refer to "Starting and Stopping with the Management Layer" on page 167.
   - To start manually, do one of the following:
     - — Use the `Start > Programs` menu.
     - — To use only the required command-line parameters, go to the directory in which the backup SCS is installed, and double-click the `startServer.bat` file.
     - — To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which the backup SCS is installed, and type the following command line:

       ```
       scs.exe -host <Configuration Server host> -port
       <Configuration Server port> -app <Solution Control Server
       Application> [<additional parameters and arguments as
       required>]
       ```

End of procedure

Redundant SNMP Master Agents

The Management Layer supports configuration with a redundant pair of SNMP master agents. Redundant configuration assumes the presence of two SNMP master agent applications, one primary and one backup. When Solution Control Server loses a connection with the primary SNMP master agent, SCS switches all NMS communications to the backup SNMP master agent.

If your SNMP master agent application can operate in a redundant mode (as does, for example, Genesys SNMP Master Agent), and you would like to deploy this configuration, follow the instructions in this section.

Redundancy

Redundant SNMP Master Agents support only the `warm standby` redundancy type.

Setting Up Redundant SNMP Master Agents

The procedures in this section describe how to install and set up redundant SNMP Master Agents.

Installation Recommendations

If you are installing the primary and backup SNMP Master Agents on the same host computer:

- Install them in different directories.
- Specify a different port number for each server.

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- Management Layer components are installed and running as described in Chapter 6 on page 111.
- The SNMP Master Agent to be designated as primary is deployed as described in "Deploying SNMP Master Agent" on page 151.

Task Summary

The table on the next page summarizes the steps required to set up redundant SNMP Master Agents.

Task Summary: Setting Up Redundant SNMP Master Agents

Task	Related Procedures and Information
1. (Optional) If the backup SNMP Master Agent is to reside on a remote Host, you can deploy it to that Host using Genesys Administrator.	Use the procedure "Deploying Management Layer components using Genesys Administrator" on page 117.
1. Configure an `Application` object for the backup SNMP Master Agent.	Use one of the following procedures, as appropriate: • "Configuring a backup SNMP Master Agent Application object using Genesys Administrator" on page 232 • "Configuring a backup SNMP Master Agent Application object using Configuration Manager" on page 233
2. If you did not deploy the backup SNMP Master Agent in Step 1, install it now.	Use one of the following procedures, as appropriate: • To install on UNIX, use the procedure "Manually installing SNMP Master Agent on UNIX" on page 154. • To install on Windows, use the procedure "Manually installing SNMP Master Agent on Windows" on page 155.
3. Modify the primary SNMP Master Agent `Application` object.	Use one of the following procedures, as appropriate: • "Modifying a primary SNMP Master Agent Application object using Genesys Administrator" on page 234 • "Modifying a primary SNMP Master Agent Application object using Configuration Manager" on page 235
4. If you installed the backup SNMP Master Agent on UNIX, modify the `run.sh` file.	Use the procedure "Modifying a backup SNMP Master Agent start file" on page 236.
5. Synchronize options and ports between the redundant SNMP Master Agents, if required.	Refer to "Synchronizing Options and Ports Between Primary and Backup Servers" on page 274 for more information and detailed instructions.

Procedure:
Configuring a backup SNMP Master Agent Application object using Genesys Administrator

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- Management Layer components are installed and running as described in Chapter 6 on page 111.
- The SNMP Master Agent to be designated as primary is deployed as described in "Deploying SNMP Master Agent" on page 151.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning > Environment > Applications`.
2. If the `Application` object for this backup SNMP Master Agent does not already exist, create it as follows:
   a. Click `New`.
   b. In the `General` section of the `Configuration` tab:
      i. Enter a descriptive name in the `Name` text box.
      ii. Select the appropriate template, as follows:
         - Click the search icon in the `Application Template` field to open a `Browse` dialog box that lists the available application templates. If an SNMP Master Agent template file is not listed, close the dialog box and import the template file `SNMP_Master_Agent_<current-version>.apd` from the Management Framework 8.0 product CD.
         - In the `Browse` dialog box, select the SNMP Master Agent template file.
         - Click `OK`.
3. In the `Server Info` section of the `Configuration` tab, enter the following information, as required:
   a. In the `Host` field, click the magnifying glass icon to select the `Host` object on which this SNMP Master Agent is running.
   b. For each listening port that an application must use to connect to SNMP Master Agent:
      i. In the `Listening Ports` field, click `Add`.
      ii. Enter the port properties in the `Port Info` dialog box.
      iii. Click `OK`.

c. For the `Working Directory`, `Command Line`, and `Command Line Arguments` fields, do one of the following:
   - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see "Starting a Backup SNMP Master Agent" on page 236.
   - Type a period (.) in the `Working Directory` and `Command Line` text boxes, and leave the `Command Line Arguments` text box blank. The information will be filled in automatically when you install the backup SNMP Master Agent, but only if the Installation Package can connect to the primary Configuration Server.

d. Select the `Auto-Restart` check box.

4. Click `Save and Close` in the toolbar to save the new object. The new object will appear in the list of applications.

End of procedure

Procedure: Configuring a backup SNMP Master Agent Application object using Configuration Manager

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- Management Layer components are installed and running as described in Chapter 6 on page 111.
- The SNMP Master Agent to be designated as primary is deployed as described in "Deploying SNMP Master Agent" on page 151.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the `Environment > Applications` folder and select `New > Application`, which opens the `Browse` dialog box that lists the available application templates. If an SNMP Master Agent template is not listed, import the `SNMP_Master_Agent_<current-version>.apd` template file from the Management Framework product CD.
2. In the `Browse` dialog box, select the SNMP Master Agent template file, which opens the `Properties` dialog box for the new SNMP Master Agent `Application` object.
3. On the `General` tab, enter a descriptive name in the `Name` text box—for example, `SNMP_MA_backup`.

4. On the Server Info tab, specify:
   a. The host on which the backup SNMP Master Agent is to be installed.
   b. The communication ports that clients must use to connect to this SNMP Master Agent.
5. On the Start Info tab:
   a. In the Working Directory, Command Line, and Command Line Arguments text boxes, do one of the following:
      - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see "Starting a Backup SNMP Master Agent" on page 236.
      - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install the backup SNMP Master Agent, but only if the Installation Package can connect to the primary Configuration Server.
   b. Select the Auto-Restart check box.
6. Click OK to create the Application object for the backup SNMP Master Agent.
7. Open the Properties dialog box of the backup SNMP Master Agent Application object.
8. On the Security tab, select This Account, making sure that the account name matches the name of the Master Account.
9. Click OK to save the configuration data.

End of procedure

Procedure: Modifying a primary SNMP Master Agent Application object using Genesys Administrator

Purpose: To enable the primary SNMP Master Agent to work with the backup SNMP Master Agent.

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- Management Layer components are installed and running as described in Chapter 6 on page 111.
- The SNMP Master Agent to be designated as primary is deployed as described in "Deploying SNMP Master Agent" on page 151.

- The primary and backup SNMP Master Agent Application objects exist.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and double-click the primary SNMP Master Agent Application object to open its properties.
2. In the Server Info section of the Configuration tab:
   a. Select the Application object corresponding to the backup SNMP Master Agent you want to use as the backup server.
   b. Select Warm Standby as the redundancy type.
   c. Select Auto-Restart.
3. Click Save and Close to save the configuration.

End of procedure

Procedure: Modifying a primary SNMP Master Agent Application object using Configuration Manager

Purpose: To enable the primary SNMP Master Agent Application object to work with the backup SNMP Master Agent.

Prerequisites

- Configuration Layer components are installed and running as described in Chapter 5 on page 77.
- Management Layer components are installed and running as described in Chapter 6 on page 111.
- The SNMP Master Agent to be designated as primary is deployed as described in “Deploying SNMP Master Agent” on page 151.
- The primary and backup SNMP Master Agent Application objects exist.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, open the Properties dialog box of the SNMP Master Agent Application object that you want to configure as the primary server.

2. On the `Server Info` tab:
   a. Use the `Browse` button to locate and select the `Application` object corresponding to the backup SNMP Master Agent you want to use as the backup server.
   b. Select `Warm Standby` as the redundancy type.
3. On the `Start Info` tab, select `Auto-Restart`.
4. On the `Security` tab, select `This Account`, making sure that the account name matches the name of the Master Account.
5. Click `OK` to save the configuration changes.

End of procedure

Procedure: Modifying a backup SNMP Master Agent start file

Purpose: To enable the backup SNMP Master Agent application to be started properly. This procedure is required only for backup Solution Control Servers installed on UNIX platforms.

Start of procedure

1. In a text editor, open the `run.sh` file.
2. Add the following at the end of the command line in the file:

```
-host <configuration server host> -port <configuration server port>
-app <backup SNMP Master Agent Application object name>
```

End of procedure

Starting a Backup SNMP Master Agent

When starting a backup Message Server, be sure to use the following command-line options:

`-host`	The name of the host on which Configuration Server is running.
`-port`	The communication port that client applications must use to connect to Configuration Server.
`-app`	The exact name of the backup SNMP Master Server `Application` object as configured in the Configuration Database.

If you installed the backup SNMP Master Server on UNIX, make sure that you modified the `run.sh` file accordingly (see the procedure “Modifying a backup SNMP Master Agent start file” on page 236). For a description of the command-line parameters specific to SNMP Master Agent, refer to "SNMP Master Agent" on page 178.

Procedure: Starting a backup SNMP Master Agent

Start of procedure

1. To start the backup SNMP Master Agent on UNIX, go to the directory in which Genesys SNMP Master Agent is installed, and do one of the following:
   - To use only the required command-line parameters, type the following command line:
     ```
     sh run.sh
     ```
   - To specify the command line yourself, or to use additional command-line parameters, type the following command line:
     ```
     gsnmpmasteragent -host <Configuration Server host> -port
     <Configuration Server port> -app <SNMP Master Agent Application>
     [<additional parameters and arguments as required>]
     ```
2. To start the backup SNMP Master Agent on Windows, do one of the following:
   - To start as a Windows Service, refer to "Starting and Stopping with Windows Services Manager" on page 181.
   - To start from Genesys Administrator or SCI, refer to "Starting and Stopping with the Management Layer" on page 167.
   - To start manually, do one of the following:
     - — Use the `Start > Programs` menu.
     - — To use only the required command-line parameters, go to the directory in which SNMP Master Agent is installed, and double-click the `startServer.bat` file.
     - — To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which SNMP Master Agent is installed, and type the following command line:
       ```
       gsnmpmasteragent.exe -host <Configuration Server host> -port
       <Configuration Server port> -app <SNMP Master Agent
       Application> [<additional parameters and arguments as
       required>]
       ```

End of procedure

Chapter

10 Setting Up Geographically Distributed Systems

This chapter describes Genesys Framework support for geographically distributed systems. It also describes how to set up Configuration Server Proxy and Distributed Solution Control Servers, and how to configure their clients to work with them.

This chapter contains the following sections:

- Overview, page 239
- Architecture, page 240
- Configuration Server Proxy, page 241
- Distributed Solution Control Servers, page 254
- Redundancy Support, page 262

Overview

Large enterprises often run contact-center operations at numerous locations worldwide. Yet, for Genesys software to function as a single unit it is usually critical that all configuration objects comprising an enterprise be stored in a single Genesys Configuration Database. Under these circumstances, network delays, component failures, and similar factors might complicate or slow down the operations of a large enterprise.

However, by operating two Framework components in different modes you can somewhat simplify the operation of a geographically distributed installation with a single Configuration Database:

- Use Configuration Server operating in Proxy mode (referred to as *Configuration Server Proxy*) in addition to the master Configuration Server to distribute configuration-related tasks among the sites.

- Operate two or more Solution Control Servers in Distributed mode (referred to as *Distributed Solution Control Servers*), to distribute management-related tasks among the sites.

Licensing Requirements

Starting Configuration Server in Proxy mode or Solution Control Server in Distributed mode requires special licenses. Refer to the *Genesys Licensing Guide* for more information.

Architecture

Figure 10 shows how Configuration Server Proxy and Distributed SCS fit into a Genesys configuration environment.

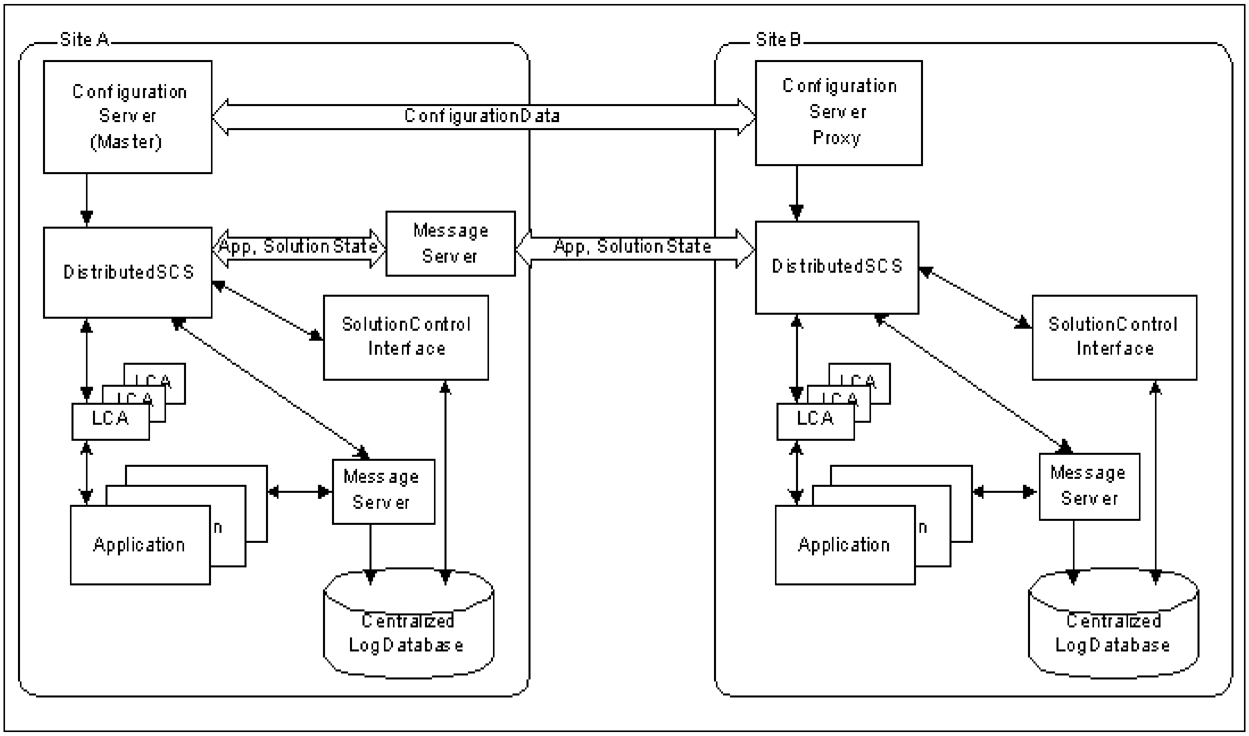


Figure 10: Geographically Distributed Installation

Configuration Server Proxy Functions

Configuration Server Proxy:

- Receives subscription requests from clients and handles them without passing the requests to Configuration Server.
- Stores in internal memory all configuration data it receives from Configuration Server.

- Receives notifications on data changes from Configuration Server, updates internal memory, and passes notifications to clients.
- Receives read-data requests from clients and responds to them using the data stored in the internal memory.

Note: A hierarchical configuration of Configuration Server Proxies—for example a Configuration Server Proxy application working with another Configuration Server Proxy that operates directly with Configuration Server—is not supported.

Distributed Solution Control Server Functions

Distributed Solution Control Server:

- Performs the same functions of monitoring, control, alarm detection, and alarm processing as the SCS in non-Distributed mode, but on a subset of hosts, applications and solutions explicitly assigned to this SCS in the Configuration Database.
- Communicates all the updates to statuses of the assigned objects to other Distributed Solution Control Servers, using a dedicated Message Server.
- Receives notifications about updates to the status of non-assigned objects (that is, objects assigned to other Solution Control Servers) from Message Server.
- When receiving a control command on an object not assigned to this SCS, forwards this command via Message Server to the appropriate SCS.

When to Use This Architecture

Genesys recommends using Configuration Server Proxy and Distributed Solution Control Server in a multi-site and/or multi-tenant environments. Using Configuration Server Proxy in a single-site environment does not reduce network traffic or increase system robustness.

Configuration Server Proxy

In a geographically distributed configuration environment, the master Configuration Server is running at the site where the Configuration Database is located. Configuration Server Proxies at multiple remote sites are connecting to the master Configuration Server.

Instead of sending all the requests to Configuration Server, Configuration Server clients that require read-only access to Configuration Server can operate with one or more Configuration Server Proxies. Configuration Server Proxy passes messages to and from Configuration Server. Moreover, the proxy keeps the configuration data in its memory and responds to client data requests. Any configuration data updates are passed immediately to Configuration Server Proxy, so that it is always up to date; no additional configuration is required to specify an update interval.

Using Configuration Server Proxy increases the robustness of the whole system, decreases the number of client connections to Configuration Server, and minimizes network traffic. That is, clients continue their operations, and new clients can start theirs, when Configuration Server fails. Also, after Configuration Server recovers, the client reconnect takes far less time than if all clients were directly connected to Configuration Server.

Note: If external authorization is used, all client authorization occurs at the Master Configuration Server. Therefore, a live connection is required between Configuration Server Proxy and the Master Configuration Server.

In Genesys configuration terms, Configuration Server Proxy is an application of the Configuration Server type operating in a special mode. As a such, it replaces Configuration Server seamlessly for the clients. However, Configuration Server Proxy provides *read-only* access to configuration data. Therefore, Configuration Server clients that require write access to Configuration Server (such as Configuration Manager, Deployment Wizards, and some others) must still connect directly to Configuration Server.

Note: To ensure faultless operation, all Configuration Servers in the configuration environment must be running the same release. Configuration Server Proxy may start with a Master Configuration Server running a previous release, but only during the migration process. Refer to the *Genesys Migration Guide* for more information.

You can also configure Configuration Server Proxy permissions so that clients of a particular proxy access only the part of configuration environment relevant to their site. See “Security Considerations” on page 59, and *Framework 8.0 Configuration Manager Help* for more information about setting permissions.

Setting Up Configuration Server Proxy

Configuration Server 8.0 operating in Proxy mode provides the same functionality as the 7.0 release of Configuration Server Proxy. Starting with the 7.0 release of Configuration Server, Configuration Server operating in Proxy mode is now referred to as *Configuration Server Proxy.*

Prerequisite

- The Configuration Layer components, including Master Configuration Server, are installed and running, as described in “Setting Up the Configuration Layer” on page 77.

Task Summary

The following table summarizes the steps required to install and set up Configuration Server Proxy.

Task Summary: Setting Up Configuration Server Proxy

Task	Related Procedures and Information
1. Configure as many instances of Configuration Server Proxy as needed.	Use one of the following procedures, as appropriate: • "Configuring a Configuration Server Proxy Application object using Genesys Administrator" on page 243 • "Configuring a Configuration Server Proxy Application object using Configuration Manager" on page 245
2. Install the corresponding number of Configuration Server Proxies.	Use one of the following procedures, as appropriate: • To install on UNIX, use the procedure "Installing Configuration Server Proxy on UNIX" on page 246. • To install on Windows, use the procedure "Installing Configuration Server Proxy on Windows" on page 247.
3. Modify each Configuration Server Proxy client.	Use one of the following procedures, as appropriate: • "Modifying a Client Application using Genesys Administrator" on page 248 • "Modifying a Client Application using Configuration Manager" on page 249
4. (Optional) Set up redundant Configuration Server Proxies.	Use one of the following procedures, as appropriate: • "Setting up a backup redundant Configuration Server Proxy using Genesys Administrator" on page 252 • "Setting up a backup redundant Configuration Server Proxy using Configuration Manager" on page 252

Procedure: Configuring a Configuration Server Proxy Application object using Genesys Administrator

Prerequisites

- Configuration Layer components, including the master Configuration Server, are installed and running, as described in Chapter 5 on page 77.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and select New in the toolbar. This opens a Browse dialog box that lists available application templates. If a Configuration Server Proxy template file is not listed, do one of the following:
   - Import the Configuration Server Proxy_<current-version>.apd file from the Management Framework 8.0 product CD.
   - Create a new template using the procedure "Creating a new application template using Genesys Administrator" on page 265, and repeat this step.
2. In the Browse dialog box, select the Configuration Server Proxy template file. The Configuration tab for the new Configuration Server Proxy Application object appears in the Details panel.
3. In the General section of the Configuration tab:
   a. Enter a descriptive name in the Name text box.
   b. In the list of Connections, add a connection to the master Configuration Server Application object. If redundant master Configuration Servers are configured, specify a connection to the primary Configuration Server.
4. In the Server Info section:
   a. Select the Host object on which this Configuration Server Proxy runs.
   b. Specify the Listening Ports that Configuration Server Proxy clients must use to connect to this Configuration Server.
   c. In the Working Directory, Command Line, and Command Line Arguments text boxes, do one of the following:
      - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see "Starting Configuration Server Proxy" on page 250.
      - Type a period (.) in the Working Directory and Command Line text boxes, and leave the Command Line Arguments text box blank. The information will be filled in automatically when you install Configuration Server Proxy, but only if the Installation Package can connect to the master Configuration Server.
   d. Enter appropriate values for the other mandatory fields (those indicated by red asterisks).
5. (Optional) On the Options tab, set the values of the log configuration options.
6. Click Save and Close to save the configuration.

End of procedure

Procedure: Configuring a Configuration Server Proxy Application object using Configuration Manager

Prerequisites

- Configuration Layer components, including the master Configuration Server, are installed and running, as described in Chapter 5 on page 77.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, right-click the `Applications` folder and select `New > Application`, which opens the `Browse` dialog box that lists the available application templates. If a Configuration Server Proxy template is not listed, either import the `Configuration Server Proxy_<current-version>.apd` file from the Management Framework product CD or use the procedure "Importing a predefined application template using Configuration Manager" on page 267 to import it, and repeat this step.
2. In the `Browse` dialog box, select the Configuration Server Proxy template file, which opens the `Properties` dialog box for the new Configuration Server Proxy `Application` object.
3. On the `General` tab, enter a name for the Configuration Server Proxy application.
4. On the `Server Info` tab, specify:
   - The host on which the Configuration Server Proxy is to be installed.
   - The communication ports that clients must use to connect to this Configuration Server Proxy.
5. On the `Connections` tab, add a connection to the Configuration Server `Application` object (`confserv`). If redundant Configuration Servers are configured, specify a connection to the primary Configuration Server.
6. On the `Start Info` tab, in the `Working Directory`, `Command Line`, and `Command Line Arguments` text boxes, do one of the following:
   - Enter the appropriate information in each of the text boxes. For information about command-line parameters, see "Starting Configuration Server Proxy" on page 250.
   - Type a period (`.`) in the `Working Directory` and `Command Line` text boxes, and leave the `Command Line Arguments` text box blank. The information will be filled in automatically when you install Configuration Server Proxy, but only if the Installation Package can connect to the primary Configuration Server.

7. (Optional) On the `Options` tab, set the values of the log configuration options.
8. Click `OK` to save the configuration changes.

End of procedure

Procedure: Installing Configuration Server Proxy on UNIX

Prerequisites

- The Configuration Server Proxy `Application` object is created.

Start of procedure

1. On the Management Framework 8.0 product CD, locate and open the installation directory appropriate for your environment:
    - For an enterprise (single-tenant) environment, the installation directory is `configuration_layer/configserver/single/<operating_system>`.
    - For a multi-tenant environment, the installation directory is `configuration_layer/configserver/multi/<operating_system>`.

    The installation script, called `install.sh`, is located in the appropriate directory.
2. Type the file name at the command prompt, and press `Enter`.
3. For the installation type, type `3` to select `Configuration Server Proxy`, and press `Enter`.
4. To specify the host name for this Configuration Server Proxy, do one of the following:
    - Type the name of the host, and press `Enter`.
    - Press `Enter` to select the current host.
5. Enter the Master Configuration Server host name, and press `Enter`.
6. Enter the Master Configuration Server network port, and press `Enter`.
7. Enter the Master Configuration Server user name, and press `Enter`.
8. Enter the Master Configuration Server password, and press `Enter`.
9. The installation displays the list of `Application` objects of the specified type configured for this `Host` object. Type the number corresponding to the Configuration Server Proxy `Application` object you configured on page 245, and press `Enter`.
10. To specify the destination directory, do one of the following:
    - Press `Enter` to accept the default.
    - Enter the full path of the directory, and press `Enter`.

11. If the target installation directory has files in it, do one of the following:
    - Type `1` to back up all the files in the directory, and press `Enter`. Specify the path to which you want the files backed up, and press `Enter`.
    - Type `2` to overwrite only the files in this installation package, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

      Use this option only if the application already installed operates properly.
    - Type `3` to erase all files in this directory before continuing with the installation, and press `Enter`. Then type `y` to confirm your selection, and press `Enter`.

    The list of file names will appear on the screen as the files are copied to the destination directory.
12. Specify the full path to, and the exact name of, the license file that Configuration Server Proxy will use, and press `Enter`.

    When the installation process is finished, a message indicates that installation was successful. The process places Configuration Server Proxy in the directory that you specified during installation.

End of procedure

Procedure: Installing Configuration Server Proxy on Windows

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Prerequisites

- The Configuration Server Proxy `Application` object is created.

Start of procedure

1. On the Management Framework 8.0 product CD, locate and open the installation directory appropriate for your environment:
    - For an enterprise (single-tenant) environment, the installation directory is `configuration_layer/configserver/single/windows`.
    - For a multi-tenant environment, the installation directory is `configuration_layer/configserver/multi/windows`.

    The installation script, called `setup.exe`, is located in the appropriate directory.
2. Locate and double-click `setup.exe` to start the Genesys Installation Wizard.

3. Use the About button on the wizard's Welcome page to review the read_me file. The file also contains a link to the server's Release Notes file.
4. Click Next.
5. On the Configuration Server Run Mode page, select Configuration Server Proxy.
6. On the Connection Parameters to the Genesys Configuration Server page, specify the host name, port, user name, and password for the Master Configuration Server, then click Next.
7. On the Select Application page, select the name of the Configuration Server Application object that you created on page 245, and click Next.
8. On the Access to License page, specify the license access type and the appropriate parameters, and click Next.
9. On the Choose Destination Location page, the wizard displays the destination directory specified in the Working Directory property of the server's Application object. If the specified path is invalid, the wizard generates a path to C:\Program Files\GCTI\<Singletenant or Multitenant> Configuration Server.

   If necessary, use the:

   - Browse button to select another destination folder. In this case, the wizard will update the Application object's Working Directory property in the Configuration Database.
   - Default button to reinstate the path specified in the Working Directory property.

   Click Next to proceed.
10. On the Ready to Install information page, click:
    - Back to update any installation information.
    - Install to proceed with the installation.
11. On the Installation Complete page, click Finish.

    When the installation process is finished, a message indicates that installation was successful. The process places Configuration Server Proxy in the directory that you specified during the installation process.

End of procedure

Procedure: Modifying a Client Application using Genesys Administrator

Purpose: To enable a client application to work with Configuration Server Proxy.

Note: Repeat this procedure for each application that is to be a client of Configuration Server Proxy.

Prerequisites

- The Configuration Server Proxy `Application` object exists.
- You have identified the client applications that are to operate with this particular Configuration Server Proxy.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning` > `Environment` > `Applications`, and double-click the client `Application` object that you want to connect to Configuration Server Proxy.
2. On the `Configuration` tab, open the `General` section.
3. Add a connection to the Configuration Server Proxy to which the client application should connect.
4. Click `Save and Close` to save the configuration changes.

   Now, when you start the client application, it will operate with the given Configuration Server Proxy.
5. Start the client application using one of the following methods:
   - From Genesys Administrator or Solution Control Interface.
   - From the command line. In this case, you must use the parameters `-host` and `-port` to point to the Configuration Server Proxy with which the application will be operating.
6. Click `Save and Close` to save the changes.

End of procedure

Procedure: Modifying a Client Application using Configuration Manager

Purpose: To enable a client application to work with Configuration Server Proxy.

Note: Repeat this procedure for each application that is to be a client of Configuration Server Proxy.

Prerequisites

- The Configuration Server Proxy Application object exists.
- You have identified the client applications that are to operate with this particular Configuration Server Proxy.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, open the Properties dialog box of the client Application object that you want to connect to Configuration Server Proxy.
2. Click the Connections tab.
3. Add a connection to the Configuration Server Proxy to which the client application should connect.
4. Click Apply and OK to save the configuration changes.

   Now, when you start the client application, it will operate with the given Configuration Server Proxy.
5. Start the client application using one of the following methods:
   - From Solution Control Interface.
   - From the command line. In this case, you must use the parameters -host and -port to point to Configuration Server Proxy with which the application will be operating.

End of procedure

Starting Configuration Server Proxy

The startup command line for Configuration Server Proxy must identify the:

- Configuration Server Proxy executable file.
- Configuration Server Proxy application name (the -app parameter).
- Configuration Server host (the -host parameter).
- Configuration Server port (the -port parameter).
- Configuration Server Proxy license file or license server location (the -l parameter).

Configuration Server Proxy supports the command-line parameters common to Genesys server applications. For a description of these parameters, refer to Chapter 8 on page 165.

Note: If using a primary-backup pair of Configuration Server Proxies, follow the same starting procedure for both primary and backup applications but make sure you specify the correct application name for each.

Procedure: Starting Configuration Server Proxy

Prerequisites

- You have set up Configuration Server Proxy, as described in "Setting Up Configuration Server Proxy" on page 242

Start of procedure

1. To start Configuration Server Proxy on UNIX, go to the directory in which Configuration Server Proxy is installed, and do one of the following:
   - To use only the required command-line parameters, type the following command line:

     ```
     sh run.sh
     ```
   - To specify the command line yourself, or to use additional command-line parameters, type the following command line:

     ```
     confserv [<additional parameters and arguments as required>]
     ```
2. To start Configuration Server on Windows, do one of the following:
   - Use the `Start > Programs` menu.
   - To use only the required command-line parameters, go to the directory in which Configuration Server Proxy is installed, and double-click the `startServer.bat` file.
   - To specify the command line yourself, or to use additional command-line parameters, open the MS-DOS window, go to the directory in which Configuration Server Proxy is installed, and type the following command line:

     ```
     confserv.exe [<additional parameters and arguments as required>]
     ```

End of procedure

Configuring Redundant Configuration Server Proxies

The high-availability (HA) architecture implies the existence of redundant applications, a primary and a backup, monitored by a management application. Like Configuration Server, Configuration Server Proxy supports the `warm standby` redundancy type between redundant Configuration Server Proxies. The redundant architecture is described in *Framework 8.0 Architecture Help*.

Procedure: Setting up a backup redundant Configuration Server Proxy using Genesys Administrator

Prerequisites

- A primary Configuration Server Proxy Application object already exists.
- You are logged in to Genesys Administrator.

Start of procedure

1. Configure an `Application` object for the backup Configuration Server Proxy following the procedure "Configuring a Configuration Server Proxy Application object using Genesys Administrator" on page 243.
2. Install a backup Configuration Server Proxy following either the procedure "Installing Configuration Server Proxy on UNIX" on page 246 or the procedure "Installing Configuration Server Proxy on Windows" on page 247.
3. In Genesys Administrator, go to `Provisioning` > `Environment` > `Applications` and double-click the primary Configuration Server Proxy client `Application` object.
4. On the `Configuration` tab, open the `Server Info` section.
5. In the `Backup Server` field, specify the Configuration Server Proxy application you want to use as the backup server.
6. In Genesys Administrator, Configuration Manager, open the `Properties` dialog box of the Configuration Server Proxy application that you want to configure as a primary server.
7. In the `Redundancy Type` field, select `Warm Standby`.
8. Select `Auto-Restart.`
9. Click `Save and Close` to save the configuration changes.

End of procedure

Procedure: Setting up a backup redundant Configuration Server Proxy using Configuration Manager

Prerequisites

- A primary Configuration Server Proxy Application object already exists.
- You are logged in to Configuration Manager.

Start of procedure

1. Configure an `Application` object for the backup Configuration Server Proxy following the procedure described in "Configuring a Configuration Server Proxy Application object using Configuration Manager" on page 245.
2. Install a backup Configuration Server Proxy following either the procedure "Installing Configuration Server Proxy on UNIX" on page 246 or the procedure "Installing Configuration Server Proxy on Windows" on page 247.
3. In Configuration Manager, open the `Properties` dialog box of the Configuration Server Proxy application that you want to configure as a primary server.
4. Click the `Start Info` tab.
5. Select `Auto-Restart.`
6. Click the `Server Info` tab.
7. Select `Warm Standby` as the Redundancy Type.
8. Specify the Configuration Server Proxy application you want to use as the backup server. Use the `Browse` button next to the `Backup Server` property field to locate the backup Configuration Server Proxy application.
9. Click `Apply` and `OK` to save the configuration changes.

End of procedure

Failure of Configuration Server Proxy

When Configuration Server Proxy fails or disconnects from its clients, the clients attempt to reconnect to Configuration Server Proxy. If it is not available and if a backup Configuration Server Proxy is configured, the clients attempt to connect to the backup.

When Configuration Server Proxy fails, you must restart it manually or use the Management Layer for autorestart.

Failure of Configuration Server

When Configuration Server fails or the connection to it is lost, the clients of Configuration Server Proxy continue their normal operations. Configuration Server Proxy initiates reconnect attempts to Configuration Server. Meanwhile, Configuration Server Proxy responds to client requests using the configuration data stored in its memory.

When Configuration Server fails, you must restart it manually or use the Management Layer for autorestart.

Figure 11 shows Configuration Server Proxy behavior when a primary-backup pair of Configuration Servers is configured.

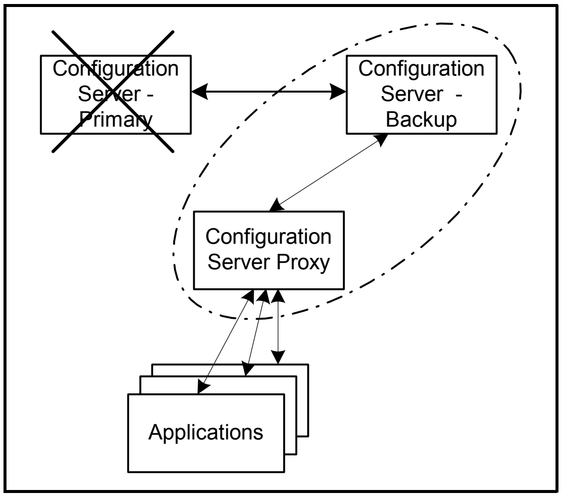

Configuration Server - Primary
Configuration Server - Backup
Configuration Server Proxy
Applications

Figure 11: Failure of Configuration Server with a Configured Backup

When the primary Configuration Server fails or the connection to it is lost, Configuration Server Proxy initiates reconnect attempts to Configuration Server and, if it is not available, to the backup Configuration Server. If the connection to the backup Configuration Server is established, Configuration Server Proxy remains connected to the backup server until:

- The connection to the backup Configuration Server is lost.
- The backup Configuration Server fails.
- Configuration Server Proxy fails or is restarted.

Distributed Solution Control Servers

In a geographically distributed configuration environment, a number of Solution Control Servers can communicate with each other and control a particular part of the Genesys environment while running at multiple remote sites (but within the same configuration environment).

This section provides information about ownership configuration and activating Distributed mode.

Note: Starting Solution Control Server in Distributed mode requires a special license. Refer to the *Genesys Licensing Guide* for more information.

SCS in Distributed Mode

Starting with release 7.0, you can use Solution Control Server operating in `Distributed` mode (referred to as *Distributed Solution Control Server*) to distribute management-related tasks among the sites in a geographically distributed enterprise that uses a single Genesys Configuration Database.

You can install and use more than one Distributed Solution Control Server within a single configuration environment. In these installations, each such server controls its own subset of the hosts, applications, and solutions. Distributed Solution Control Servers communicate with each other through the dedicated Message Server.

When you are using Distributed Solution Control Servers, you must explicitly configure the servers' ownership of hosts, applications, and solutions. That is, you must associate each host, application, and solution object with a particular SCS.

Using Distributed Solution Control Servers helps you resolve some problems common to geographically distributed installation:

- It eliminates false switchovers that occur when SCS disconnects from LCA at a remote site because of the slow network connection between sites or because of temporary network problems.
- It prevents a single point of failure. A failure of one Distributed SCS only means a temporary loss of control over a subset of hosts, applications, and solutions; other Distributed Solution Control Servers continue to control the rest of the environment.

Because Distributed Solution Control Servers communicate with each other, they all have the same information about all hosts, applications, and solutions. Therefore, given appropriate permissions, you can connect Solution Control Interface to any Distributed Solution Control Server and monitor and control the whole environment as a single entity.

Configuring Distributed Solution Control Servers

Warnings!

- Do not use Solution Control Servers in Distributed and non-Distributed modes simultaneously within the same Configuration environment. If you plan to use Distributed SCS in your installation, turn on Distributed mode for all Solution Control Servers you install.
- When using Distributed Solution Control Servers, always ensure that each Solution Control Server, either by itself or as part of a high-availability pair, is running on the host which it controls. Failure to do so can, in some cases, result in unpredictable behavior of the Solution Control Servers in the Distributed configuration. For example, different Solution Control Servers may start competing for control over applications on the host.

Procedure: Configuring Distributed Solution Control Servers

Purpose: To configure Solution Control Servers so that they can function in Distributed mode.

Start of procedure

1. Configure as many Solution Control Server `Application` objects as necessary, as described in Chapter 6 on page 111.
2. For each Solution Control Server application, turn on Distributed mode. To do so, specify the following values for configuration options in the `general` section:
   - `distributed_mode` = `ON`
   - `distributed_rights` = `DEFAULT`
3. If you are planning to leave unassigned any of the host, application, or solution objects unassigned—that is, without specifying which SCS is to control them—dedicate one SCS to the control of all unassigned hosts, applications, and solutions. To instruct one SCS to work in this mode, specify the following values for configuration options in the `general` section for that particular Solution Control Server application:
   - `distributed_mode` = `ON`
   - `distributed_rights` = `MAIN`.

Note: Only one of the Distributed Solution Control Servers can have the value `MAIN` for the `distributed_rights` configuration option.

End of procedure

Redundant Configurations for Distributed SCS

Distributed SCS supports the `warm standby` redundant configuration in the same way as other Genesys servers, with the added benefit that the backup maintains data synchronization with the primary. That is, you can configure a primary and a backup pair of Distributed Solution Control Servers to operate with warm-standby redundancy.

To set up HA port synchronization between Primary and Backup Solution Control Servers, refer to “Synchronizing HA Ports Between Redundant Solution Control Servers” on page 227.

Dividing Configuration Among Solution Control Servers

When you are using Distributed Solution Control Servers, you must specify which SCS controls which subset of the following objects:

- Hosts
- Applications
- Solutions

Do this by changing the object's properties, as described in the following sections.

Note: To distribute control over the primary and backup servers in a redundant pair between different Distributed Solution Control Servers, all Solution Control Servers in the configuration must be running release 7.5 or later.

Procedure: Specifying a Distributed Solution Control Server to control a Host, Application, or Solution

Start of procedure

1. To assign a Distributed SCS to control a host, specify the SCS application in the `Solution Control Server` field in the `General` section of the `Configuration` tab (in Genesys Administrator), or on the `General` tab (in Configuration Manager), of the `Host` object.
2. To assign a Distributed SCS to control an application, do not make any changes to the `Application` object. Specifying SCS ownership of the application's host is enough. The Distributed SCS automatically controls any applications assigned to the host this SCS controls.
3. To assign a Distributed SCS to control a solution, specify the SCS application in the `Solution Control Server` field in the `General` section of the `Configuration` tab (in Genesys Administrator), or on the `General` tab (in Configuration Manager), of the `Solution` object.

End of procedure

Recommendations

- Do not distribute control over the primary and backup servers in a redundant pair between different Distributed Solution Control Servers if any SCS in the configuration environment is running a pre-7.5 release.

Genesys recommends that you configure the same SCS to control both the primary and backup servers in a redundant pair.

- When you are distributing control over the configuration objects among Distributes Solution Control Servers, ensure that the same SCS that controls a solution also controls all applications included in this solution. While one SCS can technically control a solution while other servers control applications included in that solution, avoiding this configuration helps minimize network traffic between Solution Control Servers.

Specifying Message Server for SCS Communications

Distributed Solution Control Servers communicate with each other through Message Server. Genesys recommends that you use a dedicated Message Server for this purpose.

Procedure: Configuring a dedicated Message Server for Distributed Solution Control Servers using Genesys Administrator

Prerequisites

- An `Application` object exists for each Distributed Solution Control Server in the configuration environment.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, configure a Message Server `Application` object with appropriate configuration parameters. Refer to Chapter 6 on page 111 for instructions.
2. Double-click the Message Server `Application` object, and click the `Options` tab.
3. Create a new section called `MessageServer`.
4. In this section, create a new configuration option called `signature` and set its value to `scs_distributed`. Each Distributed SCS processes this option to determine which of the Message Servers specified in SCS connections to use for communications with other Solution Control Servers.
5. In the `Application` object for each Distributed Solution Control Server, add a connection to this Message Server, as follows:
   a. Enter `ADDP` as the `Connection protocol`.

b. Set the ADDP `Local Timeout` and `Remote Timeout` to values that are less than half the minimum `alive_timeout` values between all Distributed Solution Control Servers in the configuration environment. In other words:

$T_{addp} < T_{scs} * 0.5$

where:

T_{addp} = ADDP timeout

T_{scs} = minimum `alive_timeout` between all Distributed Solution Control Servers

Refer to the *Framework Configuration Options Reference Manual* for a detailed description of the `alive_timeout` option.

End of procedure

Procedure: Configuring a dedicated Message Server for Distributed Solution Control Servers using Configuration Manager

Prerequisites

- An `Application` object exists for each Distributed Solution Control Server in the configuration environment.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, configure a Message Server `Application` object with appropriate configuration parameters.
2. Go to the `Options` tab of the Message Server `Application Properties` dialog box and create a new section called `MessageServer`.
3. Within this section, create a new configuration option called `signature` and set its value to `scs_distributed`. Each Distributed SCS processes this option to determine which of the Message Servers specified in SCS connections to use for communications with other Solution Control Servers.
4. In the `Application` object for each Distributed Solution Control Server, add a connection to this Message Server, as follows:

   a. Enter `ADDP` as the `Connection protocol`.

   b. Set the ADDP `Local Timeout` and `Remote Timeout` to values that are less than half the minimum `alive_timeout` values between all

Distributed Solution Control Servers in the configuration environment. In other words:

$T_{addp} < T_{scs} * 0.5$

where:

T_{addp} = ADDP timeout

T_{scs} = minimum `alive_timeout` between all Distributed Solution Control Servers

Refer to the *Framework Configuration Options Reference Manual* for a detailed description of the `alive_timeout` option.

End of procedure

Notes on Configuring SCI

Because Distributed Solution Control Servers communicate with each other, they all have the same information about all hosts, applications, and solutions. Thus, you can connect Solution Control Interface to any Distributed SCS and monitor and control the whole environment as a single entity (given appropriate permissions).

When Distributed SCS receives a control command for an object that this SCS does not control, it forwards this command to the appropriate SCS and passes any further notifications back to the requestor.

Notes on Configuring Message Server for Centralized Logging

For distributed environments using a single Configuration Database, Genesys recommends using a dedicated Message Server for centralized logging at each site. In most cases, you have to configure as many Message Servers as there are Distributed Solution Control Servers.

Notes: You can configure as many Message Servers for centralized logging as you need per site.

You also need an additional Message Server to handle SCS communications (see page 258).

Procedure: Verifying configuration of Message Servers used for centralized logging in a Distributed Solution Control Server environment using Genesys Administrator

Purpose: To verify that each Message Server used for centralized logging is configured and connected to a Solution Control Server and to each of the applications controlled by that Solution Control Server.

Prerequisites

- Distributed Solution Control Servers are set up in the configuration environment.
- The Message Server used for centralized logging in this environment is installed.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Applications, and double-click a particular Solution Control Server Application object to open its Configuration tab.
2. In the General section, make sure that a connection to the Message Server that is providing the centralized logging is added to the list of Connections.
3. For each Application object that this particular Solution Control Server controls:
   a. Open the Configuration tab of the object.
   b. In the General section, make sure that a connection to that same Message Server is added to the list of Connections.

End of procedure

Procedure: Verifying configuration of Message Servers used for centralized logging in a Distributed Solution Control Server environment using Configuration Manager

Purpose: To verify that each Message Server used for centralized logging is configured and connected to a Solution Control Server and to each of the applications controlled by that Solution Control Server.

Prerequisites

- Distributed Solution Control Servers are set up in the configuration environment.
- The Message Server used for centralized logging in this environment is installed.
- You are logged in to Configuration Manager.

Start of procedure

1. Open the `Properties` dialog box for a particular Solution Control Server `Application` object.
2. Make sure that a connection to the Message Server that is providing the centralized logging is added on the `Connections` tab.
3. For each `Application` object that this particular Solution Control Server controls:
   a. Open the `Properties` dialog box.
   b. Make sure that a connection to that same Message Server is added on the `Connections` tab.

End of procedure

Installing Applications

After you are finished with the configuration tasks, physically install all instances of Solution Control Server, Solution Control Interface, and Message Server to match the configuration.

Redundancy Support

Both Configuration Server Proxy and Distributed Solution Control Server currently support `warm standby` redundant configuration in the same way as other Genesys servers. That is, you can configure a primary and a backup Configuration Server Proxy or Distributed SCS to operate with `warm standby` redundancy, so that if the primary application fails, the backup can take over current operations. The backup Distributed SCS synchronizes its data with the primary SCS; however, the backup Configuration Server Proxy does not.

Distributed SCS can handle switchovers between other redundant client applications, regardless of the redundancy type configured for those other applications. For example, redundant T-Servers can be configured as `hot standby,` whereas redundant Universal Routing Servers can be configured as `warm standby.` Distributed SCS will handle the switchover for both applications.

Appendix

A Standard Configuration Procedure

This appendix provides generic instructions for using Configuration Manager or Genesys Administrator to configure a Genesys Framework `Application` object.

This appendix contains the following sections:

- Application Templates, page 263
- Server Applications, page 268
- Graphical User Interface Applications, page 276

Refer to instructions for a particular application for any application-specific deviations from the standard configuration procedure.

Application Templates

The application template provides a majority of the configuration options for server applications and the option default values. Using one application template, you can create as many `Application` objects of the same type as you need.

Before you configure an `Application` object, import a template for this application. If a suitable predefined template is not available, create a new template.

Using Genesys Administrator

The procedures in this section describe how use Genesys Administrator to import a predefined application template, and how to create a new application template.

Tip: Before you continue, make sure you have selected Show Advanced views in User Preferences. Refer to *Framework 8.0 Genesys Administrator Help* for more information about setting your User Preferences.

Procedure: Importing a predefined application template using Genesys Administrator

Purpose: To obtain a predefined template for an application, from which one or more Application objects of that type can be created.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Application Templates, and select Import template, located in the slide-out Tasks panel on the right.

   Note: If Application Templates is not listed under Environment, open user preferences, and select Show advanced views on the General tab. Refer to *Framework 8.0.Genesys Administrator Help*, if necessary.

2. In the window that appears, click Add.
3. In the Choose file dialog box, locate the installation CD for your product and open the TEMPLATES folder.
4. Select the template file for your application.
5. Click Open to import the template file. The Configuration tab for this template is displayed.
6. Make any changes that you require, then click Save to save your changes and return to the list of available templates.

End of procedure

Next Steps

- If there is metadata associated with this template, import the metadata file. Use the procedure “Importing metadata for an application template” on page 266.

Procedure: Creating a new application template using Genesys Administrator

Purpose: To create a new application template for an application, from which one or more Application objects of that type can be created.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Application Templates, and click New in the toolbar.

   Note: If Application Templates is not listed under Environment, open user preferences, and select the Show advanced views checkbox on the General tab. Refer to *Framework 8.0.Genesys Administrator Help* if necessary.

2. Specify the template Name, select a template Type, and specify a Version.
3. If required, define default configuration options on the Options tab.
4. Click Save to save the changes and return to the list of available templates.

   The new template is stored in the Environment > Application Templates folder, and can be used to create a new Application object; you do not have to import it

End of procedure

Application Metadata

Starting with release 8.0, application templates for some Genesys components come with additional XML files called Application Metadata files. These files are used by only Genesys Administrator, and provide a user-friendly way to further configure an object. The metadata file contains all of the configuration options that can be used for the particular application, including those that are already in the template.

The metadata file is located in the same folder with the corresponding application template, and has the same filename with the extension .xml. To enable the metadata, you must import the metadata file and associate it with the application template.

For more information about metadata, refer to *Framework 8.0 Genesys Administrator Help.*

Procedure: Importing metadata for an application template

Note: Genesys Administrator must be used for this procedure. Configuration Manager does not support metadata.

Prerequisites

- The application template to be associated with the metadata is available.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Application Templates, and select the application template to which the metadata is to be imported. The Configuration tab for this template is displayed.
2. Click Import Metadata in the toolbar.
3. In the window that appears, click Add.
4. In the Choose file dialog box, locate the installation CD for your particular product and open the TEMPLATES folder.
5. Select the metadata file for the application.
6. Click Open to import the metadata file, and associate the metadata with the application template.

End of procedure

After the metadata is imported for a template, a new tab, Settings, appears in the details pane for each Application object created from that template. In that new tab, Genesys Administrator displays additional detailed information about configuration options that can be used with that application.

Using Configuration Manager

The procedures in this section describe how to use Configuration Manager to import a predefined application template, and how to create a new application template.

Procedure: Importing a predefined application template using Configuration Manager

Purpose: To obtain predefined template for an application, from which one or more `Application` objects of that type can be created.

Prerequisites

- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, select the `Environment > Application Templates` folder.
2. Select `File > Import > Application Template.`
3. Click the down arrow for the `Look In` field.
4. Locate the installation CD for your particular product and open the `TEMPLATES` folder.
5. Select the template file for your particular application.
6. Click `Open` to open the `Properties` dialog box for this template.
7. Make any changes that you require, then click `OK` to save them and exit the `Properties` dialog box.

End of procedure

Procedure: Creating a new application template using Configuration Manager

Purpose: To create a new application template for an application, from which one or more `Application` objects of that type can be created.

Prerequisites

- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, select the `Environment > Application Templates` folder.
2. Select `File > New > Application Template.`

3. Specify the template Name, select a template Type, and specify a Version.
4. If required, define default configuration options on the Options and Annex tabs.
5. Click OK to save your changes and exit the Properties dialog box.

   The new template is stored in the Environment > Application Templates folder, and is available to be used to create a new Application object; you do not have to import it

End of procedure

Server Applications

This section contains the procedures necessary to create and configure Server applications.

Using Genesys Administrator

Procedure: Creating and configuring a Server Application object using Genesys Administrator

Prerequisites

- The Configuration Layer is installed and running.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and select New in the toolbar.
2. From the available application templates in the Browse dialog box, choose the template for this application. (See "Application Templates" on page 263 for information about templates.)
3. In the General section of the Configuration tab:
   - Enter a name for this application in the text box. The application template provides information for the application type and version.
   - If you are in a multi-tenant environment, add the tenants who will be using this application.
   - In the Connections field, do any of the following as required:

  - Add a connection to any server application to which this application should be a client. To enable Advanced Disconnect Detection Protocol (ADDP) for this connection, see "Configuring ADDP" on page 273.
  - To enable ADDP between this server and Configuration Server, add the Configuration Server application (named confserv) to the Connections and specify the values for the connection protocol in seconds (see "Configuring ADDP" on page 273.) For more information, refer to *Framework 8.0 Genesys Administrator Help*.
  - Add a connection to Message Server to provide alarm-signaling and centralized-logging capabilities.

4. In the Server Info section, specify the following:
   - The host computer on which this server is to be installed and/or to run.
   - Listening ports that applications must use to connect to this server.
   - Working Directory—the full path to the directory from which the application starts.
   - Command Line properties—The command line used for starting the application; usually, it is the name of the executable file.
   - Command Line Arguments—Additional parameters, if any, used for starting the application.

   Note that the path, command line, and command-line parameters are updated automatically during the application's installation procedure.

   - If another server application is used as a backup for this one, specify the Backup Server and the Redundancy Type.

Warning! You must have a special high-availability (HA) license to use redundant configurations. Otherwise, the Management Layer does not perform a switchover between the primary and backup servers. Refer to the *Genesys Licensing Guide* for details.

5. Select the Options tab and specify or change the values of the configuration options. For option descriptions, see:
   - The *Framework 8.0 Configuration Options Reference Manual* for Configuration and Management Layer components' options.
   - The latest version of the *Framework T-Server Deployment Guide* for your specific T-Server and HA Proxy (if applicable) options.
   - The latest version of the *Framework Stat Server User's Guide* for Stat Server options.

   If the application's working directory differs from the directory in which the application was originally installed, configure an option named messagefile in the log section. Specify the full path to the application-specific log messages file (*.lms) as the option value. Otherwise, the application is unable to generate its specific log events.

6. Click `Save` or `Apply` to save your changes. The new GUI application is now listed in the list of applications.

End of procedure

Configuring ADDP

You can enable ADDP for a connection between any two Genesys applications that support it.

Procedure: Configuring Advanced Disconnect Detection Protocol using Genesys Administrator

Purpose: To configure ADDP-related parameters for a connection between two applications that form a client-server pair.

Note: Some applications do not support ADDP for certain connections. Refer to application-specific documentation or Release Notes to determine if your application supports ADDP.

Prerequisites

- The Configuration Layer is installed and running.
- `Application` objects for each application in the client-server pair exist.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to `Provisioning > Environment > Applications,` and select the client application in the client-server pair.
2. Select the `Configuration` tab, and expand the `General` section.
3. In the `Connections` list, click `Add`.
4. In the `CfgConnectionInfo` dialog box that opens:
   a. From the list of servers, select the application name that represents the connection for which you want to configure ADDP.
   b. Specify `addp` as the value for the `Connection Protocol` field.
   c. Specify any integer as the value for the `Local Timeout` field. This indicates how often, in seconds, the client application sends polling signals to the server application.

> **Tip:** To avoid false disconnect states that might occur because of delays in the data network, Genesys recommends setting the ADDP timeouts to values equal to or greater than ten seconds.

d. If you also want to enable polling signals from the server application to the client, specify any integer as the value for the `Remote Timeout` field. This timeout is also measured in seconds.

e. If you do not want either the client or the server application to print ADDP-related messages in its log, select the `Trace Is Turned Off` value for the `Trace Mode` field. Otherwise, do one of the following:
   - Select `Trace On Client Side` for the client application to print ADDP-related messages in its log.
   - Select `Trace On Server Side` for the server application to print ADDP-related messages in its log.
   - Select `Trace On Both Sides` for both client and server applications to print ADDP-related messages in their log.

5. Click `OK,` and then `Save` to save the configuration changes.

End of procedure

Using Configuration Manager

Procedure: Creating and configuring a Server Application object using Configuration Manager

Prerequisites

- The Configuration Layer is installed and running.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, select the `Environment > Applications` folder.
2. Select `File > New > Application.`
3. From the available application templates in the `Browse` dialog box, choose the template for this application. (See "Application Templates" on page 263 for information about application templates.)
4. Select the `General` tab of the `Properties` dialog box and enter a name for this application. The application template provides information for the application type and version.

5. The `Tenants` tab displays only in a multi-tenant environment. You can add tenants for this application by selecting the `Tenants` tab and clicking the `Add` button.
6. Select the `Server Info` tab and specify the:
   - Host computer on which this server is to be installed and/or to run.
   - One or more communication ports that applications must use to connect to this server.
7. If another server application is used as a backup for this one, specify the `Redundancy Type` and the `Backup Server` on the `Server Info` tab.

Warning! You must have a special high-availability (HA) license to use redundant configurations. Otherwise, the Management Layer does not perform a switchover between the primary and backup servers. Refer to the *Genesys Licensing Guide* for details.

Note: See "Synchronizing Options and Ports Between Primary and Backup Servers" on page 274 for information about enabling options and ports synchronization between primary and backup servers.

8. Select the `Start Info` tab and define the:
   - `Working Directory`—The full path to the directory from which the application starts.
   - `Command Line` properties—The command line used for starting the application; usually, it is the name of the executable file.
   - `Command Line Arguments`—Additional parameters, if any, used for starting the application.

   Note that these properties are updated automatically during the application's installation procedure.
9. Select the `Options` tab and specify or change the values of the configuration options. For option descriptions, see:
   - The *Framework 8.0 Configuration Options Reference Manual* for Configuration and Management Layer components' options.
   - The latest version of the *Framework T-Server Deployment Guide* for your specific T-Server and HA Proxy (if applicable) options.
   - The latest version of the *Framework Stat Server User's Guide* for Stat Server options.

   If the application's working directory differs from the directory to which the application is originally installed, configure an option named `messagefile` in the `log` section. Specify the full path to the application-specific log messages file (`*.lms`) as the option value. Otherwise, the application is unable to generate its specific log events.

10. Select the `Connections` tab, and do any of the following as required:
    - Add a connection to any server application this application should be a client to. To enable Advanced Disconnect Detection Protocol (ADDP) for this connection, see "Configuring ADDP" on page 273.
    - To enable ADDP between this server and Configuration Server, add the Configuration Server application (named `confserv`) to the Connections and specify the values for the connection protocol in seconds (see "Configuring ADDP" on page 273). For more information, refer to *Framework 8.0 Configuration Manager Help.*
    - Add a connection to Message Server to provide alarm-signaling and centralized-logging capabilities.

    > **Tip:** You can add a connection to Message Server for all or a set of `Application` objects after you configure them. To launch a Wizard that configures connections for multiple `Application` objects, select two or more `Application` objects, right-click, and select `Manage Connections.` Refer to *Framework 8.0 Configuration Manager Help* for more information.

11. Click `OK` to save your changes and exit the `Properties` dialog box.

End of procedure

Configuring ADDP

You can enable the Advanced Disconnect Detection Protocol (ADDP) for a connection between any two Genesys applications that support ADDP.

Procedure: Configuring Advanced Disconnect Detection Protocol using Configuration Manager

Purpose: To configure ADDP-related parameters for a connection between two applications that form a client-server pair.

Note: Some applications do not support ADDP for certain connections. Refer to documentation or Release Notes to find this information for particular applications.

Prerequisites

- The Configuration Layer is installed and running.
- `Application` objects for each application in the client-server pair exist.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, open the `Application Properties` dialog box for the client application in the client-server pair.
2. Select the `Connections` tab.
3. Double-click the application name that represents the connection for which you want to configure ADDP.
4. In the `Properties` dialog box that opens:
   a. Specify `addp` as the value for the `Connection Protocol` field.
   b. Specify any integer as the value for the `Local Timeout` field. This indicates how often, in seconds, the client application sends polling signals to the server application.

   > **Tip:** To avoid false disconnect states that might occur because of delays in the data network, Genesys recommends setting the ADDP timeouts to values equal to or greater than ten seconds.

   c. If you also want to enable polling signals from the server application to the client, specify any integer as the value for the `Remote Timeout` field. This timeout is also measured in seconds.
   d. If you do not want either the client or the server application to print ADDP-related messages in its log, select the `Trace Is Turned Off` value for the `Trace Mode` field. Otherwise, do one of the following:
      - Select `Trace On Client Side` for the client application to print ADDP-related messages in its log.
      - Select `Trace On Server Side` for the server application to print ADDP-related messages in its log.
      - Select `Trace On Both Sides` for both client and server applications to print ADDP-related messages in their logs.
5. Click `OK` to save the configuration changes, and exit the `Properties` dialog box.

End of procedure

Synchronizing Options and Ports Between Primary and Backup Servers

Configuration Manager can automatically synchronize the options and ports between primary and backup server applications. This section contains the procedures necessary to set up this automatic synchronization.

Currently, Genesys Administrator does not support this functionality.

Procedure: Synchronizing options between primary and backup servers

Purpose: To enable Configuration Manager to synchronize the options between primary and backup applications automatically.

Prerequisites

- The Configuration Layer is installed and running.
- The primary and backup servers have been installed and configured.
- You are logged in to Configuration Manager.

Start of procedure

1. Assign an application template to the primary server before using that template for a backup server. (This is the default behavior for Configuration Manager, but not for Configuration Wizards.)
2. On the application template's `Annex` tab, list the options that you want synchronized between the corresponding `Application` objects. You must list both the section and option names exactly as they appear in the primary application. *However*, instead of entering the actual option values, use one of the following values:
   - `1`— Indicates that the corresponding option in the primary server should be copied into the backup server only at the moment when the backup is assigned to the primary. This leaves the option available for later independent changes in the primary and backup servers.
   - `2`—Indicates that Configuration Server should not only copy the option to the backup during its assignment to the primary, but also that it should synchronize the options any time that the option is changed on the primary server.
3. Click `OK`.

End of procedure

Procedure: Synchronizing ports between primary and backup servers

Purpose: To enable Configuration Manager to synchronize the ports between primary and backup server applications automatically.

Prerequisites

- The Configuration Layer is installed and running.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, select `View > Options` to open the `Options` dialog box.
2. On the `General` tab, in the `Server Ports Assignment` section:
   a. Select `Auto`, and enter a starting number for the range of port numbers that will automatically be assigned for ports on server applications.
   b. Select `Auto For Backup`, and enter the first number of a range of ports that will automatically be assigned on backup applications.

      When the `Auto For Backup` option is selected, ports are automatically synchronized between the primary and backup server applications.

      When a port is defined on the primary server application, a compatible port is automatically allocated on the backup server application. If the two server applications are configured as a redundant pair, you cannot remove or change the ports on the backup server. If the two are not linked as a redundant pair, you can delete the ports on the application that had been the backup. Refer to *Framework 8.0 Configuration Manager Help* for more information.
3. Click `OK`.

End of procedure

Graphical User Interface Applications

The section contains the procedures necessary to create and configure graphical user interface (GUI) `Application` objects.

Procedure:
Creating and configuring a GUI Application object using Genesys Administrator

Prerequisites

- The Configuration Layer is installed and running.
- At least one of the servers to which the GUI connects is installed.
- You are logged in to Genesys Administrator.

Start of procedure

1. In Genesys Administrator, go to Provisioning > Environment > Applications, and select New in the toolbar.
2. From the available application templates in the Browse dialog box, choose the template for this application. (See "Application Templates" on page 263 for information about templates.)
3. In the General section of the Configuration tab, enter a name for this application in the text box. The application template provides information for the application type and version.
4. Select the Connections tab. If necessary, add connections to any server applications to which this GUI application must connect.
5. Click Save to save your changes. The new GUI application is now listed in the list of applications.

End of procedure

Procedure: Creating and configuring a GUI Application object using Configuration Manager

Prerequisites

- The Configuration Layer is installed and running.
- At least one of the servers to which the GUI connects is installed.
- You are logged in to Configuration Manager.

Start of procedure

1. In Configuration Manager, select the Environment > Applications folder.
2. Select File > New > Application.
3. From the available application templates in the Browse dialog box, choose the template for this application. (See "Application Templates" on page 263 for information about templates.)
4. Select the General tab of the Properties dialog box and enter a name for this Application in the text box. The application template provides information for the application type and version.
5. Select the Connections tab. If necessary, add connections to any server applications to which this GUI application must connect.
6. Click OK to save your changes and exit the Properties dialog box.

End of procedure

Appendix

B Standard Installation Procedure

This appendix provides instructions for installing a typical Genesys application that you have configured using Configuration Manager.

This appendix contains the following sections:

- Server Applications, page 279
- Graphical User Interface Applications, page 283
- Troubleshooting the Installation, page 284

Refer to the instructions for a particular application for the location of installation packages on a product CD and for any application-specific deviations from the standard installation procedure.

Server Applications

This section describes a standard installation procedure for a server application on UNIX and Windows operating systems.

Procedure: Installing a server application on UNIX

Warning! During installation on UNIX, all files are copied into the directory you specify. The install process does not create any subdirectories within this directory,; therefore, do not install different products into the same directory.

Prerequisites

- An Application object exists for the server application. See either the procedure or “Creating and configuring a Server Application object using Genesys Administrator” on page 268 or the procedure “Creating and configuring a Server Application object using Configuration Manager” on page 271.

Start of procedure

1. Insert the product CD with this application into the CD-ROM drive of the application host computer.
2. In the appropriate directory, locate a shell script called `install.sh`.
3. Run this script from the command prompt by typing the file name.
4. When prompted, specify the `Host Name` of the computer on which this server is to run.
5. When prompted, specify the:
   - `Host Name` of the computer on which Configuration Server is running.
   - `Port` used by client applications to connect to Configuration Server.
   - `User Name` used to log in to the Configuration Layer.
   - `Password` used to log in to the Configuration Layer.
6. The installation displays the list of applications of the specified type configured for this host. Type the number of the server application that should be installed.
7. Specify the destination directory into which this server is to be installed, with the full path to it.

   If the installation script finds that the destination directory is not empty, it suggests that you do one of the following:
   - Back up all files in the directory.
   - Overwrite only the files contained in this package.
   - Wipe the directory clean.

   Type the number that corresponds to your selection and confirm your choice.
8. If asked which version of the product to install, either the 32-bit or the 64-bit, choose the one appropriate to your environment.
9. If you plan to use functionality that requires a license, such as Solution Control Server (SCS) with Simple Network Management Protocol (SNMP), type `y` when prompted and enter one of the following:
   - The full path to the license file
   - The License Manager port and host

End of procedure

As soon as the installation process is finished, a message appears indicating that installation was successful. The process places the server application in the directory specified during the installation.

Procedure: Installing a server application on Windows

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Prerequisites

- An `Application` object exists for the server application. See either the procedure or "Creating and configuring a Server Application object using Genesys Administrator" on page 268 or the procedure "Creating and configuring a Server Application object using Configuration Manager" on page 271.

Start of procedure

1. From the product CD with this server application, open the appropriate directory.
2. Locate and double-click `setup.exe` to start the Genesys Installation Wizard.
3. Use the `About` button on the wizard's `Welcome` page to review the `read_me` file. The file also contains a link to the server's Release Notes file.
4. Click `Next` on the `Welcome` page to proceed with the installation.

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

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

   Select the application to install.

Tip: If the component does not require a technical license, omit Steps 7 and 8. If the component requires a technical license for startup, omit Step 7. If the component requires a technical license to enable a certain feature, but the license is not otherwise required, proceed with Step 7.

7. On the Run-time License Configuration page, select one of the following options:

- Use License if you plan to use features that require special licenses.
- Without License if you do not plan to use features that require special licenses. In this instance, go to Step 9.

If you decide to use a licensed feature later on, reinstall the server and enter the appropriate license information through the Genesys Installation Wizard.

8. On the Access to License page, select one of the following options:

- License Manager—You want your server application to use host name and port number parameters to connect to the license server. In this instance, you must enter values for the host and the port of the license server.
- License File—You want your server application to retrieve license server information from the license file. Use the Browse button to navigate to the license file.

9. On the Choose Destination Location page, the wizard displays the destination directory, as specified in the Working Directory property of the server's Application object. If the path configured as Working Directory is invalid, the wizard generates a path to the destination directory in the C:\Program Files\GCTI\<Product Name> format.

If necessary, use the:

- Browse button to select another destination folder. In this case, the wizard will update the Application object's Working Directory in the Configuration Database.
- Default button to reinstate the path specified in Working Directory.

10. On the Ready to Install information page, click:

- Back to update any installation information.
- Install to proceed with installation. Installation Status displays the installation progress.

11. On the Installation Complete page, click Finish.

As a result of the installation, the wizard adds Application icons to the:

- Windows Start menu, under Programs > Genesys Solutions.
- Windows Add or Remove Programs window, as a Genesys server.

- Windows `Services` list, as a Genesys service, with `Automatic` startup type.

End of procedure

Graphical User Interface Applications

This section describes a standard installation procedure for a graphical user interface (GUI) application on Windows operating systems. Genesys GUI applications are designed to operate on Windows only.

If you want to implement a security banner with the Genesys GUI application, make sure that you have the necessary files prepared before you start installing the GUI application. Refer to the *Genesys 8.0 Security Deployment Guide* for detailed information about the security banner.

Procedure:
Installing a GUI application on Windows

Warning! Genesys does not recommend installation of its components via a Microsoft Remote Desktop connection. The installation should be performed locally.

Prerequisites

- If you want to implement a security banner with the Genesys GUI application, make sure that you have the necessary files prepared before you start installing the GUI application. Refer to the *Genesys 8.0 Security Deployment Guide* for detailed information about the security banner.

Start of procedure

1. From the product CD with this application, open the appropriate directory.
2. Locate and double-click `setup.exe` to start the Genesys Installation Wizard.
3. Use the `About` button on the wizard's `Welcome` page to review the `read_me` file. The file also contains a link to the application's Release Notes file.
4. Click `Next` to proceed with the installation.
5. On the `Security Banner Configuration` page, choose whether you want to configure a security banner for this GUI application. Refer to the *Genesys 8.0 Security Deployment Guide* for detailed information about the security banner. Do one of the following:
   - If you do not want to configure a security banner for this application, clear the `Enable Security Banner` check box, and click `Next`.

- If you want to configure a security banner for this application:
  - **i.** Select `Enable Security Banner`.
  - **ii.** Follow the instructions in the procedure “Installing and configuring the Security Banner” in the *Genesys 8.0 Security Deployment Guide.* When you are finished that procedure, return here and finish this procedure.

6. On the `Choose Destination Location` page, the wizard displays the path to the destination directory in the `C:\Program Files\GCTI\<Product Name>` format.

If necessary, use the:

- `Browse` button to select another destination folder.
- `Default` button to reinstate the wizard-generated path (`C:\Program Files\GCTI\<Product Name>`).

Click `Next`.

Note: If the GUI application requires any nonstandard installation input from the user, extra pages appear here.

7. On the `Ready to Install` page, click:

- `Back` to update any installation information.
- `Install` to proceed with the installation. `Installation Status` displays the installation progress.

8. On the `Installation Complete` page, click `Finish`.

As a result of the installation, the wizard adds `Application` icons to the:

- Windows `Start` menu, under `Programs > Genesys Solutions`.
- Windows `Add or Remove Programs` window, as a Genesys application.

End of procedure

Troubleshooting the Installation

Procedure: Troubleshooting the installation of a Genesys application

Purpose: To determine and fix the cause of a warning—generated during the installation procedure for any Genesys application—that Configuration Server is unavailable and that configuration cannot be updated.

Start of procedure

1. Finish installing the Genesys application.
2. When installation of the application is complete, open the Configuration tab (in Genesys Administrator) or the `Properties` dialog box (in Configuration Manager) of the corresponding `Application` object.
3. Select the `State Enabled` check box.
4. Verify that the `Working Directory`, `Command Line`, and `Command Line Arguments` are specified correctly.
5. Save the configuration updates.

End of procedure

Appendix

C Login Procedure

When you start a Framework graphical user interface (GUI) application, or if you are being forced to log in again after a period of inactivity, a Login dialog box displays. The Configuration Layer checks the information specified in the Login dialog box and determines the user's permission to view, create, and modify objects in the Configuration Database.

Note: Configuration Layer will not allow users whose use of Genesys Administrator or Configuration Manager has been disabled to log into Genesys applications.

Procedure:
Logging in to a Framework GUI application

Start of procedure

1. Start the application. Refer to the documentation for the particular application for specific instructions.
2. In the Login dialog box:
   a. Enter a user name. If you are logging in to the Configuration Layer for the first time, use the Master Account user name, which is default. After the appropriate configuration objects of the Person type are added to the configuration, use a customized user name.
   b. Enter a user password. If you are logging in to the Configuration Layer for the first time, use the Master Account password, which is password. After the appropriate configuration objects of the Person type are added to the configuration, use a customized password.

      If you have configured Configuration Server to allow access with a blank password, you can optionally leave the Password field empty.

Refer to the *Framework 8.0 Configuration Options Reference Manual* for information on configuring this functionality.

c. Click either `Details` or `More options` to display additional input login fields.

d. Enter the application name, which is the instance of the application to which you are logging in, as it is registered in the Configuration Database.

Note: The predefined name of the Configuration Manager `Application` object is `default`. You can rename it later.

e. Enter a host name, which is the name of the computer on which Configuration Server runs.

f. Enter a port number, which is the number of the communication port that client applications use to connect to Configuration Server.

End of procedure

If your configuration uses both Primary and Backup Configuration Servers, Configuration Manager and Solution Control Interface automatically reconnect to the backup server if they lose their connection to the primary server. You can specify automatic or manual reconnection; refer to the on-line Help file of your GUI application.

Appendix

D Silent Setup

This appendix describes the purpose and configuration of Silent Setup.

This appendix contains the following sections:

- Introduction, page 289
- Creating the Response File, page 290
- Running the Silent Installation, page 291
- About the Silent Setup Log File, page 291

Introduction

InstallShield Silent allows for an automated electronic software distribution, also known as a *silent setup.* InstallShield Silent only works on Windows operating systems. With InstallShield Silent, you do not have to monitor the setup or provide input via dialog boxes. Once this information is stored in a *response file,* an InstallShield Silent setup runs on its own, without any intervention by the end-user.

An installation procedure for a server application differs slightly from an installation procedure for a GUI application. Both, however, require that you create a response file with the necessary parameters and then use it for the actual installation.

The following Framework components support Silent Setup installation:

- DB Server
- Configuration Server
- Configuration Manager
- Message Server
- Solution Control Server
- Solution Control Interface
- T-Server

- HA Proxy
- Stat Server

Creating the Response File

To select setup options and automatically record the InstallShield Silent response file, run your setup with the following command line:

```
setup -r
```

Your responses to the dialog boxes are recorded and used to create a response file. By default, the response file is named `Setup.iss, and` is stored in the `Windows` directory of your computer. To specify a different directory or file name for the response file, add `/f1"[full_path to iss file\]<FileName>"` to the setup command. Include the double quotes and do not put a space between `/f1` and the path—for example:

```
setup -r /f1"C:\GCTI\silent_response_files\mySetup.iss"
```

Note: In the optional argument, the `/f1 portion uses the numeral one (1), not the letter l.`

Subsequently, use the response file any time you need to install an application with the configured parameters.

Sample Response File (setup.iss)

```
[InstallShield Silent]
Version=v5.00.000
File=Response File
[File Transfer]
OverwriteReadOnly=NoToAll
[DlgOrder]
Dlg0=SdWelcome-0
Count=4
Dlg1=SdAskDestPath-0
Dlg2=SdSetupTypeEx-0
Dlg3=SdFinishReboot-0
[SdWelcome-0]
Result=1
[SdAskDestPath-0]
szDir=C:\GCTI\TestSiebel2KSilentMode
Result=1
[SdSetupTypeEx-0]
Result=typical
[Application]
Name=G-Plus Adapter 6.5 for Siebel 2000
Version=6.5
Company=GCTI
```

```
Lang=0009
[SdFinishReboot-0]
Result=1
BootOption=0
```

The response file contains saved information about the number of dialog boxes displayed, the order in which the dialog boxes were displayed, the values of any data entered or selected by the end user, and which button the user clicked to close the dialog box.

Running the Silent Installation

Launch the InstallShield Silent Installation with this command line:

```
Setup.exe -s /f1"<full path to Setup.iss>" /f2"<full path to setup log file>"
```

Where:

<full path to Setup.iss>
The full path to the Setup.iss file put within double quotation marks. For example: "`c:\winnt\setup.iss`" (by default, Setup.exe looks for a response file called Setup.iss in the same directory as Setup.exe)

<full path to setup log file>
The full path to the setup log file put within double quotation marks. For example: "`c:\winnt\setup.log`" (by default, setup.log generated in the same directory as the response file being used)

A silent installation program does not display a dialog if an error occurs. The status information for the silent installation is recorded (by default) in a file called **setup.log**.

Note: Do not enter a space between the f1 or f2 parameter and its value in double quotation marks.

The log file generated as a result of the Silent Setup procedure is described in the following section.

About the Silent Setup Log File

InstallShield Silent prints installation results into a setup log file.

The default name for the silent setup log file is `Setup.log`, and its default location is on Disk1, in the same folder as `Setup.iss`. You can specify a different name and location for you setup log file using the f2 switch when launching `Setup.exe`.

The Setup.log file contains three sections. The first entry in the first section, `[InstallShield Silent]`, identifies the version of InstallShield Silent used in the silent setup. The second entry identifies the file as a log file.

Entries in the second section, `[Application]`, identify the installed application's name and version and the company name.

The third section, `[ResponseResult]`, contains the result code indicating whether the silent setup has succeeded. One of the following integer return values is assigned to the `ResultCode` key name in this section:

0	Success.
-1	General error.
-2	Invalid mode.
-3	Required data not found in the Setup.iss file.
-4	Not enough memory.
-5	File does not exist.
-6	Cannot write to the response file.
-7	Unable to write to the uninstallation log file.
-8	Invalid path to the InstallShield Silent response file.
-9	Not a valid list type (string or number).
-10	Data type is invalid.
-11	Unknown error during setup.
-12	Dialog boxes are out of order.
-51	Cannot create the specified folder.
-52	Cannot access the specified file or folder.
-53	Invalid option selected.

Sample Setup Log File

The `Setup.log` file for a T-Server application successfully installed with InstallShield Silent is shown below.

```
[InstallShield Silent]
Version=v5.00.000
File=Log File
[Application]
Name=Genesys T-Server 7.0 for Rockwell Spectrum
Version=7.0
Company=GCTI
Lang=0009
[ResponseResult]
ResultCode=0
```

Appendix

E Installation Worksheet

This appendix contains tables that you can use to help prepare for and perform the installation of Framework components.

This appendix contains the following sections:

- "How to Prepare a Worksheet" on page 293
- "Database Connections" on page 299

How to Prepare a Worksheet

1. Fill in the database information in Table 6 on page 294.
2. Fill in the License Manager and license file(s) information in Table 7 on page 296.
3. Fill in the main configuration parameters you specify for Framework applications in Table 8 on page 296. Note that:
   - All applications must be configured in the Configuration Layer unless otherwise noted.
   - Host name or IP address can be specified as the value for the `host` parameter.
   - Application port and working directory are only specified for server applications.
   - Working directory is the full path to the directory in which the application is installed and/or is to be running.
4. For Windows applications, fill in the `Program Folder` information in Table 9 on page 298.

Table 5: Installation Worksheet

Installation Worksheet	
Person responsible	
Start date	
Completion date	
Database information	Refer to Table 6.
Licensing information	Refer to Table 7 on page 296.
Application configuration	Refer to Table 8 on page 296.
Program folders (for Windows applications)	Refer to Table 9 on page 298.

Table 6: Database Information

Parameter	Value	Description
Configuration Database		
DBMS Name		The name or alias identifying the SQL server DBMS that handles the database. • For DB2, this value should be set to the name or alias-name of the database specified in the db2 client configuration. • For Informix, this value is the name of SQL server, specified in the sqlhosts file. • For Microsoft SQL, this value should be set to the name of the SQL server (usually the same as the host name of the computer on which Microsoft SQL runs). • For Oracle, it is the name of the Listener service. • For PostgreSQL, this value should be set to the name of the PostgreSQL server (usually the same as the host name of the computer on which PostgreSQL runs). • For Sybase, this is the server name stored in the Sybase interface file.
DBMS Type		The type of DBMS that handles the database.

Table 6: Database Information (Continued)

Parameter	Value	Description
Database Name		The name of the database as it is specified in your DBMS. This value is required for all database types except Oracle. For Sybase, Informix, DB2, Microsoft SQL, and PostgreSQL, this value is the name of the database where the client will connect.
User Name		The user name established to access the database.
Password		The password used for accessing the database.
Log Database		
DBMS Name		The name or alias identifying the SQL server DBMS that handles the database. • For DB2, this value should be set to the name or alias-name of the database specified in the db2 client configuration. • For Informix, this value is the name of SQL server, specified in the sqlhosts file. • For Microsoft SQL, this value should be set to the name of the SQL server (usually the same as the host name of the computer on which Microsoft SQL runs). • For Oracle, it is the name of the Listener service. • For PostgreSQL, this value should be set to the name of the PostgreSQL server (usually the same as the host name of the computer on which PostgreSQL runs). • For Sybase, this is the server name stored in the Sybase interface file.
DBMS Type		The type of DBMS that handles the database.
Database Name		The name of the database as it is specified in your DBMS. This value is required for all database types except Oracle. For Sybase, Informix, DB2, Microsoft SQL, and PostgreSQL, this value is the name of the database where the client will connect.
User Name		The user name established to access the database.
Password		The password used for accessing the database.

Table 7: Licensing Information

Parameter	Value
License Manager	
host	
port	
License Files	
full path to and name	
full path to and name	
full path to and name	

Table 8: Application Configuration Parameters

Application Type	Application Name	Application Host	Application Port	Working Directory
Configuration Layer Components				
DB Server, Primary, for Configuration Database (configured via configuration file)				
DB Server, Backup, for Configuration Database (configured via configuration file)				
Configuration Server, Primary (configured via configuration file)				
Configuration Server, Backup (configured via configuration file)				
Configuration Manager			Not applicable	

Table 8: Application Configuration Parameters (Continued)

Application Type	Application Name	Application Host	Application Port	Working Directory
Management Layer Components				
Local Control Agent	Not applicable		(Configured in Host Properties)	Not applicable
DB Server, Primary, for Log Database				
DB Server, Backup, for Log Database				
Database Access Point		Not applicable		
Message Server, Primary				
Message Server, Backup				
Solution Control Server, Primary				
Solution Control Server, Backup				
Solution Control Interface			Not applicable	
SNMP Master Agent, Primary				
SNMP Master Agent, Backup				
Media Layer Components				
T-Server, Primary, for switch ...				
T-Server, Backup, for switch ...				
T-Server, Primary, for switch ...				
T-Server, Backup, for switch ...				

Table 8: Application Configuration Parameters (Continued)

Application Type	Application Name	Application Host	Application Port	Working Directory
Services Layer Components				
Stat Server, Primary				
Stat Server, Backup				

Table 9: Windows Application Program Folder

Application	Program Folder
Configuration Layer Components	
DB Server, Primary, for Configuration Database (configured via configuration file)	
DB Server, Backup, for Configuration Database (configured via configuration file)	
Configuration Server, Primary (configured via configuration file)	
Configuration Server, Backup (configured via configuration file)	
Configuration Manager	
Management Layer Components	
Local Control Agent	
DB Server, Primary, for Log Database	
DB Server, Backup, for Log Database	
Message Server, Primary	
Message Server, Backup	

Table 9: Windows Application Program Folder (Continued)

Application	Program Folder
Solution Control Server, Primary	
Solution Control Server, Backup	
Solution Control Interface	
SNMP Master Agent, Primary	
SNMP Master Agent, Backup	
Media Layer Components	
T-Server, Primary, for switch ...	
T-Server, Backup, for switch ...	
T-Server, Primary, for switch ...	
T-Server, Backup, for switch ...	
Services Layer Components	
Stat Server, Primary	
Stat Server, Backup	

Database Connections

Table 10 on page 300 shows how many connections to a database the Framework components require.

Table 11 on page 301 shows how many connections to a database the solution and Reporting components require.

Table 10: Number of Database Connections Required for Framework Components

Framework Component	Connection to DB Server/ Database	Number of Simultaneous Connections	Comments	Total per Layer
Configuration Layer				**2 + 2**
Configuration Server	Yes	2		
Configuration Conversion Wizard	Yes	2	Temporary (either Configuration Conversion Wizard or Database Initialization Wizard uses the connection at a given moment)	
Database Initialization Wizard	Yes	2	Temporary	
Configuration Import Wizard	No	0		
Management Layer				**2**
Message Server	Yes	1		
Solution Control Server	No	0		
Solution Control Interface	Yes	1		
SNMP Master Agent	No	0		
User Interaction Layer				**1**
Genesys Administrator	Yes	1	Does not use DB Server, but connects to database directly based on the connection definition from the Database Access Point	

Table 10: Number of Database Connections Required for Framework Components (Continued)

Framework Component	Connection to DB Server/ Database	Number of Simultaneous Connections	Comments	Total per Layer
Services Layer				**1**
DB Server	No	0		
Stat Server	Yes	1	Stat Server has an option to save data directly into database tables; this operation takes one connection.	

Table 11: The Number of Database Connections Required for Solutions' Components

Solution Component	Connection to DB Server/ Database	Number of Simultaneous Connections	Comments	Total per Solution
Outbound Solution				**1 + n**
Outbound Contact Server	Yes	n	One per list	
Outbound Contact Manager	Yes	1		
Universal Routing Solution				**1**
Universal Routing Server	Yes	0–1	In theory, the number of connections is unlimited	
Reporting				**31**
Call Concentrator	Yes	1		
Data Sourcer	Yes	2	DB Server	
IS Data Sourcer	Yes	2	JDBC	
ETL Runtime	Yes	20	JDBC	
Purging	Yes	2	JDBC	

Table 11: The Number of Database Connections Required for Solutions' Components (Continued)

Solution Component	Connection to DB Server/ Database	Number of Simultaneous Connections	Comments	Total per Solution
Object Tracking	Yes	1	JDBC	
BRIO Server	Yes	2	SQLNet/ODBC	
BRIO Report Designer	Yes	1	SQLNet/ODBC	

Supplements

Related Documentation Resources

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

Genesys Framework

- *Framework 8.0 Architecture Help,* which helps you view the place of a particular component in the Framework architecture and learn about Framework functionality that is new to release 8.0.
- *Framework 8.0 Genesys Administrator Deployment Guide,* which helps you deploy Genesys Administrator.
- *Framework 8.0 Genesys Administrator Help,* which helps you use Genesys Administrator.
- *Framework 8.0 Configuration Manager Help,* which helps you use Configuration Manager.
- *Framework 8.0 Configuration Options Reference Manual,* which provides descriptions of configuration options for Framework components.
- *Framework 8.0 Management Layer User's Guide,* which helps you better understand how the Management Layer works and how to enable its functions.
- *Framework 8.0 Solution Control Interface Help,* which helps you use Solution Control Interface.

Genesys

- *Genesys 8.0 Security Deployment Guide,* which describes the security features provided by Genesys software and provides detailed instructions on deploying the features.
- *Genesys Technical Publications Glossary,* which ships on the Genesys Documentation Library DVD and which provides a comprehensive list of

the Genesys and computer-telephony integration (CTI) terminology and acronyms used in this document.

- *Genesys Migration Guide*, which ships on the Genesys Documentation Library DVD, and which provides documented migration strategies for Genesys product releases. Contact Genesys Technical Support for more information.
- Release Notes and Product Advisories for this product, 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*

For additional system-wide planning tools and information, see the release-specific listings of System Level Documents on the Genesys Technical Support website, 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 Library DVD, 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_dep_06-2008_v8.0.001.00

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

Screen Captures Used in This Document

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

Type Styles

Table 12 describes and illustrates the type conventions that are used in this document.

Table 12: 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 306).	Please consult the *Genesys Migration Guide* for more information. Do *not* use this value for this option. A *customary and usual* practice is one that is widely accepted and used within a particular industry or profession. The formula, $x + 1 = 7$ where x stands for . . .

Table 12: Type Styles (Continued)

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

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