Reporting 8.0

Deployment Guide

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Table of Contents

Preface

Welcome to the *Reporting 8.0 Deployment Guide*. This guide provides detailed instructions for configuring, installing, and setting up Historical and Real-Time Reporting. It also includes the following information:

- An overview of the Data Collection, Data Mart, and Information Delivery Services, including a description of their supporting components
- Deployment planning checklists for configuration and installation
- Database preparations, and sizing and scaling guidelines
- General system requirements
- Starting, stopping, and uninstall procedures

This guide is valid only for the 8.0 release of Solution Reporting, which consists of 8.0 Real-Time Reporting components and 7.6 Historical Reporting components.

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

This preface contains the following sections:

For information about related resources and about the conventions that are used in this document, see the supplementary material starting on page 121.

Intended Audience

This guide, primarily intended for system and database administrators, assumes that you have a basic understanding of:

- Computer-telephony integration (CTI) concepts, processes, terminology, and applications.

- Network design and operation.
- Your own network configurations.

You should also be familiar with the Genesys Framework architecture and functions, and particularly with Configuration Manager.

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Chapter

1 Reporting Overview

This chapter introduces Genesys Reporting and explains the data collection and organization components that deliver contact center data to CCPulse+ and Contact Center Analyzer (CC Analyzer). These applications provide real-time and historical reporting.

This chapter contains the following sections:

What Is Reporting?

Genesys Reporting is a powerful tool for viewing and analyzing contact center performance, enabling you to improve enterprise efficiency. It consists of two products, CC Analyzer and CCPulse+, which draw on much of the same data but provide different functional capabilities.

High availability (HA) of historical reporting data—a new feature provided since the Reporting 7.2 release—is intended to minimize the chance of loss of historical reporting data in the event of a single hardware component failure. Refer to Chapter 3, "High-Availability Architecture," on page 39 for information about how to implement this feature.

A number of components support CC Analyzer and CCPulse+ in their historical reporting functions. These components are organized into two services: the Data Collection Services and the Data Mart Services. A third service, Information Delivery Services, consists of:

- CC Analyzer, in combination with Report Generation Assistant, the Hyperion Performance Suite, and, if desired, other third-party report-generation tools.
- CCPulse+, which enables users to create real-time and, if desired, historical views. These views can be printed.

The following sections describe the functions and components of these services.

Reporting Architecture

CC Analyzer and CCPulse+ rely on information and processes managed by the Genesys Framework layers depicted in Figure 1.

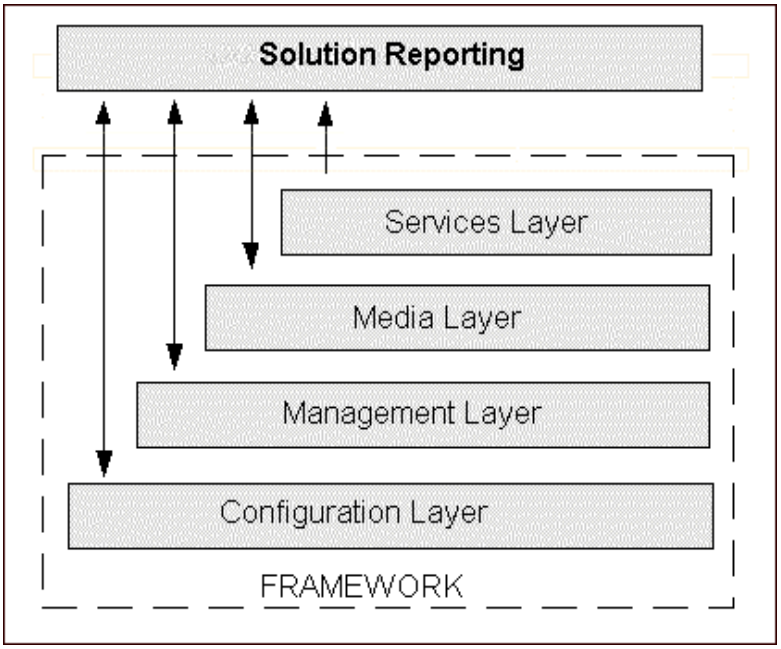

Figure 1: Genesys Framework Architecture

- The Configuration Layer provides information about configuration objects for which statistics are collected.
- CC Analyzer integrates with the Management Layer, where you centrally manage Genesys applications via the Solution Control Interface.
- The Media Layer, the most important component of which is the Genesys T-Server, supplies TEvent information used by other Framework components, such as Stat Server, that then supply data to CC Analyzer and CCPulse+.
- The Services Layer defines statistical parameters and provides the statistical information requested by CC Analyzer and CCPulse+. The Services Layer consists of Stat Server.

Starting with release 7.0, CC Analyzer and CCPulse+ also serve as part of the Customer Interaction Management (CIM) platform, which includes the Genesys Framework, Real-Time Routing via the Genesys Universal Routing Server, and open media interaction handling abilities. Figure 2 illustrates CIM platform components.

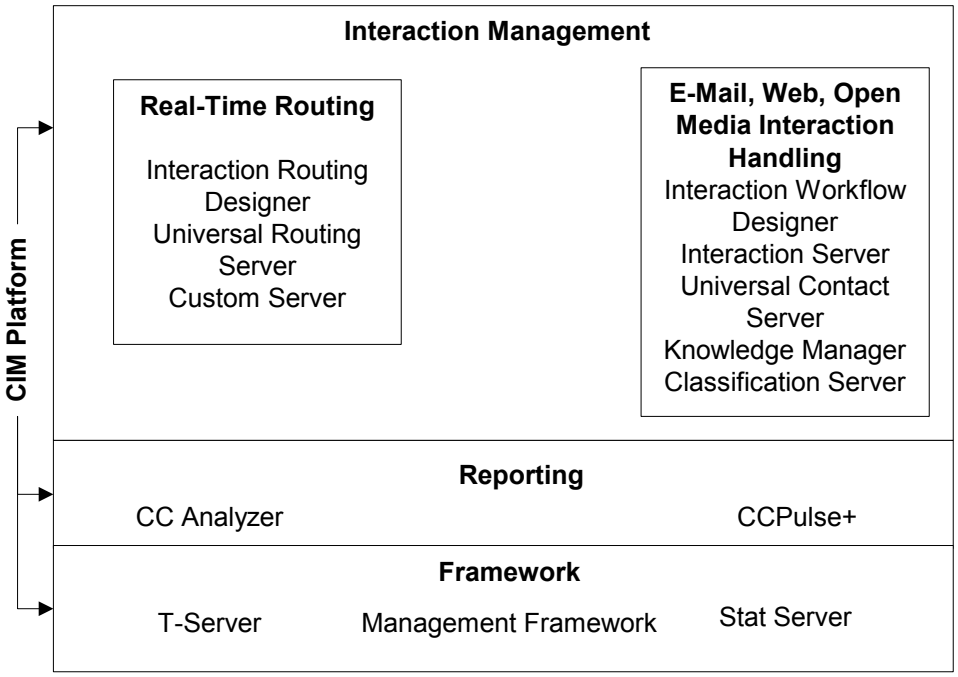

Figure 2: Reporting as Part of the CIM Platform

For information on the Reporting architecture including high availability, refer to "HA Architecture" on page 41.

The Reporting Services

Reporting functionality can be conveniently broken down into three services:

- The *Data Collection Services* collect the data.
- The *Data Mart Services* then transfer, organize, and store this data.
- The *Information Delivery Services* request data from the Data Mart and use that data to generate reports that summarize your contact center's activities.

Each service consists of several components that work together to perform its functions. Figure 3 illustrates Reporting components and their relationships.

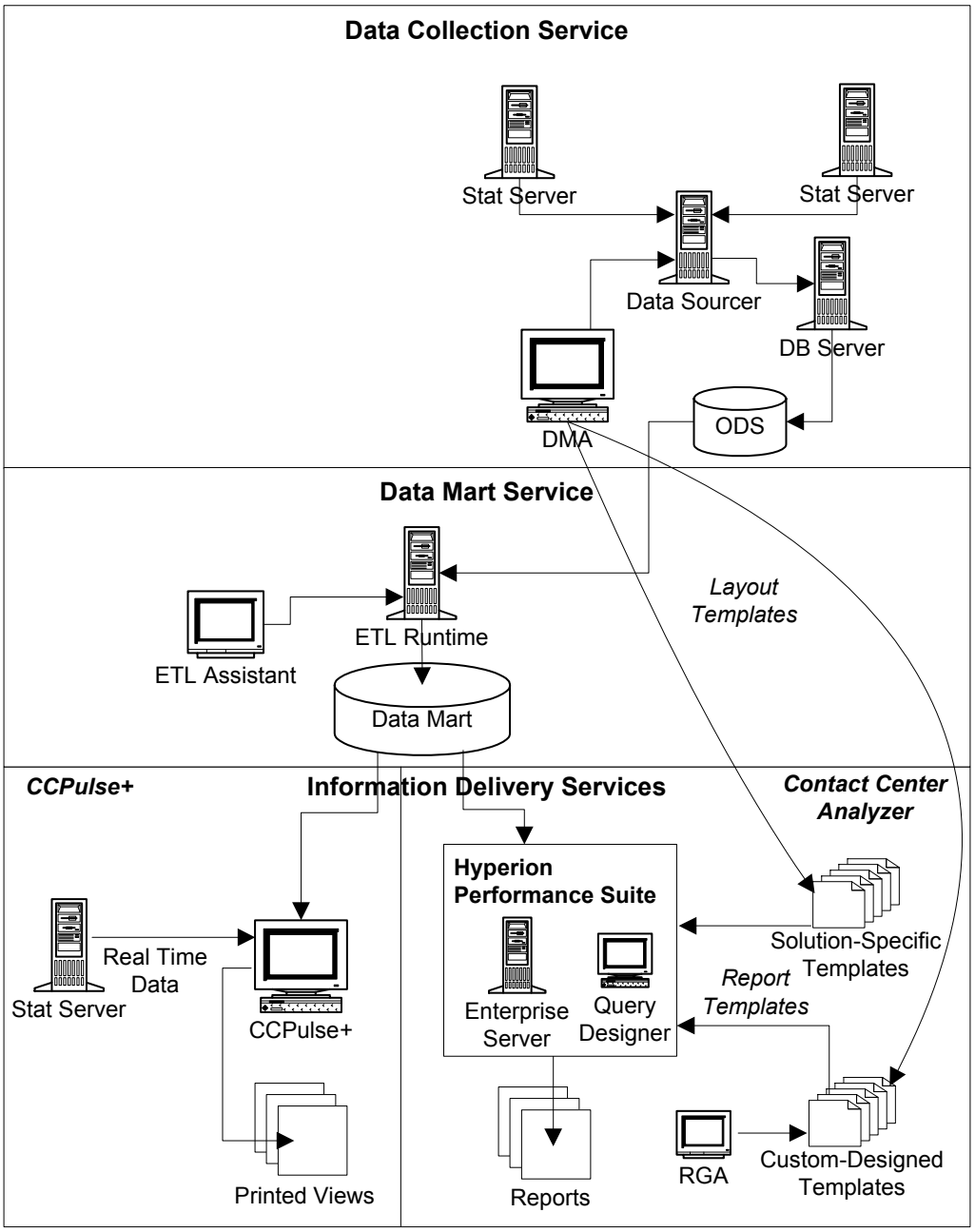

Figure 3: Reporting Architecture

Data Collection Services

This section focuses primarily on the Data Sourcer component of the Data Collection Services and its relationship with Stat Server, DB Server, and ODS (Operational Data Storage).

The Data Collection Services include:

- **Data Sourcer**—Collects statistical data from Stat Server and writes it to ODS.
- **Data Modeling Assistant (DMA)**—A GUI application that you can use to import, export, edit, create, and delete layout templates (defined on page 14).
- **ODS**—A relational database that serves as the staging area for the Data Mart Services.

The Data Collection Services use these other Genesys components:

- **Stat Server**—Supplies statistical information to Data Sourcer about interactions and the objects that handle them, such as queues or agents.
- **DB Server**—DB Server handles database requests from multiple clients. It provides a single interface from its clients to a variety of database engines including Sybase, Oracle, Microsoft SQL Server, and DB2. As a client of DB Server, Data Sourcer reads information about activated report layouts and writes statistics received from Stat Server to the ODS.

Note: See the *Framework 8.0 Stat Server User's Guide* for information on Stat Server, the *Framework 8.0 DB Server User's Guide* for information on DB Server.

What Is a Collection Unit?

The Data Collection Services are the foundation for the Historical Reporting functionality of both CC Analyzer and CCPulse+. These services consist of one or more *collection units*—groupings of servers and databases that collect and store data specifically for use by the Data Mart Services.

For contact centers using a Genesys Stat Server to track interactions, each collection unit consists of a Stat Server, Data Sourcer, DB Server, and an ODS located on one of four industry-standard RDBMS servers (see Figure 4). Starting with release 7.2, a collection unit may also be comprised of backup Data Sourcer and Stat Server applications.

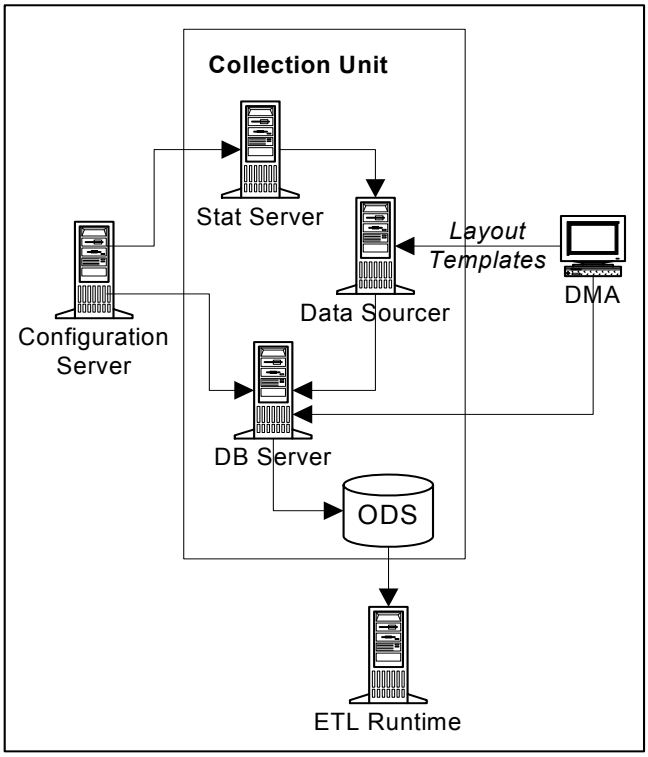

Figure 4: Data Collection Unit

Note: Because Data Sourcer handles a very heavy volume of data, Genesys recommends that you dedicate a Stat Server to each Data Sourcer application in your environment.

Layout Templates

Data Sourcer uses *layout templates* to store statistics that are to be collected for selected contact center objects. Each layout template is stored in ODS and specifies:

- Statistics to be included in each new report layout.
- Stat type parameters.
- Time profiles for the schedules to be created.
- A default name for report layouts.
- A default description.

These layout templates control Data Sourcer's data collection parameters—which statistics to collect, for which objects, on which schedule, and so on.

Data Modeling Assistant

To import, export, edit, create, and delete layout templates, use Data Modeling Assistant. You use DMA to manage layout templates specific to your solution. Layout templates for Genesys Outbound Contact, for instance, contain a set of

statistics that include outbound-specific activities. These include indicators for campaign performance such as the number of callbacks completed, the number of unsuccessful dial attempts, how long a campaign was active, and so forth.

DMA performs the following functions:

- Connects to DB Server to read data from, and write data to, the ODS specified by the server's database access point, which is defined in Data Sourcer's configuration.
- Reads information from Configuration Server about all configured `Data Sourcer Application` objects and their corresponding database access points, as well as all configured objects within the tenant(s), such as agent queues, routing points, and places.
- Updates information about statistical types, time profiles, time ranges, and filters, and sends it to the Configuration Server. Configuration Server then updates the configuration of the corresponding Stat Server application.
- Sends information to Data Sourcer about the activation and deactivation of report layouts.

Report Layouts

Data Sourcer uses the layout templates to create *report layouts* for tenants within your contact center. You must create and activate report layouts before data collection or the reporting interval begins.

Layouts are automatically created if you enter `true` as the value for the `auto-create-new-tenant-layouts` option; and layouts are automatically activated if you enter `true` as the value for the `activate-new-layouts` option when you configure the Data Sourcer application using the Reporting Wizard. If you set both the `auto-create-new-tenant-layouts and activate-new-layouts` options to `false`, create and activate the layouts using Data Modeling Assistant.

Report layouts specify:

- Which contact center objects are to be monitored.
- What statistics are to be collected for these objects.
- How often statistical data is to be collected.

Note: When report layouts are first created and a new tenant is connected to Data Sourcer (option `auto-create-new-tenant-layouts` is set to `true`), Data Sourcer automatically activates the new report layouts for each new tenant if you have set the Data Sourcer `activate-new-layouts` configuration option to `true`. Data Sourcer collects statistical data only for activated report layouts. You can activate or deactivate report layouts at any time using the DMA.

The number of report layouts Data Sourcer can create is bound by database limitations and Data Sourcer performance considerations. Chapter 2 on page 23 shows you how to calculate this number.

Time Profile

Data Sourcer collects statistical information about contact center objects on a periodic basis, as specified by a *time profile* associated with the report layout. This time profile defines the timing and frequency, in consecutive time intervals of constant duration, that Data Sourcer must use to send requests for statistics to Stat Server. For instance, the default time profile, named `CollectorDefault`, has Data Sourcer sending requests to Stat Server every 15 minutes, starting at midnight (`0:00+0:15`).

Operational Data Storage

ODS is the staging area for statistical data about objects in Configuration Server. This data is aggregated over the time period (the time profile) you specify, which is every 15 minutes by default. Data Sourcer draws this data from Stat Server and deposits it into ODS.

ODS is a relational database:

- Into which Data Sourcer writes, organizes, and stores this data.
- From which ETL Runtime extracts and, if desired, purges data.

Data Sourcer can use the Genesys DB Server to access an ODS on the following DBMS types:

- Oracle
- Microsoft SQL Server
- Sybase
- DB2

Note: The ODS schema is proprietary. Genesys reserves the right to alter it from release to release.

Component Interconnectivity for the Data Collection Services

Data Sourcer, a server itself, is a client of:

- Configuration Server
- Stat Server
- DB Server

DMA is a client of:

- DB Server
- Configuration Server
- Data Sourcer

The sections below present more detailed information about these components.

Configuration Server

As a client of Configuration Server, primary and backup Data Sourcer receives information about configuration objects for which statistics are collected. Configuration Server provides information about contact center objects (agents, tenants, places, calling lists, campaigns, and so on), statistical parameters (time ranges, time profiles, filters, and statistical types), as well as information about changes to contact center objects. Data Sourcer uses this delta information for ODS upkeep and for creating appropriate report layouts. The "Tracking Configuration Server Objects" chapter in the *Reporting 7.6 Data Sourcer User's Guide* discusses in detail what information Data Sourcer collects about your environment.

Stat Server

Stat Server tracks information about customer interaction networks that consist of one or more contact centers in conjunction with one or more computer networks. Stat Server receives information from one or more T-Servers and converts the accumulated data for directory numbers, agents, agent groups, and so on, into statistical information.

As a client of Stat Server, Data Sourcer requests historical statistics for objects belonging to particular report layouts and periodically receives statistical values, calculated metrics, and information about whether the reported values are valid.

The statistics measure quantities associated with time intervals rather than single moments of time. These time intervals are specified by the report layout's time profile (`CollectorDefault`, by default). For example, Data Sourcer might issue the following request:

How many calls were answered in the past 15 minutes?

but not:

How many calls are currently in queue?

Note: Data Sourcer does not track individual calls but rather collects aggregated predefined statistics from Stat Server.

The statistics that Data Sourcer requests from Stat Server for groups of intervals must be calculable from the values for the individual intervals in the group. For example, you can request statistics for an hour, based on four 15-minute collection intervals. You cannot request statistics for a 20-minute period if your collection time profile is every 15 minutes.

Also, you can request statistics for categories, such as `TotalTime` and `TotalNumber`, that produce meaningful values when added together. However, some statistical categories, such as `AverageTime`, are not additive.

Note: In Stat Server, such additive statistics are referred to as `cumulative` and the categories to which they belong are called *cumulative categories*.

Data Sourcer uses only the statistical types defined in Stat Server. As additional statistical types are developed, Data Sourcer inherits the ability to use them.

DB Server

DB Server is the Genesys component that handles database requests from multiple client processes. DB Server provides a single interface from the clients to a variety of database engines, including Sybase, Oracle, Microsoft SQL Server, and DB2. As a client of DB Server, Data Sourcer reads information about activated report layouts and writes statistics received from Stat Server to ODS. Also, when operating in a high-availability environment, Data Sourcer uses the DB Server connection to track its current ODS access mode.

Data Modeling Assistant

Data Modeling Assistant (DMA) enables you to use layout templates to choose which standard operational statistics to collect, on what objects, and how often. Additionally, DMA supports the creation of custom business statistics, such as the number of calls received concerning Product X or revenue generated by Agent Group A.

Data Sourcer acts as a server for DMA. Data Sourcer receives commands from DMA on the activation and deactivation of report layouts. When you activate a report layout within DMA, DMA notifies Data Sourcer, which starts collecting data for that report layout. When you deactivate a report layout, DMA notifies Data Sourcer to stop collecting data for that report layout.

Data Mart Services

The components of a collection unit work together to collect and provide temporary storage for historical data until ETL Runtime (Extraction, Transformation, and Loading Runtime) transforms the data and transfers it to the Data Mart, the database where data is permanently housed.

ETL Runtime, ETL Assistant, and the Data Mart are the components of the Data Mart Services.

You can view results of ETL Runtime transformation using ETL Assistant, which manages the metadata in the Data Mart.

This section describes the Data Mart Services as they relate to CC Analyzer and CCPulse+ as a whole, focusing particularly on ETL Runtime.

Note: *Reporting 7.6 ETL Assistant Help* describes ETL Assistant functionality, and the *Reporting 7.6 Physical Data Model* describes the table and field structure of the Data Mart for the supported RDBMS types.

Component Interrelationships

ETL Runtime is the workhorse of the Data Mart Services as it interacts with the following components to read, write, aggregate, and delete data:

- ODS
- Configuration Server
- ETL Assistant
- Data Mart

Figure 5 illustrates this connectivity.

ODS ODS, the final component of the Data Collection Services, holds historical data until ETL Runtime transfers it to the Data Mart. Furthermore, if the ETL Runtime `dropTransferredTables` parameter is used, ETL Runtime deletes the corresponding tables from ODS after it confirms that the data transfer has successfully completed.

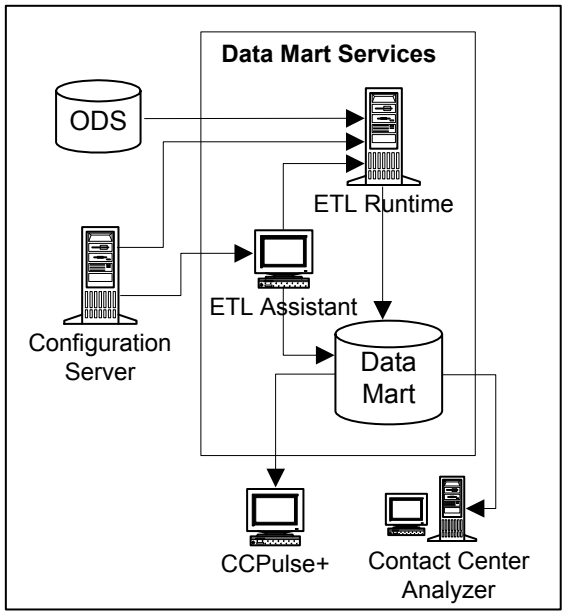

Figure 5: Components of the Data Mart Services

ETL Assistant ETL Assistant is the front-end interface you use to communicate with the ETL Runtime server. Using ETL Assistant, you:

- Specify the ODSs from which ETL Runtime is to read data.
- Establish a purge schedule for Data Mart elements.
- Discover the names of the Data Mart tables to which data has been transferred.
- Review Data Mart content.

ETL Assistant accesses the Data Mart using a JDBC driver.

Data Mart The Data Mart is the target database where data is permanently stored for retrieval using report-generation tools such as Report Generation Assistant (RGA), CCPulse+, Hyperion Query Designer, or other third-party tools. Data is organized in report folders by aggregation level, for quick access. Genesys Reporting supports four DBMS types for your Data Mart: Oracle, Microsoft SQL Server, Sybase, and DB2.

Configuration Server

Although Configuration Server is not a part of the Data Mart Services, ETL Runtime connects to this server to:

- Register itself as a Genesys component (all Genesys software is registered in the Configuration Server).
- Track tenant changes, such as tenant additions or deletions.
- Track group changes, such as when new members are added to, or deleted from, a group.

ETL Runtime tracks only those objects, groups, and tenants that you have assigned it to monitor using ETL Assistant.

The Genesys ETL Service Starter

The Reporting Configuration Wizard creates an `ETL Service Starter Application` object, among other `Application` objects, that you can view and edit using Configuration Manager. When you run the Starter, it schedules the following processes to run:

- Transformation Module
- Aggregation Module
- Configuration–Object Tracking Module

All three processes run continuously until stopped. You can add other modules, such as the Purging module, at your discretion.

You can configure this application to run other ETL Runtime processes on a daily basis. If, however, you want to schedule processes to run beyond today (such as every Sunday at 2:00 AM or on the first day of each month), you will have to use a third-party scheduler.

Information Delivery Services–CCPulse+

CCPulse+ enables both real-time and historical monitoring of contact center activity. CCPulse+ monitors the status and statistics related to contact center objects (such as agents, queues, routing points, and interaction queues) and displays them on the user's desktop. Using CCPulse+ you can:

- Customize real-time, historical, and query-based views of contact center objects.
- Monitor the current state and activity of objects throughout the contact center, to help make decisions about staffing, scheduling, and call-routing strategies.
- Create threshold/action associations that generate some kind of notification when a specified activity reaches the threshold level you set.
- Print views, which can then function as basic reports of contact center activity.

CCPulse+ interfaces with the Services and Configuration Layers of the Genesys Framework (refer to Figure 1 on page 10) to monitor agent performance of one or more tenants from one or more sites.

If you are using Historical Reporting, CCPulse+ also connects to the Reporting Data Mart Services.

Figure 6 illustrates the architecture delivering these capabilities. For detailed information on CCPulse+, refer to *Reporting 8.0 CCPulse+ Help* and the *Reporting 8.0 CCPulse+ Administrator's Guide*.

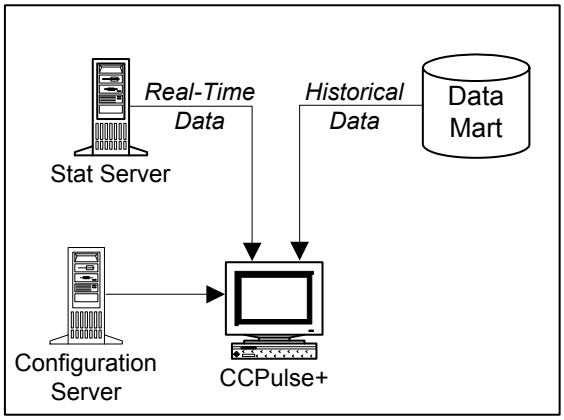

Figure 6: CCPulse+ Architecture

Information Delivery Services—CC Analyzer

CC Analyzer is a powerful and flexible tool for generating historical reports. CC Analyzer is comprised of Report Generation Assistant (RGA), a Reporting component powered by the Hyperion Query Designer (formerly, BrioQuery Designer). Genesys provides Hyperion Query Designer to CC Analyzer customers through an agreement with Oracle Corporation.

Report Generation Assistant

RGA is the Reporting component that enables automatic generation of queries, charts, and reports, based on the Genesys-provided report templates and metadata from your Data Mart. RGA is powered by Hyperion Query Designer.

Hyperion Query Designer

Oracle Corporation provides Hyperion products that enable the design and delivery of reports by means of client-server connections, the Web, e-mail, and more. Genesys Reporting supplies Hyperion products that provide powerful Historical Reporting tools. These tools, which draw upon the data stored in the

Data Mart, enable you to create a wide range of report types and to customize the data presentation to suit your reporting needs.

Note: For detailed information about Hyperion's products, refer to the provided Hyperion documentation. For additional information about generating reports using Contact Center Analyzer, refer to the *Reporting 7.2 Report Generation Assistant User's Guide* and the *Reporting Technical Reference Guide.*

New In This Release

This section lists topics that are new or that have changed significantly since the 7.5 release:

- Security banner, if configured, prompts a user to accept or reject conditions of use before the CCPulse+ login window appears.
- CCPulse+ employs a new silent server reconnect procedure.
- CCPulse+ supports new improved storage file formats.
- CCPulse+ connection to Genesys Info Mart is discontinued.
- Data Sourcer supports multiple chunk composition modes.
- IS Data Sourcer is discontinued.

Chapter

2 Predeployment Measures

This chapter describes preparatory steps you should perform before configuring and installing the Genesys Reporting 8.0 components. Be sure to read through this chapter and understand the requirements for each component.

This chapter contains the following sections:

To successfully install any Reporting 8.0 component, you must first:

- Have the Reporting and Reporting Templates CDs at hand.
- Have a current 8.0 version of Configuration Server running in your environment.

> **Note:** You can use Reporting 8.0 with Configuration Server 7.6. However, to take advantage of the 8.0 Reporting Configuration Wizards, which are launched through the Genesys Wizard Manager, you must install the Framework 8.0 Configuration Wizard, which are found on the Management Framework CD.

- Have administrator privileges to create `Application` objects in Configuration Server. (User privileges are set using Configuration Manager.)
- Install JRE 1.4 or later on the same machine on which the Reporting 8.0 Configuration Wizards run. The Configuration Wizards perform RDBMS validation and connect to RDBMS using JDBC.

Supported Operating Systems

Refer to the *Genesys Supported Operating Environment Reference Manual* for the list of operating systems and database systems supported in Genesys releases 6.x, 7.x, and 8.x. You can find this document on the Genesys Technical Support website at http://genesyslab.com/support/dl/retrieve/default.asp?item=B6C52FB62DB42BB229B02755A3D92054&view=item.

For UNIX-based (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, and is available within the installation packages.

Prerequisites for Each Reporting Component

Before running either the CC Analyzer or the CCPulse+ Wizard, review the requirements for each Reporting component listed in the following sections to verify that you have correctly prepared your environment for installation.

Data Sourcer

The following are required to install Data Sourcer:

- You must have administrative privileges on the target host.
- A database prepared by your database administrator for Data Sourcer (ODS). See “Preparing the Databases” on page 26 for details on preparing the database.
- The user name and password for ODS.
- A running DB Server for Data Sourcer to access the ODS.
- Database user privileges to create, update, and delete tables, and to create procedures and triggers. This database user should *not* have administrator privileges.
- The DB Server `tran_batch_mode` configuration option set to `OFF`.

Note: For 7.6 Data Sourcer to operate properly, DB Server version 7.6.000.09 or later is required.

Data Modeling Assistant

Before installing Data Modeling Assistant, ensure that:

- You have administrator privileges on your Windows platform.

> **Note:** Administrative privileges are required to register Object Linking and Embedding (OLE) Custom Controls (OCXs) to the system registry; DMA cannot operate without the registered OCXs.

- Microsoft Internet Explorer 6+ is installed on the host machine which will run DMA.

Data Mart/ETL Runtime

Before launching the setup program to install the Data Mart, ensure that:

- JRE 1.4 or later is installed.
- A supported database is available for the Data Mart. See “Preparing the Databases” on page 26 for details.
- A RDBMS user account for the Data Mart has been created with privileges to create tables, views, and indexes. This account, however, should *not* be granted DBA privileges.

Hyperion Performance Suite

The report-generation tools that you can use with CC Analyzer are offered in cooperation with Oracle Corporation. The Hyperion tool set comes with its own documentation to which you should refer for complete installation requirements.

CCPulse+

Before launching the setup program to install CCPulse+ reporting, ensure that:

- You have administrator privileges on your Windows platform.

> **Note:** Administrator privileges are required to register OCXs to the system registry; CCPulse+ cannot run without the registered OCXs.

- Microsoft Internet Explorer 6+ is installed on the host machine which will run CCPulse+.
- All prior versions of CC Pulse/CCPulse+ have been completely uninstalled.
- Microsoft Visual C++ 2008 SP1 Runtime is installed.

If you intend to use Historical Reporting in CCPulse+, also review the component-specific requirements for Data Sourcer, DMA, and ETL Runtime, which are described on pages 24 and 25.

Preparing the Databases

Historical Reporting, whether delivered by CC Analyzer or CCPulse+, requires two databases: ODS and the Data Mart. Both databases must use the same relational database management system.

Refer to the *Reporting 7.6 Physical Data Model* for your specific RDBMS type to understand Data Mart structure and to the *Standard PDM Report* for your RDBMS type to understand ODS structure. The standard PDM reports are available in the database directory where Data Sourcer is installed.

In preparing these databases, you complete several preparatory steps including:

- Ensuring that you are using a supported RDBMS.
- Ensuring that database capacity requirements are met.
- Ensuring that a dedicated number of threads exist for Data Sourcer and ETL Runtime.
- Preparing the database environment.
- Appropriately sizing the ODS and Data Mart databases.

Supported RDBMSs

Reporting 8.0 supports the following relational database management systems:

- Oracle 9.0, 9.2, 10g, 10.2, and 11g
- Sybase 12.5
- Microsoft SQL Server 2000, SP 3 or later,
  Microsoft SQL Server 2005, SP1,
  Microsoft SQL Server 2008
- DB2 8.2, DB2 9.1, and 9.5

Notes: See also, *Genesys Supported Operating Environment Reference Manual*, which contains the most recent information.

Ensure that you are using an appropriate version of DB Server that supports your version of DBMS and meets a minimum DB Server version requirement (7.6.000.09) for Data Sourcer to operate properly.

Calculating Database Capacity

Develop database-capacity requirements as they relate to your system by answering the following questions.

Note: See pages 29 through 36 for information about estimating the correct size for each database.

- How much space is needed for the database?
- How much space is to be added in the future?
- How powerful should the database be?
- How will this database be used? (to generate operational reports? analytical reports?)
- When and how often will loading and transformation occur?
- When will aggregation occur?
- How will indexes be managed? For example, do you require separate tablespaces for indexes?

Calculating the Number of Threads

The Data Collection and Data Mart Services use numerous threads to run many functions in parallel. Use this optional procedure if you are using an operating system that has a low limit for the number of threads.

You can calculate the number of threads used by the various components as follows:

- 11 for each Data Sourcer application (primary and backup).
- 17 + (3 x *NODSs*) for ETL Runtime's Transformation and Aggregation modules, where *NODSs* denotes the number of data sources defined to ETL Runtime.

This calculation represents the maximum number of threads ETL Runtime uses. The number of threads ETL Runtime uses decreases in direct relation to the number of writers defined by the `numberOfWriters` ETL Runtime parameter. (ETL Runtime modules and parameters are described in the *Reporting 7.6 ETL Runtime User's Guide.*)

Preparing Your Database Environment

Prior to installation, the requisite database environment *must* be prepared by a database administrator. Because working with both the Data Collection and the Data Mart Services is database intensive, Genesys also recommends DBA participation during the installation process.

Example: The Oracle Database Environment

The Oracle database environment, for example, is composed of the following:

- A tablespace for ODS (refer to sizing information on page 29 to estimate database size).
- A tablespace for the Data Mart (refer to sizing information on page 33 to estimate database size).
- An additional tablespace for each collection unit, if you plan to operate a second or third Data Sourcer. These additional tablespaces might not be required depending on your level of resource usage. (Refer to page 36 to determine the number of collection units your environment requires.)

Note: During the configuration process, you are prompted for the user name and password of each user created, as well as the RDBMS host and port. For the Oracle database, a system identification number (SID) is required. If you do not have this information, you cannot proceed with the configuration.

Preparatory Steps

After developing capacity requirements, prepare databases for ODS and Data Mart using the following procedure.

During the configuration process, you are prompted for the user name and password of each user created, as well as the RDBMS host and port.

Note: The Data Collection and Data Mart Services support only single-byte database names.

1. Create accounts for Data Sourcer and for ETL Runtime. (You must have DBA privileges to create accounts). Consult the documentation for your database and/or your DBA for the procedure.

   Note: The accounts for Data Mart and Data Sourcer *must not* have administrator privileges.

2. Ensure that the following initialization parameters allow all clients, including Data Sourcer and ETL Runtime, to work with this database instance:
   - `open_cursors` (default: `49`; recommended: `200`)
   - `dml_locks` (default: `100`; recommended: `200`)
3. Ensure that the `COMPATIBLE` parameter for an Oracle ODS and Data Mart reflects the current version of your RDBMS. For example, `COMPATIBLE=9.0.1`.

DB2 Database Requirements

If you are using a DB2 database, verify that it meets these requirements:

- A buffer pool has been created with page size of at least `16 KB`.
- A tablespace is associated with that buffer pool.
- Rights to the tablespace associated with the buffer pool are assigned to the Data Mart owner.
- Given that, in most cases, the default value of the DB2 `applheapsz` configuration parameter is too low, increase this value as needed.

Microsoft SQL Server Database Recommendation

Setup Steps

If you are using Microsoft SQL 2005 for your ODS database, Genesys recommends that you perform the following setup steps:

1. Create a login, or choose an existing one, for Data Sourcer to use to connect to your ODS database.
2. Create a database.
3. Create a new schema in the database; for example, `genesys` or `ods`.
4. Create a new user for this database. The user must have the same name as the schema created in Step 3. Map the new user to the login created for Data Sourcer in Step 1, and set the ownership of the new schema to this new user.
5. Grant the required database privileges to the new user.

Modify the DAP Application

To enable Data Sourcer to retrieve needed configuration parameters, Genesys also recommends modifying the DAP application used to access the ODS database, if:

- You are using a Microsoft SQL Server database for your ODS.
- Your Data Sourcer application is release 7.6.x.

For more information, see the chapter about fine-tuning your Data Sourcer configuration in the *Reporting 7.6 Data Sourcer User's Guide*.

Estimating ODS Size

Genesys recommends reserving enough space in ODS for at least two additional days of data collection, in the event data is not removed from ODS as you anticipate. Determining an appropriate size for ODS depends on the number of requests, the time profiles, the average size of record requests, and how often you plan to purge the database.

Use the following formula to estimate the minimum ODS size:

$ODSSize = NRequests \times NTimesPerDay \times RequestsRecordSize \times (NDays + 2)$

where:

- *ODSSize* is the size of the Operational Data Storage in bytes.
- *NRequests* is the number of requests made to Stat Server.
- *NTimesPerDay* is the number of `Collection Time Profiles` per day.
- *RequestsRecordSize* is the request record length in bytes.
- *NDays* is the number of days data is stored in the ODS.

Data Sourcer stores the data it requests from Stat Server in `OL_DATA`*n* tables in ODS. This table's record length depends on your relational database management system and its storage parameters. Table 1 provides record length estimates for the supported RDBMSs.

The actual record length in your `OL_DATA`*n* tables may differ.

Table 1: Estimated Length of Request Records by RDBMS

	Microsoft SQL	Oracle	DB2	Sybase
Record length	66 bytes	42 bytes	58 bytes	83 bytes

You can calculate the number of requests made to Stat Server as follows:

$$NRequests = \sum_{i=1}^{NLayouts} NObjects_i \times NStatistics_i$$

where:

- *NObjects* is the number of objects in your report layout.
- *NStatistics* is the number of statistics collected by each report layout.
- *NLayouts* is the number of active report layouts in Data Sourcer.

Note: DMA shows the number of requests for all active report layouts in the `Status` bar when the topmost report folder (the default name is `Report Layouts`) is selected on the `Folder` pane. DMA displays the total number of statistics for a particular report layout when that report layout is selected on the `Folder` pane.

Example

Assume the following: 100,000 requests, a 15-minute time profile, an Oracle RDBMS, and ODS is cleared once daily.

- *NRequests* = 100,000
- *NDays* = 1
- *NTimesPerDay* = 4 collections/1 hr x 24 hrs/day = 96 collections/day

An appropriate database size for this scenario is ~1.2 GB (100,000 x 96 x 42 x [1+2]). And it is a good idea to factor in some extra space.

Calculating the Number of Requests

Table 2 shows some examples of solution-specific layout templates.You can use these templates as starting points for creating report layouts that measure the status and performance of specific contact center objects. The table also shows the number of statistics collected. For a complete list of templates, please refer to the *Reporting Technical Reference Guide.*

Note: See "ODS Layout Templates" in the *Reporting Technical Reference Guide* for more information about the statistics gathered.

Table 2: Solution Layout Templates

Outbound Contact Layout Templates		Enterprise Routing Layout Templates		Multimedia Solution Email Layout Templates	
Template Name	**Number of Statistics Collected**	**Template Name**	**Number of Statistics Collected**	**Template Name**	**Number of Statistics Collected**
CALL_LS	24	AGENT	28	EMAIL_AG	11
CMP	25	GROFAGS	28	EMAIL_GAG	11
CMP_CALL_L	24	GROFPLS	28	EMAIL_GPL	11
CMP_GR	7	GROQUEUES	11	EMAIL_IQ	5
GROFPLS	28	PLACE	28	EMAIL_PL	11
GROFQUEUES	11	QUEUE	11	EMAIL_TEN	11
O_AGENT	32	ROUTEPOINT	11		
O_AGENT_GR	32				
PLACE	28				
QUEUE	11				
ROUTEPOINT	11				

Table 2: Solution Layout Templates (Continued)

Multimedia Solution Email Layout Templates		Multimedia Solution Voice Layout Templates		Multimedia Solution Live Web Layout Templates	
Template Name	**Number of Statistics Collected**	**Template Name**	**Number of Statistics Collected**	**Template Name**	**Number of Statistics Collected**
EMAIL_AG	11	VOICE_A	22	CHAT_A	13
EMAIL_GAG	11	VOICE_AG	22	CHAT_GA	13
EMAIL_GPL	11	VOICE_GQ	12	CHAT_GH	7
EMAIL_IQ	5	VOICE_P	22	CHAT_GP	13
EMAIL_PL	11	VOICE_PG	22	CHAP_P	13
EMAIL_TEN	11	VOICE_Q	15		
		VOICE_RP	15		
		VOICE_T	16		

VCB Email Layout Templates	
Template Name	**Number of Statistics Collected**
VCB_GQ_EV	9
VCB_GQUEUE	12
VCB_Q_EV	9
VCB_QUEUE	12
VCB_RP	12
VCB_TENANT	21

Use the following formula to calculate the number of requests generated for an ODS containing all seven layout templates for Enterprise Routing:

NRequests = (*NAGENTs* x 28) + (*NGROFAGSs* x 28) + (*NPLACEs* x 28) + (*NGROFPLS* x 28) + (*NQUEUEs* x 11) + (*NROUTEPOINTs* x 11) + (*NGROFQUEUES* x 11)

Example

Consider the following sample environment:

Tenant 1

1,000 agents
50 agent groups
500 places
25 place groups
10 queues
20 routing points
5 queue groups
15-min time profile (*NTimesPerDay*=96)
Oracle RDBMS
ODS cleared once daily

Tenant 2

2,000 agents
100 agent groups
500 places
25 place groups
10 queues
100 routing points
5 queue groups
15-min time profile (*NTimesPerDay*=96)
Oracle RDBMS
ODS cleared once daily

Using these figures in the equation on page 30, you calculate the number of requests and ODS size as follows:

NRequests = [(1000 x 28) + (50 x 28) + (500 x 28) + (25 x 28) + (10 x 11) + (20 x 11) + (5 x 11)] +
[(2000 x 28) + (100 x 28) + (500 x 28) + (25 x 28) + (10 x11) + (100 x 11) + (5 x 11)]
= 44,485 + 74,765
= 119,250

ODSSize = 119,250 x 96 x 42 x (1 + 2)
= ~1.4 GB

Estimating Data Mart Size

The appropriate size for Data Mart depends on the number of objects stored, the number of statistics gathered, and how long data is kept. This database is much larger than ODS because:

- It maintains a much longer history of contact center statistics; typically, it stores statistics for one year.
- Presummarized data is generated for several aggregation levels, to improve reporting performance.

To calculate the Data Mart size, you must calculate its raw data size and then factor in whatever amount of overhead is appropriate for your enterprise. Overhead size includes the space required for such things as indexes and metadata and highly variable. Steps for calculating the minimum size for the Data Mart appear in the next section.

As a guideline, note that in addition to storage requirements for raw data, you must also store three default indexes:

- One composite index for the `Fact` table on the `Object` and `Time` foreign keys.
- Two indexes, one each on the primary key indexes for the `Dimension` tables.

Refer to the Standard PDM documents for your RDBMS for information on these and other Data Mart tables. These three indexes and the two `Dimension` tables consume approximately one-third again as much space, so the total minimum space required for the Data Mart is calculated as follows:

$$DMSize = RawDataSize \times 1.33$$

Calculating Data Mart Size

Calculating the raw data size requires that you first calculate the number of aggregations you are using, and then use this figure in the equation for raw data size.

Calculating Number of Aggregations

Each report layout star schema contains two `dimension` tables (`object` and `time`) and one `Fact` table for each aggregation level. `Fact` tables affect database size more than `dimension` tables do. All `Fact` tables hold the number of aggregation periods maintained for each aggregation level.

For example, at the 15-minute aggregation level, Data Mart maintains 35,040 aggregation periods for a one-year period (365 days/year x 24 hours/day x 4 aggregations/hour), while at the one-year aggregation level, the Data Mart maintains just one aggregation period.

The total of all aggregation periods can be represented as follows:

$$TotalAggs = \sum_{i=1}^{NLevels} NAggregations_i$$

where *i* represents one of seven default aggregation levels: 15-minute, hour, day, week, month, quarter, and year. The total number of aggregations for these seven aggregation levels is:

$$TotalAggs = 35040 + 8760 + 365 + 52 + 12 + 4 + 1 = 44234$$

Calculating Raw Data Size

For each report layout schema:

- The number of objects multiplied by the total number of aggregation periods translates into the number of rows.
- The number of statistics translates into the number of columns.

In addition, two keys in each row, the `Object` and `Time` foreign keys, point to the `Dimension` tables. Each statistic and the two keys occupy four bytes of space.

To calculate the total size of the raw data in the Data Mart, sum the star schema sizes for each report layout:

$$RawDataSize = TotalAggs \sum_{j=1}^{NLayouts} NObjects_j \times \langle \langle NStatistics_j \times 4 \rangle + \eta \rangle$$

where η is the size of the row key (that is, the size of the `TIME_KEY` and `OBJECT_ID` fields).

Example

To calculate Data Mart size, assume the following:

- The Data Mart is loaded daily.
- You are using the default aggregation levels.
- You are maintaining a one-year history in the Data Mart.

Tenant characteristics are as follows:

Tenant 1	Tenant 2
1,000 agents	2,000 agents
50 agent groups	100 agent groups
500 places	500 places
25 place groups	25 place groups
10 queues	10 queues
20 routing points	100 routing points
5 queue groups	5 queue groups
Oracle row-key size = 30	Oracle row-key size = 30

As shown above, the equation is as follows:

$$RawDataSize = TotalAggs \sum_{j=1}^{NLayouts} NObjects_j \times \langle \langle NStatistics_j \times 4 \rangle + \eta \rangle$$

You must perform the calculation separately for each layout, using the correct number of objects and number of statistics for each layout. Add these results together to obtain the raw data size.

Total Aggs = 44234 (See the calculation in "Calculating Number of Aggregations" on page 34.)

NLayouts = 7 (Agent, Agent Group, Place, Place Group, Queue, Queue Group, Routing Point)

$NObjects_j$ 3000 agents, 150 agent groups, 1000 places, 50 place groups 20 queues, 120 routing points, and 10 queue groups.

$NStatistics_j$ The number of statistics for each layout as shown in Table 2 on page 31.

η = 30 (Row key size)

Using these figures, the raw data size comes to 25.02664458 GB.

The minimum recommended Data Mart size is as follows:

Raw Data Size x 1.33 = 25.02664458 x 1.33 = 33.28543729 GB

Example—Alternative Calculation of Data Mart Size

You can also calculate the minimum Data Mart size as follows:

DMSize = (*NRequests* x *NTimesPerDay* x *NDays* x 8) + 20,000

where:

- *DMSize* is the size of the Data Mart in bytes.
- *NRequests* is the total number of requests from all Data Sourcers connected to the Data Mart.
- *NTimesPerDay* is the number of `Collection Time Profiles` per day.
- *NDays* is the number of days data is stored in the Data Mart.

Using the same number and types of objects as in the previous example, this is calculated as:

DMSize = (119,250 x 96 x 365 x 8) + 20,000 = 33,428,180,000 bytes

To convert the answer to GB, divide by 1,073,741,824. This gives an appropriate database size for this scenario of ~32 GB. And it is a good idea to factor in some extra space.

Note: *NRequests* is calculated as follows:

[(1,000 x 28) + (50 x 28) + (500 x 28) + (25 x 28) + (10 x 11) + (20 x 11) + (5 x 11)] + [(2,000 x 28) + (100 x 28) + (500 x 28) + (25 x 28) + (10 x 11) + (100 x 11) + (5 x 11)]
= 44,485 + 74,765 = 119,250

Distributed Architecture

In estimating database- and hardware-sizing requirements, first determine the implementation architecture for the Data Collection Services. In most cases, a centralized configuration easily accommodates interaction volume. For large volumes—more than 30 interactions per second—Genesys recommends a distributed configuration.

Calculating the Number of Collection Units

Because Stat Server tracks and maintains statistics in memory, Stat Server can handle only a limited number of statistics. This limitation depends on call volume, RDBMS throughput, CPU speed, and available memory. To scale beyond these limitations, distribute the monitoring and collection of statistics across multiple collection units. Refer to Figure 4 on page 14 for an illustration of collection unit components.

Determining how many collection units to configure requires site-specific information on contact center volume, interaction complexity, and hardware and software environments. In general, configure one collection unit for every contact center or for every tenant in a multi-tenant environment. For a more precise determination of initial distribution, use the following procedure.

Note: The procedure is only a guideline because accurate scaling of collection units requires ongoing monitoring and tuning.

1. Determine the number of calls per second each T-Server handles.
2. Organize the T-Servers into groups whose total call volume adds up to no more than approximately 30 contacts per second:

$$GroupCV \leq 30$$

3. For each group of T-Servers, calculate the number of requests for all report layouts associated with each T-Server:

$$NRequests = \sum_{i=1}^{NLayouts} NObjects_i \times NStatistics_i$$

4. Calculate the number of collection units for each T-Server group by multiplying its number of requests by its total call volume. Then, divide the result by the product of the tested limits for call volume per second and requests for the hardware on which the collection unit will run:

$$NCollectionUnits = \frac{NRequests_T \times GroupCV}{CVMax \times NRequests_H}$$

5. Add the sum of collection units for each T-Server group to get the total number of collection units:

$$TotalCollectionUnits = \sum_{i=1}^{NGroups} NCollectionUnits_i$$

6. In the event of fractional results, round up the number of collection units as a cushion for increasing volumes.

Note: The value for the maximum number of requests per collection unit ($NRequests_H$) is based on the performance of both Stat Server and Data Sourcer. Performance, in turn, is based on a number of factors including disk space, memory, and whether binding is used, to mention a few. Refer to "Stat Server Performance" and "Data Sourcer Performance" in the "Performance Measurements" chapter of the *Reporting 8.0 Reference Manual* for more information.

Example

Adding to the previous example on page 30, Tenant 1 is serviced out of two equally sized contact centers, each with a T-Server handling contact volume of approximately 10 contacts per second. Tenant 2 is also serviced out of two equally sized sites, each with a T-Server handling 20 contacts per second. The total contact volume is 60 contacts per second, which would overload a single collection unit.

This example is based on a Windows Server environment running on computers with Pentium 400 processors and 256 MB of RAM, which tests have shown to be capable of handling:

- Approximately 30 contacts per second.
- Approximately 50,000 requests per second.

These numbers depend heavily on call complexity, which can vary widely. The tests used contacts of average complexity (for example, few transfers, few conferences, typical amounts of attached data, and so forth).

Tenant 1 (Each Contact Center)		Tenant 2 (Each Contact Center)	
500 agents	5 queue groups	1,000 agents	5 queue groups
25 agent groups	15-min time profile	50 agent groups	15-min time profile
250 places	70-bit record size	250 places	70-bit record size
12 place groups	2 T-Servers	12 place groups	2 T-Servers
5 queues	10 contacts per second	25 queues	20 contacts per second
10 route points		50 route points	

In making the collection-unit calculation, you could distribute four collection units, one each to the four sites. However, you can optimize the distribution by following this process:

1. The T-Server contact volumes are:
   - T-Server 1: 10 contacts per second.
   - T-Server 2: 10 contacts per second.
   - T-Server 3: 20 contacts per second.
   - T-Server 4: 20 contacts per second.
2. You can pair each Tenant 1 site with a Tenant 2 site:
   - T-Server 1 + T-Server 3: 30 contacts per second
   - T-Server 2 + T-Server 4: 30 contacts per second
3. Since each of the paired sites has the same characteristics, the number of requests is identical:

   NRequests

   = [(500 x 28) + (25 x 28) + (250 x 28) + (12 x 28) + (5 x 11) + (10 x 11) + (5 x 11)] + [(1000 x 28) + (50 x 28) + (250 x 28) + (12 x 28) + (25 x 11) + (50 x 11) + (5 x 11)]

   = 22,256 + 37,616

   = 59,872
4. The number of collection units for each T-Server group is calculated as follows:

   $$NCollectionUnits = \frac{59872 \times 30}{1500000} = 1.2$$
5. The total number of collection units for the two T-Server groups is calculated as follows:

   $$TotalCollectionUnits = 1.2 + 1.2 = 2.4$$

If 2.4 is rounded up, you would distribute three collection units. In this case, instead of the two pairs of sites above, you could, alternatively, configure one collection unit for Tenant 1's two sites and a separate one for each of Tenant 2's two sites.

Chapter

3 High-Availability Architecture

This chapter discusses the concept of High-Availability (HA) architecture in Reporting release 8.0. This chapter contains the following sections:

Note: Reporting 8.0 consists of two products, Contact Center Analyzer 7.6 and CCPulse+ 8.0.

Overview

The high-availability architecture in historical reporting is intended to minimize the chance of any loss of historical reporting data, in the event of a single hardware component failure.

The HA reporting architecture consists of two Data Sourcer applications, configured in `Hot Standby` mode, and connected to two Stat Server applications, an HA T-Server, an ODS, and a Data Mart. The Stat Server applications will collect and send duplicate sets of data to the Data Sourcer pair, although only the Data Sourcer with the ODS lock will write to the ODS.

Data redundancy, connections to backup servers, and components operating in `Hot Standby` mode, will together ensure high availability of historical reporting data in release 8.0. Figure 7 illustrates the HA reporting architecture.

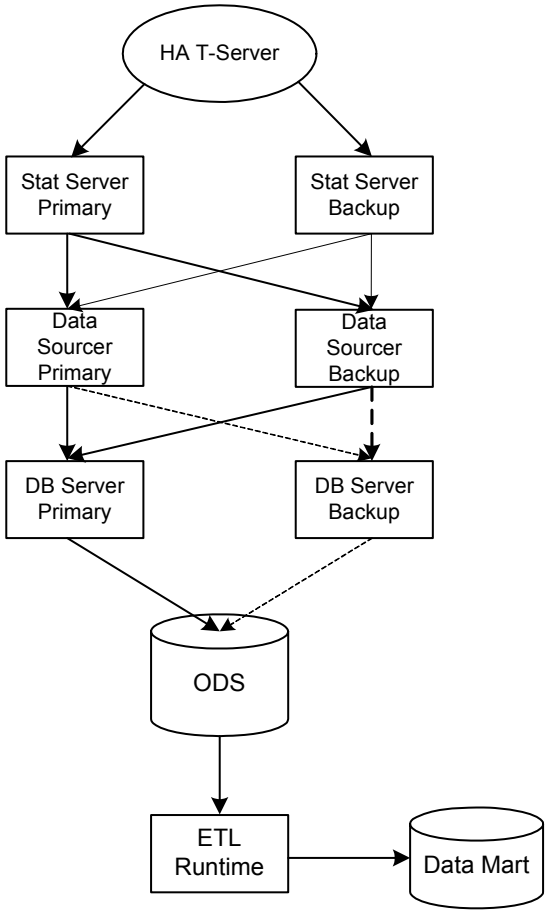

Figure 7: High-Availability Reporting Architecture

Planning Considerations

Proper planning is required to ensure successful implementation of the HA reporting architecture. The following suggestions are guidelines for planning your HA architecture:

- Install your primary and backup reporting components on separate servers, if your hardware boxes are not HA. If possible, physically separate each primary server from each backup server.
- Use HA networks or clustered boxes.
- Set up alarms to signal component failures, and create a response plan for handling these alarms.
- Configure your ODS and Data Mart databases to operate in HA mode. It is the responsibility of your DBA to configure both ODS and Data Mart databases in HA mode, to ensure that there is no loss of data from databases on the RDBMS side. For example, in the case of an Oracle

database, you can achieve the necessary database level guarantees by using appropriate storage solutions, or by using Oracle Data Guard in maximum protection mode.

HA Architecture

In the HA reporting architecture, a primary and backup Data Sourcer pair operates in `Hot Standby` mode. Each Data Sourcer is connected to both a primary and a backup Stat Server. The complete HA reporting architecture must also include an HA T-Server, an ODS, and an Data Mart database. Refer to Figure 7 on page 40.

To provide data redundancy, primary and backup Stat Server applications collect and send the same set of statistics to each Data Sourcer at the same time. Under normal operating conditions, the data from the primary Stat Server has priority over the data collected from the backup Stat Server. Although each Data Sourcer receives an identical set of statistics, only the primary Data Sourcer will write this data to ODS. An ODS lock mechanism ensures that only one Data Sourcer (primary) is able to write to ODS at one time.

Note: To avoid loss of data, your T-Server, and your ODS and Data Mart databases, must all be in HA mode. Refer to the *Framework 8.0 T-Server Deployment Guide* for your specific T-Server, and to your DBA, for further information.

To achieve High Availability in historical reporting data, you must also configure two Stat Server applications in such a way that one Stat Server functions as a backup to the other. Stat Server is now able to accept client connections while running in `backup` mode. This enables both the primary and backup Stat Servers to collect the same set of statistics, thus ensuring minimal loss of data in the event of primary Stat Server failure.

To enable this connectivity in `backup` mode, you must set a new configuration option, `accept-clients-in-backup-mode`, in each `Stat Server Application` object. In both the primary and backup Data Sourcer applications, configure a connection to the primary Stat Server.

Note: If these options are not set, Stat Server will function as it did in previous releases, and you will not have HA in historical reporting data.

Primary and Backup Data Sourcer Applications

You designate Data Sourcer 7.6 applications either as primary or backup in Configuration Server. This initial designation, however, does not actually determine which Data Sourcer application will serve the primary role of writing data to ODS. The initial operating mode of both applications is determined at startup when each application, regardless of its configured state, attempts to gain control of ODS. The successful application becomes the primary Data Sourcer, and it alone writes data to ODS. The other Data Sourcer serves as the backup.

Note: The initial operating mode of Data Sourcer is not static. In the event of a failure, the operating mode of each Data Sourcer can change.

Although a primary Data Sourcer 7.6 application operates in the same manner as a Data Sourcer 7.2 application, a backup Data Sourcer application behaves differently. A backup Data Sourcer collects the same data from Stat Server as does the primary Data Sourcer application. Although the backup Data Sourcer application collects this data at the same time, it does not write this data to ODS. Instead, the backup application periodically checks ODS to see whether Stat Server data has been successfully written to ODS. Upon ensuring this event occurred, the backup Data Sourcer application deletes its duplicate information from memory. The backup Data Sourcer also performs periodic checks of ODS to determine whether the primary Data Sourcer still has control and switches to primary mode if required.

Hot Standby Mode

Hot Standby mode in Genesys Framework implies the existence of redundant applications, and monitoring and control of these applications by the Management Layer (that is, Solution Control Server and Local Control Agent). In the HA reporting architecture, `Hot Standby` mode is controlled by Data Sourcer and ODS, *not* by the Genesys Management Layer.

In `Hot Standby` mode, both backup and primary Data Sourcer applications collect the same data at the same time from both Stat Server applications. If the primary Data Sourcer fails and loses its connection to ODS, for example, the backup Data Sourcer does not automatically switchover to primary mode. Instead, in `Hot Standby` mode, both Data Sourcer applications will attempt to gain control of ODS. It is the one that is successful that becomes the primary Data Sourcer. Consequently, unlike `Hot Standby` in other Genesys components, there exists the chance that the Data Sourcer that was primary *before* the failure will become the primary Data Sourcer *again*, after reconnection to ODS.

Data Sourcer does not operate in `warm standby` mode.

Deployment

Deployment of a high-availability reporting architecture requires configuration and deployment of primary and backup Data Sourcer applications, primary and backup Stat Server applications, and the other high-availability components discussed earlier in this chapter.

You can use the Reporting Wizards to accomplish this, or you can manually configure and deploy the necessary Reporting components. Refer to the following sources for more information:

- Chapter 4, "Solution Reporting Wizards," on page 45.
- Chapter 5, "Configuring Genesys Solution Reporting," on page 49 (using the wizards).
- "Modifying Your Primary Data Sourcer Application Properties for High Availability" on page 44.
- "Modifying Your Stat Server Application Object for High Availability" on page 44.

In addition to configuring primary and backup Data Sourcer applications, you must also set the `accept-clients-in-backup-mode` configuration option within each Stat Server application to enable each to function in high-availability mode. See page 44 for details.

Using the Data Sourcer Wizard

You can use the Data Sourcer Wizard to create and configure a new primary `Data Sourcer Application` object, as in previous releases, or to upgrade your existing primary Data Sourcer application from an earlier version. See "Operating the Data Sourcer Wizard" on page 53 for more information. You can also use this Wizard to create and configure a backup Data Sourcer application. Once your primary and backup Data Sourcer applications have been created, you must also set some specific properties for these objects and the supporting `Stat Server Application` object in Configuration Server. Refer to "Modifying Your Primary Data Sourcer Application Properties for High Availability" and "Manually Configuring Stat Server Applications for High Availability" below for further instructions.

Modifying Your Primary Data Sourcer Application Properties for High Availability

Make the following adjustments to the properties of your primary Data Sourcer to enable it to work in Hot Standby mode with the backup Data Sourcer.

1. From your Applications folder, open the Properties of the primary Data Sourcer object.
2. On the Server Info tab, click the Browse button next to the backup Server box. Browse to find your backup Data Sourcer application.
3. Select the backup Data Sourcer application and click OK.
4. From the drop-down menu next to the Redundancy Type box, select Hot Standby.
5. On the Server Info tab, click Apply and OK to save your changes.

To complete the CC Analyzer deployment, using the reporting wizards, refer to Chapter 5, "Configuring Genesys Solution Reporting," on page 49.

To install Data Sourcer 7.6 software, refer to "Installing Data Sourcer on Windows Platforms" on page 76, or "Installing Data Sourcer on UNIX Platforms" on page 78, as appropriate.

Modifying Your Stat Server Application Object for High Availability

Use the Stat Server Wizard as described in the *Framework 8.0 Stat Server Deployment Guide* to create primary and backup Stat Server Application objects. For them to function in reporting High Availability mode, you must also add the accept-clients-in-backup-mode configuration option to both Stat Server applications, as described below:

1. From your Applications folder, open the Properties file of the primary Stat Server, and do one of the following:
   - Right-click the Stat Server object and select Properties.
   - Double-click the Stat Server object.
2. On the Options tab, from the list of sections, double-click statserver.
3. Click the Create New Section/Option icon. This opens the Edit Option dialog box.
4. Enter the following values:
   - Option Name: accept-clients-in-backup-mode
   - Option Value: True or Yes
5. Click OK to save your changes, and close the dialog box.
6. Click Apply and OK to save your changes.
7. Repeat Steps 1 through 6 for the backup Stat Server Application object.

Chapter

4 Solution Reporting Wizards

The CCPulse+ and Contact Center Analyzer (CC Analyzer) wizards guide you through the process of configuring the necessary Reporting `Application` objects in Configuration Server and deploying installation files and templates to a designated location on your network.

Note: In the Reporting 7.*x* and 8.*x* releases, you first configure Reporting `Application` objects, using the reporting wizards, before installing Reporting applications.

This chapter contains the following sections:

Overview

Before deploying or operating any Reporting components, make sure you understand Reporting architecture and how it fits into your environment.

- Complete the predeployment steps and prepare the ODS and Data Mart databases as described in Chapter 2, beginning on page 23.
- Familiarize yourself with the performance issues applicable to your specific contact center environment. The *Reporting 8.0 Reference Manual* contains some recommendations to achieve good performance.

Starting with the Reporting 7.0.1 release, you can invoke the Solution Reporting Configuration Wizard directly from the Genesys Wizard Manager (the Genesys Common Wizard Set), which is on the Management Framework 8.0 CD.

The CC Analyzer Wizard

The CC Analyzer Wizard helps you configure the following objects, which CC Analyzer uses for Historical Reporting:

- Data Sourcer
- Data Modeling Assistant (DMA)
- Data Mart (an ETL Runtime object)

The CC Analyzer Wizard calls other wizards—such as the Stat Server and Log wizards—to configure other necessary Genesys components and further tune CC Analyzer Application objects.

The CCPulse+ Wizard

You can use CCPulse+ as a real-time Reporting application or as an application providing both real-time and historical Reporting data. If you use CCPulse+ for both, the CCPulse+ Wizard will help you configure the following objects:

- Call Center Pulse
- Data Sourcer
- Data Modeling Assistant
- Data Mart

If you use CCPulse+ only for real-time Reporting, you need to configure only a Call Center Pulse + Application object. In this case, the Wizard presents only the necessary steps to deploy Real-Time Reporting.

The CCPulse+ Wizard calls other wizards—such as the Stat Server and Log wizards—to configure other necessary Genesys components and further tune Application objects.

Installing and Starting the Solution Reporting Wizards

You will need the CDs shown in Figure 8 to configure and install CC Analyzer and CCPulse+.

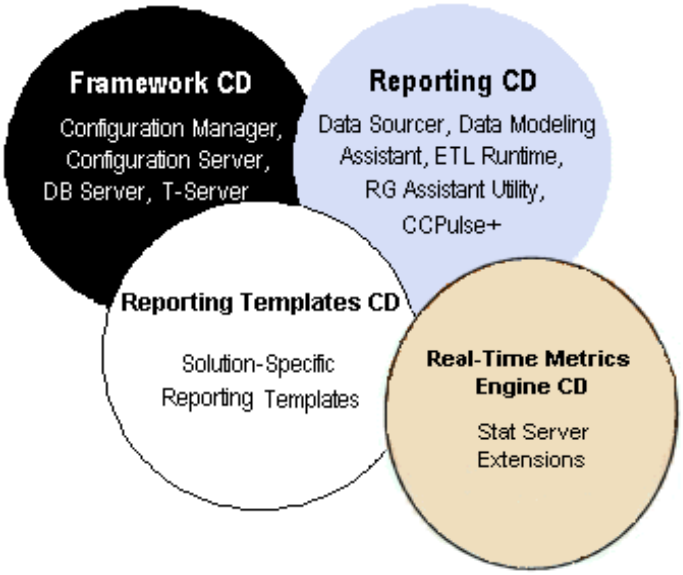

Figure 8: Genesys CDs

To run the Solution Reporting Wizards:

1. Install the Genesys Common Wizard Set (the Genesys Wizard Manager), located on the Management Framework 8.0 CDs.

   Note: Deploy the Common Wizard Set and all other Genesys wizards, including the Solution Reporting Wizard, in the same directory and program folder.

2. Install the Genesys Stat Server Wizard located on Real-Time Metrics Engine 8.0 CD. Refer to the *Framework 8.0 Stat Server Deployment Guide* for information about installing this wizard.
3. After installing the Common Wizard Set, install the Genesys Reporting Configuration Wizard from the `configuration_wizard` directory of the Reporting 8.0 CD.

   The steps for installing the Genesys Reporting Configuration Wizard are similar to those for installing the Stat Server Wizard and are not repeated in this document.

   In addition to deploying the Historical Reporting and Real-Time Reporting Wizards, the Reporting Configuration Wizard, like the Stat Server Wizard,

allows you to configure a security banner for user access to the Reporting Wizards.

4. Start the Genesys Wizard Manager, which provides access to the Solution Reporting Wizards. See the *Framework 8.0 Deployment Guide* for instructions on starting and operating the Genesys Wizard Manager.

Chapter

5 Configuring Genesys Solution Reporting

This chapter describes how to create, upgrade, and configure Genesys Solution Reporting components using the CC Analyzer Wizard, the CCPulse+ Wizard, and their component wizards. After configuring Solution Reporting components, read Chapters 6 and 9 to learn how to install them.

This chapter contains the following sections:

The CCPulse+ and CC Analyzer Wizards share many of the same configuration screens. This is especially true for a CCPulse+ environment configured for both Real-Time and Historical Reporting functionality. Therefore, this chapter discusses the configuration of both Real-Time and Historical application components together to avoid repeating the steps in two separate chapters. Where information is specific to one wizard, or Real-Time deployment for CCPulse+ only, this chapter either notes this fact or prefaces the procedures with one of the following acronyms:

- **CPR** for a CCPulse+ configuration in Real-Time-only mode
- **CPRH** for a CCPulse+ configuration in both Real-Time and Historical mode
- **CCA** for a CC Analyzer configuration

Use the links and page references in the "Navigating..." sections starting on page 51 to locate the procedures describing the Reporting environment you wish to configure.

Invoking the Solution Reporting Wizard

Open the Genesys Wizard Manager, log in to your Configuration Server, and select `Solution Reporting` from the list on the left side of the screen. The `Solution Reporting` page appears as shown in Figure 9.

Figure 9: Invoking Solution Reporting from the Genesys Wizard Manager

To start the CC Analyzer Wizard, select `Contact Center Analyzer` from the bottom of the `Solution Reporting` page. To start the CCPulse+ Wizard, select `CCPulse+` from the middle of the `Solution Reporting` page.

Navigating the CC Analyzer Wizard

If you select Contact Center Analyzer, the Genesys Wizard Manager calls the CC Analyzer Wizard and displays a Welcome screen followed by the:

- Reporting Templates CD screen, described on page 52.
- Data Sourcer screen, described on page 53. (The Wizard may display other screens prior to this one depending on the option selected at the preceding screen.)
- Data Modeling Assistant screen, described on page 58.
- ETL Runtime screen, described on page 61.
- Summary screen, described on page 72.

Navigating the CCPulse+ Wizard

If you select CCPulse+ from the Solution Reporting page, the Genesys Wizard Manager calls the CCPulse+ Wizard and displays the first screen, Welcome.

For Real-Time Reporting

The Wizard displays the following sequence of screens for a Call Center Pulse Application object that you choose to configure only for Real-Time Reporting:

- Reporting Templates CD screen, described in section "Deploying Reporting Templates" on page 52.
- Operating Mode screen, described in Step 3 on page 52. (The Wizard may display other screens prior to this one depending on the option selected at the preceding screen.)
- CCPulse+ screen, described on page 67.
- Summary screen, described on page 72.

For Real-Time and Historical Reporting

The Wizard displays the following sequence of screens for a Call Center Pulse Application object that you choose to configure for both Real-Time and Historical Reporting:

- Reporting Templates CD screen, described in "Deploying Reporting Templates" on page 52.
- Operating Mode screen, described in Step 3 on page 52. (The Wizard may display other screens prior to this one depending on the option selected at the preceding screen.)
- Data Sourcer screen, described on page 53.
- Data Modeling Assistant screen, described on page 58.
- ETL Runtime screen, described on page 61.
- CCPulse+ screen, described on page 67.
- Summary screen, described on page 72.

From Welcome, click Next to proceed to the Reporting Templates CD screen, which is described next.

Deploying Reporting Templates

From the Reporting Templates CD screen, you can deploy Real-Time and/or Historical Reporting templates to your environment for:

- E-mail
- Enterprise Routing (ERS)
- GIM Inbound Voice
- Outbound Contact (OCS).
- Open Media Sample
- Voice CallBack (VCB)
- Voice
- Web Media (formerly MCR)

Note: GIM Inbound Voice templates are available for installation from the Reporting 7.2 Templates CD but are not supported with the Reporting 8.0 release.

1. At the Reporting Templates CD screen, click Have Disk to specify the path to the Reporting Templates CD. Then click Next.

   Note: To skip template deployment, select the Do not install any reporting templates now check box and click Next.

   CPR: The Wizard takes you to the Operating Mode screen discussed in Step 3 below.

   CCA: The Wizard takes you to the Data Sourcer screen discussed in "Operating the Data Sourcer Wizard" on page 53.

   To install the reporting templates later, follow the steps to reach the Reporting Templates CD screen, and then specify the path to the Reporting Templates CD.

2. At the Reporting Templates Groups screen, select the group(s) of templates to install. To select more than one group, hold down the [Ctrl] key while you click the groups you want. Then click Next. (Multi-selection may also be performed using the Shift key or by holding down the left mouse button over your desired selection, and then releasing the button.)
3. **CPR/CPRH:** At the Operating Mode screen, select either:
   - Real-time-only Mode to display the Real-Time Reporting Data screen.
   - Real-time and Historical Mode to display the Historical Reporting Data screen.

   Then click Next.
4. **CCA/CPRH:** At the Historical Reporting Data screen, enter the destination where you want reporting templates copied, or click the Browse button to navigate to the desired location. Then click Next.

CPR: At the Real-Time Reporting Data screen, enter the destination where you want reporting templates copied, or click the Browse button to navigate to the desired location. Then click Next.

The Wizard opens the Reporting Data screen, which displays a progress-of-completion bar as the Wizard copies the files to the destination you specified.

5. When the copy process completes, click Next.

CCA/CPRH: The Data Sourcer screen appears. Proceed to "Operating the Data Sourcer Wizard" on page 53.

CPR: The CCPulse+ screen appears. Proceed to "Operating the CCPulse+ Wizard" on page 67.

Operating the Data Sourcer Wizard

From the Data Sourcer screen of the Wizard, you can perform the following tasks:

- Upgrade a prior version of Data Sourcer to release 7.6 using the Data Sourcer Wizard. Refer to "Upgrading an Existing Data Sourcer Application Object" on page 54 for the steps to take.
- Run the Data Sourcer Wizard to define a new release 7.6 Data Sourcer Application object in Configuration Server. Refer to "Creating a New Data Sourcer Application Object" on page 55 for information about operating this Wizard.
- Select an existing 7.6 Data Sourcer Application object for configuration from the Available Applications list box. The Available Applications list box on the Data Sourcer screen shows the already existing Data Sourcer Application objects in Configuration Server and their respective versions.

  If your environment already has a 7.6 Data Sourcer Application object that you want to use, skip the configuration of this component by clicking Next to advance to the Data Modeling Assistant screen (page 58).
- Remove an existing Data Sourcer application.

CC Analyzer operation requires at least one release 7.6 Data Sourcer Application object. You can add more Data Sourcer Application objects to your environment, if desired.

High availability of historical reporting data requires that you have at least two release 7.6 Data Sourcer Application objects configured and installed.

Note: Skip this section if you are configuring CCPulse+ in Real-Time mode only.

Upgrading an Existing Data Sourcer Application Object

At the Data Sourcer screen of the Wizard:

1. Select a Data Sourcer Application object from the Available Applications list box and click Properties.

   The Data Sourcer Properties screen opens.

2. On the General Information tab, click the Upgrade button.

   This action opens the General Information screen of the Data Sourcer Wizard.

3. Click Next to continue. The Server Information screen appears.

4. Change the host and port information for the Configuration Server on which this application is located if necessary. Then click Next. The Installation Path screen appears.

5. At the Installation Path screen:

   a. Specify the source of the new Data Sourcer installation package. The source can be either the Reporting CD or the Genesys Express CD.

   b. Specify the destination to which you want the installation package copied, and then click Next.

   The Installation Copy screen appears displaying a progress-of-completion bar. When the copy process completes, the Upgrade Information screen appears.

   Note: This installation package is used for CC Analyzer installation (see Chapter 6, beginning on page 75) and for CCPulse+ installation (see Chapter 9, beginning on page 103).

6. Click Next to continue. The Summary screen appears showing the name, version, host, and port for the upgraded Data Sourcer Application object.

7. Click Finish to return to the General Information tab of the Data Sourcer Properties screen (the same screen as in Step 2).

   Notice that the version number of your Application object now reads 7.6.

8. Click OK to return to the Data Sourcer screen, and with your Data Sourcer Application object selected in the Available Applications list box, click Next to proceed to the Data Modeling Assistant screen (page 58).

You have now upgraded your Data Sourcer Application object. After you complete the Wizard, install the deployed installation package (see "Installing Data Sourcer on Windows Platforms" on page 76 or "Installing Data Sourcer on UNIX Platforms" on page 78 as appropriate).

Creating a New Data Sourcer Application Object

At the Data Sourcer screen of the Wizard:

1. Click New to start the Data Sourcer Wizard.
2. At the Welcome screen, click Next.
3. At the General Information screen, enter a name for your Data Sourcer Application object, select a Configuration Manager folder to place it in, and then click Next. The Wizard provides a unique default name. If you enter a different name, be sure that it is also unique.
4. At the Tenants screen, select the tenants that this application is to serve. Then click Next.

   Note: If you have a single tenant environment, you will not see this screen.

5. At the Log Options screen, accept the default log options or click Run Log Wizard to specify your own, and then click Next. Refer to the "Log Section" topic in the *Reporting 7.6 Data Sourcer User's Guide* for a description of log options.
6. At the Options screen, specify the options for automatic report-layout activation for new tenants and the emergency save file directory, and then click Next. Specifying either is optional.

   Note: The emergency save file directory must reside on the machine running Data Sourcer. If you chose not to specify a path to an emergency save directory, no emergency save files will be created.

7. At the Stat Server screen:
   a. Select the appropriate Stat Server from the Stat Server Applications list box. You can choose only one Stat Server to connect to Data Sourcer.

      Note: The Wizard displays only those Stat Servers belonging to the current tenant.

   b. Verify that the location of Stat Server's configuration file is correct.

      The Wizard automatically fills in this field with the path of the Stat Server configuration file, if you chose to install reporting templates at Step 1 of "Deploying Reporting Templates" on page 52. You can click the Browse button to the right of this field to search for the location.
   c. Click Next.

   If you choose, you can create a new Stat Server Application object by clicking New to invoke the Stat Server Wizard, or you can upgrade an

existing Stat Server Application object to release 8.0 by clicking Properties and then Upgrade from the General tab. Refer to the *Framework 8.0 Stat Server Deployment Guide* for further information on Stat Server deployment.

Once you have created the new Stat Server Application object, control returns to the Stat Server screen of the Data Sourcer Wizard. Click Next to proceed.

The wizard compares definitions of the statistical parameters that it imports with the definitions in the Stat Server Application you specified. If there are any discrepancies, the wizard requires that you resolve them before proceeding.

8. At the Database Access Point screen, click New to invoke the Database Access Point Wizard from which you can define a database access point to Data Sourcer.

   Note: Refer to "Operating the Database Access Point Wizard" on page 65 for instructions on using the Database Access Point Wizard.

   Database access points describe the parameters required for communication with a particular database and the DB Server through which this database can be accessed.

   Once you have defined a database access point, control returns to the Database Access Point screen of the Data Sourcer Wizard where the Database Access Point Name field reflects the database access point you just defined. Click Next to proceed.

   Note: Genesys recommends that DB Server and your RDBMS be up and running. Otherwise, the Wizard cannot validate or initialize ODS.

9. If your ODS is not initialized, at the Operating Mode screen, select Yes to have the Wizard initialize ODS now or No to have Data Sourcer initialize ODS upon first start. Then, click Next.

   Note: The Stat Server assigned to Data Sourcer must be up and running. Otherwise, the Wizard cannot initialize ODS.

10. If your ODS has been initialized but contains outdated layout templates, at the ODS Upgrade screen, select Yes to upgrade ODS now or No to postpone the upgrade for a later time. Then, click Next.

    When upgrading templates, the Wizard displays screens that enable you to compare stat type definitions of your layout templates with stat type

definitions provided in the upgraded templates, if they differ. For each stat type definition, you can select one version or the other.

Note: Please be sure to thoroughly understand the differences in stat definitions before you upgrade them.

11. At the second `Options` screen that appears, specify the TCP/IP port for management client connection. Then click `Next`.
12. At the third `Options` screen, review the options you have specified thus far. Click `Back` if you need to change any of them or click `Next` to proceed.
13. At the `Server Information` screen, specify a host and port for Data Sourcer and click `Next`. Click the `Browse` button  to display the `Browse for Host` screen from which you can select an existing host or create a new one.
14. At the `Installation Path` screen, specify a source path and a destination path for installation files and click `Next`. By default, the Wizard fills in the source path from the Reporting CD (or Genesys Express CD) and destination, but you can change this if desired. If you specify a destination that does not exist, the Wizard creates it for you.

    Note: Remember the destination path you specify in this step. You will need it later (in Chapter 6,"Installing Historical Reporting Components") to install Data Sourcer.

    The `Installation Copy` screen appears displaying a progress-of-completion bar. When the copy process completes, the `Solution-Specific Data` screen appears.
15. At `Solution-Specific Data` screen, specify the source path to which the Wizard copied solution-specific data. Then click `Next`. Use the `Browse` button if necessary. The destination path, populated with the value specified at Step 14, is disabled.

    A second `Solution-Specific Data` screen appears displaying a progress-of-completion bar. When the copy process completes, the `Backup Server Information` screen appears.
16. At the `Backup Server Information` screen, indicate whether to configure a backup Data Sourcer application.
    - If you choose to configure a backup, fields appear on this screen for you to specify the name, host, port, and folder for this application. Change the `Redundancy Type` to `Hot Standby`, and click `Next`. (Data Sourcer does not operate in Warm Standby mode.)
    - If you choose not to configure a backup, click `Next`. The `Installation Information` screen appears. After reading the information provided on this screen, click `Next`.

17. At the Summary screen, read the information about the newly-created Data Sourcer Application object. Click Finish to return to the Data Sourcer screen, which now lists the Data Sourcer Application object you just created at the bottom of the Available Applications list box.
18. If desired, repeat Step 1 through Step 17 to define another Data Sourcer Application object for your Reporting environment.
19. With your Application object selected, click Next to proceed to the Data Modeling Assistant screen of the Wizard. The operations available from this screen are described in the next section (page 58).

You have now configured a new Data Sourcer Application object. The red slash through the Application icon  indicates that the object is not yet active. This object self-activates upon installation. For installation procedures, refer to "Installing Data Sourcer on Windows Platforms" on page 76 or "Installing Data Sourcer on UNIX Platforms" on page 78 as appropriate.

Data Sourcer is normally a client of Configuration Server, but you can configure it to connect to Configuration Server Proxy (CS Proxy) instead. CS Proxy is a Genesys application that enables read-only access to a remote Configuration Server. To specify a backup CS Proxy after you have configured a Data Sourcer Application object you must manually edit the object in Configuration Manager to change the value in the Redundancy Type field on the Start Info tab from Not Specified to Warm Standby.

Refer to the "Setting Up Geographically Distributed Systems" chapter in the *Framework 8.0 Deployment Guide* for more information about Configuration Server Proxy.

Operating the Data Modeling Assistant Wizard

From the Data Modeling Assistant screen, you can perform any of the following tasks:

- Upgrade a prior version of DMA to release 7.6 using the Data Modeling Assistant Wizard. Refer to "Upgrading an Existing DMA Application Object" on page 59.
- Run the Data Modeling Assistant Wizard to define a 7.6 DMA Application object in Configuration Server. Refer to "Creating a New DMA Application Object" on page 60 for information about operating this Wizard.
- Select an existing 7.6 DMA Application object for configuration from the Available Applications list box. The Available Applications list box on the Data Modeling Assistant screen shows the already-existing Data Modeling Assistant Application objects and their respective versions.

If your environment already has a 7.6 Data Modeling Assistant Application object that you want to use, skip the configuration of this component by clicking Next to advance to the Data Mart screen (page 61).

CC Analyzer 7.6 operation requires at least one release 7.6 Data Modeling Assistant Application object. You can add more than one Data Modeling Assistant Application object to your environment, if desired.

Note: Skip this section if you are configuring CCPulse+ in Real-Time mode only.

Upgrading an Existing DMA Application Object

At the Data Modeling Assistant screen of the Wizard:

1. Select a Data Modeling Assistant Application object from the Available Applications list box and click Properties.

   The Data Modeling Assistant Properties screen opens.

2. On the General Information tab, click the Upgrade button.

   This action opens the General Information screen of the Data Modeling Assistant Wizard.

3. Click Next to continue. The Installation Path screen appears.

4. At the Installation Path screen:

   a. Specify the source of the new DMA installation package. The source can be either the Reporting 8.0 CD or the Genesys Express CD.

   b. Specify the destination to which you want the installation package copied and then click Next.

   The Installation Copy screen appears displaying a progress-of-completion bar. When the copy process completes, the Upgrade Information screen appears.

   Note: This installation package is used for CC Analyzer installation (see Chapter 6, beginning on page 75) and for CCPulse+ installation (see Chapter 9, beginning on page 103).

5. Click Next to continue. The Summary screen appears showing the name, version, host, and port for the upgraded Data Modeling Assistant Application object.

6. Click Finish to return to the General Information tab of the Data Modeling Assistant Properties screen (the same as in Step 1).

   Notice that the version number of your Application object now reads 7.6.

7. Click OK to return to the Data Modeling Assistant screen. With your Data Modeling Assistant Application object selected in the Available Applications list box, click Next to proceed to the Data Mart screen (page 61).

You have now upgraded your Data Modeling Assistant Application object. After you complete the Wizard, install the deployed installation package (see "Installing Data Modeling Assistant" on page 75).

Creating a New DMA Application Object

At the Data Modeling Assistant screen of the Wizard:

1. Click New to start the Data Modeling Assistant Wizard.
2. At the Welcome screen, click Next.
3. At the General Information screen, name your Data Modeling Assistant Application object, select a Configuration Manager folder to place it in, and then click Next. The Wizard provides a unique default name. To change it, type a new unique name over the default.
4. At the Installation Path screen, specify a source path and a destination path for installation files and click Next. By default, the Wizard fills in the source path from the Reporting CD (or Genesys Express CD) and destination, but you can change this if desired. If you specify a destination that does not exist, the Wizard creates it for you.

   Note: Remember the destination path you specify in this step. You will need it later (in Chapter 6,"Installing Historical Reporting Components") to install DMA.

   The Installation Copy screen appears displaying a progress-of-completion bar. When the copy process completes, the Installation Information screen appears.
5. At this screen, read the information and then click Next.
6. At the Summary screen, read the information about the Data Modeling Assistant Application object you just created. Click Finish to return to the Data Modeling Assistant screen which now lists the Data Modeling Assistant Application object you just created at the bottom of the Available Applications list box.
7. If desired, repeat Steps 1 through 6 to define another Data Modeling Assistant Application object in your Reporting environment.
8. With your Application object selected, click Next to proceed to the ETL Runtime screen of the Wizard. The operations available from this screen are described in the next section (page 61).

You have now configured and activated a new Data Modeling Assistant Application object. For installation procedures, refer to "Installing Data Modeling Assistant" on page 75.

Operating the Data Mart Wizard

The Data Mart Wizard enables you to create or upgrade a Data Mart Application object for ETL Runtime. ETL Runtime transforms data stored in the ODS, aggregates it, and writes it to the Data Mart.

Note: You must have JRE 1.4 or later installed on your computer prior to deploying, configuring, and installing an ETL Runtime application.

From the ETL Runtime screen of the Wizard, you can perform any of the following tasks:

- Upgrade a prior version of ETL Runtime to 7.6 using the Data Mart Wizard. Refer to "Upgrading an Existing ETL Runtime Application Object" on page 62.
- Run the Data Mart Wizard to define a 7.6 Data Mart Application object in Configuration Server. Refer to "Creating a New ETL Runtime Application Object" on page 63 for information about how to operate this Wizard.
- Select an existing 7.6 Data Mart Application object for configuration from the Available Applications list box. The Available Applications list box on the ETL Runtime screen shows the Data Mart Application objects already existing in Configuration Server and their respective versions.

  If your environment already has a 7.6 Data Mart Application object that you want to use, skip the configuration of this component by clicking Next to advance to the Summary screen (page 72).

CC Analyzer 7.6 operation requires at least one 7.6 Data Mart Application object. CCPulse+ operation requires that a Data Mart Application object be configured among CCPulse+'s application properties only if you intend to use CCPulse+ for Historical as well as Real-Time Reporting. You can add more Data Mart Application objects and more Data Marts to your environment, if desired, but CCPulse+ supports data extraction from only one configured Data Mart.

Note: Skip this section if you are configuring CCPulse+ in Real-Time mode only.

Upgrading an Existing ETL Runtime Application Object

At the ETL Runtime screen of the Wizard:

1. Select a Data Mart Application object from the Available Applications list box and click Properties.

   The ETL Runtime Properties screen opens.

   Note: Make sure your RDBMS is already running because the Data Mart Wizard requires it for JDBC validation.

2. On the General Information tab, click the Upgrade button.

   This action opens the General Information screen of the Data Mart Wizard.

   Click Next to continue. The Wizard checks database access point and JDBC connection parameters. If a connection cannot be established, the Wizard halts the upgrade process and suggests that you double check the setup of your database access point/ JDBC configuration.

3. At the Server Information screen, specify any changes to the host and port in which Data Mart is to operate and click Next.

4. At the Data Mart Upgrade screen, choose whether to upgrade your existing Data Mart and click Next.

5. At the Installation Path screen:

   a. Specify the source of the new Data Mart installation package. The source can be either the Reporting or Genesys Express CDs.

   b. Specify the destination to which you want the installation package copied, and then click Next.

   The Installation Copy screen appears displaying a progress-of-completion bar. When the copy process completes, the Upgrade Information screen appears.

   Note: This installation package is used for CC Analyzer installation (see Chapter 6, beginning on page 75) and for CCPulse+ installation (see Chapter 9, beginning on page 103).

6. Click Next to continue. The Summary screen appears showing the name, version, host, and port for the upgraded Data Mart Application object.

7. Click Finish to return to the General Information tab of the ETL Runtime Properties screen.

   Notice that the version number of your Application object now reads 7.6.

8. Click OK to return to the ETL Runtime screen. With your Data Mart Application object selected in the Available Applications list box, click Next to proceed to the Data Mart screen (page 72).

You have now upgraded your Data Mart Application object and database. After you have completed the Wizard, install the deployed installation package (see "Installing Data Mart on Windows Platforms" on page 79 or "Installing Data Mart on UNIX Platforms" on page 81 as appropriate). Also, revisit the log options for this object, because the upgrade process resets all log options to their defaults.

Creating a New ETL Runtime Application Object

Use the Data Mart Wizard to configure a new Data Mart Application object to start one or more ETL Runtime modules.

Refer to the "Component Overview" chapter of the *Reporting 7.6 ETL Runtime User's Guide* for a listing and brief description of ETL Runtime's modules.

Notes: Your RDBMS must be running for JDBC validation.

Refer to "Deploying ETL Runtime Using DB2 v8+" on page 85 for notes specific to DB2 before creating a Data Mart Application object.

1. At the ETL Runtime screen, click New to start the Data Mart Wizard.
2. At the Welcome screen, click Next.
3. At the General Information screen, name your Data Mart Application object, select a Configuration Manager folder to place it in, and then click Next. The Wizard provides a unique default name. To change it, type a new unique name over the default.
4. At the Database Access Point screen, click New to invoke the Database Access Point Wizard from which you can define a database access point to Data Mart. Then click Next. Refer to "Operating the Database Access Point Wizard" on page 65 for further information.

   The Wizard validates the information you provided before displaying the next screen. If validation fails, click the Properties button to correct connection parameters.

   Note: Genesys recommends that DB Server and your RDBMS be running. Otherwise, the Wizard cannot validate or initialize the Data Mart.

5. At the Data Mart Initialization screen, select Yes or No as appropriate and click Next. Initializing the Data Mart creates the database's schema and populates it with metadata and folder templates.

6. If you opted to initialize Data Mart, when initialization completes, click `Next`.
7. At the `Data Sourcer List` screen, move one or more sources for your Data Mart from the right pane to the left pane.

   Note: This screen and the next appears only if the Data Mart has no ODSs defined to it.

8. At the `Connect Data Sourcer` screen, specify parameters for JDBC connection and the time zone. As you specify these values the Wizard automatically fills in the `URL` field. Click `OK` at this screen and `Next` at the `Data Sourcer List` screen to proceed.
9. At the `Configuration Options` screen, select which processes your ETL Starter application will run, and click `Next`.

   Note: The Tenant Alias Tracking option on this screen is available only for multi-tenant environments.

10. At the second `Configuration Options` screen, specify:
    - Whether ETL Runtime is to drop transferred tables from ODS.
    - The start day of your business week: Sunday or Monday (for week-level aggregations that ETL Runtime performs).

      (To select any other day, you will have to update the `setFirstDayOfWeek` parameter in `etl.properties` after Data Mart installation.)

    Note: These options are grayed if you do not select the Transformation and Aggregation processes during the previous step.

    Click `Next`. The Wizard prompts you to confirm your selection of `Drop ODS Tables`. Click `Yes` or `No` as appropriate.
11. At the `Log Options` screen, accept the default log options or run the Log Wizard to specify your own and click `Next`.

    Refer to the "Common Log Options" chapter in the *Reporting 7.6 ETL Runtime User's Guide* for a description of log options.
12. At the `Options` screen, verify the options you have chosen thus far and click `Next` to proceed or `Back` to change them. Notice that the processes you chose at Step 9 appear as values for the `Processes` key.
13. At the `Server Information` screen, specify the host and port in which Data Mart is to operate and click `Next`.

    Note: Refer to "Deploying ETL Runtime Using DB2 v8+" on page 85 for additional configuration information regarding DB2 version 8+.

14. At the Installation Path screen, specify a destination in your network for copying installation files and click Next. By default, the Wizard fills in the source path from the Reporting CD, but you can change this path if desired. If you specify a destination that does not exist, the Wizard creates the path for you.

    Note: Remember the destination path you specify in this step. You will need it later (in Chapter 6,"Installing Historical Reporting Components") to install Data Mart.

    The Installation Copy screen appears displaying a progress-of-completion bar. When the copy process completes, the Installation Information screen appears.

15. At the Installation Information screen, read the information about the installation package you just prepared and click Next.
16. At the Summary screen, read the information about the Data Mart Application object you just created. Click Finish to return to the ETL Runtime screen which now lists the Data Mart Application object you just created at the bottom of the Available Applications list box.
17. If desired, repeat Steps 1 through 16 to define another Data Mart Application object in your Reporting environment.
18. Click Next to proceed to the Summary screen of the Wizard (page 72).

You have now configured a new Data Mart Application object. The red slash through the Application icon  indicates that the object is not yet active. The object self-activates when you install the application. For installation procedures, refer to "Installing Data Mart on Windows Platforms" on page 79 or "Installing Data Mart on UNIX Platforms" on page 81, as appropriate.

Operating the Database Access Point Wizard

The Database Access Point Wizard enables you to create a Database Access Point Application object, which stores connection parameters—such as user name, password, and database name—to your ODS or Data Mart. This object also stores JDBC information for your Data Mart and specifies which DB Server to connect to. Database access points, themselves, have no processes associated with them.

Note: You must have JRE 1.4 or later installed on your computer prior to configuring a database access point.

From the Database Access Point screen of either the Data Sourcer Wizard or the Data Mart Wizard, you can perform any of the following tasks:

- Create a new 8.0 database access point. Refer to "Creating a New Database Access Point Application Object" below.
- View and update the properties of an existing database access point. Refer to "Updating a Database Access Point Application Object" on page 67.

Creating a New Database Access Point Application Object

You can invoke the Database Access Point Wizard by clicking `New` from the `Database Access Point` screen of either the Data Sourcer Wizard or the Data Mart Wizard.

Note: Your RDBMS must be running for JDBC validation.

1. At the `Database Access Point Name and Type` screen:
   a. Type a unique name for your `Database Access Point Application` object.
   b. Click the `Browse` button to locate your DB Server for Data Mart. You can also use this button to create a new `DB Server Application` object.
   c. Select or clear the `Enable JDBC access` check box. Genesys recommends that you leave this check box selected.
   d. Specify the folder in Configuration Manager that will house the `Database Access Point Application` object or accept the default `Applications` folder.
   e. Click `Next`.

   Note: At this screen, the Wizard does not verify name uniqueness.

2. At the `Database Information` screen, specify database access parameters including the DBMS name, type, database name, and name and password of a user who is authorized to access database. Then click `Next`.

   Note: At this point, the Wizard does not verify the parameters you specify.

3. At the `JDBC Connection` screen, specify the host and port of your Data Mart and click `Next`. Also specify the SID for an Oracle Data Mart. As you specify these values, the Wizard automatically fills in the `JDBC URL` field based on the standard JDBC designation for your DBMS; for instance, `jdbc:jtds:sqlserver://dbhost:dbport;DatabaseName=dbname`

   If your JDBC driver or URL is nonstandard, click `Use custom Driver` to specify its values. Genesys does not support all JDBC drivers. Contact

Genesys Technical Support to determine wether your custom driver is supported.

Note: The port you specify at this screen is a database port, not a DB Server port.

4. At the Case Conversion screen, select lower or upper from the list box if your DBMS requires that parameters be presented in lower- or uppercase. Otherwise, accept the default, any, and click Finish.

When you return to the Database Access Point screen of either the Data Sourcer or Data Mart Wizard and click Next, the Wizard attempts to establish a connection to your ODS or Data Mart. Click the Properties button at this screen to make corrections if necessary.

Updating a Database Access Point Application Object

Note: Your RDBMS must be running for JDBC validation.

At the Database Access Point screen of either the Data Sourcer Wizard or the Data Mart Wizard:

1. In the Name field on the General tab, rename and/or relocate your database access point, if desired.
2. On the DB Info tab, change any of the database access fields or DB Server, if desired.
3. Click OK.

Note: If you are running Data Sourcer 7.2.003.10 (or later) in a Microsoft SQL Server environment, Genesys recommends modifying the DAP Application that Data Sourcer uses to access the ODS. This is a manual step that must be performed after you complete the installation. See the configuration chapter in the *Reporting 7.6 Data Sourcer User's Guide* for more information.

Operating the CCPulse+ Wizard

Click CCPulse+ on the Solution Reporting screen of the Genesys Wizard Manager to reach the CCPulse+ screen. From this screen you can perform any of the following tasks:

- Upgrade a prior release of CC Pulse or CCPulse+ to release 8.0, using the CCPulse+ Wizard. Refer to "Upgrading an Existing CCPulse+ Application Object" below.

Note: The name "CC Pulse" refers to a release of the application prior to release 6.5. The name "CCPulse+" refers to the 6.5 or later release of the application.

- Run the CCPulse+ Wizard to define a new 8.0 `Call Center Pulse Application` object in Configuration Server. Refer to "Creating a New CCPulse+ Application" on page 70 for the operation of this Wizard.
- Select an existing 8.0 `Call Center Pulse Application` object for configuration from the `Available Applications` list box. The `Available Applications` list box on the `CCPulse+` screen shows the already-existing `Call Center Pulse Application` objects and their respective versions.

  If your environment already has an 8.0 `Call Center Pulse Application` object that you want to use, skip the configuration of this component by clicking `Next` to advance to the `Summary` screen (page 72).

CCPulse+ 8.0 operation requires at least one release 8.0 `Call Center Pulse Application` object. You can add more to your environment if desired.

Note: Skip this section if you are configuring CC Analyzer.

Upgrading an Existing CCPulse+ Application Object

At the `CCPulse+` screen of the CCPulse+ Wizard:

1. Select a `Call Center Pulse Application` object from the `Available Applications` list box and click `Properties`.

   The `CCPulse+ Properties` screen opens.

2. On the `General Information` tab, click the `Upgrade` button.

   This action opens the `General Information` screen of the CCPulse+ Wizard.

3. Click `Next` to continue. The `Historical Reporting View` screen appears.

Note: If operating the Wizard in historical mode, you will need to have at least one release 7.5 or later CCPulse+ application already configured in historical mode; otherwise, `Next` is disabled.

4. To enable Historical Reporting for your Call Center Pulse Application object, select the Enable Historical Reporting with CCPulse+ check box. Select your Data Mart application from the list box, and then click Next.

   Note: You cannot select an application from the Data Mart Available Applications list box or otherwise use the list box (to resize columns, for example) unless you select the Enable Historical Reporting with CCPulse+ check box.

5. At the Stat Server Connections screen, click Add to display the Browse for Applications screen, where you can select one or more Stat Servers from your environment. (Hold down the Ctrl key to select more than one application at a time. The Wizard does allow other methods of selecting multiple objects.) Then click Next.

   If you choose, you can define and select a new Stat Server Application object by clicking the New Application button from the Browse for Applications screen to invoke the Stat Server Wizard.

   Note: Unlike other Genesys applications, you do not have to specify a Stat Server connection protocol for CCPulse+.

   Once you have defined one or more Stat Server Application objects, control returns to the Stat Server Connections screen where the List of Current Connections list box reflects your selection(s). Click Next to proceed.

6. At the Installation Path screen, specify the destination in your environment for copying installation files and click Next. If you specify a destination that does not exist, the Wizard creates the path for you. (The Wizard automatically fills in the source path from the Reporting or Genesys Express CD as appropriate.)

   Note: Remember the destination path you specify in this step. You will need it later (in Chapter 9,"Installing Real-Time Reporting") to install CCPulse+.

   The Installation Copy screen appears displaying a progress-of-completion bar. When the copy process completes, the Upgrade Information screen appears.

   Note: This installation package is used for CCPulse+ installation (see Chapter 9).

7. Click Next to continue. The Summary screen appears showing the name and version for the upgraded Call Center Pulse Application object.

8. Click Finish to return to the General Information tab of the CCPulse+ Properties screen.

   Notice that the version number of your Application object now reads 8.0.

9. Click OK to return to the CCPulse+ screen. With your Call Center Pulse Application object selected in the Available Applications list box, click Next to proceed to the Summary screen (page 72).

Creating a New CCPulse+ Application

At the CCPulse+ screen:

1. Click New to start the CCPulse+ Wizard.
2. At the Welcome screen, click Next.
3. At the General Information screen, name your Call Center Pulse Application object, select a Configuration Manager folder to place it in, and then click Next. The Wizard provides a unique default name. To change it, type a new unique name over the default.
4. At the Solution-specific data screen, specify the location of your preexisting storages or select the Copy Storages check box and specify the location to which the Wizard is to deploy storages from the Reporting CD (or Genesys Express CD). Then click Next.

   Notes: To enable historical views for predefined templates, you must use the release 6.5 or later solution-specific storages. You can always import your custom templates, actions, and thresholds into the 6.5+ storages later.

   Even though the option to specify a Queries Storage exists at this screen, Reporting 8.0 architecture does not support connection to Genesys Info Mart.

   Refer to “Fine-Tuning CCPulse+ Configuration” in the *Reporting 8.0 CCPulse+ Administrator’s Guide* for information about locating your storages.

5. At the Storage Files screen, click Next when the copy operation is completed.
6. At the Stat Server Connections screen, click Add to display the Browse for Applications screen where you can select one or more Stat Servers from your environment. (Hold down the [Ctrl] key to select more than one application at a time. The Wizard does allow other methods of selecting multiple objects.) Then click Next.

If you choose, you can define and select a new Stat Server Application object by clicking the New Application button from the Browse for Applications screen to invoke the Stat Server Wizard.

Note: Unlike other Genesys applications, you do not have to specify a Stat Server connection protocol for CCPulse+.

Once you have defined one or more Stat Server Application objects, control returns to the Stat Server Connections screen where the List of Current Connections list box displays your selection(s). Click Next to proceed.

The wizard compares definitions of the statistical parameters that it imports with the definitions in the Stat Server Application you specified. If there are any discrepancies, the wizard requires that you resolve them before proceeding.

7. At the Historical Reporting View screen, select the appropriate ETL Runtime application from the Data Mart Applications list box, and click Next.

   Note: This screen appears only if you selected the Real-time and Historical operating mode at Step 3 on page 52.

8. At the Info Mart Reports View screen, select the GIM ETL application that will provide CCPulse+ data for query-based reports, and click Next.

   You cannot create a new GIM ETL Application object from this screen or modify application properties. This application must be configured before invoking the CCPulse+ Wizard.

   Note: This screen appears only if you selected GIM Inbound Voice Reporting Templates at the Reporting Template Groups screen described in Step 2 on page 52.)

9. At the Installation Path screen, specify a source path and a destination path for installation files, and click Next. By default, the Wizard fills in the source path from the Reporting CD (or Genesys Express CD), but you can change this if desired. If you specify a destination that does not exist, the Wizard creates it for you.

   Note: Remember the destination path you specify in this step. You will need it later (in Chapter 9,"Installing Real-Time Reporting") to install CCPulse+.

The Installation Copy screen appears displaying a progress-of-completion bar. When the copy process completes, the Installation Information screen appears.

Note: This installation package is used for CCPulse+ installation (see Chapter 9).

10. At the Installation Information screen, read the information about the installation package you just prepared and click Next.
11. At the Summary screen, read the information about the Call Center Pulse Application object you just created. Click Finish to return to the CCPulse+ screen which now lists the Call Center Pulse Application object you just created at the bottom of the Available Applications list box.
12. If desired, repeat Steps 1 through 11 to define another Call Center Pulse Application object in your Reporting environment. Click Next to proceed to the Summary screen of the Wizard (page 72).

You have now configured and activated a new Call Center Pulse Application object. For installation procedures, refer to "Installing Real-Time Reporting" on page 103.

Summary Screen

The Summary screen is the last screen of the both the CC Analyzer and CCPulse+ Wizards. For CC Analyzer, this screen provides information about Hyperion and a link to the Hyperion website. Click Finish to close the Wizard and return to the Genesys Wizard Manager.

Resolving Statistical Parameter Ambiguities

When you copy new templates to your environment, the statistical parameters (stat types, filters, time ranges, and time profiles) for the measures referenced by the templates are configured within the Stat Server application that you designate. This designation may point to an existing Stat Server application in your environment that contains different parameter definitions.

Various releases of Reporting, Stat Server, and/or the Reporting Templates introduced changes to some parameter definitions. You may have also modified parameter definitions yourself to meet business needs, such as the definition for the ServiceFactorAnsweredThreshold parameter.

Both the CC Analyzer and CCPulse+ wizards allow you to review parameter definitions and, in the case of conflicting or ambiguous definitions, define the

appropriate definition before it is applied to the designated Stat Server application.

Note: If you are configuring a new Stat Server application, there are no existing Stat Server parameter definitions, and therefore no ambiguous definitions to address.

The Wizards display the `Statistical Parameter Import Ambiguity` screen, as shown in Figure 10, when a discrepancy is encountered.

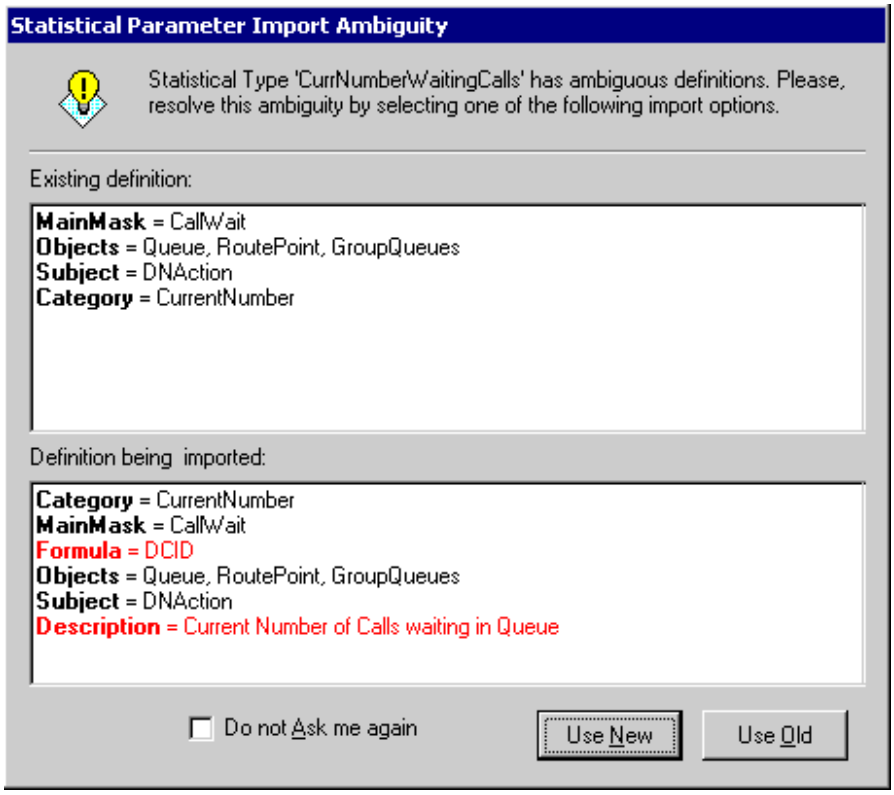

Figure 10: Resolving an Ambiguous Stat Type Definition

If you encounter this screen during configuration of CC Analyzer or CCPulse+ applications, study the differences between the new and existing definition carefully before making your selection. Small differences, such as the Distinct by Connection ID (DCID) option, shown in the example above, can have a profound impact on the reports you generate.

Refer to the *Framework 8.0 Stat Server User's Guide* for more information about statistical parameters and the *Reporting Technical Reference Guide for the Genesys 7.2 Release* to view the latest definitions of statistical parameters used in the Genesys-provided templates.

Chapter

6 Installing Historical Reporting Components

Historical Reporting components use three separate installations to facilitate the distribution of Data Modeling Assistant, Data Sourcer, and Data Mart over different machines in your network. You can install Data Sourcer and Data Mart on either Windows or UNIX platforms. You can install DMA and ETL Assistant, however, only on Windows platforms.

This chapter provides the steps for installing each component on Windows and UNIX platforms. Before installation, make sure that you have configured Historical Reporting `Application` objects (see Chapter 5). You will not be able to install any opponents otherwise.

After installing Historical Reporting components, read Chapter 7, for additional setup prior to starting Historical Reporting for the first time.

This chapter contains the following sections:

Installing Data Modeling Assistant

The procedure for installing DMA is the same regardless of whether you have configured a `Data Modeling Assistant Application` object and whether this `Application` object was configured using the Data Modeling Assistant Wizard. However, you can install and operate only one 7.6 DMA application on any given machine. Previous versions of DMA installations did not impose this restriction. Furthermore, Genesys recommends that you install DMA 7.6 in a different directory from any previously installed version(s) of DMA.

1. Invoke `setup.exe`, either from the destination path you specified during configuration (refer to Chapter 5, "Operating the Data Modeling Assistant Wizard," on page 58), or from the Reporting CD.

   The InstallShield Wizard opens. If the Wizard detects an existing 7.6 DMA version installed on your machine, it displays the `Welcome to the Maintenance of DMA` screen, where your only option is to remove the existing version:

   a. Select the `Remove` button and click `Next`.
   b. At the `Confirm Uninstall` screen, select `Yes` or `No` as appropriate.
   c. At the `Maintenance Complete` screen, click `Finish`.

   To reinstall DMA 7.6, re-invoke `setup.exe` and proceed.
2. At the `Welcome to the Installation of DMA` screen, read the general information and click `Next`.
3. At the `Choose Destination Location` screen, accept the default location, type a desired location, or click `Browse` to choose the path where DMA is to be installed. Click `Next` to proceed.
4. At the `Ready to Install` screen, click `Install`.

   The Wizard displays a progress-of-completion bar on the `Installation Status` screen while copying the necessary files and registering dlls.
5. At the `Installation Complete` screen, click `Finish`.

The Wizard creates a `Data Modeling Assistant` program group inside `Genesys Solutions\Reporting 7.6`, with two menu items:

- `Start Data Modeling Assistant`—a shortcut to the application executable
- `ReadMe for Data Modeling Assistant`—a shortcut to information about the DMA installation package

Once installed, your DMA application is ready for immediate use.

Installing Data Sourcer on Windows Platforms

Notes: The installation procedure installs Data Sourcer automatically as a Windows service; you cannot install Data Sourcer in any other manner.

Before installing a release 7.6 Data Sourcer, first read Chapter 3, "High-Availability Architecture," on page 39.

To install Data Sourcer on a Windows platform:

1. Invoke `setup.exe`, either from the destination path you specified during configuration (refer to Chapter 5, "Operating the Data Modeling Assistant Wizard," on page 58), or from the Reporting CD.

The InstallShield Wizard opens.

2. At the Welcome to the Installation of Data Sourcer screen, read the general information and click Next to proceed.
3. At the Maintenance Setup Type screen, select Install new instance of the application and click Next.

   The Wizard searches the installation directory for GCTISetup.ini, which is created when you configured a Data Sourcer Application object using the Data Sourcer Wizard. Skip to Step 6 if you used the Data Sourcer Wizard; otherwise, continue with Step 4.
4. At the Connection Parameters to the Genesys Configuration Server screen, type the host, port, user name, and password for your Configuration Server in the fields provided. Then, click Next.
5. At the Select Application screen, from the upper list box, select the configured Data Sourcer Application object you want to install and click Next.

   The lower list box displays the properties of the Data Sourcer application you selected.
6. At the Choose Destination Location screen, accept the default location, type a desired location, or click Browse to choose the path where Data Sourcer is to be installed, and click Next.
7. At the Ready to Install screen, click Install.

   The Wizard displays a progress-of-completion bar on the Installation Status screen while copying the necessary files and registering dlls.
8. At the Installation Complete screen, click Finish.

The Wizard creates a Data Sourcer program group inside Genesys Solutions \Reporting 7.6, with two menu items:

- ReadMe—a shortcut to information about the Data Sourcer installation package
- Start Data Sourcer—a shortcut to the application executable

Once installed, your Data Sourcer application is activated within Configuration Server and ready for immediate use. ODS is initialized by Data Sourcer when you start Data Sourcer the first time.

Note: Data Sourcer does not begin collecting data until report layouts are created and activated within ODS. Refer to *Reporting 7.6 Data Modeling Assistant Help* for more information about layout templates and report layouts.

Installing Data Sourcer on UNIX Platforms

If you are using the Wizard to copy files, check that the files in the installation package have the `r` and `x` permissions to be able to read and execute them. For example:

```
-r-x-------- 1 admin   staff 10 Dec 13 17:27 sample.sh*
```

If these permissions are missing, you can easily change this by issuing the UNIX `chmod` commands:

```
chmod u+x install.sh
chmod u+x gunzip
```

To install Data Sourcer on a UNIX platform:

1. If you used the Wizard to deploy a Data Sourcer installation package, locate the directory of the deployed package. Otherwise, locate the shell script called `install.sh` under the appropriate `data_sourcer` *`operating_system`* directory on the Reporting CD.
2. Run this script from the command prompt by typing the `sh` command and the file name. For example:

   `sh ./install.sh` or `./install.sh`

   If you used the Wizard to configure a `Data Sourcer Application` object, skip to Step 4.
3. When prompted, specify the host name of the computer where Data Sourcer is to be installed or press `Enter` to accept the provided default, which is the current host.

   If you did not use the wizard to configure your `Data Sourcer Application` object or if the `GCTISetup.ini file` is missing or corrupt, the installation routine indicates that it was unable to locate configuration information.
4. When prompted, specify the following information about your Configuration Server:
   - Host name of the computer where the Configuration Server is running.
   - Network port used by the client applications to connect to Configuration Server.
   - User name used to log in to Configuration Server.
   - Password used to log in to Configuration Server.

   The installation routine then attempts to connect to Configuration Server to gather information about Data Mart applications configured therein. If unable to make this connection, skip to Step 6.
5. From the list of applications of `Data Sourcer` type configured for this host, type the number of the Data Sourcer applications to install.
6. When prompted, specify the full path where Data Sourcer is to be installed.

   If this directory already exists, the installation routine provides you three options to deploy files:

```
1. Back up all files in the directory
2. Overwrite only the files contained in this package
3. Wipe the directory clean
```

Choose the appropriate option.

The installation routine extracts Data Sourcer application files to the path you specified.

7. At this prompt:

```
There are two versions of this product available: 32-bit and 64-bit.
Please enter 32 or 64 to select which version to use.
```

Enter `32` or `64` to specify which version of the executable to use.

As soon as the installation process is complete, a message appears indicating a successful installation. The process places the Data Sourcer in the directory specified during installation.

Installing Data Mart on Windows Platforms

Note: The installation procedure on Windows platforms installs Data Mart automatically as a Windows service; you cannot install Data Mart in any other manner.

You must have JRE 1.4 or later installed on your computer prior to deploying, configuring, and installing an ETL Runtime application.

To install Data Mart on a Windows platform:

1. Invoke `setup.exe`, either from the destination path you specified during configuration (refer to "Operating the Data Mart Wizard" on page 61) or from the Reporting CD.

   The InstallShield Wizard opens.

2. At the `Welcome to the Installation of Data Mart` screen, read the general information and click `Next` to proceed.

3. At the `Maintenance Setup Type` screen, select `Install new instance of the application` and click `Next`.

   The Wizard searches the installation directory for `GCTISetup.ini`, which is created when you configured a `Data Mart Application` object using the Data Mart Wizard. Skip to Step 7 if you used the Data Mart Wizard; otherwise, continue with Step 4.

4. At the Select Components screen, select ETL Runtime, at your discretion, and click Next. The Wizard automatically installs ETL Assistant.

   Note: InstallShield verifies that JRE 1.4 or later has been installed. Installation ceases if this check fails. If this happens, restart the Data Mart installation after installing JRE 1.4 (or later).

   Skip to Step 7 if you chose to install ETL Assistant only.

5. At the Connection Parameters to the Genesys Configuration Server screen, type the host, port, user name, and password for your Configuration Server in the fields provided. Then, click Next.

6. At the Select Application screen, from the upper list box, select the configured Data Mart Application object you want to install and click Next.

   The lower list box displays the properties of the Data Mart application you selected.

7. At the Choose Destination Location screen, accept the default location, type a desired location, or click Browse to choose the path where ETL Runtime is to be installed and click Next.

8. At the Ready to Install screen, click Install.

   The Wizard displays a progress-of-completion bar on the Installation Status screen while copying the necessary files and registering dlls.

9. At the Installation Complete screen, click Finish.

The Wizard creates a Data Mart program group inside Genesys Solutions/Reporting 7.6, with two menu items:

- ReadMe for Data Mart—a shortcut to information about the Data Mart installation package
- Start Data Mart—a shortcut to the application executable

Once installed, your Data Mart application is activated within Configuration Server and ready for immediate use.

Note: If you did not initialize your Data Mart during configuration, execute the procedure listed in "Initializing the Data Mart" on page 83 before starting ETL Runtime for the first time. You must also manually specify ODS sources using ETL Assistant. Refer to the "Specifying a New ODS" topic in *Reporting 7.6 ETL Assistant Help* for more information.

Installing Data Mart on UNIX Platforms

If you used the Wizard to copy files, check that the files in the installation package have the `r` and `x` permissions to be able to read and execute them. For example:

```
-r-x-------- 1 admin   staff 10 Dec 13 17:27 sample.sh*
```

If these permissions are missing, you can easily change this by using the UNIX `chmod` command, `chmod 750*`

If you did not use the Wizard, make sure that the two `Application` objects (of type `ETL Proxy` and `Data Mart`) have been created and configured properly in the Configuration Manager.

Notes: You must have JRE 1.4 or later installed on your computer prior to deploying, configuring, and installing a Data Mart application. Also, set up the `CLASSPATH` and `PATH` environment variables properly to run Java.

Refer to "Supported Operating Systems" on page 24 for a list of websites from which you can download JRE.

To install Data Mart on a UNIX platform:

1. Designate a UNIX path for Data Mart.
2. On the Reporting CD in the appropriate `data_mart/[operating_system]` directory, locate a shell script called `install.sh`.
3. Run this script from the command prompt by typing the `sh` command and the file name. For example:

   ```
   sh ./install.sh
   ```

4. When prompted, specify the host name of the computer where Data Mart is to be installed or press `Enter` to accept the provided default, which is the current host.

   If you did not use the wizard to configure your `Data Mart Application` object or if the `GCTISetup.ini file` is missing or corrupt, the installation routine indicates that it was unable to locate configuration information.
5. When prompted, specify the following information about your Configuration Server:
   - Host name of the computer where the Configuration Server is running.
   - Network port used by the client applications to connect to Configuration Server.
   - User name used to log in to Configuration Server.
   - Password used to log in to Configuration Server.

The installation routine then attempts to connect to Configuration Server to gather information about Data Mart applications configured therein. If unable to make this connection, skip to Step 7.

6. When prompted, from the list of `Application` objects of the `Data Mart` type configured for this host, specify the number of the `Data Mart Application` objects to install.
7. When prompted, specify the full path where Data Mart is to be installed.

   If this directory already exists, the installation routine provides you three options to deploy files:

   ```
   1. Back up all files in the directory
   2. Overwrite only the files contained in this package
   3. Wipe the directory clean
   ```

   Choose the appropriate option.

   The installation routine extracts Data Mart application files to the path you specified.
8. Enter `32` or `64` to specify which version of the executable to use, if prompted:

   ```
   There are two versions of this product available: 32-bit and 64-bit.
   Please enter 32 or 64 to select which version to use.
   ```

As soon as the installation routine completes, a message appears indicating a successful installation. On UNIX platforms, you may also need to configure certain parameters, such as `CfgAppName`, `CfgUser`, and `CfgUserPassword` to gain full functionality. Refer to the "Runtime Parameters" chapter in the *Reporting 7.6 ETL Runtime User's Guide* for information about these and other parameters.

Notes: After installing the ETL service on AIX 5.x and 6.x in the 64-bit mode, you must edit the `run.sh` file manually to specify that the 32-bit version of starter (`starter_32`) must be used.

Refer to Chapter 7, for information on initializing the Data Mart, specifying ETL Runtime properties, and running the ETL Runtime application.

Chapter

7 Setting Up Historical Reporting

The procedures described in Chapters 5 and 6 configure, install, and activate `Data Modeling Assistant`, `ETL Assistant`, `Data Mart`, and `Data Sourcer Application` objects. However, if, during installation, you chose any of the following, additional setup is required:

- Not to initialize the Data Mart
- To install ETL Runtime on UNIX
- Not to identify ODS sources within ETL Assistant
- To edit ETL Runtime properties

You should also review the start-up priorities in the Configuration Manager to verify that they reflect the requirements of your environment.

This chapter describes the additional setup required. It contains the following sections:

Initializing the Data Mart

You can change four database initialization parameters by modifying settings in the `createdb.properties` file. The properties you can edit are the database user name (`user`), database password (`pass`), the JDBC URL (`jdbcurl`), and the name of the log file (`log`). Users can also add the log level (`loglevel`) parameter to the `createdb.properties` file.

Note: See the "ETL Runtime Parameters" table in the *Reporting 7.6 ETL Runtime User's Guide* for parameter definitions.

To change these parameters and initialize your Data Mart on a Windows platform:

1. Open the `createdb.properties` file using a text editor.
2. Change database initialization parameters as desired, and save the file.
3. Run the `run-createdb.bat` batch script.

   If errors occur, exceptions are generated and written to the log specified in the `createdb.properties` file.

Figure 11 illustrates a sample `createdb.properties` file with settings for five parameters.

```
# $Id: createdb.properties,v 2.2 2000/07/29 06:10:36 saund Exp $
# Default properties for database initialization
# DATAMART owner database username
user=susie_datamart
# DATAMART owner database password
pass=susie_datamart
# for ORACLE: jdbc:oracle:thin:@dbhost:dbport:ORACLE_SID
# for  MSSQL: jdbc:weblogic:mssqlserver4:dbname@dbhost:dbport
# for SYBASE: jdbc:sybase:Tds:dbhost:dbport
# provided to JDBC driver for connect to DATAMART database
jdbcurl=jdbc:oracle:thin:@susie:2121:orcl
# name of the log file [default=<STDOUT>]
log=createdb.log
# <INIT[[:0-9]:ClassName],...> - log level: (logName:level)
# [default=CREATE-SQL:3,WRITE:5,DIST-POOLING:3,INFO:9,PURGE:9,INIT:3,DEE
loglevel=THREAD-WAIT:3,SQL:3,CREATE-SQL:3,WRITE:3,DIST-POOLING:3,INFO:9,

# will create database schema, populate it
# by meta-data and templates info and exit
createdb
```

Figure 11: Sample createdb.properties File

To change these parameters and initialize your Data Mart on a UNIX platform:

1. Open the `createdb.properties` file using a text editor.
2. Change database initialization parameters as desired, and save the file.
3. Type `./run-createdb` at the command prompt.

   If an error occurs, an exception is generated and written to the log you specified. Check for errors using the following command:

   `grep -i EXCE` *`[logfilename]`*

   where *`[logfilename]`* is the name of the log file.

Specifying ETL Service Starter Processes

By default, the Data Mart installation defines the following ETL Runtime processes to run when you invoke the ETL Service Starter:

- `ETL_Trans_Only`
- `ETL_Agg_Only`
- `ETL_Tracking`

To run a different mix of processes, modify the `process` section of the Genesys ETL Service Starter within Configuration Manager to include the processes you want to run. Be sure to define a separate section for each new process you add.

Refer to "Configuration Options" in the *Reporting 7.6 ETL Runtime User's Guide* for information about the various ETL Runtime processes. Refer to "Starting and Stopping ETL Runtime" on page 96 for information about starting ETL Runtime.

Before running ETL Runtime, set the properties by which data should be aggregated and/or transformed in the `etl.properties` file.

Deploying ETL Runtime Using DB2 v8+

Starting with the Reporting 7.5 release (CC Analyzer 7.2), ETL Runtime supports Data Mart operation on DB2 8.1 and 8.2 RDBMSs. The most visible change in the configuration of a DB2 version 8 Data Mart is the port number used for Data Mart connection. The Universal JDBC driver, used in conjunction with this version of DB2, communicates with a DB2 server via an open distributed protocol (DRDA). As such, JDBC server `db2jd` is no longer necessary and the JDBC URL format remains the same. The default DRDA port number is `50000`. Use this value instead of `6789`, which is the default JDBC server port number populated by the Data Mart Wizard during ETL Runtime configuration.

You can use the following procedure for determining your actual DRDA port value if the default (`50000`) is not used:

1. Type `get DBM CFG` at the DB2 command line.
2. Find the line where the `SVCENAME` configuration parameter is displayed. It will resemble the following:

   ```
   TCP/IP Service name     (SVCENAME) = db2inst1
   ```
   or
   ```
   TCP/IP Service name     (SVCENAME) = 50000
   ```
3. Determine the value of `SVCNAME`:
   a. If a numeric value is assigned to `SVCENAME`, use it for the JDBC URL in ETL Runtime configuration.

b. If a symbolic value, such as `db2inst1`, is used, you must determine the numeric value from either the `/etc/services` file or the `NIS/NIS+` database. Please contact your UNIX administrator for assistance.

c. If no value is assigned at all, contact your DB2 database administrator to modify the configuration of your DB2 server.

Assigning Start-Up Priorities

Genesys recommends that you assign Data Sourcer a startup priority of at least one number higher than your backup Stat Server. For example, if your Stat Server has a startup priority of `4` and its backup has startup priority of `5`, then you should assign Data Sourcer a start-up priority of `6` (or higher). Priorities are assigned at the solution level within Configuration Manager.

Figure 12 provides another example, showing the startup priorities of components belonging to the Production solution. Note that the primary Stat Server application is assigned startup priority of `5`. Its backup, `StatServerReporting_bk`, is assigned `6`, and Data Sourcer is assigned `12`.

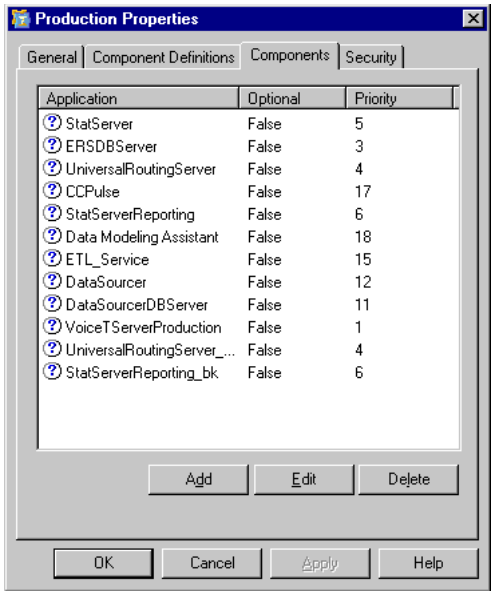

Figure 12: Startup Priorities of the Production Solution

Refer to the "Solutions" section in *Framework 8.0 Configuration Manager Help* for further information about assigning priorities to the applications in your configuration environment.

Chapter

8 Starting and Stopping Historical Reporting

This chapter provides the starting and stopping procedures for each component of Historical Reporting. Each section includes "What Must Be Running Prior to Start" so that startup is successful the first time. Starting procedures assume that you have properly configured and installed the application components. If not, refer to Chapters 5, and 6. The final section provides a table of default source paths for all Historical Reporting executables mentioned in this guide.

Your entire solution, including the server components of Historical Reporting, may be started from the Solution Control Interface (SCI), which is the recommended approach. Where applicable, this information is also covered in a subsection.

This chapter contains the following sections:

Starting and Stopping DMA

This section describes the starting and stopping procedures for Data Modeling Assistant (DMA).

What Must Be Running Prior to Start

- RDBMS with ODS
- Configuration Server

- DB Server for the ODS

Refer to the "Troubleshooting" chapter in the *Reporting 7.6 Data Sourcer User's Guide* for information about the data collected when the Data Sourcer to which DMA connects, or the Stat Server assigned to that Data Sourcer, is not running.

Starting DMA on Windows Platforms

On a Windows platform, you can start DMA:

- From the Programs menu.
- From a console window.
- From the Configuration Manager.

From the Programs Menu

1. Select Data Modeling Assistant from the program folder created during installation.

   The Welcome to Data Modeling Assistant screen appears with the name of the previous user in the User name field.

   Note: If a security banner is configured for all Genesys user interfaces, it is displayed before the Login screen.

2. Type an authorized user name and password to connect to your Configuration Server.
3. Click Details>> to display connection information for your Configuration Server. The Welcome to Data Modeling Assistant screen expands.
4. Enter the DMA application name, the host name and port number of the appropriate Configuration Server, and then click OK.

   DMA opens the Select DataSourcer Application screen and displays all applications of type Data Sourcer.
5. Select a Data Sourcer Application object and click OK.

   DMA opens a document window that connects to the corresponding ODS. A connection is made to DB Server using the Database Access Point specified at Step 8 on page 56 when you configured your Data Sourcer Application object. If DMA cannot connect to the specified DB Server, an appropriate message displays. If DMA successfully connects to the DB Server, but the DB Server is connected to a database other than ODS, an SQL error message appears.

   Refer to *Framework 8.0 Configuration Manager Help* for information about Database Access Points. Refer to "Operating the Data Sourcer

Wizard" on page 53 for information about configuring `Data Sourcer Application` objects.

You can have several document windows open simultaneously within DMA. From the `File` menu, select `Open` to open another document window. The `Select DataSourcer Application` screen reappears. Repeat Step 5.

From a Console Window

1. At the command-line prompt, go to the directory where DMA has been installed.
2. Enter `dma.exe`, which opens the `Welcome to Data Modeling Assistant` screen.
3. Complete Steps 2–5 ("From the Programs Menu") starting on page 88.

From the Configuration Manager

You can start DMA from the Configuration Manager by right-clicking any active `Data Sourcer Application` object to display the context menu, and then selecting `Data Modeling Assistant` from this menu (see Figure 13). The Configuration Manager marks inactive applications with a red slash ( ).

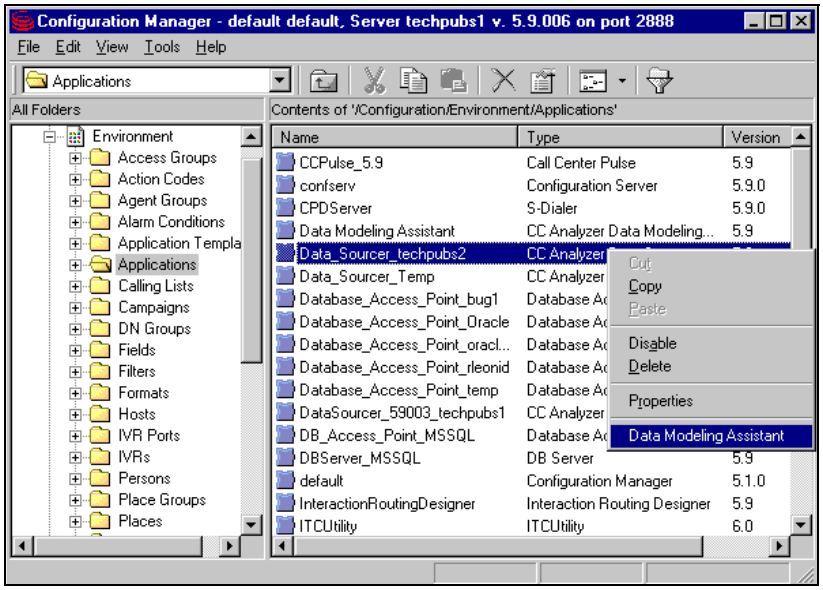

Figure 13: Starting DMA from the Configuration Manager

To invoke DMA in this manner, your `Data Modeling Assistant Application` object must be named `Data Modeling Assistant`. DMA starts and opens a document window with the specified `Data Sourcer Application` object. DMA connects to the DB Server specified by the Database Access Point without closing any previously opened document windows or existing connection(s), provided that the Configuration Server remains the same.

Stopping DMA

There are at least two ways to exit DMA:

- From the `File` menu, select `Exit`.
- Click the `Close` button located on the right side of the title bar in the DMA main window.

Note: You cannot stop DMA from the Configuration Manager although you can start it from there.

Starting and Stopping Data Sourcer

This section describes the starting and stopping procedures for Data Sourcer. You can start Data Sourcer on a Windows or UNIX platform. Genesys recommends that you start Data Sourcer from SCI.

Refer to the "Troubleshooting" chapter in the *Reporting 7.6 Data Sourcer User's Guide* if you experience performance problems in starting and operating Data Sourcer.

Note: If you have upgraded Data Sourcer from release 6, Genesys strongly recommends that you back up your Operational Data Storage (ODS) before starting Data Sourcer 7.6 for the first time.

What Must Be Running Prior to Start

Important! Before starting Data Sourcer for the first time, ensure that you have properly configured your `Stat Server Application` object in the Configuration Manager. This is especially pertinent if you manually configured this object.

HA Stat Server If you are using two Stat Server applications in a high availability configuration, you must also define the `accept-clients-in-backup-mode` option in each Stat Server's configuration. Refer to "Modifying Your Stat Server Application Object for High Availability" on page 44 for further instructions.

For Data Sourcer 7.0.1 and earlier releases, specifically, check that you have set values for the following properties:

- The `TimeProfiles` section of Stat Server must contain the `CollectorDefault` option set to `0:00+0:15`.
- The `TimeRanges` section of Stat Server must contain two time ranges: `ServiceFactorAbandonedThreshold`, with a recommended value set to `0-5`, and the `ServiceFactorAnsweredThreshold`, with a recommended value set to `0-10`.

If you attempt to start Data Sourcer without having set options for the `Time Ranges` or `TimeProfiles` sections, startup may fail. These settings are not necessary for Data Sourcer 7.0.2 and later releases.

Backup Configuration Server

To enable your Data Sourcer application to be restarted when backup Configuration Server switches to the primary mode, you must specify the backup Configuration Server parameters when starting Data Sourcer.

On the command line, specify these parameters using the following two new arguments:

`-backup_host` *hostname*

`-backup_port` *port-number*

where:

- *hostname* refers to the name of the computer on which the backup Configuration Server is running.
- *port-number* refers to the port on which the backup Configuration Server is running.

For more information on starting Data Sourcer from a console window, see "From a Console Window" on page 92 of this guide.

Microsoft SQL Server

If you are starting Data Sourcer 7.2.003.10 (or later) in a Microsoft SQL Server environment, Genesys recommends modifying the DAP application that Data Sourcer uses to access the ODS. This is a manual step that must be performed after installing the Data Sourcer application. See the configuration chapter in the *Reporting 7.6 Data Sourcer User's Guide* for more information.

Starting Data Sourcer for the first time is quite simple if you used either the CCPulse+ or CC Analyzer Wizard to configure your `Data Sourcer Application` object. Genesys recommends that you start Data Sourcer with the following applications already running:

- The RDBMS with your ODS
- Your Configuration Server
- The DB Server for your ODS
- The Stat Server assigned to your Data Sourcer and/or the RDBMS with your solution-specific server database (Internet Contact Server Database)

Refer to the "Troubleshooting" chapter in the *Reporting 7.6 Data Sourcer User's Guide* for information on the data collected when any or all of these applications are *not* running. Refer to Chapter 7 for information about startup.

Starting Data Sourcer from the Solution Control Interface

You can start Data Sourcer on any of the supported platforms. To do so from SCI:

1. From the `Applications` view, select your `Data Sourcer Application` object in the list pane.

2. Click the `Start` button on the toolbar, or select `Start` either from the `Action` menu or the context menu. (Right-clicking your `Application` object displays the context menu.)
3. Click `Yes` in the confirmation box that appears. Your Data Sourcer application starts.

Note: If you are using a Framework 8.0 environment, if Data Sourcer is connected to the Configuration Server Proxy and if the primary Configuration Server and the Configuration Server Proxy have the appropriate connections, starting Data Sourcer through SCI establishes a connection with the Configuration Server Proxy.

For information about how to use SCI, refer to *Framework 8.0 Solution Control Interface Help*.

Starting Data Sourcer from Windows Platforms

On a Windows platform, you can start Data Sourcer:

- Manually from the `Programs` menu as an application.
- Manually from a console window as an application.
- Automatically or manually as a Windows service.

From the Programs Menu

To start Data Sourcer from the `Programs` menu as an application, select `DataSourcer` from the program group created during installation. The application opens a console window and automatically issues the parameters you specified during configuration to start Data Sourcer. The Data Sourcer application name and version appear in the title bar.

From a Console Window

To start Data Sourcer as an application from a console window:

1. At the command-line prompt, go to the directory where Data Sourcer has been installed.
2. Type the name of the Data Sourcer executable followed by the appropriate command-line parameters using the following syntax:

   `data_sourcer.exe -host` *hostname* `-port` *portno* `-app` *application*

   where:

   - *`hostname`* refers to the name of the computer on which Configuration Server is running.
   - *`portno`* refers to the communication port on which Configuration Server is running.

- *application* refers to the name of the Data Sourcer Application object as defined in the Configuration Manager.

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

For example, to start Data Sourcer with parameters specifying the host as cs-host, port as 2020, and name as Data Sourcer, type:

```
data_sourcer.exe -host "cs-host" -port 2020 -app "Data Sourcer"
```

Note: If needed, specify the optional parameters -backup_host and -backup_port.

As a Windows Service

1. From the task bar, choose Start > Settings > Control Panel > Administrative Tools. The Control Panel folder appears.
2. Double-click the Services icon. The Services screen opens.
3. Right-click your Data Sourcer service from the list and click Start.

Note: Since the Local Control Agent (LCA) can be installed as a Windows service with the user interface disabled, all servers started through SCI, in this case, are started without a console unless you specifically select the Allow Service to Interact with Desktop check box for both LCA and Data Sourcer.

Manually Starting Data Sourcer from UNIX Platforms

1. Go to the directory where Data Sourcer has been installed.

Note: You can invoke Data Sourcer only from the directory where it is installed.

2. Type the name of the Data Sourcer executable followed by the appropriate command-line parameters using the following syntax:

   ./data_sourcer -host *hostname* -port *portno* -app *application*

   where:

   - *hostname* refers to the name of the computer on which Configuration Server is running.
   - *portno* refers to the communication port on which Configuration Server is running.

- *application* refers to the name of the Data Sourcer Application object as defined to the Configuration Server.

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

For example, to start Data Sourcer with parameters specifying the host as cs-host, port as 2020, and name as Data Sourcer, type:

```
./data_sourcer -host "cs-host" -port 2020 -app "Data Sourcer"
```

Note: If needed, specify the optional parameters -backup_host and -backup_port.

When Data Sourcer starts, it writes log messages into stdout, so you can check for errors in its configuration. If Data Sourcer fails to start, a descriptive message with the reason is written to stdout. If you cannot resolve the problem, contact Genesys Technical Support and provide the entire content of the Data Sourcer log.

You can also type the name of the Data Sourcer executable and its command-line parameters into a shell script and execute the script using the following command:

./run.sh *[Name of script]*

To redirect Data Sourcer output (on most UNIX shells), use the following syntax:

./data_sourcer -host *hostname* -port *portno* -app *appl* > *log_file.log*

To have both log file and console, within the Configuration Manager add the following to Data Sourcer's application properties:

- Section: Log.
- Option: all.
- Value: stdout, <log_file_name.log>, network. Instead of stdout, you can also use stderr.
- Add the name of the log file. (It is written into the same directory where Data Sourcer is installed, or indicate the full path where you want it to be written.)
- Separate values with commas.

Stopping Data Sourcer on Windows Platforms

If Data Sourcer is running as an application, switch to its console window and press Control-C (^C) to stop it. If you are running Data Sourcer as a Windows service, you should stop it only from the Microsoft Management Console.

To stop Data Sourcer running as a Windows service:

1. From the task bar, choose `Start > Settings > Control Panel > Administrative Tools`. The Control Panel folder appears.
2. Double-click the `Services` icon. The `Services` screen opens.
3. Right-click your Data Sourcer service from the list and click `Stop`.

Note: Be sure that the autorestart property is cleared for the `Data Sourcer Application` object in the Configuration Manager.

If you use LCA and SCS, you can stop Data Sourcer from SCI. To do so:

1. From the `Applications` view, select your `Data Sourcer Application` object in the list pane.
2. Click `Stop` on the toolbar, or select `Stop` either from the `Action` menu or the context menu.
3. Click `Yes` in the confirmation box that appears.

Stopping Data Sourcer on UNIX Platforms

Note: Be sure that the `autorestart` property is cleared for the `Data Sourcer Application` object in the Configuration Manager.

Stop Data Sourcer on UNIX using either of the following methods:

- On the command line, type `kill -9` *`processid`*, where *`processid`* is Data Sourcer's UNIX process ID.
- Press `^C` from the active Data Sourcer console.
- If LCA and SCS are used, you can stop Data Sourcer from SCI.

Starting and Stopping ETL Assistant

This section describes the starting and stopping procedures for the Extraction, Transformation, and Loading (ETL) Assistant, a component of both Real-Time and Historical Reporting. You can start ETL Assistant from a Windows 2000, Windows XP, or Windows Server 2003 platform.

What Must Be Running Prior to Start

- Configuration Server
- RDBMS for Data Mart

Starting ETL Assistant

On a Windows platform, you can start ETL Assistant:

- From the `Programs` menu.
- From a console window.

From the Programs Menu

1. Select `ETL Assistant` from the program folder created during installation.

   The `Login` screen appears.
2. Type an authorized user name and password for connection to a Data Mart.
3. Click `Details>>` to specify connection information for the Data Mart. The `Login` screen expands.
4. Select the appropriate DBMS type from the drop-down list, and specify host and port information for connection to the database server. In addition, for Oracle, type the identification name in the `SID Name` field.

From a Console Window

1. At the command-line prompt, go to the directory where ETL Assistant has been installed.
2. Type the ETL Assistant command: `run.bat`. The `Login` screen appears.
3. Complete Steps 2–4 under "From the Programs Menu" to finish starting ETL Assistant from a console window.

Stopping ETL Assistant

To exit ETL Assistant, either:

- Select `Exit` from the `File` menu.
- Click the `Close` button on the right side of the title bar of the ETL Assistant main window.

Starting and Stopping ETL Runtime

Starting ETL Runtime in this release is significantly different from starting it in releases prior to 6.1. The recommended approach is to start ETL Runtime and its modules using the ETL Runtime Starter, an `Application` object defined in the Configuration Manager.

Note: ETL Runtime Starter is also referred to as *Starter* and the two names can be used interchangeably.

You can also start ETL Runtime from the Solution Control Interface on both Windows and UNIX platforms. Optionally, you can start ETL Runtime's modules individually from the command line of a console window. This section describes all methods for starting ETL Runtime on the Windows and UNIX platforms.

Refer to the "Configuration Options" chapter in the *Reporting 7.6 ETL Runtime User's Guide* for more information about ETL Runtime Starter (also known as Starter).

Note: If you have upgraded ETL Runtime from release 6, Genesys strongly recommends that you back up your Data Mart before starting ETL Runtime for the first time.

What Must Be Running Prior to Start

- The RDBMS with your ODS
- Your Configuration Server
- The RDBMS with your Data Mart

Starting ETL Runtime Starter from SCI

You can start ETL Runtime Starter on any of the supported platforms. To start it from SCI:

1. From the `Applications` view, select your `ETL Runtime Starter Application` object in the List pane.
2. Click `Start` on the toolbar, or select `Start` either from the `Action` menu or the context menu.
3. Click `Yes` in the confirmation box that appears.

Starting ETL Runtime Starter from Windows Platforms

You can start the ETL Runtime Starter:

- Manually from the `Programs` menu as an application.
- Manually from a console window as an application.
- Automatically as a Windows service.

From the Programs Menu

Select `ETL Runtime Starter` from the program group created during installation. ETL Runtime Starter opens a console window and automatically issues the command-line parameters that you specified during configuration, to

start ETL Runtime. The `ETL Runtime Application` object name and version appear in the title bar.

From a Console Window

1. At the command-line prompt, open the directory where you have installed ETL Runtime.
2. Type the name of the Starter executable followed by the appropriate command-line parameters, using the following syntax:

   `starter.exe -host` *hostname* `-port` *portno* `-app` *application*

   where:

   - *hostname* refers to the name of the computer on which Configuration Server is running.
   - *portno* refers to the communication port on which Configuration Server is running.
   - *application* refers to the name of the `Data Mart Application` object.

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

You can also type the name of the Starter executable and its command-line parameters into a shell script, and execute the script using the following command:

`./run.sh` *[Name of script]*

As a Windows Service

1. From the task bar, choose `Start > Settings > Control Panel > Administrative Tools`.
2. Double-click the `Services` icon.
3. Select your ETL Runtime service from the list and click `Start`.

Note: Because you can install LCA as a Windows service with the user interface disabled, all servers started through SCI, in this case, are started without a console, unless you specifically select the `Allow Service to Interact with Desktop` check box.

Starting ETL Runtime Starter from UNIX Platforms

To start ETL Runtime Starter on a UNIX platform:

1. Go to the directory where ETL Runtime has been installed.

   Note: You can invoke ETL Runtime Starter (or any of ETL Runtime's components) only from the directory where it is installed.

2. Type the name of the Starter executable followed by the appropriate command-line parameters, using the following syntax:

   `./starter -host` *`hostname`* `-port` *`portno`* `-app` *`application`*

   where:

   - *`hostname`* refers to the name of the computer on which Configuration Server is running.
   - *`portno`* refers to the communication port on which Configuration Server is running.
   - *`application`* refers to the name of the `Data Mart Application` object.

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

When ETL Runtime Starter starts, it writes log messages into `stderr`, so you can check for errors in its configuration. If ETL Runtime Starter fails to start, a descriptive message with the reason is written to `stderr`. If you cannot resolve the problem, contact Genesys Technical Support and provide the entire content of the log.

You can also type the name of the Data Sourcer executable file and its command-line parameters into a shell script, and execute the script using the following command:

`./run.sh` *`[Name of script]`*

To redirect ETL Runtime output (on most UNIX shells), use the following syntax:

`./starter -host` *`hostname`* `-port` *`portno`* `-app` *`appl`* `>` *`log_file.log`*

To have both log file and console working, within the Configuration Manager add the following in the `Properties` dialog box of the `ETL Runtime Starter Application` object:

- Section: `Log`
- Option: `all`
- Value: `stderr`, `<log_file_name.log>`, `network`. Instead of `stderr`, you can also use `stdout`.

- Add the name of the log file (it will be written into the same directory where you installed ETL Runtime, or indicate the full path where you want the log file to be written).
- Separate values with commas.

Starting the ETL Runtime Modules Individually

From the command line in the directory where ETL Runtime is installed, you can start any of the following ETL Runtime modules individually:

- Aggregation
- Data Mart Database Creation
- One-Time Transformation
- Purge
- Tenants Alias Update
- Transformation
- Transformation and Aggregation

Refer to the *Reporting 7.6 ETL Runtime User's Guide* for a description of ETL Runtime's modules and property files.

The command-line syntax for starting ETL Runtime is the following:

`java` *`java_options`* `-jar transform.jar -conf` *`properties_file`*

where

- *`java_options`* are those specified in the corresponding properties file (sample batch files provided in Table 3).
- *`properties_file`* are any of the properties files listed in Table 3 on page 100.

ETL Runtime parameters can also be issued at the command line for all ETL Runtime modules. Refer to the *Reporting 7.6 ETL Runtime User's Guide* for a complete listing of parameters.

Table 3 lists the batch files and corresponding `.properties` file that you can issue for each module at the command line where ETL Runtime has been installed.

Table 3: Starting ETL Runtime's Modules

ETL Runtime Module	Batch File	Corresponding Property File
Aggregation	Windows: run-agg_only.bat UNIX: run-agg_only	etl.properties
Data Mart Database Creation	Windows: run-createdb.bat UNIX: run-createdb	createdb.properties

Table 3: Starting ETL Runtime's Modules (Continued)

ETL Runtime Module	Batch File	Corresponding Property File
One-Time Transformation	Windows: run-trans_once.bat UNIX: run-trans_once	etl.properties
Purge	Windows: run-purge.bat UNIX: run-purge	purge.properties
Tenants Alias Update	Windows: run-tenants_alias_update.bat UNIX: run-tenants_alias_udpate	tenants_alias_update.properties
Transformation	Windows: run-trans_only.bat UNIX: run-trans_only	etl.properties
Transformation and Aggregation	Windows: run-trans_and_agg.bat UNIX: run-trans_and_agg	etl.properties

Stopping ETL Runtime Starter on Windows Platforms

Note: Be sure that the `autorestart` property is cleared for the `ETL Runtime Starter Application` object in the Configuration Manager.

If ETL Runtime Starter is running as an application, switch to its console window and press `^C` to stop it.

If you are running ETL Runtime Starter as a Windows service, you should stop it only from the Microsoft Management Console:

1. From the task bar, choose `Start > Settings > Control Panel > Administrative Tools`.
2. Double-click the `Services` icon.
3. Select your ETL Runtime service from the list and click `Stop`.

Note: Be sure that the `autorestart` property is cleared for the `ETL Runtime Starter Application` object in the Configuration Manager.

To stop ETL Runtime Starter from SCI:

1. From the `Applications` view, select your `ETL Runtime Starter Application` object in the List pane.

2. Click `Stop` on the toolbar, or select `Stop` either from the `Action` menu or the context menu.
3. Click `Yes` in the confirmation box that appears.

Stopping ETL Runtime Starter on UNIX Platforms

Note: Be sure that the `autorestart` property is cleared for the `ETL Runtime Starter Application` object in the Configuration Manager.

Stop ETL Runtime Starter on UNIX using either of the following methods:

- On the command line, type `kill -SIGTERM` *`processid`* where *`processid`* is ETL Runtime Starter's UNIX process ID.
- Press `^C` from the active `ETL Runtime Starter` console.

Default Source Path

Table 4 lists the source paths and program groups of Historical Reporting components on Windows platforms created during the installation process if you accepted all default values.

Table 4: Default Application Source Paths for Historical Reporting

Reporting Component	Default Source Path/ Program Group
Data Sourcer	Source Path: `C:\Program Files\GCTI\Data Sourcer` Program Group: `Genesys Solutions\Reporting 7.6`
Data Modeling Assistant	Source Path: `C:\Program Files\GCTI\Data Modeling Assistant` Program Group: `Genesys Solutions\Reporting 7.6`
ETL Assistant	Source Path: `C:\Program Files\GCTI\Data Mart\etl_assistant` Program Group: `Genesys Solutions\Reporting 7.6`
ETL Runtime	Source Path: `C:\Program Files\GCTI\Data Mart\ETL Runtime` Program Group: `Genesys Solutions\Reporting 7.6`

Chapter

9 Installing Real-Time Reporting

The installation of Real-Time Reporting involves one component: CCPulse+. This chapter describes the steps for manually installing CCPulse+. Refer to the *Reporting 8.0 CCPulse+ Administrator's Guide* for instructions on installing CCPulse+ silently.

Note: CCPulse+ is a Microsoft Windows application. It is not supported on UNIX platforms.

Refer to Chapter 2 for preparatory requirements that you must satisfy before installing Real-Time Reporting.

To install Real-Time Reporting:

1. Invoke `setup.exe`, either from the destination path you specified during configuration (refer to "Operating the CCPulse+ Wizard" on page 67), or from the Reporting CD.

   The InstallShield Wizard opens.

2. At the `Welcome to the Installation of CCPulse+` screen, read the general information and click `Next` to proceed.

3. At the `Choose Destination Location` screen, accept the default location, type a desired location, or click `Browse` to choose the path where CCPulse+ is to be installed, and click `Next`.

4. At the `Select Monitoring Agent Activity` screen, select whether users can monitor agent activity, and click `Next`.

5. At the `Ready to Install` screen, click `Install`.

   The Wizard displays a progress-of-completion bar on the `Installation Status` screen while copying the necessary files and registering dlls.

6. At the `Installation Complete` screen, click `Finish`.

The Wizard creates a CCPulse+ program group inside Genesys Solutions/Reporting 8.0, with two menu items:

- ReadMe—a shortcut to information about the CCPulse+ installation package
- Start CCPulse+—a shortcut to the application executable

Chapter

10 Setting Up Real-Time Reporting Users

CCPulse+ looks to the setting of the `Ranks` property of `Persons` objects in Configuration Server to determine whether to grant or restrict access to certain CCPulse+ functionality that is typically reserved for administrator-type operations. This ranking is not to be confused with access to data in the Configuration Database—access which is controlled, in part, by the `Security` property of the `Persons` object.

This chapter describes the additional setup required to set up CCPulse+ users and administrators. It contains the following sections:

Refer to the "Persons" topics in *Framework 8.0 Configuration Manager Help* for additional information about this object's properties.

Setting Up Users

CCPulse+ users can select and monitor configuration objects only with a connection to a selected Stat Server and its set of monitored tenants. Any CCPulse+ user can open any workspace against a particular Stat Server application available from Stat Server list.

To set up a new CCPulse+ user within the Configuration Manager:

1. With the `Persons` folder selected, select `File` > `New` > `Person`.
2. On the `General` tab, identify the new person by completing the `First` and `Last` name fields.
3. On the `Ranks` tab, click `Add` and specify the following:
   - Application type: `Call Center Pulse`
   - Rank: `User`

4. Click OK.

You have now set up a CCPulse+ user.

Note: By default, CCPulse+ recognizes all Configuration Manager Persons objects as having the rank of User, if not explicitly identified otherwise.

Setting Up Administrators

In addition to the privileges provided by CCPulse+ users, CCPulse+ administrators can:

- Use the CCPulse+ Threshold and Action Wizard to create and/or modify threshold and action scripts.
- Use the CCPulse+ Template Wizard to create and/or modify templates.
- Use the Import/Export Utility.

To set up a new CCPulse+ administrator within the Configuration Manager:

1. With the Persons folder selected, select File > New > Person. The Configuration Manager displays the Person Properties screen.
2. On the General tab, identify the Person by filling in the appropriate fields. Clear the Is Agent check box.
3. Select the Ranks tab, click Add, and specify the following:
   - Application type: Call Center Pulse
   - Rank: Administrator
4. Click OK.

You have now set up a CCPulse+ administrator.

Chapter

11 Starting and Stopping Real-Time Reporting

This chapter provides the starting and stopping procedures for Real-Time Reporting and includes a "What Must Be Running Prior to Start" subsection, so that startup is successful the first time. Starting procedures assume that you have properly configured and installed application components. If not, refer to Chapters 5 and 9. The final section provides the default source paths for all Real-Time Reporting executables.

You can start your entire solution, including the server components of Reporting, from SCI, which is the recommended approach. Where applicable, this information is covered in Chapter 8. The historical aspect of Real-Time Reporting is also covered.

This chapter contains the following sections:

Starting and Stopping CCPulse+

This section describes the starting and stopping procedures for CCPulse+, a component of Real-Time Reporting.

What Must Be Running Prior to Start

- Configuration Server
- Stat Server
- RDBMS and DB Server for Data Mart, if you intend to operate CCPulse+ in historical as well as real-time mode

Starting CCPulse+

On Windows platforms, you can start CCPulse+:

- From the Programs menu.
- From a console window.

From the Programs Menu

To start CCPulse+ from the Programs menu:

1. From the Genesys Solutions\Reporting 8.0 program folder created during installation, select Start CCPulse+.

   The Login screen appears with the name of the previous CCPulse+ user in the User name field.

   Note: If a security banner is configured for all Genesys user interfaces, it is displayed before the Login screen.

2. Type an authorized user name and password for connection to your Configuration Server.
3. Click the Details>> button to display connection information for your Configuration Server. The CCPulse+ Login screen expands.
4. Type your CCPulse+ application name, host name and port of your Configuration Server, and click OK.

From a Console Window

1. At the command-line prompt, open the directory where CCPulse+ has been installed.
2. Type CallCenter.exe at the command line. The Login screen appears, with the name of the previous user filled in.
3. Complete Steps 2–4 under "From the Programs Menu" to finish starting CCPulse+ from a console window.

Stopping CCPulse+

To exit CCPulse+, either:

- Select Close from the File menu.
- Click the Close button located on the right side of the title bar in the CCPulse+ window.

Default Source Paths

Table 5 lists the source path and program group of the CCPulse+ component of Real-Time Reporting on Windows platforms as created during the installation process if you accept all default values.

Refer to Table 4 on page 102 for a listing of Historical Reporting component source paths, which are used for the historical facet of Real-Time Reporting.

Table 5: Default Application Source Paths for Real-Time Reporting

Reporting Component	Default Source Path/ Program Group
CCPulse+	Source Path: `C:\Program Files\GCTI\CCPulse+` Program Group: `Genesys Solutions\Reporting 8.0`

Chapter

12 Uninstalling Reporting Components

To uninstall applications, you must first stop them. Refer to Chapters 8 and 11 for information about stopping Reporting components.

This chapter contains the following sections:

Starting with the 7.0.2 release, you uninstall applications on Windows platforms either from `Add/Remove Programs` in the Control Panel, or during the maintenance of an existing installation. Previously, you performed this action by selecting the `Uninstall` menu item from the program group created during installation. Release 7.0.2 installations no longer deploy an `Uninstall` menu item.

Uninstalling Data Modeling Assistant

On Windows platforms, you can uninstall Data Modeling Assistant:

- From the Control Panel
- During Installation Maintenance

From the Control Panel

To uninstall Data Modeling Assistant from the Control Panel:

1. Open `Add or Remove Programs`.
2. Select the `Genesys Data Modeling Assistant 7.6` application.

3. Click Remove.

During Installation Maintenance

To uninstall Data Modeling Assistant during Installation Maintenance:

1. From the path where the DMA Wizard deployed your installation package, or from the Reporting CD, double-click setup.exe.
2. Navigate to the Maintenance Setup Type screen and select the Maintenance of the existing installation option.
3. Select your Data Modeling Assistant application from the list box and click Next.
4. At the Welcome screen, click Remove, and then Next.
5. At the Confirm Uninstall dialog box, click Next.
6. At the Maintenance Complete screen, click Finish.
7. At the After Installation screen, click Next.

Uninstalling Data Mart

On Windows platforms, you can uninstall Data Mart:

- From the Control Panel
- During Installation Maintenance

From the Control Panel

To uninstall Data Mart from the Control Panel:

1. Open Add or Remove Programs.
2. Select the Genesys Data Mart 7.6 application.
3. Click Remove.

During Installation Maintenance

To uninstall Data Mart during Installation Maintenance:

1. From the path where the Data Mart Wizard deployed your installation package or from the Reporting CD, double-click setup.exe.
2. Navigate to the Maintenance Setup Type screen and select the Maintenance of the existing installation option.
3. Select your Data Mart application from the list box, and click Next.
4. At the Welcome screen, click Remove, and then Next.
5. At the Confirm Uninstall dialog box, click Next.

6. At the Maintenance Complete screen, click Finish.
7. At the After Installation screen, click Next.

Note: The Uninstall Wizard does not delete the Data Mart database or the Data Mart Application object in the Configuration Server, so you can reuse them later if desired.

Uninstalling Data Sourcer

On Windows platforms, you can uninstall Data Sourcer:

- From the Control Panel
- During Installation Maintenance

From the Control Panel

To uninstall Data Sourcer from the Control Panel:

1. Open Add or Remove Programs.
2. Select the Genesys Data Sourcer 7.6 application.
3. Click Remove.

During Installation Maintenance

To uninstall Data Sourcer during Installation Maintenance:

1. From the path where the Data Sourcer Wizard deployed your installation package, or from the Reporting CD, double-click setup.exe.
2. Navigate to the Maintenance Setup Type screen and select the Maintenance of the existing installation option.
3. Select your Data Sourcer application from the list box, and click Next.
4. At the Welcome screen, click Remove, and then Next.
5. At the Confirm Uninstall dialog box, click Next.
6. At the Maintenance Complete screen, click Finish.
7. At the After Installation screen, click Next.

Note: The Uninstall Wizard does not delete ODS or the Data Sourcer Application object in the Configuration Server, so you can reuse them later if desired.

Uninstalling CCPulse+

On Windows platforms, you can uninstall CCPulse+:

- From the Control Panel
- During Installation Maintenance

From the Control Panel

To uninstall CCPulse+ from the Control Panel:

1. Open `Add or Remove Programs`.
2. Select the `Genesys CCPulse+ 8.0` application.
3. Click `Remove`.

During Installation Maintenance

To uninstall CCPulse+ during Installation Maintenance:

1. From the path where the CCPulse+ Wizard deployed your installation package or from the Reporting CD, double-click `setup.exe`.
2. Navigate to the `Maintenance Setup Type` screen and select the `Maintenance of the existing installation` option.
3. Select your CCPulse+ application from the list box and click `Next`.
4. At the `Welcome` screen, click `Remove` and then `Next`.
5. At the `Confirm Uninstall` dialog box, click `Next`.
6. At the `Maintenance Complete` screen, click `Finish`.
7. At the `After Installation` screen, click `Next`.

Appendix

Scaling Your Environment

The original estimates you made for the number of collection units required in your Reporting environment might require modification. For instance, your environment might grow beyond expectations as your company structure changes, or your environment might be splintered as your company is divided into independent business units.

The information provided in Chapter 2 assumes a stable, nonelastic environment and assists you in configuring your original environment.

This chapter assumes otherwise, and it describes how to modify your configuration to effectively use your custom reports or the canned reports provided with each solution so that they continue to yield meaningful results.

This chapter contains the following sections:

Do You Need to Scale Your Environment?

Ultimately, only you can determine whether to scale up or scale down your environment; however, Table 6 lists a few signs that you can look for when making your assessment.

Table 6: Signs to Look for When Determining Whether to Scale Up

Symptom	Probable Cause
The emergency save files steadily grow.	• Performance problems with the ODS RDBMS. • Network is slow. • ODS is not regularly available. • The number of statistics requested is too large for your environment. • The number of objects in your Configuration Server has increased.
Data Sourcer chunks are getting larger over time, or chunk write time has increased. (You can review chunk write time in the Data Sourcer log.)	• The number of open statistics has increased. • The number of objects in your Configuration Server has increased.
Reporting activity overloads your collection unit.	• Stat Server is overloaded (that is, you have reached 100 percent CPU). • The collection unit is unable to process all of the requests from all activated report layouts within the processing time indicated by the time profile.
Stat Server cannot handle the number of requests made by Data Sourcer.	• Stat Server memory required exceeds the available physical memory.
Memory consumption increases over time.	• You are running other non-Reporting processes concurrent with Reporting. • The number of objects in your Configuration Server has increased.

Adding New Collection Units

If you intend to create a new collection unit composed of elements completely separate from those in your existing collection unit(s), create the new collection unit as described in Chapter 2. If, however, you intend to move objects between collection units—such as `Agent`, `Place`, or `Queue` objects—use the following procedure. The problem you want to avoid is double counting—that is, having objects considered twice (or more) in the corresponding reports generated by each collection unit.

Note: In this procedure, the *N* subscript denotes elements in the new collection unit. *O* indicates elements in the old or existing collection unit.

To add a collection unit to your environment:

1. Map out the Reporting environment as you envision it and determine which objects are to reside in which collection unit. Account for every object in your mapping. Follow the sizing guidelines outlined in Chapter 2.
2. Stop Data Sourcer (DS_O).
3. Configure a new `Data Sourcer Application` object (DS_N) for the new collection unit.
4. Install DS_N, and then start it to initialize the new ODS (ODS_N).
5. When initialization completes, stop DS_N.
6. In the Configuration Server, define uniquely named, nonoverlapping groups of objects.

   Figure 14 is a simple example showing the `Bronze` agent group being split into the `BronzeInfo` and `BronzeService` agent groups. The six agents previously included in the `Bronze` group have been assigned to *either* the `BronzeInfo` or `BronzeService` agent groups.

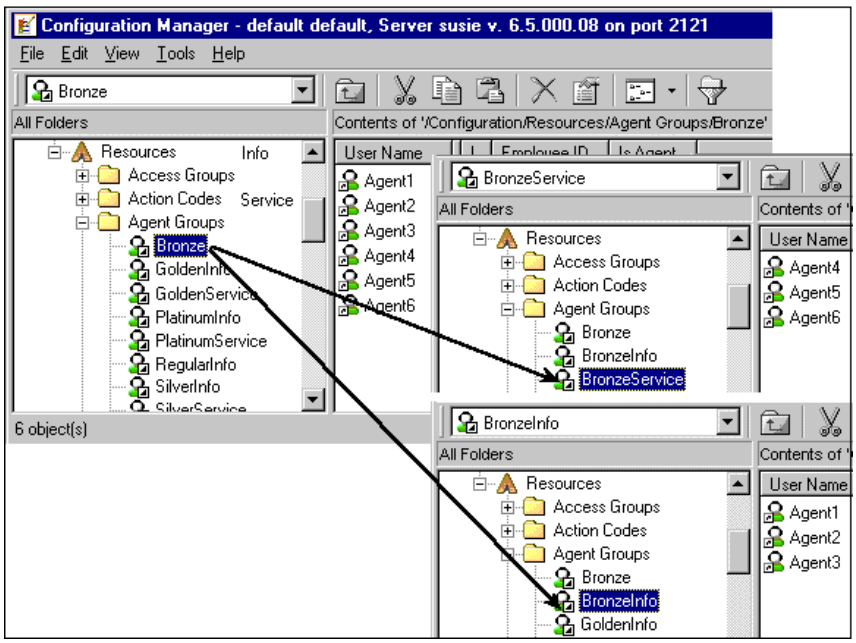

Figure 14: Redefining Metagroups

> **Note:** In this example, when the transformation of objects is complete, delete the `Bronze` agent group.

7. Deactivate the affected report layouts in DMA. Affected report layouts are those that are based on the former metagroup—for example, the `Bronze Agent Layout`. (There is no quick way to find all affected report layouts.)

8. Using DMA, redefine the affected report layouts to reference the appropriate metagroups. You might have to create new report layouts to complete this task.

   For example, in Figure 15 the report layout named `Bronze Agent Layout` was renamed to `BronzeService Agent Layout` and its supporting metagroup was changed from `All Agents` to the `BronzeService`, which consists of three agents (refer to Figure 14). Then a new agent report layout, `BronzeInfo Agent Layout`, was created to incorporate the agents belonging to the `BronzeInfo` agent group.

   After you have defined these report layouts, activate them so that data collection can begin when Data Sourcer is started.

9. Start DS_N to start data collection in the new ODS *(ODS_N)*.

10. Start ETL Assistant and add ODS_N to the Data Mart. Define purge rules if they should differ from the default.

When you run the Transformation module, ETL Runtime automatically combines report views from multiple sources.

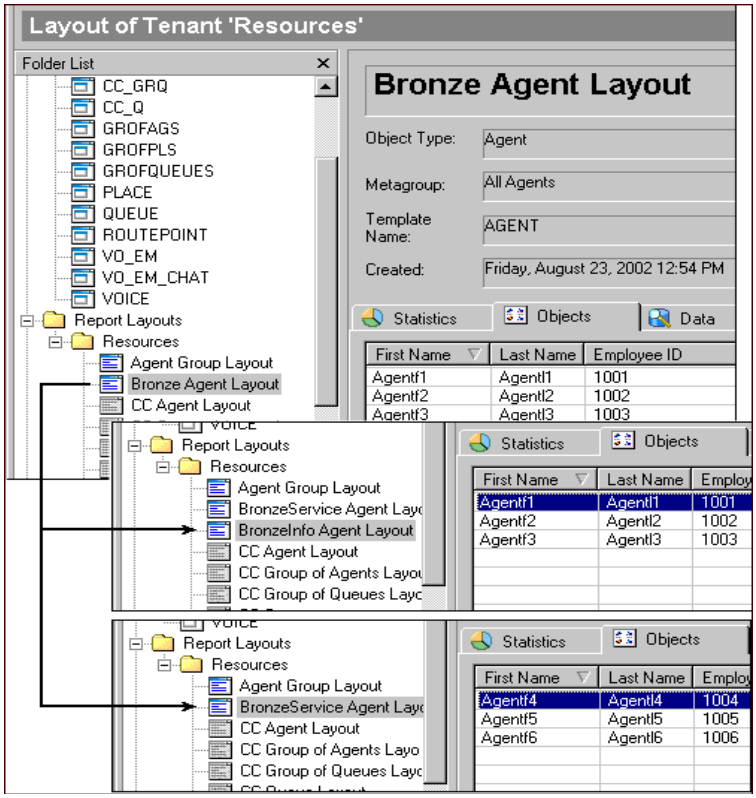

Figure 15: Redefining Report Layouts

For Reporting 6.1 users, two additional steps are necessary:

1. Run the Tenants Alias Update (TAT) module of ETL Runtime. Do this even if your modified environment remains a single-tenant environment. Running the TAT module combines report views from multiple sources.

2. If you use ETL Runtime Starter, add the TAT process to its definition.

Removing Collection Units

There are several reasons why you might consider scaling down your Reporting environment—for example, your company might choose to downsize or restructure its business into smaller and independent business units, or to correct an inefficient environment and make better use of resources.

Note: In this procedure, the *D* subscript denotes elements in the collection unit to be removed or deleted. *R* denotes the elements in the remaining collection unit.

To remove a collection unit from your Reporting environment:

1. Map out the environment you envision and execute the plan during off-peak hours. Follow the guidelines in Chapter 2, to determine if your remaining collection unit(s) can absorb the statistics collected on the objects from the collection unit being removed.
2. Deactivate all affected collection units by stopping their Data Sourcer applications. Affected collection units are those that will either be:
   - Deleted.
   - Modified to take on all or part of the objects from the deleted collection unit(s).
3. Invoke ETL Assistant and delete the corresponding ODS source (ODS_D). This action marks this source for deletion in the Data Mart. Note that ODS_D data still resides there.
4. Create object groups in the remaining collection unit and/or modify existing object groups to absorb those objects in the collection unit you are deleting.
5. If you created new object groups in Step 4, create new report layouts based on those object groups and activate them in DMA.
6. If you created new object groups in Step 4, run ETL Runtime's TAT module to create the new tables necessary for the report views.
7. Reactivate the remaining collection units by starting their Data Sourcer applications.

Be sure to monitor the Data Sourcer log file over the course of a day containing peak periods, to make sure you have not overloaded your resources. If you use the `emergency save` file, for instance, and have no unexplained network interruptions, resources are probably inadequate to handle the load. Revisit Chapter 2. If all goes smoothly, this procedure frees up the DS_D, ODS_D, and $DBServer_D$ resources.

Problems with Scaling Incorrectly

Statistical double counting might result when two or more collection units share objects and is manifested in the canned reports you generate. For instance, if Bob is defined as an agent both in CU_1 and CU_2, the calls he receives might be tallied by both collection units. If Bob took any calls during a reported time period, the agent report for that period reports twice the number of calls Bob actually received.

As you modify your Reporting environment, also make sure that the objects you create are uniquely named across all collection units common to one Data Mart. For instance, if you are adding Bob Smith to CU_2 and a Bob Smith already exists in CU_1, double counting results even if the agents represent two different people. The canned reports are based on the `Presentation Name` field in the various `Object` tables (the field with names beginning with `O_`) of the Data Mart; this field is not unique.

Note: Refer to "Generating Accurate Reports" in the *Reporting 7.2 Report Generation Assistant User's Guide* for more information.

Finally, map out your integration plan thoroughly. You must properly set up:

- All objects in the Configuration Manager.
- Object groups to include all objects.
- Report layouts based on those metagroups.
- All ODS sources within ETL Assistant.

If you do not, CCPulse+ and Contact Center Analyzer cannot possibly generate the results you expect.

Related Documentation Resources

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

Solution Reporting

- *Reporting 7.6 Data Modeling Assistant Help,* for information about the operation of this component.
- The *Reporting 7.6 ETL Runtime User's Guide,* for information about fine-tuning the Data Mart configuration.
- *Reporting 8.0 CCPulse+ Help,* for information about the operation of this product.
- The *Reporting Technical Reference Guide for the Genesys 7.2 Release,* for information about the reporting and layout templates provided with Genesys solutions.
- The *Reporting 8.0 CCPulse+ Administrator's Guide,* for information about CCPulse+ administrators, installing CCPulse+ silently, and fine-tuning the CCPulse+ configuration.
- The *Reporting 8.0 Master Index,* which will help you find where other related topics are documented.
- The *Genesys Info Mart Deployment Guide,* for information about the deployment of Genesys Info Mart.

Management Framework

- The *Framework 8.0 Stat Server Deployment Guide,* for information related to configuring Stat Server.

Oracle (Hyperion)

- Hyperion's documentation set for instructions on installing Hyperion Query Designer, which is used in conjunction with the Genesys-provided report templates included on the Reporting Templates CD. This documentation set also explains the tools available with the Hyperion Performance Suite, including the Hyperion Intelligence Server.

Genesys

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

Consult these additional resources as necessary:

- *Genesys Hardware Sizing Guide,* which provides information about Genesys hardware sizing guidelines for the Genesys 7.x/8.x releases.
- *Genesys Interoperability Guide,* which provides information on the compatibility of Genesys products with various Configuration Layer Environments; Interoperability of Reporting Templates and Solutions; and Gplus Adapters Interoperability.
- *Genesys Licensing Guide,* which introduces you to the concepts, terminology, and procedures relevant to the Genesys licensing system.
- *Genesys Database Sizing Estimator 7.6 Worksheets,* which provides a range of expected database sizes for various Genesys products.

For additional system-wide planning tools and information, see the release-specific listings of System Level Documents on the Genesys Technical Support website, 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_ref_06-2008_v8.0.001.00

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

Screen Captures Used in This Document

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

Type Styles

Table 7 describes and illustrates the type conventions that are used in this document.

Table 7: 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 124).	Please consult the *Genesys Migration Guide* for more information. Do *not* use this value for this option. A *customary and usual* practice is one that is widely accepted and used within a particular industry or profession. The formula, $x + 1 = 7$ where x stands for . . .
Monospace font (Looks like `teletype` or `typewriter text`)	All programming identifiers and GUI elements. This convention includes: • The *names* of directories, files, folders, configuration objects, paths, scripts, dialog boxes, options, fields, text and list boxes, operational modes, all buttons (including radio buttons), check boxes, commands, tabs, CTI events, and error messages. • The values of options. • Logical arguments and command syntax. • Code samples. Also used for any text that users must manually enter during a configuration or installation procedure, or on a command line.	Select the `Show variables on screen` check box. In the `Operand` text box, enter your formula. Click `OK` to exit the `Properties` dialog box. T-Server distributes the error messages in `EventError` events. If you select `true` for the `inbound-bsns-calls` option, all established inbound calls on a local agent are considered business calls. Enter `exit` on the command line.
Square brackets ([ ])	A particular parameter or value that is optional within a logical argument, a command, or some programming syntax. That is, the presence of the parameter or value is not required to resolve the argument, command, or block of code. The user decides whether to include this optional information.	`smcp_server -host [/flags]`
Angle brackets (< >)	A placeholder for a value that the user must specify. This might be a DN or a port number specific to your enterprise. **Note:** In some cases, angle brackets are required characters in code syntax (for example, in XML schemas). In these cases, italic text is used for placeholder values.	`smcp_server -host <confighost>`

Index

Symbols

A

B

C

D

E

F

G

H

I

J

L

M

O

P

R

S

T

U

V