G*plus* Adapter 7.5.1

for SAP ICI Multi-Channel

Deployment Guide

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Table of Contents

Preface

Welcome to the *G*plus *Adapter 7.5.1 for SAP ICI Multi-Channel*. This Guide lists system requirements and describes how to install and configure the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter).

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

This preface provides an overview of this document, identifies the primary audience, introduces document conventions, and lists related reference information. It contains the following sections:

The Adapter provides integration between Genesys Framework and a SAP Interaction Center (IC).

New in This Release

The 7.5.1 G*plus* Adapter for SAP ICI Multi-Channel (the Adapter) interfaces with the SAP Interaction Center (IC) WebClient via the SAP ICI (Integrated Communication Interface), which is an interface that supports the integration of multi-channel management systems (contact centers) with the SAP IC WebClient.

The Adapter processes voice and/or e-mail interactions. Genesys Agent Interaction Layer (AIL) helps control and manage agent multimedia interactions.

This release includes the following new features:

- Support for the T-Server-initiated `AgentCallWork` (ACW) option.

- Support for advanced HTTP and HTTP proxies.
- Support for on/off capability of blended workmodes.
- Advanced logging and tracing features.

Intended Audience

This Guide is intended for system administrators or other individuals who install and configure the Adapter.

This Guide assumes that you have a basic understanding of, and familiarity with:

- SAP Customer Relationship Management (CRM) design and communication protocols.
- Computer-telephony integration (CTI) concepts, processes, terminology, and applications.
- Network design and operation.
- Network configurations used in your company's computing environment.

You should also be familiar with the following Genesys products:

- Framework
- Enterprise Routing
- Multimedia
- Multi-channel Routing (MCR)

Chapter Summaries

This *Deployment Guide* provides installation and configuration information for the G*plus* Adapter for SAP ICI Multi-Channel. To help you locate information, the Guide begins with a Table of Contents and ends with an Index. It contains the following chapters and appendixes:

- Chapter 1, "About the Adapter," on page 13, provides an overview of the role that the Adapter has in the call-processing environment.
- Chapter 2, "System Requirements," on page 19, describes the minimum system and software requirements for installing the Adapter.
- Chapter 3, "Configuring the Adapter," on page 23, describes how to configure the Adapter, including guidelines for setting option values.
- Chapter 4, "Configuring HTTPS and Proxy," on page 65, describes how to configure the Adapter for HTTPS and HTTP Proxy.
- Chapter 5, "Installing the Adapter," on page 71, describes how to install the Adapter.

- Chapter 6, “Configuring the Agent Place,” on page 87, describes agent workmodes, wrap-up functionality, reason codes, and free seating.
- Chapter 7, “Configuring E-Mail,” on page 103, describes the Adapter’s e-mail functionality, and e-mail strategy configuration.
- Chapter 8, “Configuring the Media Routing Component,” on page 109 describes the Adapter’s Media Routing Component functionality, and Media Routing Component strategy configuration.
- Appendix A, “Call-Attached Data Conversion Examples,” on page 121, describes how the Adapter translates call-attached data from Genesys format to SAP format, and vice versa.
- Appendix B, “Localizing the Adapter,” on page 131, describes the conversion of localizable text resources.
- Appendix C, “Queue Presence Information,” on page 133, describes how the Adapter processes the request for presence information.
- Appendix D, “Canonical Address Format for Phone Numbers,” on page 137, describes how SAP and the Adapter work with canonical number optimizations.

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:

75gp_dep_sap-mc_03-2006_v7.5.1.7.000.02

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

Type Styles

Italic

In this document, italic is used for emphasis, for documents’ titles, for definitions of (or first references to) unfamiliar terms, and for mathematical variables.

Examples:

- Please consult the *Genesys 7 Migration Guide* for more information.
- *A customary and usual practice* is one that is widely accepted and used within a particular industry or profession.

- Do *not* use this value for this option.
- The formula, $x + 1 = 7$ where *x* stands for . . .

Monospace Font

A monospace font, which looks like `teletype or typewriter text`, is used for 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; and code samples.

Examples:

- Select the `Show variables on screen` check box.
- Click the `Summation` button.
- In the `Properties` dialog box, enter the value for the host server in your environment.
- In the `Operand` text box, enter your formula.
- Click `OK` to exit the `Properties` dialog box.
- The following table presents the complete set of error messages T-Server® distributes 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.

Monospace is also used for any text that users must manually enter during a configuration or installation procedure, or on a command line:

Example:

- Enter `exit` on the command line.

Screen Captures Used in This Document

Screen captures from the product GUI (graphical user interface), as used in this document, may sometimes contain a minor spelling, capitalization, or grammatical error. 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.

Square Brackets

Square brackets indicate that a particular parameter or value is optional within a logical argument, a command, or some programming syntax. That is, the parameter's or value's presence is not required to resolve the argument,

command, or block of code. The user decides whether to include this optional information. Here is a sample:

```
smcp_server -host [/flags]
```

Angle Brackets

Angle brackets indicate a placeholder for a value that the user must specify. This might be a DN or port number specific to your enterprise. Here is a sample:

```
smcp_server -host <confighost>
```

Related Resources

This section describes additional resources that you can use in conjunction with this Guide.

Genesys Documentation

- The *Framework 7.x T-Server Deployment Guide* for the T-Server that is installed with your system, which includes information about the software working with the CTI link on your switch, and the configuration options that facilitate the delivery of call data to agents.
- The *Genesys Technical Publications Glossary,* which ships on the Genesys Documentation Library CD, and which provides a comprehensive list of the Genesys and CTI terminology and acronyms used in this document.
- The *Genesys 7 Migration Guide,* also on the Genesys Documentation Library CD, which provides a documented migration strategy from Genesys product releases 5.1 and later to all Genesys 7.x releases. Contact Genesys Technical Support for additional information.
- The 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 Systems and Databases Reference Manual*
- *Genesys Supported Media Interfaces Reference Manual*

Genesys product documentation is available on the:

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

SAP Resources

To access additional SAP documentation, such as the SAP Integrated Communication Interface specification or SAP Notes, visit:

- The SAP Help Portal at `http://help.sap.com`.
- The SAP Service Marketplace at `http://service.sap.com`.

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Chapter

1 About the Adapter

This chapter provides an overview of the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter), its features, and its architecture. It contains the following sections:

The Adapter is a server application that provides integration between SAP Customer Relationship Management (CRM) and Genesys Framework, thus enabling telephone and e-mail interactions in the customer's enterprise applications.

The Adapter is intended for customers who are running one of the following products:

- SAP CRM Server
- SAP CRM Interaction Center (IC) WebClient

Feature Overview

The G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) enables data exchange between a computer, a telephone, and a SAP system. For example, it enables telephony functionality for an agent who is conducting voice and e-mail interactions through the SAP Interaction Center, (IC) WebClient. The data exchange is processed through the Adapter by Genesys components, the telephony switch, and the SAP application.

Key Features

The Adapter enables the following key features:

- Support for the SAP thin client architecture, the WebClient.

- Support for data exchange over HTTP using Simple Object Access Protocol (SOAP). HTTP is supported by all Internet browsers and servers. SOAP provides a way to communicate between applications that are running on different operating systems, with different technologies and programming languages.
- Support for data exchange over HTTPS.
- Use of the Genesys Agent Interaction Layer (AIL) as a library for communication with Genesys components, thus enabling the Adapter to provide voice and e-mail services.
- Integration with SAP Customer Relationship Management (CRM), thus providing a gateway for different telephony and e-mail functions that the SAP system supports.
- Integration with the Genesys Framework Media Layer, and support for different telephony switches through Genesys T-Servers.
- Integration with the Genesys Multimedia solution for e-mail handling.
- Adapter configuration from the Genesys Framework Configuration Layer, thus enabling easy configuration for system administrators.
- Adapter administration from the Genesys Framework Management Layer, thus enabling remote start, stop, and view status.
- Support for the Genesys High Availability feature, thus ensuring automatic connection to the backup instance(s) of the Framework server(s) in the event of a primary server failure.
- Improved customer number lookup, thus ensuring that valid customer data is displayed for ASM mode during outbound campaigns. In earlier releases, valid customer data was not displayed for ASM mode during outbound campaigns.

Support for SAP Telephony and E-mail Functions

Agents can use the phone and e-mail interface with the SAP IC WebClient to:

- Change their agent workmode.
- Receive and make calls.
- Transfer phone interactions to another agent, a queue, or a Routing Point.
- Transfer phone interactions through the network, to a remote contact center.
- Initiate and participate in conference sessions.
- Receive calls from a queue, and make calls to a queue or Routing Point.
- Hold, retrieve, and reconnect calls.
- Receive and send e-mail.
- Transfer and forward incoming e-mail to external and internal recipients.
- Supports the sending of `DTMF` Tones.

- Using the Case-Insensitive Phone Book:

  By default, the Genesys Configuration Server database is case-sensitive. This means that any IDs (for example, `Testagent1` and `TestAgent1`) are treated as different IDs. Conversely, the Adapter treats the agent and queue names as case-insensitive. This means that any names (for example, `Testagent1` and `TestAgent1`) are treated as the same name.

`Note:` Only agents\queues from the Adapter's `Tenant` are added to the case-insensitive phone book.

The `Agent` name values configured in the Configuration Server must be unique strings. The Adapter will treat the names that are different only by cases (for example, `"agent"` and `"AGENT"`) as the equal strings.

Genesys Media Layer

The Adapter communicates with the Genesys T-Server, part of the Genesys Media Layer, in order to process telephony requests—for example:

- Transfer telephony requests from a SAP system to the Genesys T-Server.
- Notify the SAP system of T-Server telephony events. For details, see the "Adapter Architecture".

Genesys Configuration Layer

The Adapter can be configured by using the Genesys Configuration Layer. This enables administrators to manage the Adapter's configuration options. For details, see Chapter 3 on page 23.

Genesys Management Layer

The Adapter can be administered through the Genesys Management Layer. This layer provides the ability to remotely start, and stop the Adapter, and monitor its status.

Genesys High- Availability Configuration

The Adapter takes advantage of the High-Availability features of the Genesys Framework and supports the Primary-Backup schema for Genesys server components. This means that if the primary instance of the Genesys server fails or goes out of service, a standby (backup) instance will take over automatically.

In most cases, the Adapter provides seamless switchover between primary and backup servers. Therefore, agents are able to resume their operations quickly, with little or no loss of state.

In addition, the Adapter supports Advanced Disconnect Detection Protocol (ADDP) connection to Genesys servers. Although adjusting ADDP improves the ability to detect network disconnection, it increases local network loading.

Note: For more information about High Availability configuration and ADDP, see the Genesys Framework documentation.

Adapter Architecture

Note: For information about the SAP system architecture, see the “Live System Architecture” section in the SAP ICI documentation.

Genesys and SAP communicate through the Adapter. The architecture diagram in Figure 1 shows how SAP and Genesys are connected. It also shows how the Adapter, Genesys Framework, and Genesys computer telephone intergration (CTI) components are connected.

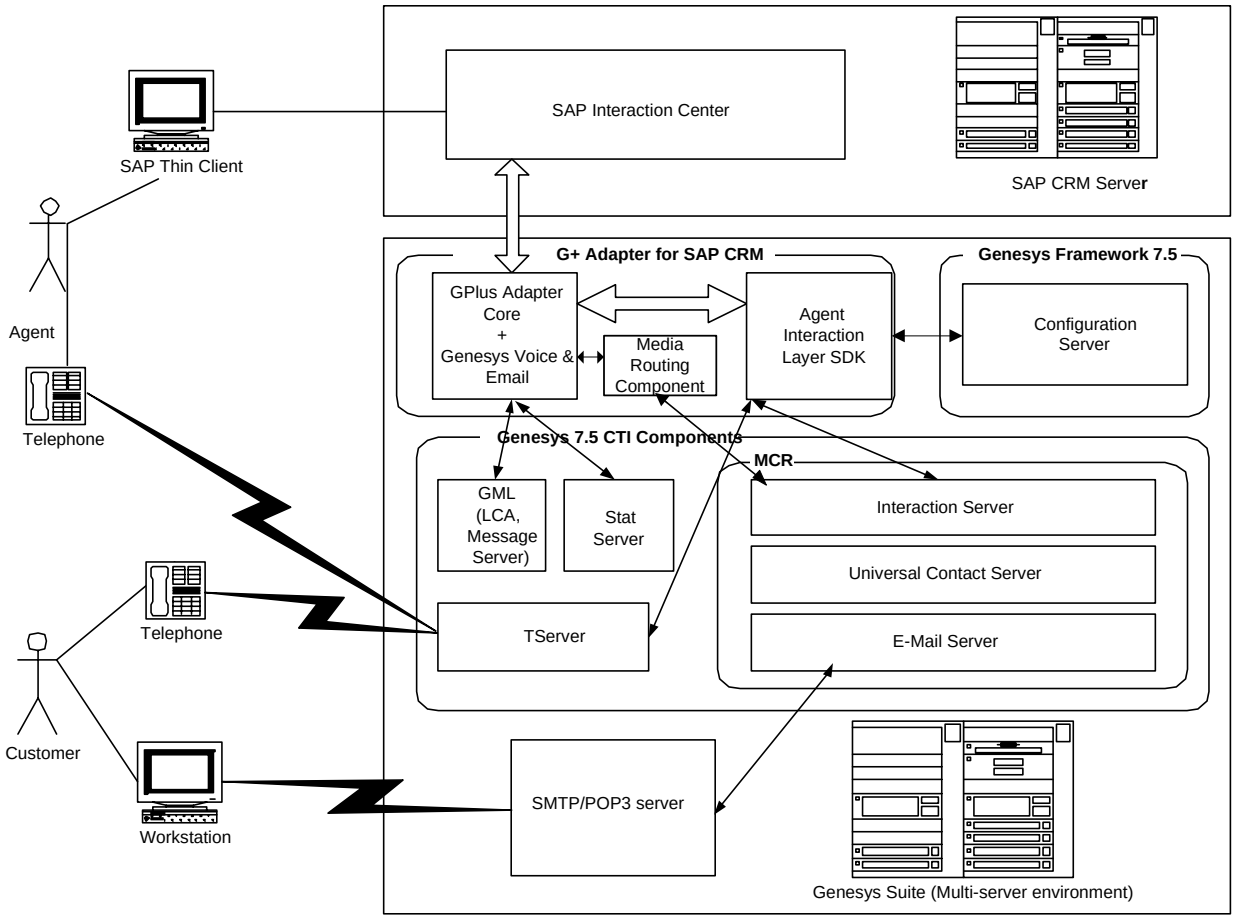

Figure 1: Architecture of G*plus* Adapter for SAP ICI Multi-Channel and External Systems

Connectivity between SAP and Genesys is as follows:

- SAP IC WebClient connects to the SAP Interaction Center.
- SAP IC connects to the Adapter.
- The Adapter accesses Stat Server for login control, and to obtain the presence queue information.
- The Media Routing component accesses the Genesys Multimedia components to manage the `action items` open media interactions.

Connectivity within Genesys is as follows:

- The switch or Simple Mail Transfer Protocol (SMTP) server connects to the Genesys CTI components.
- The Genesys CTI components connect to the Adapter.
- The Adapter accesses Configuration Server through the Agent Interaction Layer.
- The Adapter accesses Genesys Multimedia components, which are required in order to manage voice and e-mail interactions, through the AIL.

Chapter

2 System Requirements

This chapter outlines the minimum hardware and software requirements for deploying the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter).

Please review these system requirements before installing the Adapter.

This chapter contains the following sections:

Compatibility Overview

The proper functioning of the G*plus* Adapter for SAP ICI Multi-Channel (the Adapter) depends on the following items:

- The operating system
- The telephony switch
- The Genesys environment
- The SAP system

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

- *Genesys Supported Operating Systems and Databases Reference Manual*
- *Genesys Supported Media Interfaces Reference Manual*

Software Requirements

You need the following software in order to deploy and use the Adapter:

- Genesys Framework

- A SAP system (SAP Application Server)
- An operating system. For details, see the *Genesys 7 Supported Operating Systems and Databases Reference Manual*.
- A web browser (such as Microsoft Internet Explorer 5.5 or later) and a PDF viewer (such as Adobe Acrobat Reader 5.0 or later), for reading and viewing the support documentation.

Genesys Applications

The required Genesys applications are:

- G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel.
- G*plus* Adapter 7.5.1 Media Routing for SAP
- Genesys Framework, including:
  - The Configuration Layer (Configuration Server, Configuration Manager, and DB Server).
  - The Management Layer (Message Server, Local Control Agent [LCA], Solution Control Server [SCS], and Solution Control Interface [SCI]).
  - The Media Layer (T-Server[s]).
  - The Service Layer (Stat. Server).
- Genesys Multimedia solution (E-mail Server, Interaction Server, and Contact Server).

  Note: The Adapter is not compatible with Genesys E-mail Server release 7.1 or earlier.

- Enterprise Routing Solution (Interaction Routing Designer, Universal Routing Server [URS]).

SAP Applications

The required SAP system applications are:

- SAP CRM 2006s.
- SAP Interaction Center (IC).
- SAP Integrated Communication Interface (ICI).

Java Development Kit

The Adapter requires:

- An installed J2SE Runtime Environment (JRE) or J2SE Software Development Kit (SDK) v 1.4 (or later) on the computer that is running the Adapter.

> Note: Although it is recommended that you use JRE or Java Development Kit (JDK) 1.4, version 1.5, or later, may be required for some tracing features.

- A JAVA_HOME environment variable pointing to this Java Development Kit (JDK) or JRE.

> Note: If the JRE is located in C:\\Program Files\Java\j2re1.4.2, ensure that the JAVA_HOME environment variable is also located there.

For a Windows operating system, the JDK/JRE is available on Sun's Java website. Follow the installation instructions at http://java.sun.com/.

Hardware Requirements

The following are the minimum hardware requirements to deploy the Adapter on a Windows operating system:

- CPU at 2.4 GHz, or faster
- 1 GB or more of RAM
- 200MB of free disk space
- CD-ROM drive
- Display
- Network adapter and network connection

> Note: For the hardware requirements for other Genesys Framework components, see the Genesys Framework documentation.

Telephony Switches

The Adapter is compatible with several hardware and software telephony switches. Information about supported switches is available on the Genesys Technical Support website, in the *Genesys Supported Media Interfaces Reference Manual* document.

Information for SAP System Administrators

The following settings are needed in order to program SAP and enable server-side connectivity to Genesys:

- Protocol / Connection Type = HTTP
- Host Name = <Host where Genesys Adapter resides> (for example, adapterhost.genesyslab.com). See "Server Info Tab" on page 31.
- Path Prefix = <Http path to Genesys Soap Dispatcher>.

> **Note:** From release 7.1 onward, this information is not required, because the Adapter implements its own Http Server running on top of JRE; therefore, the path information is actually ignored.

- Port / Service No. = <TCP port where the Adapter can be accessed> (for example, 8080). See "Server Info Tab" on page 31.

  Visit http://adapterhost.genesyslab.com:*/ (replace * with your TCP port information) to verify that you have an output.

> **Note:** You must add a user named admin (all lowercase) in Genesys Configuration Manager to enable a successful SAP connection test.

Chapter

3 Configuring the Adapter

This chapter describes how to configure the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter). It contains the following sections:

Preliminary Procedures

Before you can configure the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter), you must configure the Genesys Framework and Genesys Multimedia applications. The required Genesys Framework applications are:

- DB Server.
- Configuration Server.
- Stat Server.
- Configuration Manager.
- License Manager.
- Universal Routing Server.
- Message Server Object.

The required Genesys Multimedia application(s) depend on the type of interaction(s) that the Adapter will process. The possible types of interactions include:

- Voice interactions
- E-mail interactions
- Voice and e-mail interactions.

The following subsections describe the Genesys Multimedia applications that are required for each of these interaction types.

Voice Interactions

If you are using the Adapter for voice interactions, you must configure the following applications with connections:

- T-Server, configured for a voice environment (see your *T-Server Deployment Guide* for details).
- The Adapter, with connections to T-Server and Stat Server.

E-Mail Interactions

If you are using the Adapter for e-mail interactions, you must configure the following applications with connections:

- Genesys Multimedia configured for an e-mail environment (see the *Genesys Multimedia Deployment Guide* for details)
- The Adapter, with connections to:
  - Universal Contact Server
  - Genesys Multimedia Interaction Server
  - Stat Server

Voice and E-Mail Interactions

If you are using the Adapter for both voice and e-mail interactions, you must follow the preceding guidelines for both voice and e-mail.

SAP Business Warehouse (BW) Analytics Support

The G*plus* Adapter for SAP ICI Multi-Channel enables the G*plus* Adapter for SAP Analytics to collect the agent's statistical information and send it to the SAP Business Warehouse.

Note: Full reporting is supported for voice interactions only.

In order to support SAP statistics, the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) maintains a special attached data pair, `in-call/interaction`, with a predefined key (`gplus-analytics-id`). The value is set to the interaction/call ID that is reported to the SAP Customer Relationship Management system.

The following rules are applied:

1. The Adapter does not change the value of the interaction/call ID if it is already set.
2. The Adapter generates the interaction ID before making the `call/creating` interaction, and sets the key-value pair in the `makeCall/createInteraction` request.
3. During the `InitTransfer`, the `InitConference` requests that the Adapter assigns the interaction ID to the child call.
4. The Adapter sets the interaction ID for any call/interaction that does not have this pair in its attached data.

Configuring Genesys Framework Objects

Before you can configure the Adapter, you must configure the following Genesys Framework objects:

- `Host` object(s)—The server(s) on which the Genesys Framework objects and the Adapter will be installed.
- Local Control Agent (LCA)—The object that enables the Adapter to be managed remotely by the Solution Control Interface (SCI).
- Message Server—The object used to manage message logs in the Message Server database.
- Stat Server—The object that enables agent login control (see "Configuring Agent Login Control" on page 89).
- T-Server—The object that manages messaging from the switch.
- Universal Routing Server— The object that executes routing strategies.

Creating the Host Object

You must creat the `Host` object before the Adapter `Application` object. If the host has already been configured on your Configuration Server, skip this section and proceed to "Configuring the Local Control Agent".

To create the `Host` object:

1. Open Genesys Configuration Manager, right-click the `Environment` folder, and select the `Hosts` folder.
2. Right-click the `Hosts` folder and select `New` > `Host`.

   The `Host Properties` dialog box appears.
3. On the `General` tab (see Figure 2), configure the following properties:
   - `Name`: Enter a name for the Host object.
   - `IP Address`: Enter the IP address of the Host object.
   - `OS Type`: Enter the operating system.
   - `Version`: Enter the version of the operating system software.

- `LCA Port`: Enter the port that serves the LCA application.

> `Note:` Set `LCA Port` to `0` if you are not using the LCA with the Adapter.

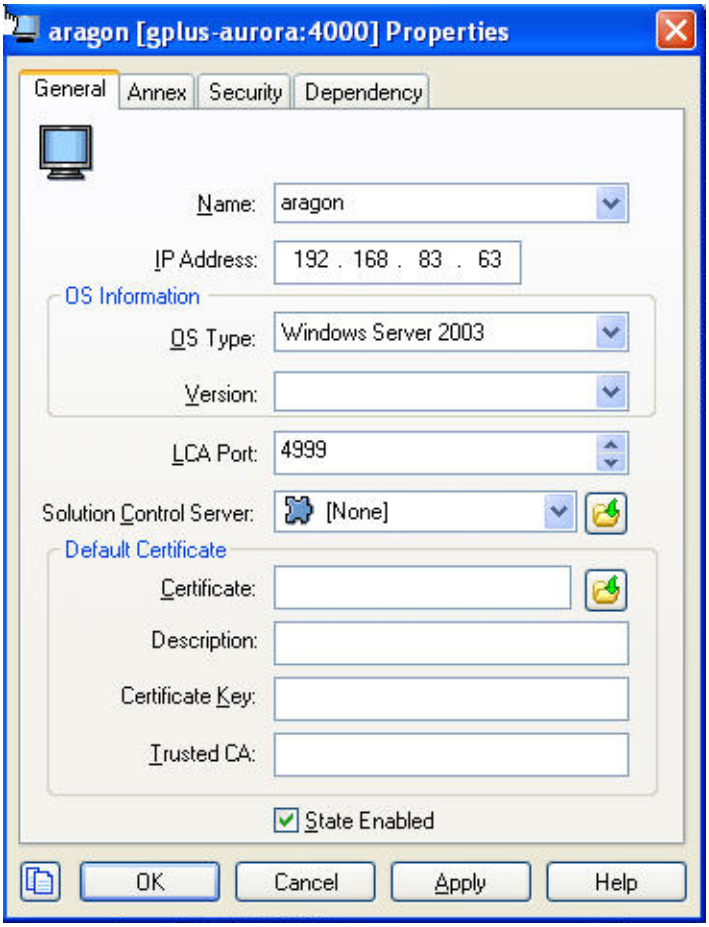

Figure 2: Host Properties Dialog Box—General Tab

4. Click `OK`.

Configuration of the `Host` object is now complete. Next, configure the Local Control Agent.

Configuring the Local Control Agent

The Local Control Agent (LCA) enables the Adapter to be started and stopped using the Solution Control Interface (SCI).

Note: Install the LCA component on the same server as the Adapter. For details, see the *Genesys Framework 7.5.1 Deployment Guide*.

When the Adapter has been stopped as a result of a request from the LCA:

- All active users become unavailable and new requests or events are not processed.
- All user communication items are stopped between the Adapter and SAP.
- The Adapter shuts down.

Configuration of the LCA is now complete. Next, configure the Message Server.

Configuring Message Server

The Adapter supports logging through the Message Server component. To configure the Message Server for logging:

1. Set the `msgServerVerbose` option as described on page 59.
2. Add Message Server to the Adapter `Application` object's connections, as described page 33.

Note: If Agent Interaction Layer (AIL) logs are required, set the `msgServerAILIncluded` option as described on page 59.

Configuration of the Message Server is now complete. You can now configure the Adapter.

Configuring Stat Server

The Adapter supports agent log in control. To configure the agent log in control:

1. Set the `allowWorkOnLoggedInPlace` option as described on page 89.
2. Add Stat Server to the Adapter `Application` object's connections, as described on page 33.

To configure the statistics that are processed by the Adapter and reported for the queues, see Appendix C on page 133.

Configuring T-Server

Note the following when you configure T-Server(s), for use with the Adapter:

- If you have more than one switch configured in a Tenant, make sure that the DNs associated with the switches and their corresponding T-Servers have unique names. If the names are not unique, critical problems might result.
- For the Alcatel 4400 switch, if the place configuration in the Configuration Server includes both extension and position DNs, the Adapter will send telephony events twice, which can cause unexpected problems. To avoid this, the `Place` in the Configuration Server should have only extension DNs, and the Adapter's `a4400-custom-substitute mode` option should be set to `false`. This will cause the Adapter to emulate the T-Server `agent-substitute = true` mode, and will override the T-Server `agent-substitute` option.
- On the Tenovis Integral 33 switch, the value of the T-Server `agent-substitute` option must be set to `true`.

Configuring the Adapter Application

You must configure the objects described in "Configuring Genesys Framework Objects" on page 25 before you can configure the Adapter.

- If you have already configured these objects, proceed to "Importing the Application Template".
- If you have not configured these objects, do so now. Then, proceed to "Importing the Application Template".

Importing the Application Template

Before you can configure the Adapter, you must import the `Genesys Generic Server` Application Template into Configuration Manager.

To import the Application Template:

1. Open Configuration Manager and select the `Environment` folder.
2. Right-click the `Application Templates` folder, and select `Import Application Template`.

   The `Open` dialog box appears.
3. Select the `Genesys Generic Server` Application Template. The name of the file is `Gplus_Adapter_for_SAP_ICI_MultiChannel_751.apd`.
4. Click `Open`.

   The `Application Properties` dialog box appears.
5. Click `OK` to accept the default values.

You have now imported the Application Template object into Configuration Manager. Next, create the Application object for the Adapter.

Creating the Application Object

After you have imported the Application Template, you must create and configure an Application object.

To create the Adapter's Application object:

1. In Configuration Manager, select the Environment folder.
2. Right-click the Applications folder, and select New > Application.

   A Browse dialog box appears.
3. Select the Application Template that you just imported (Gplus_Adapter_for_SAP_ICI_MultiChannel_751.apd).
4. Click OK.

   The Application Properties dialog box appears.

You have now created the Adapter's Application object. Next, configure its properties.

Configuring the Application Object

In the Properties dialog box, you will configure the following tabs for the Adapter's Application object: General, Tenants, Server Info, Start Info, Connections, and Options. The following subsections describe the tabs in the order in which they appear. The first tab is the General tab.

Note: The Annex tab does not require configuration.

General Tab

1. In the Name box, enter a name for the Adapter Application object. For example, in Figure 3, the name of the Adapter object is ICI_MultiChannel_751.

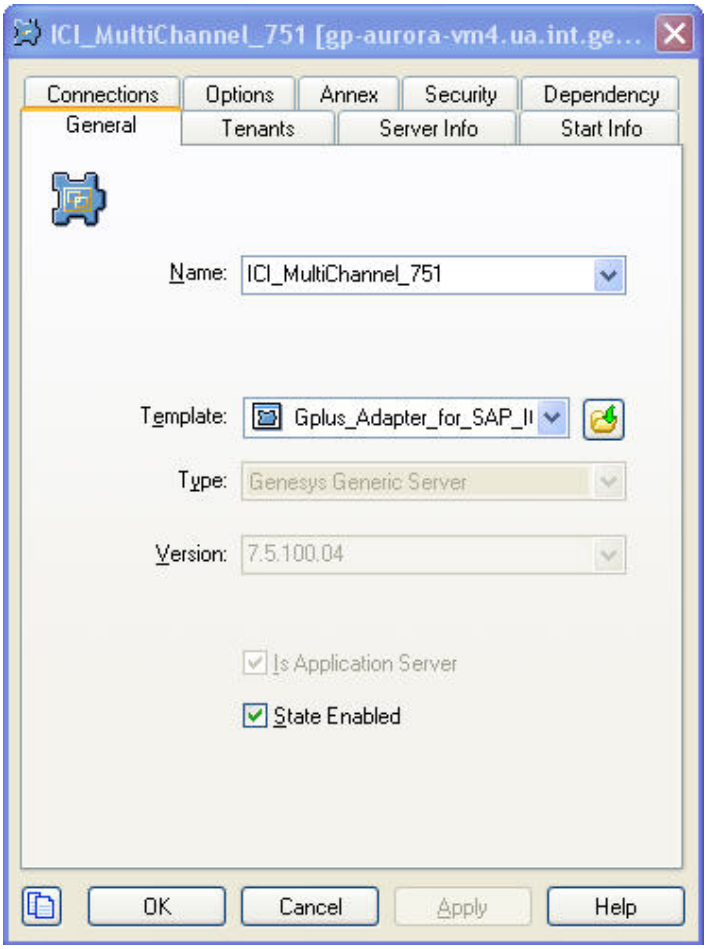

Figure 3: Adapter Application Properties Dialog Box—General Tab

2. Select the `State Enabled` check box (see Figure 3).
3. Click the `Tenants` tab.

Tenants Tab

On the `Tenants` tab, specify the tenant that you are using, as follows:

1. Click `Add`.
2. Select the Tenant that has the switch, places, agents, and agent groups configured (see Figure 4).

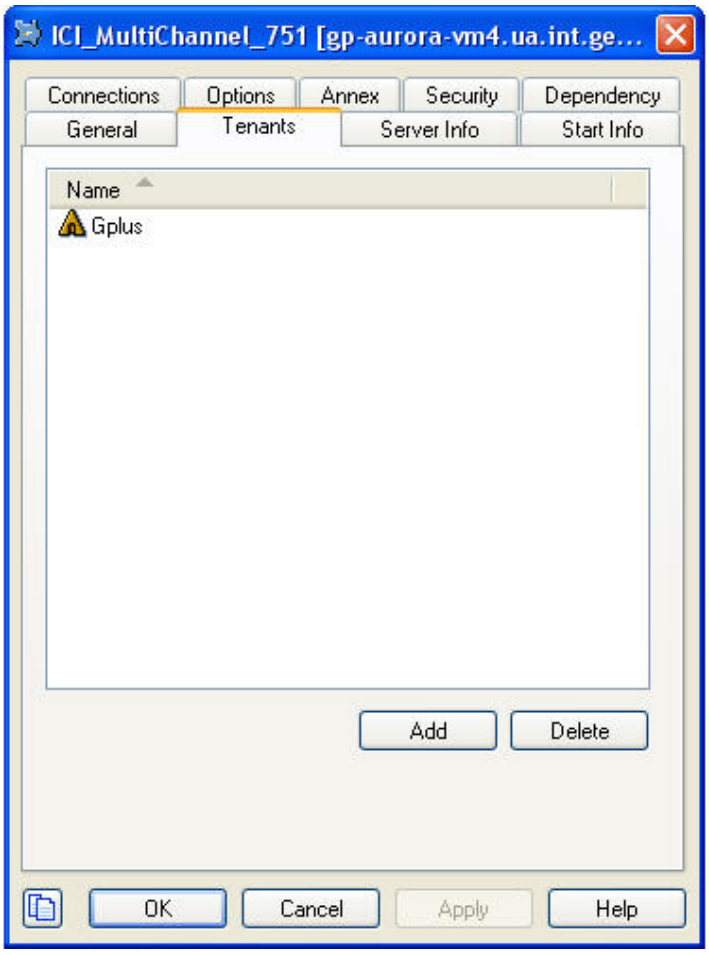

Figure 4: Adapter Application Properties Dialog Box — Tenants Tab

Warning!	You must specify the correct tenant for the Adapter `Application` object if you are using a multi-tenant Configuration Server.

3. Click the `Server Info` tab.

Server Info Tab

The properties on the `Server Info` tab are used by the local control agent (LCA) application. They enable automatic shut down of the Adapter. Configure the properties as follows:

1. In the `Host` box, select the host on which you will install the Adapter, and then click `OK`.
2. In the `Ports` box, you can accept the default value of `7000`, or enter any valid communication port number from the host by using the `Edit Port` button.

3. For the `Reconnect Timeout` box, accept the default value.
4. For the `Backup Server` box, accept the default value (of `[None]`).
5. For the `Redundancy Type` box, accept the default value of (`Not Specified`) (see Figure 5).

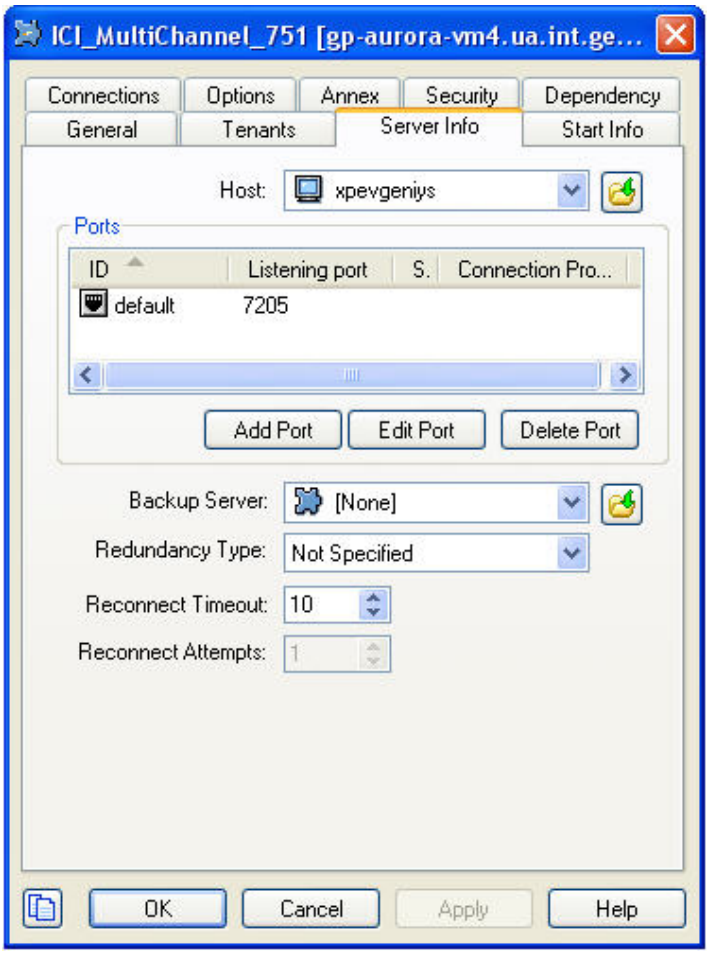

Figure 5: Adapter Application Properties Dialog Box — Server Info Tab

6. Click the `Start Info` tab.

Start Info Tab

You must set values for the `Working Directory`, `Command Line`, and `Command Line Arguments` boxes on the `Start Info` tab, even though the data will be overwritten when the Adapter is installed.

1. In the `Working Directory` box, enter a period (.).
2. In the `Command Line` box, enter a period (.).
3. (Optional) In the `Command Line Arguments` box, enter a period (.). The parameters are setup during installation.

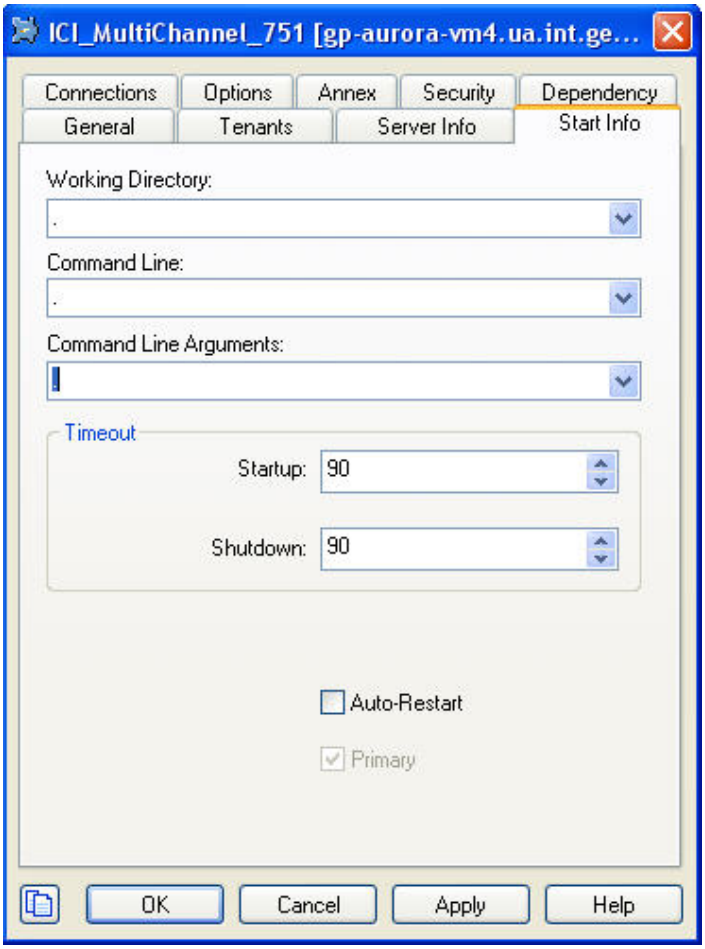

Figure 6: Adapter Application Properties Dialog Box—Start Info Tab

4. Leave the default values for the remaining boxes.
5. Click the `Connections` tab.

Connections Tab

On the `Connections` tab, add the following connection(s):

- For a voice-only configuration, add a T-Server connection.
- For a voice and e-mail configuration, add T-Server, Universal Contact Server, and Interaction Server connections.
- If you want the Adapter to access the Agent Place login status, add Stat Server connection.
- If you want the Adapter to write log into the network database, add Message Server connection.

To create connections:

1. Add a connection to the server(s). See Figure 7 as an example. The application in Figure 7 has connections to the following servers:

- Stat Server
- T-Server.

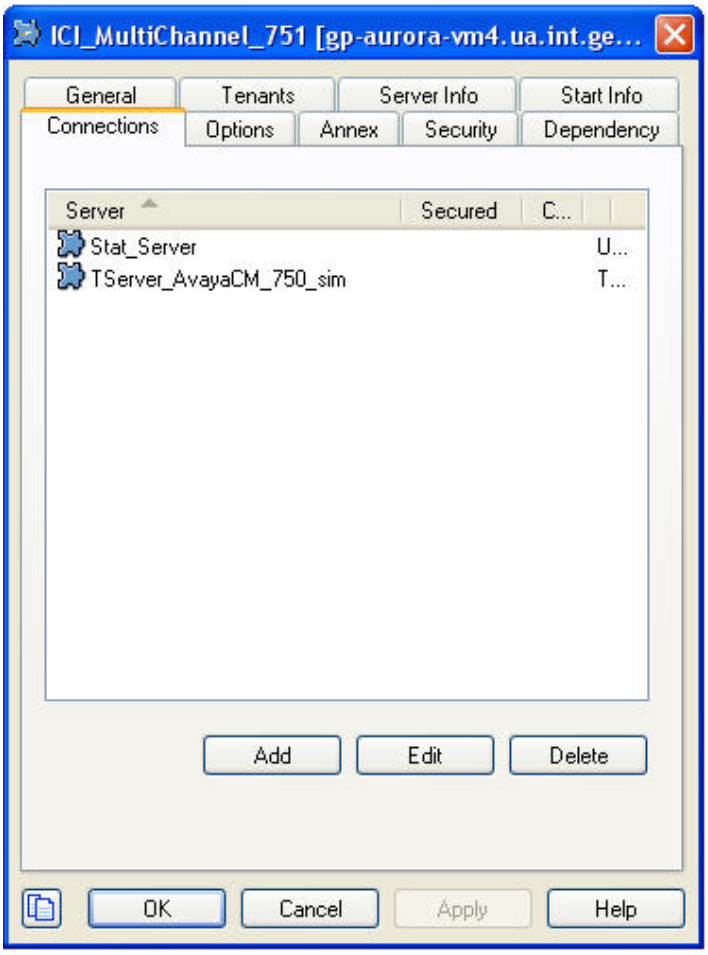

Figure 7: Adapter Application Properties Dialog Box—Connections Tab

2. (Optional) Add an Advanced Disconnect Detection Protocol (ADDP) connection to the Configuration Server to enable connection monitoring between the Adapter and the Configuration Server.
3. To enable the Adapter to use Stat Server data regarding login status on the agent Place, see the description of the `allowWorkOnLoggedInPlace` option on page 43.
4. (Optional) Adjust the ADDP connection between the Adapter and Genesys servers. This will improve the disconnection detection capability.
5. Click the `Options` tab.

Options Tab

The `Options` tab has 12 sections (see Figure 8):

- `call-number-translator`

- dn-at-switch
- GPMC_ActionMedia

> **Note:** The GPMC_ActionMedia section is available and needed only when using the Adapter with the G*plus* Media Routing for SAP component.

- GPMC_Common
- GPMC_Email
- GPMC_Proxy
- GPMC_SSL
- license
- log
- multimedia
- settings
- voice

Note: Sections are either AIL-specific or Adapter-specific. Sections that are prefixed with GPMC_ configure Adapter options. Sections *without* the GPMC_ prefix (except the call-number-translator section) configure the *required* AIL options. For details about *optional* AIL options, see the *Agent Interaction Layer Deployment Guide*.

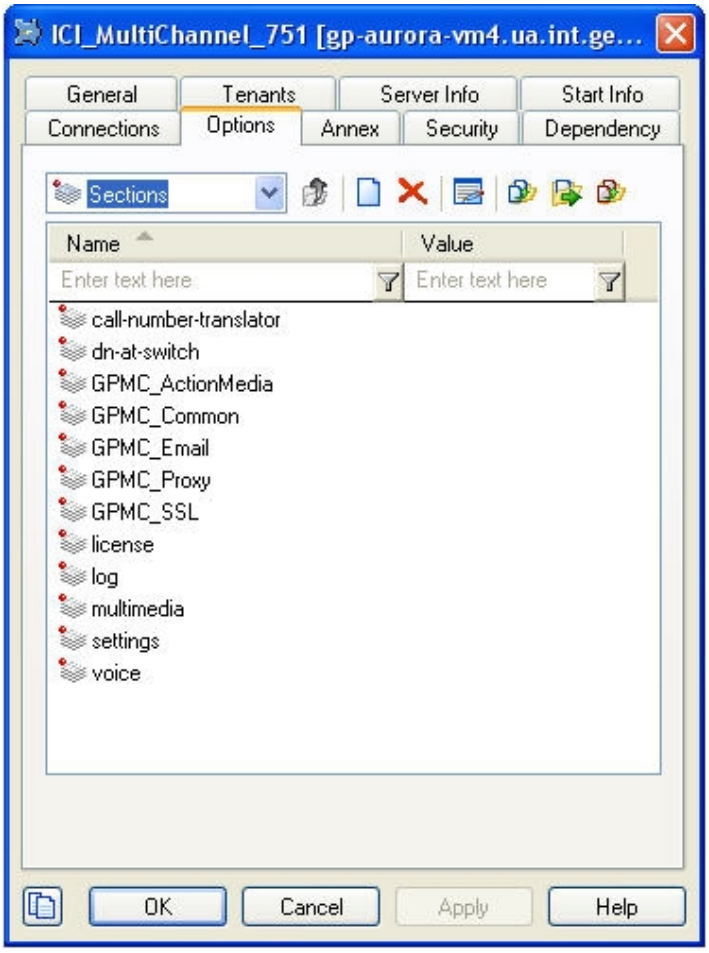

Figure 8: Adapter Application Properties Dialog Box—Options Tab

To configure the options for each section:

1. Double-click the section's name.
2. Enter the option values as described in Table 1.

Table 1: Adapter Configuration Options

Option Name	Values	Description	Must Restart	Must Set
call-number-translator Section Controls settings for phone number dialing codes.				
Notes: SAP has its own method for number translation and optimization. Usually, you will not want to use both the SAP and G*plus* Adapter implementations of number- optimization together, but you may do so if the need arises. The Adapter and SAP use similar settings for number translation (such as country- code, extension length, and so on). Genesys recommends keeping consistency between such settings in both SAP and the Adapter.				
inbound-prefix	Default Value: `<empty>` Valid Values: `<any string>`	Specifies the prefix that the Adapter removes from ANI numbers provided by T-Server, before sending the information to the SAP system. This prefix may be used when there is a discrepancy between the number saved and used for searching in the SAP system, and the number given by the telephony system. (for example, `00331234567890 <-> 1234567890`) If no value is present or set, no action is taken on the incoming number.	No	No
outbound-prefix	Default Value: `<empty>` Valid Values: `<any string>`	Specifies the prefix that the Adapter adds on to numbers provided by SAPphone for outbound dialing, before sending the information to the T-Server.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
outbound-prefix (continued)		This prefix may be used when there is a discrepancy between the number saved and used in the SAP system and the number the telephony system requires. (for example, `1234567890 <-> 00331234567890`) If no value is present or set, no action is taken on the number to dial.		
inbound-optimization	Default Value: `disabled` Valid Values: `disabled`, `extension`, `national`, `canonical`	Specifies the type of Inbound call number optimization that the Adapter performs: • if the value is `disabled`, no optimization is performed. • if the value is `extension`, only the extension number is passed to the SAP system (according to the value of the `extension-length` option). • if the value is `national`, ANI passed to the SAP system will not contain an international prefix and country- code if they are the same as those defined in the Adapter options. • if the value is `canonical`, ANI will be presented as `+{country-code}{area-code}{base-number}XYZ`, where `XYZ` is the extension number.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
inbound-optimization (continued)		**Note:** The optimization is processed before outbound/inbound prefix treatment. Usually, inbound prefix treatment should not be set if incoming call optimization is enabled.		
outbound-optimization	Default Value: `disabled` Valid Values: `disabled`, `enabled`	Specifies the type of outbound call number optimization that the Adapter performs: • If the value is `disabled`, no optimization is performed. • If the value is `enabled`, the country-code and/or local-area-code will be removed from the number to dial if they are the same as those defined in the Adapter's options. The dialing number will be optimized according to the following rules: a. For `idd country-code area-code base-number xyz` numbers, `ndd area-code base-number xyz` will be dialed (if the number's area code is not the same as the Adapter's area code). b. For `idd country-code area-code base-number xyz` numbers, `base-number xyz` will be dialed (if the number's area code is the same as the Adapter's area code).	No No	No No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
outbound-optimization (continued)		c. For `ndd area-code base-number xyz` numbers, `base-number xyz` will be dialed. d. For `area-code base-number xyz` numbers, `base-number xyz` will be dialed. **Note:** In order for optimization to occur, the length of extension `(xyz)` in the dialing number should be the same as the length defined in the `extension-length` Adapter option.		
country-code	Default Value: `1` Valid Values: `<any string of digits>, <empty>`	Corresponds to the `Country` attribute of the SAP site definition, (for example, transaction `SPHB`).	No	No
outbound-remove	Default Value: `( )-` Valid Values: `<any character string>, <empty>`	Specifies the characters to be removed from the dialed string before any other processing activity.	No	No
outbound-idd-substitute	Default Value: `true` Valid Values: `true, false`	If the value is `true`, the Adapter replaces the leading plus sign `(+)` with the value of `idd`.	No	No
idd	Default Value: `011` Valid Values: `<any string of digits>, <empty>`	Specifies the international direct dialing (IDD) prefix for this country, (for example, `011` for the United States, `8-10` for Russia, and so on.)	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
area-code	Default Value: `415` Valid Values: `<any string of digits>`, `<empty>`	Specifies the area code.	No	No
ndd	Default Value: `1` Valid Values: `<any string of digits>`, `<empty>`	Specifies the national direct dialing (NDD) prefix, (for example, `1` for the United States, `8` for Russia, and so on).	No	No
base-number	Default Value: `913` Valid Values: `<any string of digits>`, `<empty>`	Specifies the common number before an extension number.	No	No
extension-length	Default Value: `4` Valid Values: `<any positive integer>`	Specifies the number of digits in the extension number. This option also corresponds to the extension length in the SAP site definition, (for example, transaction `SPHB`).	No	No
dn-at-switch Section Configures the Adapter to work in a multiple switch environment.				
enabled	Default Value: `false` Valid Value: `true`, `false`	Used when there are several DNs with identical IDs declared on the different switches in the same configuration. For example, `DN 103's ID` on the switch `Xswitch` becomes `103@Xswitch`. **Warning!** You must not edit this option during runtime. Editing this option leads to a malfunction with the voice channel, and you will need to restart the Adapter.	No	Yes

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
GPMC_ActionMedia Section Configures the Adapter for media routing functionality.				
inbox	Default Value: `<action>` Valid Values: `<Any String>`	This option specifies the name of the `ActionItem` container.	No	No
agent	Default Value: `WF-BATCH` Valid Values: `<any string>`	Specifies the name of the server agent from which the server request for queuing `ActionItem` interactions is sent. The name of the server agent must not coincide with any agent name in the Configuration Database. **Note:** The agent with the corresponding name must exist in the Configuration Manager.	Yes	No
mediaType	Default Value: `ActionItem` Valid Values: `<a valid media type configured in ConfigurationServer>`	Specifies the media type for the Open Media interactions that the Adapter works with. The media type must be the primary setting on the Configuration Server.	Yes	No
queue	Default Value: `Action queue` Valid Values: `<any string>`	Specifies the name of the queue where the `ActionItem` are submitted as a result of the queuing requests. **Note:** The queue must exist in the Multimedia solution.	Yes	No
submitters	Default Value: `10` Valid Values: `<any positive integer>`	Specifies the number of threads that process server requests.	Yes	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
available	Default Value: `0` Valid Values: `0,1,2`	Specifies whether an agent is able to work with the `ActionItem` channel. See "Configuring Agent Channels" on page 99. • If the value is 0, the ActionItem channel is turned off (agent settings are discarded). • If the value is `1`, the ActionItem channel is turned off for all agents, unless it is explicitly turned on for a particular agent. • If the value is `2`, the ActionItem channel is turned on for all agents, unless it is explicitly turned off for a particular agent.	Yes	No
GPMC_Common Section Configures miscellaneous Adapter behavior and functionality.				
allowWorkOnLoggedInPlace	Default Value: `0` Valid Values: `0`, `1`	Specifies whether an agents can log in to a place that has logged-in DNs. See "Configuring Agent Login Control". • If the value is `0` a login on the place with logged-in DNs is not allowed, and an exception will be thrown on the `getAttributes` response.	Yes	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
allowWorkOnLoggedInPlace (continued)		• If the value is `1`, a login on the place with logged-in DNs is allowed. **Note:** Genesys recommends that you accept the default value (`0`) for this option. Value `1` is for backward compatibility.		
automaticWrapUpMode	Default Value: `0` Valid Values: `0`, `1`	Specifies the Adapter's wrap-up mode. • If the value is `0`, the wrap-up mode must be requested. • If the value is `1`, the wrap-up mode is automatic. **Note:** The value `1` is for backward compatibility only, and it will cause problems with free-seating functionality. For more information about this mode, see "Wrap-Up Modes" on page 97.	No	No
emptyInteractionLists	Default Value:`1` Valid Values: `0`, `1`	Controls the execution of the `IciFolder_getMessages` and `IciPhoneLine_getCalls` commands. Controlling the execution flow enables the following: • Optimizes the Adapter's performance. • Prevents big response messages during the agent login.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
emptyInteractionLists (continued)		**Note**: If the value is `0`, the Adapter returns a list of messages/calls from the container that holds the `IciFolder_getMessages` and `IciPhoneLine_getCalls` responses. If the value is `1`, the Adapter returns an empty response on `IciFolder_getMessages` and `IciPhoneLine_getCalls`.		
eventProcessingTime	Default Value: `600000` Valid Values: <any `positive integer greater than or equal to 10000`>	Specifies the amount of time (in milliseconds) to wait for the expected status on an interaction.	No	No
processingThreads	Default Value: `30` Valid Values: <any `positive integer from 1 to 5000`>	Specifies the number of threads that will process an agent's requests.	Yes	No
rerouteDirectCallAddress	Default Value: No default value Valid Values: `<string with the name of any valid DN on the Adapter connections' switch>`	Specifies the queue for redirecting an agent's direct calls, in the event of call rejection. **Note:** SAP IC WebClient enables agents to reject calls. However, your switch might not support this functionality. Be sure to assess your T-Server's capabilities before attempting to use this feature.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
rerouteQueueCallAddress	Default Value: No default value Valid Values: `<string with the name of any valid DN on the Adapter connections' switch>`	Specifies the DN for redirecting an agent's calls that arrive from the queue, in the event of call rejection. **Note:** SAP IC WebClient enables agents to reject calls. However, your switch might not support this functionality. Be sure to assess your T-Server's capabilities before attempting to use this feature.	No	No
sendAttempts	Default Value: `3` Valid Values: `<any positive integer>`	Specifies the number of times to try to send an event to a user. If this number is exceeded, the user is considered unreachable.	No	No
subscriptionTime	Default Value: `1800000` Valid Values: `<any positive integer greater than or equal to 100000>`	Specifies the amount of time (in milliseconds) that the agent's session will be kept open if it is not used. After the time expires, the `IciEvent_subscriptionEnded` event will be triggered, and the agent's session will be closed. **Notes:** • The Adapter closes an inactive session within one to two inactivity periods. • Genesys recommends that you set this option to a value greater than or equal to `1800000`.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
unsubscribeOnEventFault	Default Value: `0` Valid Values: `0`, `1`	Configures session behavior. This option specifies whether the session is closed when SAP returns the `SOAP-Fault` response for the Adapter event. • If the value is `0`, the session will not be closed if SAP returns the `SOAP-Fault` response for the Adapter event. • If the value is `1`, the session will be closed if SAP returns the `SOAP-Fault` response for the Adapter event.	No	No
workcenterIdType	Default Value: `0` Valid Values: `0, 1, 2, 3, 100, any positive integer greater than 100`	Specifies the type of the supported workcenter detection method to be used for seating (logon to SAP). See “Configuring Agent Seating” on page 87. • If the value is `0`, there is no free seating. Therefore, the agent’s default `Place` is considered the only workcenter. • If the value is `1`, the Workcenter ID is the fully qualified domain name — for example, `raptor.pal.sap.corp` • If the value is `2`, the Workcenter ID is the hostname—for example, `raptor`. • If the value is `3`, the Workcenter ID is the IP address—for example, `12.14.48.23`.	Yes	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
workcenterIdType (continued)		• If the value is `100`, the agent enters the Workcenter ID manually. • If the value is `>100`, the Workcenter ID is unspecified.		
wrapUpOnCall	Default Value: `0` Valid Values: `0, 1`	Specifies when the workmode on the `WrapUp` request is changed. • If the value is `0`, the workmode will be changed to `NotReady WrapUp` immediately after the call has gone to the `Ended` state. • If the value is `1`, the workmode will immediately be changed to `NotReady WrapUp` during `WrapUp` request processing.	No	No
genesysCADApplicationName	Default Value: `GENESYS-CAD` Valid Values: `any non-empty string`	Specifies the application `ID` that is used to store all the Genesys Call-Attached Data (CAD) into XML that is sent to SAP. For more details see, Appendix A on page 121.	No	No
forceChangeWorkmodeRequest	Default Value: `0` Valid Values: `0,1`	Controls the processing of the `setCurrentWorkmode` request when the requested workmode is equal to the current workmode on the DN. If the value is `1`, the request is sent to the TServer and the event notification is sent to the SAP side after the corresponding event is sent from TServer (or `timeout`).	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
forceChangeWorkmodeRequest (continued)		If the value is `0`, the event notification is sent to the SAP side immediately. **Note:** This option applies to voice media *only.*		
processWrapUpAsACW	Default Value: `1` Valid Values: `0,1`	Specifies the value that the `AgentWorkMode` parameter passes to T-Server for a `NotReady` request. **Note:** This option applies to `ICIUser_setCurrentWorkmode (WrapUp(4))` requests sent from SAP to Genesys *only* .	No	No
keepAliveTimeout	Default Value: `0` Valid Values: `0 or any positive interger value`	Specifies the number of seconds that the Adapter will wait for a subsequent request before closing the connection. The timeout value specified by this option is applied once a request has been received. See Chapter 4 on page 68.	Yes	No
keepAliveTimeout (continued)		• If the value is `0`, there is no timeout. Therefore, the connection will not be closed by a timeout. The value of the timeout can be overridden for a particular connection by using the `Keep-Alive HTTP` header directive with a parameter timeout.		
allowDTMF	Default Value: `1` Valid Values: `0, 1`	Enables `send DTMF` capability for phone calls. This option is necessary in order to support older versions of SAP WC (before 5.1), which do not have the `send DTMF` capability.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
allowDTMF (continued)		• If the value is `0`, this option hides the `send DTMF` capability. • If the value is `1`, this option shows the `send DTMF` capability.		
unsubscribeOnHttpFault	Default Value: `0` Valid Values: `0, 1, 2`	Configures session behavior. This option determines whether the session or subscription is closed when SAP returns a `http-fault` response (all HTTP codes except `200`, `201`, and `202`) from Adapter events. The `http-fault` response from SAP for Adapter events generally means that the agent session/resource subscription was closed on the SAP side without notifying the Adapter about it. • If the value is `0`, this option specifies that the Adapter will retry sending the event. The number of tries is configured by the `sendAttempts` option. • If the value is `1`, this option specifies that the subscription for a particular resource (that is, the resource for the subscription that it was issued for) will be unsubscribed.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
unsubscribeOnHttpFault (continued)		• If the value is `2`, this option specifies that the agent session will be closed. All subscriptions for this particular agent will be unsubscribed.		
wrapUpProcessingStyle	Default Value: `1` Valid Values: `0`, `1`, `2`	Specifies the processing of `WrapUp`. This mainly impacts the restoring of the `before-wrapUp` workmode. • If the value is `0`, this option specifies that any workmode change (for example, changes initiated by the switch, desktop tool, or WebClient) will be processed by the `before-wrapUp` workmode restoring. • If the value is `1`, this option specifies that only workmodes changed directly by the WebClient (`setCurrentWorkmode` command) will be restored. This is the old default behavior. • If the value is `2`, this option specifies no `WrapUp` actions initiated by the Adapter, no `wrapUpRequired` capability for communication items, and no `before-wrapUp` workmode restoring.	Yes	No
allowBlendedWorkmodes	Default Value: `1` Valid Values: `0`, `1`	Enables or disables using blended workmodes. • If the value is `0`, this option specifies that blended workmodes are disabled.	Yes	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
allowBlendedWorkmodes (continued)		• If the value is `1`, this option specifies that blended workmodes are enabled. For more details see, Chapter 6 on page 91.		
wrapUpForNonAnsweredCall	Default Value: `1` Valid Values: `0,1`	Specifies whether it is possible to request the `wrap-up` mode for unanswered calls (calls that were finished, without being connected, in the `Alerting` or `Dialing` states). • If the value is `0`, the `wrap-up` mode is not allowed for unanswered calls • If the value is `1`, the `wrap-up` mode is allowed for unanswered calls.	No	No
GPMC_Email Section Configures the Adapter for e-mail functionality.				
agentEmailDomain	Default Value: `genesyslab.com` Valid Values: `<any valid e-mail server domain>`	Specifies the domain that is appended to the user ID and sent to SAP. For example, if the user ID is `Agent_Smith`, and the option is `matrix.com`, the e-mail address that is sent to SAP is `Agent_Smith@matrix.com`.	Yes	No
draftQueue	Default Value: `Draft queue` Valid Values: `<any string>`	Specifies the name of the queue where all created draft e-mails will be stored. **Note:** The `draftQueue` name must exist in the Multimedia solution.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
draftWorkbin	Default Value: `Draft` Valid Values: `<any string>`	Specifies the workbin that is configured to obtain interactions from the `draftQueue`. **Note:** The `draftWorkbin` name must exist in the Multimedia solution.	No	No
fakeEmailBox	Default Value: No default value Valid Values: `<any valid e-mail address>`	Specifies the fake e-mail address that AIL uses for sending e-mail messages.	Yes	Yes
outboundQueue	Default Value: `Outbound queue` Valid Values: `<any string>`	Specifies the name of the queue that e-mail is sent through. **Note:** The `outboundQueue` name must exist in the Multimedia solution.	No	No
sharedEmailBox	Default Value: No default value Valid Values: `<a comma-separated list of valid e-mail addresses>`	Specifies a list of e-mail addresses that are to be included in the agent's current queues.	Yes	No
showContentInEvent	Default Value: `0` Valid Values: `0`, `1`	Specifies whether subject and message text is shown in events. • If the value is `0`, the subject and message are not shown. • If the value is `1`, the subject and message are shown.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
substituteAgentAddress	Default Value: `1` Valid Values: `0`, `1`	Controls what is shown in the `From` and `Reply-To` fields of an e-mail from another agent. • If the value is `0`, the `From` and `Reply-To` fields have the original values. • If the value is `1`, the `From` and `Reply-To` fields are replaced with agent addresses.	No	No
transferEmailBox	Default Value: No default value Valid Values: `<any valid e-mail address>`	Specifies the external e-mail address that will be used for sending e-mail messages from one agent to another. **Notes:** • The Genesys E-mail Server must be configured to receive messages from this e-mail address (in addition to standard e-mail addresses used for receiving messages from customers). • This e-mail address must be used in the strategy described in "Configuring E-Mail Routing Strategies" on page 106. • To ensure that the Multimedia E-mail Server includes the transfer address from the `senders` list, the `pop-client` section must have an `address` value different from the address in the `transferEmailBox` option. See, Chapter 7 on page 103 for a description.	Yes	Yes

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
available	Default Value: `0` Valid Values: `0, 1, 2`	Controls whether the agent is able to work with the e-mail channel. See “Configuring Agent Channels” on page 99.	Yes	No
GPMC_Proxy Section Configures the Adapter for an HTTP/HTTPS proxy.				
host	Default Value: No default value Valid Values: `<any valid host name or IP address>`	Specifies the proxy server to connect to. If the value is left blank, no connection to the proxy will be established.	Yes	No
password	Default value: No default value Valid Value: `<password>`	Specifies the password if the proxy server requires authentication.	Yes	No
port	Default Value: `0` Valid Values: `<any positive integer from 0 to- 9999>`	Specifies the proxy server port to connect to. If the value is less than or equal to `0`, no connection to the proxy will be established.	Yes	No
username	Default value: No default value Valid Value: `<username>`	Specifies the user name if the proxy server requires authentication.	Yes	No
GPMC_SSL Section Configures the Adapter for an HTTPS connection.				
keyStore	Default Value: No default value Valid Values: `<valid path to the file>`	Specifies the file name of the `keystore` with a private key and a matching public key. The certificates are used to authenticate to a remote socket peer.	Yes	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
keyStore (continued)		**Note:** Consult the Java 2 Software Development Kit (SDK) documentation for the default `keyStore` location if the `keyStore` option is not specified, if it is empty, or if the specified `keystore` does not exist.		
keyStorePassword	Default Value: No default value Valid Values: `<valid keystore password>`	Specifies the password to the `keystore` with the Adapter's public/private key pair.	Yes	No
sslEnabled	Default Value: `0` Value Values: `0, 1`	Controls whether the communication between the Adapter and clients is secure. • If the value is `0`, the communication is not secure. • If the value is `1`, the communication is secure.	Yes	No
sslProtocol	Default Value: `SSLv3` Valid Values: `<valid SSL protocol name>`	Specifies the name of the requested Secure Socket layer (SSL) protocol.	Yes	No
trustStore	Default Value: No default value Valid Values: `<valid path to the file>`	Specifies the file name of the `keystore` with certificates that should be used for authenticating to a remote socket peer when: • Client authentication is needed. • The Adapter stands as a client for SAP (events sending).	Yes	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
trustStore (continued)		**Note :** Consult the Java 2 SDK documentation for the default `keystore` location if the `trustStore` option is not specified, if it is empty, or if the specified `keystore` does not exist.		
trustStorePassword	Default Value: No default value Valid Values: `<any valid truststore password>`	Specifies the password to the `keystore` with certificates for authenticating a remote socket peer.	Yes	No
license Section Configures the Genesys License Server parameters.				
attempts-interval	Default Value: `5` Valid Values: `<any positive integer>`	Specifies the time interval (in seconds) between two successive connection attempts.	No	No
attempts-max	Default Value: `10` Valid Values: `<any positive integer>`	Specifies the maximum number of successive connection attempts to the License Server, before an exception is triggered.	No	No
license-file	Default Value: `license.dat` Valid Value: `port@hostname1, port@hostname2`	This option holds the addresses of the `Flexlm` license servers.	Yes	Yes
log Section Configures the Adapter traces.				
console	Default Value: `info` Valid Values: `false, debug, info, warn, error, fatal`	Specifies the level and size of traces to display on the standard output.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
file	Default Value: `info,Ail.log, 10MB, 20, zip` Valid Format: `<level>, <filename>, <max filesize>, <max file number>, [zip]` Valid Values: • `<level>`: false, debug, info, warn, error, fatal • `<file name>`: Correct path to a file name • `<max file size>`: Maximum file size, in MB • `<max file number>`: Number of files for the rolling logs • `[, zip]`: To get compressed log files	Specifies what is written to the log file. This option determines the detail of the traces that you have selected.	No	No
filter	Default Value: `info, 5000` Valid Format: `<level>,<number>` Valid Values: • `<level>: false, debug, info, warn, error, fatal`	Specifies the level of trace to be buffered for internal purposes.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
filter (continued)	• <number>: Any postitive interger from <positive integer from `200` to- `10,000`>			
msgServerAILIncluded	Default Value: `0` Valid Values: `0, 1`	Specifies the application scope for writing in the Message Server log. • If the value is `1`, messages from both AIL and the Adapter will be logged to the Message Server. • If the value is `0`, only messages from the Adapter will be logged to the Message Server.	No	No
msgServerVerbose	Default Value: No default value Valid Values: `all, debug, trace, interaction, standard, none`	Specifies the verbose level for writing in the Message Server log. **Note:** For details, see the "Log Options" section in the *Framework 7 Configuration Options Reference Manual*.	No	No
CADFilter	Default Value: No default value Valid values: `<a comma-separated list of key names from CAD>`	Contains key patterns in order to remove `CADFilter` keys. You can use the `*` symbol as a replacement for 0 or more symbols as a part of the `CADFilter` key.	Yes	No
ShowCADInLog	Default Value: `1` Valid Values: `0,1`	Shows or hides the CAD in the Adapter's log. • A value of `0` hides the CAD in the Adapter's log. • A value of `1` shows the CAD in the Adapter's log.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
hideAIL	Default Value: `0` Valid Values: `0,1`	Shows or hides the AIL log. • A value of `0` shows the AIL log. • A value of `1` hides the AIL log.	No	No
multimedia Section Configures the Adapter for multimedia functionality.				
email-address-rfc822-strict	Default Value: `false` Valid Value: `true`, `false`	Specifies whether AIL checks if the e-mail addresses of an interaction for compliance with the RFC-822 standard for the format of ARPA Internet text messages.	No	No
settings Section Configures attached data behavior.				
enable-attached-data-byte-array	Default Value: `true` Valid Values: `true`, `false`	Specifies the conversion method for binary data in ESP requests and responses. • If the value is set to `true`, the AIL/Adapter converts binary data from a request to an array of bytes (`byte[]`) and expects an array of bytes in return. • If the value is set to `false`, the AIL/Adapter converts binary data to an ArrayList of objects with class `Byte` and expects an ArrayList of objects in return. See Appendix A on page 121 for details.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
enable-attached-data-multi-valued-key	Default Value: `false` Valid Values: `true, false`	Manages the use of duplicate keys in attached data. • If the value is `false`, you must have unique keys in the attached data. • If the value is `true`, you can have duplicate keys in attached data.	No	No
voice Section Configures telephone parameters.				
a4400-custom-substitute-mode	Default Value: `true` Valid Values: `true, false`	**Important:** This option must be set to `false` in order to work with the Alcatel A4400 switch.	No	No
database	Default Value: `all` Valid Values: `all, external, none`	Specifies the use of the database for voice calls. • If the value is `all`, all voice calls use the database. • If the value is `external`, internal calls do not use the database. • If the value is `none`, no voice calls use the database.	No	No
dms-last-digits	Default Value: `-1` Valid Values: `<any positive integer>`	Specifies how many digits are to be kept at the end of a DN number. For example, if the DN number is `1001234567`, and this option is set to `4`, the DN is `4567`. If the value is `-1`, or if the resulting transformation does not provide a correct DN number, the entire DN number is used. **Note:** This option is for the Nortel Communication Server 2000 (DMS 100) switch only.	No	No

Table 1: Adapter Configuration Options (Continued)

Option Name	Values	Description	Must Restart	Must Set
enable-all-routing-events	Default Value: `false` Valid Values: `true, false`	Specifies whether all events are sent to the `RoutingInteraction Listeners`. • If the value is `false`, only `NEW`, `IDLE`, and `INFO-CHANGES` events are sent. • If the value is `true`, all events are sent.	No	No
enable-attached-data-for-transfer	Default Value: `true` Valid Values: `true, false`	Manages the attachment of `GD_*` data when transferring a phone call.	No	No
enable-possible-changed-event	Default Value: `false` Valid Values: `true, false`	Specifies whether AIL delivers events (fake possible changed events generated in AIL) to the Adapter. • If the value is `true`, events are delivered to the Adapter. • If the value is `false`, events are not delivered to the Adapter **Note**: This option must be set to `false`. The value `true` is *not* supported in the current release of the Adapter.	No	No

Configuring Agent Resources

The Adapter identifies each SAP agent through the `userId` that SAP IC WebClient passes to it. It then maps the `userId` to the `User Name` of `Person` objects already configured in Configuration Manager.

Note: The User Name, created in the Configuration Manager, *must not* contain a back slash (\) or forward slash (/). These characters are not allowed by the SAP system due to limitations introduced by the SAP ICI protocol.

To log into a switch, the Adapter uses the password that is specified in the login_pwd option on the Annex tab of the Agent Login object. To add a password to the Annex tab, you must create a section named GplusICIAdapter, and then add to it an option named login_pwd. Figure 9 shows an example of how this is done. (In this example the password is 01 for agent login 0001.)

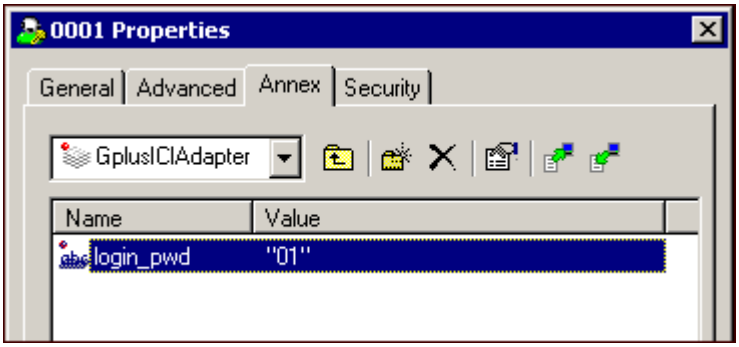

Figure 9: Using the Annex Tab to Add a CTI Login Password

An agent can register for any DN associated with that agent's Place (either the default, or one that is selected using the Free Seating feature).

The Adapter also gathers information about an agent's queues, from a list of queues associated with the groups that the agent belongs to. The ability to log into a queue is based on the Login ID assigned to the agents in the Configuration Server. Agents can work with only those queues and DNs that are available.

Chapter

4 Configuring HTTPS and Proxy

This chapter describes how to configure the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) to work through HyperText Transfer Protocol Secure (HTTPS) and Proxy. It contains the following sections:

Adapter–SAP HTTPS Communications

You can configure the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) to use HyperText Transfer Protocol Secure (HTTPS) to communicate with the SAP system, as shown in Figure 10. In order to set up a secure connection you must configure both the Adapter and the SAP system (see, *SAP Note 942093* for details).

Configuring the Adapter for HTTPS

To configure the Adapter for HTTPS, configure the Adapter `Application` object's `GPMC_SSL` section as follows:

1. Set the `sslEnabled` option (see page 56) to `1`.
2. Set the `sslProtocol` option (see page 56) to the name of the requested SSL protocol.
3. Set the `keyStore` (see page 55) and `keyStorePassword` (see page 56) options.

> **Note:** The `keyStore` and `keyStorePassword` options contain the Adapter's private key configuration, and the matching public key certificates. These are used to establish the secure connection.

4. Set the `trustStore` (see page 56) and `trustStorePassword` (see page 57) options.

> **Note:** The `trustStore` and `trustStorePassword` options contain SAP certificates that the Adapter uses to authenticate the remote socket peer when the Adapter functions as a client (events sending).

5. Export the Adapter's server certificate, from `keyStore`, and add to the store on the SAP system side. To export the server certificate to a file, use the following command line:

   ```
   <JAVA_HOME>\bin\keytool -export -alias <alias> -keystore
   <keystore_file> -file <file> -storepass <keystore_password>.
   ```

   Here, `<file>` is the name of file that will contain the certificate.

6. Add the SAP certificate to the Adapter's `truststore`. To import the server certificate, on the SAP system, use the following command line:

   ```
   <JAVA_HOME>\bin\keytool -import -noprompt -alias <alias> -keystore
   <truststore_file> -file <file> -storepass <truststore_password>.
   ```

   Here, `<file>` is the name of file with the SAP certificate.

Adapter–SAP HTTPS Event Flow

Figure 10 shows the HTTPS event flow between the Adapter and SAP.

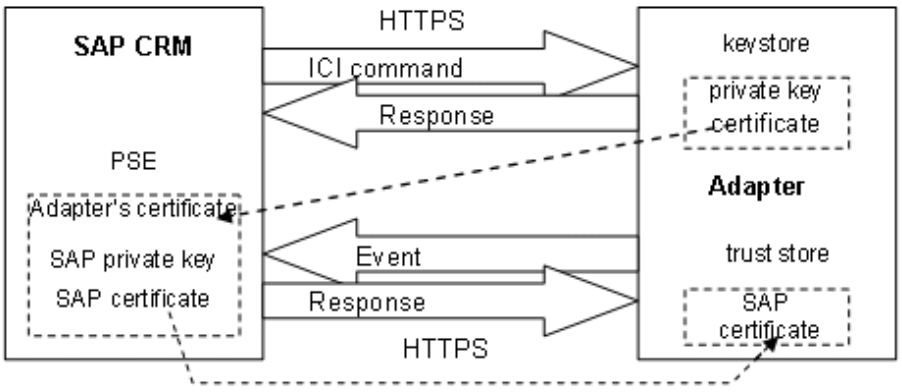

Figure 10: Adapter—SAP HTTPS Event Flow

Adapter–HTTP/HTTPS Proxy–SAP Communications

The Adapter may be configured to communicate with SAP through an HTTP/HTTPS Proxy, as shown in Figure 11. To use an HTTP/HTTPS Proxy you must configure, both the Adapter and the SAP system (see, the *SAP Note 942093* for details on configuring the SAP system).

Configuring the Adapter for the Proxy

To configure the Adapter for the Proxy, configure the Adapter `Application` object's `GPMC_Proxy` section as follows:

1. Set `host` to the Name/IP address of the proxy server.
2. Set `port` to the port of the proxy server.
3. (Optional) If the proxy server requires authorization, set the `username` and `password` to the user name and password of the account on the proxy server.

Adapter–Proxy–SAP Event Flow

Figures 11 shows the Adapter–Proxy–SAP event flow.

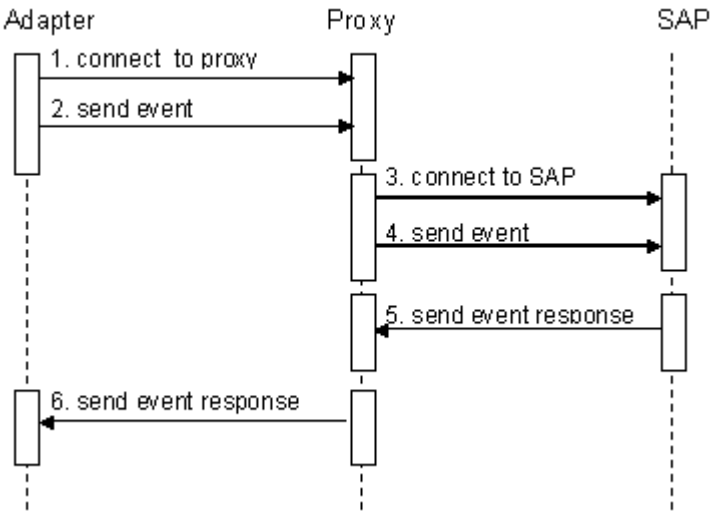

Figure 11: Adapter—Proxy—SAP Event Flow

The events in Figure 11 are as follows:

1. The Adapter connects to the `host:port` where HTTP Proxy resides (the values of the `host` and `port` options in the `GPMC_Proxy` section).
2. The Adapter sends a packet to the HTTP Proxy that contains the SAP URL in the header.

3. The proxy server opens the connection to the SAP URL.
4. The proxy server sends the packet, obtained from the Adapter, to SAP.
5. SAP sends a response to the Proxy.
6. The Proxy sends a response to the Adapter.

If the Proxy is set up to support HTTPS (that is, if the `sslEnabled` option in the `GPMC_SSL` section is set to `1`), events will be sent through a tunneling connection. The events are as follows:

1. The Adapter opens a connection to the proxy server, and then sends a `CONNECT sap_url` packet.
2. The proxy server opens a connection to the specified URL, and then sends a `CONNECT` response to the Adapter.

If the connection is established, the events and event responses will be passed through an established Adapter–SAP tunnel.

Note: To transmit events through a secure connection, the proxy server must support the `CONNECT` method.

Keep-Alive Mode

What Is the Keep-Alive Mode?

The Keep-Alive extension for HTTP enables continuous connections, as defined in the *HTTP/1.1* draft. These extended HTTP sessions enable multiple requests to be sent over the same Transmission Control Protocol (TCP) connection and, in some cases, have been shown to result in an almost 50 percent speed-up in latency times.

Using the Keep-Alive Mode

In order to use the Keep-Alive mode, the SAP system must:

1. Support it.
2. Be configured to use it.

The Adapter always tries to establish HTTP connections (both client and server) in the Keep-Alive mode, and the actual usage of this mode depends only on the ability of the SAP system to support it.

By default, the opened Keep-Alive connection will not close until one of the following occurs:

- it receives a special command from SAP.
- The socket is closed on the SAP side.

If SAP sends out a request or response with an HTTP header with either a `connection:close` directive or a no connection directive at all, then the Adapter will close the connection.

Note: The `keepAliveTimeout` option is set to `0` as default.

You can change this behavior by using the `GPMC_Common\keepAliveTimeout` option. This option specifies the number of seconds that the Adapter waits for a subsequent request before closing the connection. Once a request is received, the timeout value specified by this option is applied.

The value of the timeout can be overridden for certain connections by using the `keepAlive` HTTP header directive with a parameter timeout, which must be set on the SAP side.

Chapter

5 Installing the Adapter

This chapter describes how to install the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter). It contains the following sections:

Installing the Adapter

The following directory on the G*plus Adapter 7.5.1 for SAP ICI Multi-Channel* CD contains the Adapter's installation package:

`<cd_drive>/gplus_components/gplus_ici_multichannel/windows/.`

You must install the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) on the target computer by using an InstallShield Wizard that takes you step-by-step through the installation.

To install the Adapter:

1. If you have not already done so, insert the Adapter installation CD into your CD-ROM drive.
2. Locate the `setup.exe` file in the CD path `\gplus_components\gplus_ici_multichannel\windows\`, or in your installation package.
3. Double-click `setup.exe` to run the InstallShield Wizard.

   InstallShield takes you through the installation process step by step.

   After InstallShield prepares the Genesys Installation Wizard, the `Welcome` page appears (see Figure 12.).

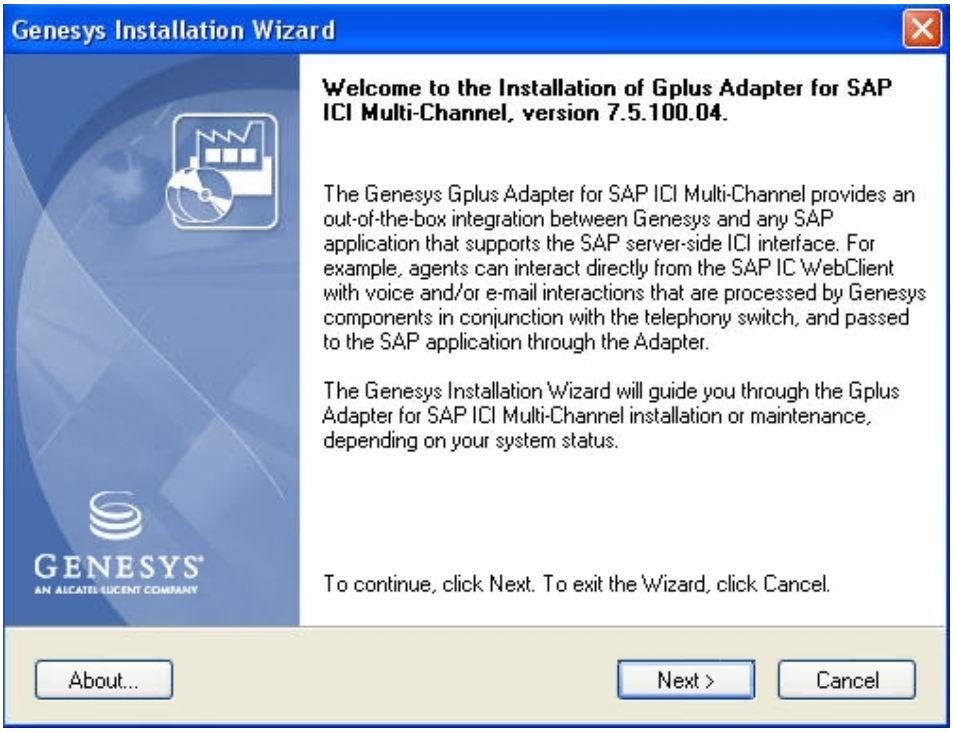

Figure 12: Welcome Page

4. Read the text on this page, and then click `Next` to continue.

   The `Connection Parameters to the Genesys Configuration Server` page appears (see Figure 13.)

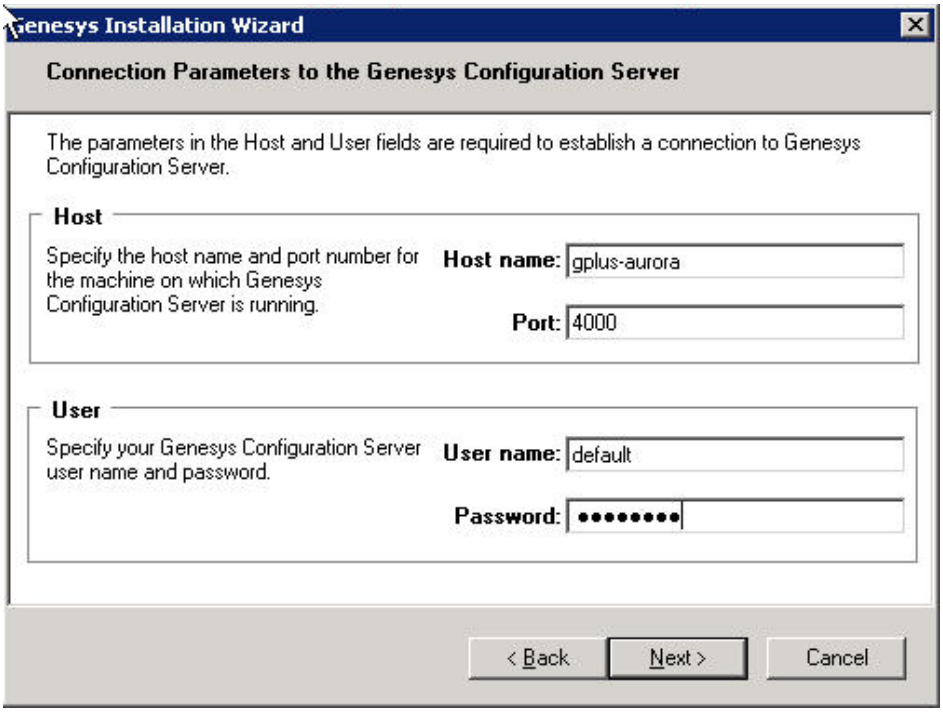

Figure 13: Connection Parameters to the Genesys Configuration Server Screen

5. Configure the connection parameters:
   a. In the `Host name` box, enter the Genesys Configuration Server host name.
   b. In the `Port` box, enter the Configuration Server port.
   c. In the `User name` box, enter your assigned Configuration Server user name.
   d. In the `Password` box, enter your Configuration Server password.
6. Click `Next` to continue.

   The `Select Application` page appears (see Figure 14). This screen displays a list of configured `Application` objects of the `Genesys Generic Server` type for the host on which the installation is running.

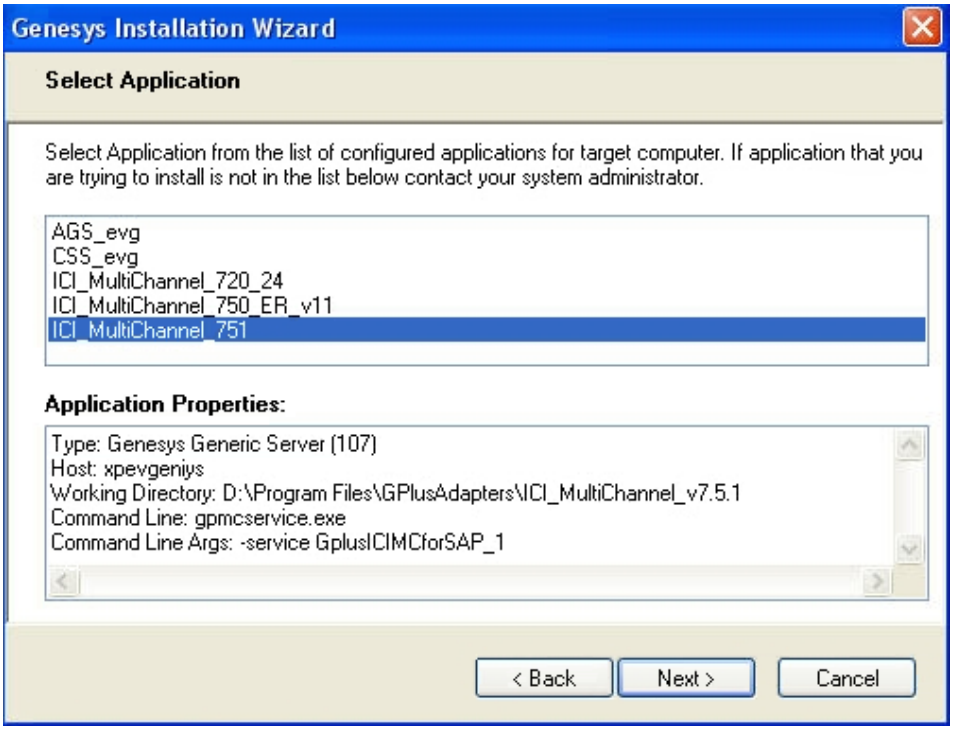

Figure 14: Select Application Page

7. Select the configured Adapter `Application` object from the list.
8. Click `Next` to continue.

   The `Access to License` page appears.
9. You can select the License Manager, or specify a path to the License File location.

   To select the License Manager:

   Click `License Manager`, and specify the `Host` name and `Port` (see Figure 15).

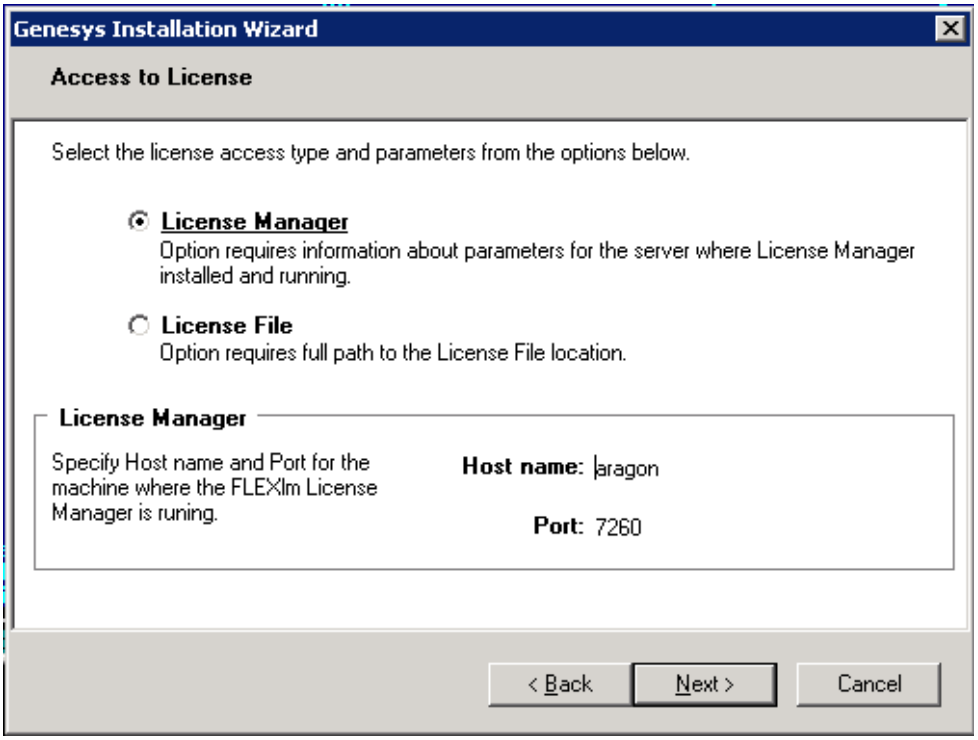

Figure 15: Access to License Page — License Manager Option

To select the License File:

Click `License File`, and enter the full path to the License File location (see Figure 16).

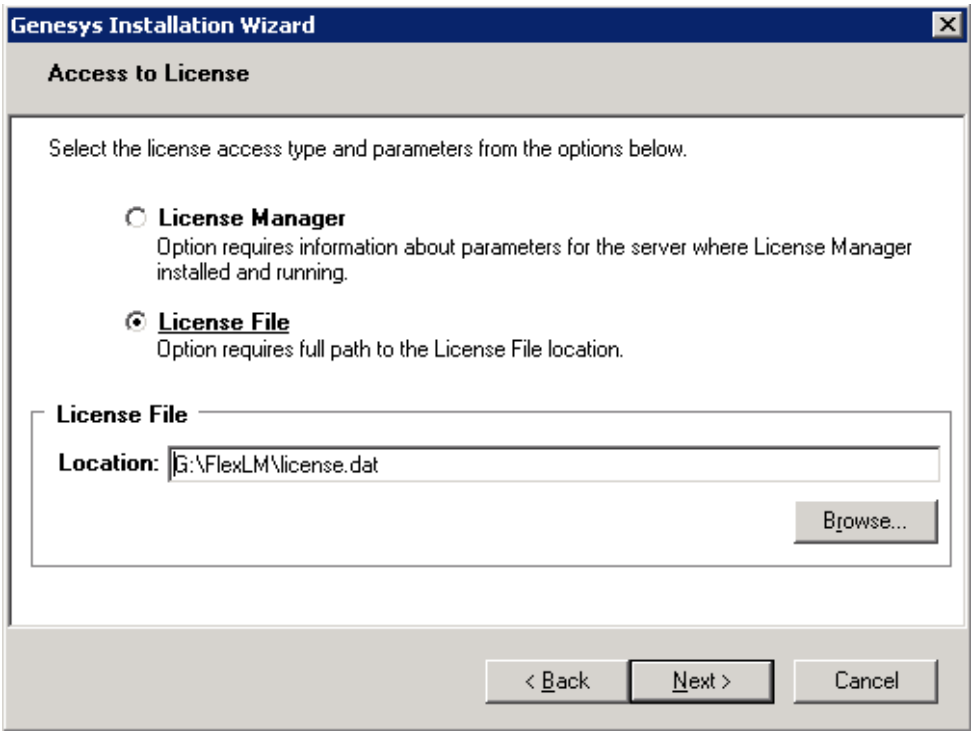

Figure 16: Access to License Page — License File Option

10. Click `Next` to continue.

The `Choose Destination Location` page appears (see Figure 17).

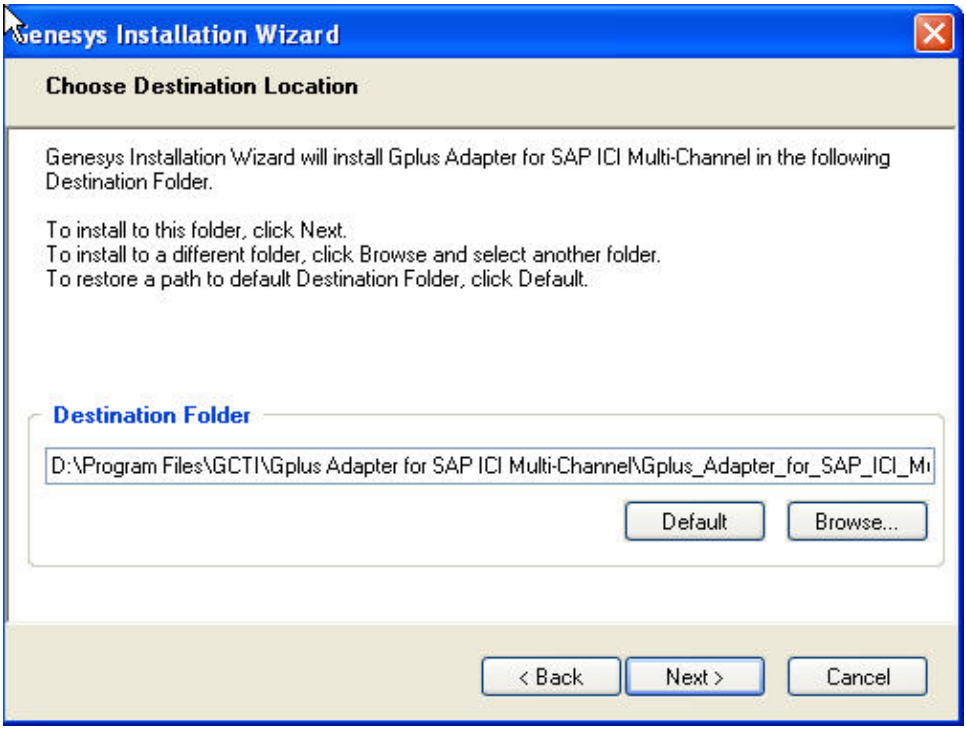

Figure 17: Choose Destination Location Page

11. You can accept the default destination folder, specify a new destination folder, or restore the default destination folder:

To change the destination location:

- Click `Browse`, and select another folder.

To restore a path to default Destination Folder:

- Click `Default`.

To keep the destination location:

12. Click `Next` to continue.

The `G`*`plus`* `Adapter for SAP ICI Multi-Channel Parameters` page appears (see Figure 18).

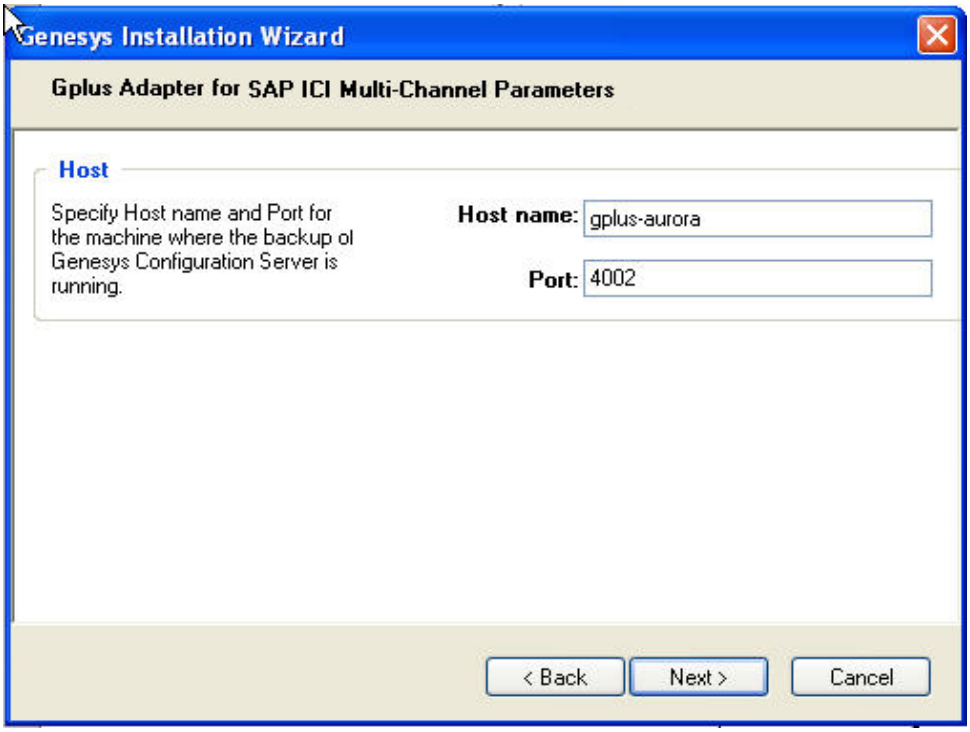

Figure 18: Gplus Adapter for SAP ICI Multi-Channel Parameters Page

13. Set the Adapter parameters:
    a. In the `Host name` box, enter the backup Genesys Configuration Server host name.
    b. In the `Port` box, enter the backup Configuration Server port.
14. Click `Next` to continue.

    The `Select Installed Sun's Java Runtime Environment (JRE)` page appears.

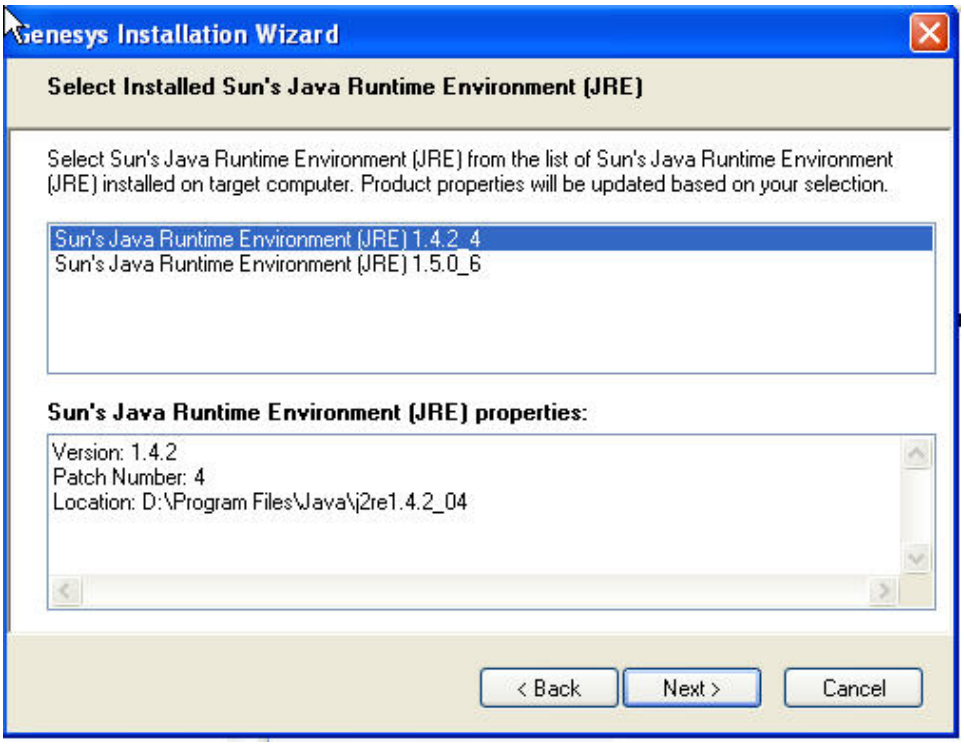

Figure 19: Select Installed Sun's Java Runtime Environment (JRE) Page

15. Select the runtime environment from the list of JREs installed on the target computer.

    The product properties are updated based on your selection.

16. Click `Next` to continue.

    The `Ready to Install` page appears (see Figure 20).

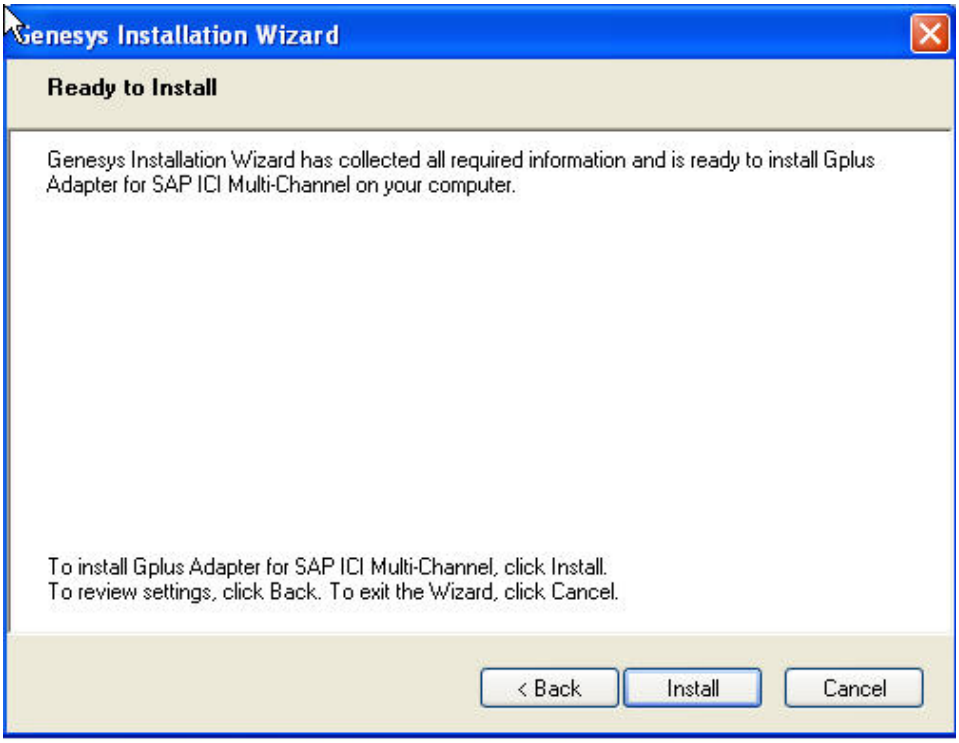

Figure 20: Ready to Install Page

17. Click `Install` to begin copying files.

    After a few moments, the `Installation Status` screen page.

18. Wait for the installation to finish (it can take several minutes), or click `Cancel` if you want to cancel this installation.

19. When the installation is finished, the `Installation Complete` page appears (see Figure 21).

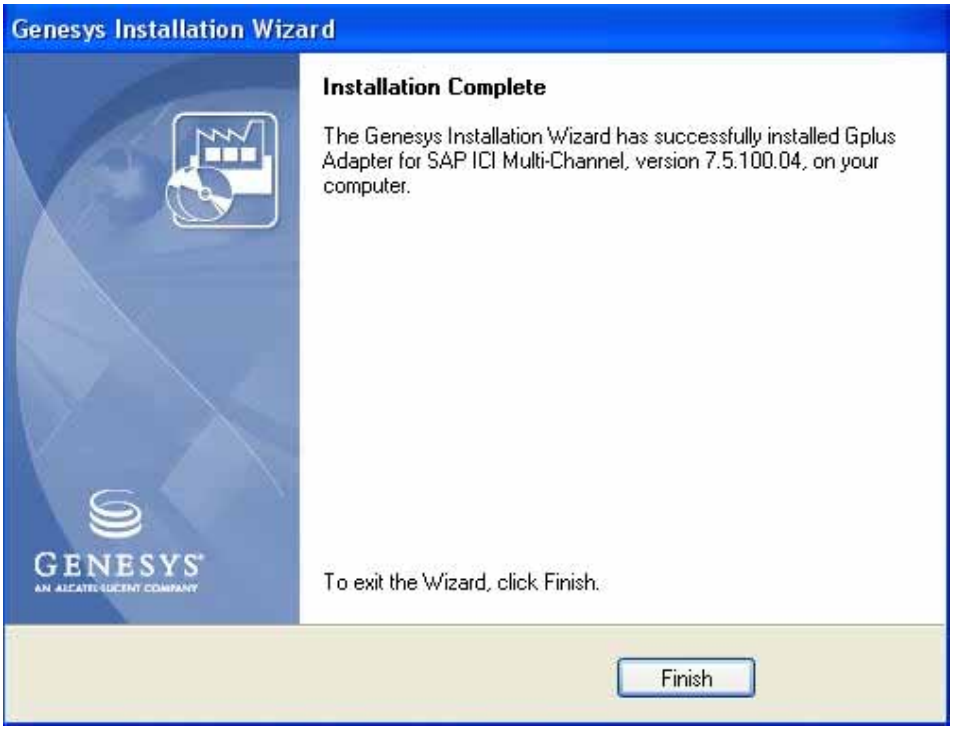

Figure 21: Installation Complete Page

20. Click `Finish` to complete the installation.

`Note:` The Adapter installs as the Windows service. After the computer reboots, the Windows service starts automatically. If you do not want the Adapter to start-up as the Windows service, please go to `Windows Control Panel > Administrative Tools > Services` and change the start-up type for the Adapter service from `Automatic` to `Manual`. You can then manually start the Adapter from the `Programs` menu.

Editing the sapadapter.properties File

If you want to change any of the values that are automatically updated during the Adapter installation, edit the `sapadapter.properties` file. This file is located in the directory in which the Adapter is installed. The file contains key-value pairs, which are described in Table 2.

Table 2: Configuration Server Connection Parameters

Key	Value
Application.Name	Name of the Adapter application in the Configuration Server, as specified on the `Application` object's `General` tab (see Step 1 on page 29).
ConfigServer.Host	Name of the host on which the Configuration Server is running.
ConfigServer.Port	Port of the Configuration Server.
ConfigServer.Backup.Host	Name of the host on which the backup Configuration Server is running.
ConfigServer.Backup.Port	Port of the backup Configuration Server.
ConfigServer.reconnectPeriod	Heartbeat interval, in seconds, for checking the connections to the servers (for example, Configuration Server, T-Servers, and so on). This ping keeps these connections alive. The default value is `300` (five minutes). The value should be greater than the value of `ConfgServer.requestTimeout`.
ConfigServer.requestTimeout	Timeout, in seconds, for requests to the servers. If a request to a server does not receive an answer before this timeout expires, the server throws a timeout exception. The default value is `60`. The value should be lower than the value of `ConfigServer.reconnectPeriod`.

The following is an example of the `sapadapter.properties` file contents:

```
Application.Name=SAPAdapterMultiChannel
ConfigServer.Host=GServer
ConfigServer.Port=4000
ConfigServer.Backup.Host=
ConfigServer.Backup.Port=
ConfigServer.reconnectPeriod=300
ConfigServer.requestTimeout=60
```

Uninstalling the Adapter

You can uninstall the Adapter by using the Microsoft Windows Add/Remove Programs feature.

Note: The uninstallation procedure varies, depending on the version of the Windows operating system that you are running. Keep this in mind as you complete the following procedure.

To completely uninstall the Adapter components:

1. From the Windows main taskbar, select `Start` > `Settings` > `Control Panel` > `Add/Remove Programs`.
2. Select `Genesys Gplus Adapter for SAP ICI Multi-Channel` as the installed component to remove.
3. Follow the on-screen instructions, and confirm that you want to remove the Adapter components.

   Add/Remove Programs removes the Adapter components, and a message appears, informing you that the uninstallation has been completed.
4. Follow the on-screen instructions to conclude the uninstallation.

Note: If the Adapter's application folder contains files that were not initially installed, the uninstallation process will not delete these files. You must remove them manually.

Java Virtual Machine Tuning

Before you start the server in production mode, you can tune the Java Virtual Machine (JVM) by editing the appropriate Adapter start-up files for your startup method:

- If you have started from a shortcut: `run_adapter.bat`
- If you have started as a service: `gpmcservice.ini`

JVM Tuning Options

Selecting the Virtual Machine Type

There are two different virtual machine (VM) types to choose from, depending on whether the server is running in the client or server mode.

- If the server is running in the client mode, select the Java HotSpot Client VM. This is the default selection.

- If the server is running in the server mode, select the Java HotSpot Server VM.

Memory Usage

- Xmsn memory:

  Specify the initial size, in bytes, of the memory allocation pool. This value must be a multiple of 1024 greater than 1MB. Append the letter k or K to indicate kilobytes, or m or M to indicate megabytes. The default value is 2 MB.

  Examples:

  `Xms6291456`

  `Xms6144k`

  `Xms6m`

- Xmxn memory

  Specify the maximum size, in bytes, of the memory allocation pool. This value must a multiple of 1024 greater than 2 MB. Append the letter k or K to indicate kilobytes, or m or M to indicate megabytes. The default value is 64 MB.

  Examples:

  `Xmx83886080`

  `Xmx81920k`

  `Xmx80m`

The Adapter default is `Xmx256M`. You can increase this value and set the `Xms` option to enable the Adapter to use more memory for its operations.

Additional Tuning Options

For additional tuning options and guidelines that are applicable to the JVM used by the Adapter, refer to the Sun Java documentation—for example, the Java Tuning White Paper:

`http://java.sun.com/performance/reference/whitepapers/tuning.html`

Note: Incorrect tuning parameters may lead to performance degradation and malfunctioning of the Adapter. In most cases, using the `-server`, `-Xms` and `-Xmx` options is sufficient.

Applying JVM Tuning Options

Starting the Adapter from a Shortcut

The tuning options need to be specified in the `run_adapter.bat` file.

To apply the tuning options:

1. Stop the Adapter, if it is running.
2. Open the `run_adapter.bat` file for editing.
3. Find the line containing:

```
"%JAVA_HOME%\bin\java" -Xmx256M -
Dcom.genesyslab.platform.license=com.genesyslab.platform.commons.pr
otocol.runtime.license.LicenseRestrictionCollection -cp
.;.\lib\sapadapter.jar;.\lib\saprouting.jar;%JAVA_LIBs%
com.genesyslab.gplus.sap.core.AdapterManager %CMD_LINE_ARGS%.
```

4. Add the required tuning options—for example:

```
"%JAVA_HOME%\bin\java" -server -Xms768m -Xmx1024m -
Dcom.genesyslab.platform.license=com.genesyslab.platform.commons.pr
otocol.runtime.license.LicenseRestrictionCollection -cp
.;.\lib\sapadapter.jar;.\lib\saprouting.jar;%JAVA_LIBs%
com.genesyslab.gplus.sap.core.AdapterManager %CMD_LINE_ARGS%.
```

5. Save the changed file.
6. Start the Adapter.

Starting the Adapter as a Service

The tuning options need to be specified in the `gpmcservice.ini` file.

To apply the tuning options:

1. Stop the Adapter, if it is running.
2. Open the `gpmcservice.ini` file for editing.
3. Find the `[JavaArgs]` section:

```
[JavaArgs]
J=-Xmx256M
```

4. Add the required tuning options—for example:

```
[JavaArgs]
J=-Xmx768M
J=-server
J=-Xms768m
```

```
J=-
Dcom.genesyslab.platform.license=com.genesyslab.platform.commons.pr
otocol.runtime.license.LicenseRestrictionCollection
J=-Djava.class.path=/lib/ail.jar;...
```

> Note: The two last lines in this section must remain unchanged.

5. Save the changed file.
6. Start the Adapter.

Chapter

6 Configuring the Agent Place

This chapter describes how to configure the Agent Place. It contains the following sections:

Configuring Agent Seating

The workcenter seating configuration determines which workcenter(s) an agent can log in to.

There are three ways agent seating can be configured:

- No free seating
- Simple free seating
- Advanced free seating

`Seating is configured through the Adapter Application object, by setting the workcenterIDType` (see the description on page 47). The value assigned to the `workcenterIDType` option determines the agent's required workcenter login credentials.

No Free Seating

If the value of `workcenterIDType` is `0`, there is no free seating. The only workcenter the agent can log in to is his or her default place, as specified in the Configuration Server.

Simple Free Seating

Simple free seating enable the agent to work on any correctly configured `Place`, using his or her own login. When this type of seating is used, the `Workcenter ID` is the ID of the agent's place.

There are four types of Simple Free Seating:

- Fully-qualified seating
- Host name seating
- IP address seating
- User-defined seating

Fully Qualified Seating

If the value of `workCenterIDType` is `1`, then the workcenter ID is the fully qualified domain name of the host that the agent is logged in to—for example:

1. The agent logs in to SAP from the host `(raptor.pal.sap.corp)` with SAP IC WebClient.
2. The SAP IC WebClient sends, to the Adapter, the fully-qualified domain name of the host that the agent logged in from (`raptor.pal.sap.corp`).
3. The Adapter looks for a `Place` with the name `raptor.pal.sap.corp`.
4. If a corresponding `Place` is found, the Adapter logs the agent in on this `Place`; otherwise, the agent is not logged in.

Host Name Seating

If the value of `workcenterIdType` is `2`, then the workcenter ID is the name of the host that the agent is logged in from—for example:

1. The agent logs in to SAP from the host (`raptor`) with SAP IC WebClient.
2. The SAP IC WebClient sends, to the Adapter, the name of the host that the agent logged in from (`raptor`).
3. The Adapter looks for a `Place` with the name `raptor`.
4. If a corresponding `Place` is found, the Adapter logs the agent in on this `Place`; otherwise, the agent is not logged in.

IP Address Seating

If the value of `workcenterIdType` is `3`, then the workcenter ID is the IP address of the host that the agent is logged in from— for example,

1. The agent logs in to SAP from the host with an IP (`12.14.48.23`) with SAP IC WebClient.
2. The SAP IC WebClient sends, to the Adapter, the IP address of the host that the agent is logged in from (`12.14.48.23`).
3. The Adapter looks for a `Place` with the name `12.14.48.23`.

4. If a corresponding place is found, the Adapter logs the agent in on this `Place`; otherwise, the agent is not logged in.

User-Defined Seating

If the value of `workcenterIdType` is `100`, then the agent must manually enter the workcenter ID in the SAP IC WebClient—for example:

1. The agent opens the SAP IC WebClient.
2. The SAP IC WebClient prompts for the `workcenter ID`.
3. The user enters the `workcenter ID`, for example: `place_1234`.
4. The SAP IC WebClient sends, to the Adapter, the `workcenter ID (place_1234)`.
5. The Adapter looks for a `Place` with the name `place_1234`.
6. If a corresponding `Place` is found, the Adapter logs the agent in on this `Place`; otherwise, the agent is not logged in.

Advanced Free Seating

You can define a comma-separated list of free seating types in the `workcenterIdType` option. This list defines possible alternative ways to log in using free seating capabilities.

For example, if the value of `workcenterIdType` is `=2, 100`, the SAP system will try to log in the agent by using the host name. If the login attempt fails, the SAP system will prompt the agent for a user-defined workcenter ID.

Configuring Agent Login Control

The Adapter's ability to log in to a Place that already has DNs logged in is managed with the `allowWorkOnLoggedInPlace` option. (See the description on page 43).

Place Login Security

The `allowWorkOnLoggedInPlace` option has two valid values:

- `0` = Login not allowed.
- `1` = Login allowed.

Note: Stat Server is required for the `Login not allowed` mode. If the Adapter is configured without Stat Server the Adapter will always work in the `Login allowed` mode, regardless of what the value of the `allowWorkOnLoggedInPlace` option is.

Login Not Allowed

If the value of `allowWorkOnLoggedInPlace` is `0`, login is not allowed on a `Place` that has logged-in DNs. For example, if `Agent 1` is logged in to `Place 1`, and `Agent 2` attempts to log in to `Place 1`:

1. The Adapter checks the `Place 1` login status by using the Stat Server.
2. The Adapter does not send the `Agent 2` login request to T-Server.
3. The Adapter sends a fault response to the SAP system.

`Note:` Genesys recommends this option.

Login Allowed

If the value of `allowWorkOnLoggedInPlace` is `1`, login is allowed on a `Place` that has logged-in DNs. For example, if `Agent 1` is logged in to `Place 1`, and `Agent 2` attempts to log in to `Place 1`:

1. The Adapter does not check the `Place 1` log-in status by using the Stat Server.
2. The Adapter sends the `Agent 2` login request to T-Server and/or Interaction Server.

`Notes:` Although the Adapter sends a request to the T-Server and/or Interaction Server, the ability to have multiple logins is determined by the T-Server and/or Interaction Server functionality.

It is not recommended to use `Login Allowed` if you are using the free seating environment.

Place Login Status

The Adapter uses the connections configured on the Adapter `Application` object's `Connections` tab to determines the Place login status (see "Connections Tab" option on page 33):

- If a Stat Server connection was added on the `Connections` tab, the `Place` login status is from Stat Server.
- If a Stat Server connection was not added, the `Place` login status is based on the login status of the voice DNs.

Configuring Agent Workmodes

Workmodes define an agent's work status or readiness to accept a new interaction. This section contains information on:

- Workmodes types
- Cumulative workmodes calculations
- Wrap-up workmodes

Workmodes Types

There are three workmode types defined in the `gp_resources.properties` file (located in the directory where the Adapter is installed):

- Blended workmodes
- Custom-defined workmodes
- Standard workmodes

Blended Workmodes

E-mail and voice workmodes can be blended into a single workmode state value. If the agent has two media configured only the blended workmodes are taken into account. This is required because the SAP system accepts only one workmode `import-state` parameter. The Adapter cannot pass two separate workmodes to SAP, one for voice and another for e-mail. The workmode values that SAP permits are:

- `1 = Logged Off`
- `2 = Logged On - Ready`
- `3 = Logged On - NotReady`
- `4 = Logged On - NotReady WrapUp`

The following subsections describe how a single workmode state is determined from a multi-channel environment (voice and e-mail). It also describes how to edit blended workmode descriptions and values.

`Note:` Blended workmodes can be disabled by using the "allowBlendedWorkmodes" option on page 51. If blended workmodes are turned off, the Adapter uses the logic described in "Cumulative Workmode Calculations" option on page 96 to report agent workmodes.

Determining Workmodes State

To determine the workmode state, that will be passed to the SAP system, the Adapter first blends voice and e-mail (and/or action items) workmodes by using one of the following:

- Blended Workmode list
- Blended Workmode switching.

For example, if the voice and e-mail workmodes do *not* match one of the six blended workmodes in the Blended Workmodes list, the workmode will be determined through Blended Workmode switching, as shown in Table 3.

Blended Workmode List

- `Voice NotReady, Email Ready`
- `Voice NotReady, Email Logged off`
- `Voice Ready, Email NotReady`
- `Voice Ready, Email Logged off`
- `Voice Logged off, Email NotReady`
- `Voice Logged off, Email Ready`

Blended Workmode Switching

Table 3: Blended Workmode State After Switching

Voice	E-Mail	Result
`Logged out`	`NotReady`	Voice Logged off, Email NotReady
`Logged out`	`Ready`	Voice Logged off, Email Ready
`NotReady`	`Logged out`	Voice NotReady, Email Logged off
`Ready`	`Logged out`	Voice Ready, Email Logged off
`NotReady`	`Ready`	Voice NotReady, Email Ready
`Ready`	`NotReady`	Voice Ready, Email NotReady
`Logged out`	`NotReady` (with reason code)	Voice Logged Off, Email NotReady
`NotReady` (with reason code)	`Logged out`	Voice NotReady, Email Logged off
`Ready`	`NotReady` (with reason code)	Voice Ready, Email NotReady
`NotReady` (with reason code)	`Ready`	Voice NotReady, Email Ready

> **Note:** If an agent attempts to manually switch to `Logged Off` for one media only, the state for this media is set to `NotReady`. For example, if an agent selects the `Voice Ready, Email Logged Off` workmode, the Adapter switches the agent to the `Voice Ready, Email NotReady` workmode. Workmodes with one media in the Logged off state show only the unanticipated situations, such as `InteractionServer` disconnection.

Editing Blended Workmodes

The Adapter can either use the predefined blended workmodes from its resource file, or generate them at startup. In both cases, the `workmode ID` is the `Workmode_mixed_base` string plus the workmode constant.

To edit the blended workmodes base:

1. Open the `gp_resources.properties` file, which is located in the `Adapter directory` directory.
2. Locate the `#Mixed workmodes` section.
3. Locate the `Workmode_mixed_base` string, and set it to a value greater than the numeric value of the last custom-defined workmode.

> **Note:** If you do not set the `Workmode_mixed_base` string in the `gp_resource.properties` file, the default value of `10^number_of_medias` is used.

Generating Blended Workmodes

The Adapter dynamically generates blended workmodes at the time of startup. The rules for the dynamic generation of blended workmodes for multimedia are as follows:

1. The length of the dynamically generated ID is equal to `max (m, length(Workmode_mixed_base))`.
2. The dynamically generated `ID` is constructed from the `Workmode_mixed_base` string plus the `m-length` constant, where every digit represents the state of the partial media:
   - `1` = The media is `Logged off`.
   - `2` = The media is `Logged on, Ready`.
   - `3` = The media is `Logged on, NotReady`.
3. If the `Workmode_mixed_base` string is not set, it will be initialized to the value `10^m`.

> **Note:** Locate the `Workmode_mixed_base` string, and set it to a value *greater* than the numeric value of the custom-defined workmode.

4. The `media in ID` is ordered according to the value of the media number in the ICI protocol:
   - Telephony (`1`)
   - E-mail (`2`)
   - Chat (`3`)
   - Action routing (`4`)

   This is available only for Adapter media that have blended workmodes—for example:
   - For an Adapter with voice and action routing media, `123` means: `Voice Ready, Action Item Not Ready (Workmode_mixed_base=100).`
   - For an Adapter with voice and email media, `112` means: `Voice Logged Off, Email Ready (Workmode_mixed_base=100)`
   - For an Adapter with voice and action routing media, `121` means: `Voice Ready, Action Item Logged Off (Workmode_mixed_base=100)`
   - For an Adapter with voice and e-mail media, `123` means: `Voice Ready, Email Not Ready (Workmode_mixed_base=100).`
5. The blended workmode description is a comma-separated list of partial media workmode descriptions— for example, `Voice Ready, Email Not Ready`.
6. The partial media workmode description is displayed in the format `Media_name Media_workmode`, where `Media_name` and `Media_workmode` are constants defined in the Adapter's resource file.
7. The following rule applies in the case of three or more medias: if only one media has a workmode that differs from the common description of the blended workmode, the blended workmode is displayed as `Common workmode, Media_name Media_workmode`.

   For example, if the voice and e-mail channels are in the `Ready` state, and the `action` routing channel is logged off, the blended workmode description is `Ready, Action routing Logged off.`

Presetting Blended Workmodes

Instead of the generated blended workmodes, the Adapter can use the predefined blended workmodes from its properties file: `gp_resource.properties.`

In this case, the blended workmodes are represented as custom-defined workmodes with an ID and a description. The ID consists of the `Workmode_mixed_` prefix and a numeric value. The numeric values are represented as `m-length` constants, where every digit represents the state of the partial media (see Step 2 on page 93).

For example, if two channels (voice and e-mail) are configured, with the voice channel in the `Ready` state, and the e-mail channel in the `NotReady` state, then the next string can be set as follows in the `gp_resource.properties` file:

```
Workmode_mixed_23 = Voice Ready, Email Not Ready
```

As another example, if two channels (voice and e-mail) are configured, with the voice channel in the NotReady state, and the e-mail channel in the Ready state, you can set the next string as follows in the gp_resource.properties file: Workmode_mixed_32= Voice_coffee(NotReady), E-mail_Ready.

To edit the predefined blended workmodes:

1. Open gp_resources.properties, which is located in the Adapter directory directory.
2. Locate the #Mixed workmodes section.
3. Locate the description of the blended workmodes that you want to edit.
4. Update the description as required.

Custom-Defined Workmodes

Custom-defined workmodes are required so agents can create additional reason codes for Not Ready states. These workmodes are treated as Logged on – Not Ready, but each has its own numeric value and description. Standard installation of the Adapter provides two sample custom-defined workmodes:

- 5 = Coffee Break
- 6 = Restroom

To use these workmodes, remove the comment symbol # before their definitions in the gp_resources.properties file, located in the directory in which the Adapter is installed.

To define additional workmodes:

1. Open the gp_resources.properties file.
2. Find the section marked with the string # Workmodes.

   This section contains strings with <key>=<value> pairs, where key is the workmode identifier and value is the workmode_information structure.

   The workmode_information structure has the following format:

   <Numeric value>,<Workmode description>

   Note: The default workmodes are also described in the # Workmodes section, but they have stable numeric values, so the workmode_information structure field for these workmodes contains <Workmode description> only.

3. In the # Workmodes section, locate workmodes that have labels starting with the string Workmode_Logged_on_not_ready_reason_. All these workmodes are custom-defined workmode.
4. Edit the custom-defined workmodes.

   You have the following options:

- *Create* a new custom-defined workmode by adding a new string with a `<key>=<value>` pair, where `<key>` is the string `Workmode_Logged_on_not_ready_reason_` followed by the numeric value, and `<value>` is a valid `workmode_information` structure.

  Be sure that numeric suffixes in the key are sequential (for example, `1, 2, 3`, and so on) and that there are no gaps between them (for example, `2,3,5`).

  For example: `Workmode_Logged_on_not_ready_reason_3 = 7,Lunch`
- *Update* workmode information for an existing custom-defined workmode. Be sure that the format of `workmode_information` is still correct after the modification.

  For example:

  Old value: `Workmode_Logged_on_not_ready_reason_1 = 5,Coffee break`

  New value: `Workmode_Logged_on_not_ready_reason_1 = 5,Tea break`
- *Delete* a custom-defined workmode (just delete the corresponding string).

Note: Change to custom-defined workmodes take effect after you restart the Adapter.

Standard Workmodes

The Standard workmode has four permitted values, which are as follows:

- `1 = Logged off`
- `2 = Logged on - Ready`
- `3 = Logged on - Not Ready`
- `4 = Logged on – Not Ready WrapUp`

Cumulative Workmode Calculations

Cumulative workmode calculations are required in two cases:

- When a voice channel has multiple DNs—for example, a `Place` with one DN set to the `ACD` position, and a second DN set to the `Extension` position.
- When the Adapter is configured for some channels, but the blended workmodes are prohibited.

The calculations procedure remains the same for both cases. The following example describes the principles of a cumulative workmode calculation for a voice channel with multiple DNs.

The workmode for a voice channel with multiple DNs is calculated as follows (see Table 4):

- If at least one DN (`ACD Position` or `Extension`) is in the `Ready` state on the `Place`, the cumulative workmode is `Ready`.
- If there are no DNs in the `Ready` state, but one DN is `Not Ready`, the cumulative workmode is `NotReady`.

> Note: If the `Not Ready` DN has a reason code, then the workmode is set to a custom-defined workmode.

- If all the DNs are `Logged off`, the cumulative workmode will be `Logged off`.

Table 4: Workmode Matrix for Two DNs

State Of		DN 1		
		Logged Out	**Not Ready**	**Ready**
DN 2	**Logged Out**	Logged off	Not Ready	Ready
	Not Ready	Not Ready	Not Ready	Ready
	Ready	Ready	Ready	Ready

Wrap-Up Modes

The `wrap-up` mode is applicable only for the voice channel. Wrap-up mode can be requested on a call in an active or suspended state.

There are two types of wrap-up mode processing:

- `Manual`
- `Automatic`.

Manual Mode

In Manual mode, the agent should require the Wrap-Up mode in SAP IC WebClient. The Adapter then changes the agent workmode to `Wrap-up` during a call, or just after it ends. The Adapter considers the Wrap-Up mode as `NotReady` with a reason code of `4`. This default value can be changed in the `gp_resources.properties` file.

The `wrapUpOnCall` option must be set to `0` for switches that do not enable the workmode to be changed on a DN during an active call (for example, Siemens HiCom 300E), or that release the active call with `NotReady` requested during the call (for example, Aspect ACD). See the description of the “wrapUpOnCall” option on page 48.

When a call is dropped, the Adapter automatically switches into the wrap-up processing state. Wrap-up mode must be completed by a request from SAP to end wrap-up. After wrap-up mode, the Adapter will try to restore the agent's original workmode.

Automatic Mode

In Automatic mode, the interaction is automatically switched to `Wrap-up` state after the call has ended (see the description of the "automaticWrapUpMode" option on page 44).

When a call is dropped, the Adapter automatically switches the agent to the Wrap-Up workmode (if the last agent is not yet in this workmode.) The Wrap-Up mode is ended by a request sent from the SAP IC WebClient. After ending the Wrap-Up mode, the Adapter will try to restore the agent's original (before the Wrap-Up mode was applied) workmode

Limitations

The Wrap-Up request is applicable for only a certain set of calls (voice interactions). The following conditions apply:

- An item cannot have `wrapUpRequired` capability if it is a consult call.
- An item cannot have `wrapUpRequired` capability if it is an outgoing internal call.
- An item cannot have `wrapUpRequired` capability if it was transferred in the scope of the `BlindTransfer` or `WarmTransfer` operation.
- An item cannot have `wrapUpRequired` capability if it is a participant in a conference and its state is `ConferenceParticipant`.
- An item will have `wrapUpRequired` capability if the preceding prohibitions do not apply.

Special Wrap-Up Features

Wrap-Up for Alerting and Dialing Calls

Wrap-up for alerting or dialing calls is controlled by the `wrapUpFrNonAnsweredCall` option (see "wrapUpForNonAnsweredCall" option on page 52).

Note: For the `Automatic Wrap-up` mode, it is recommended that you set the option value to `0` to prevent any automatic wrap-ups for abandoned calls.

Wrap-Up as a NotReady Workmode on T-Server

Depending on the value of the `processWrapUpAsACW` option, the Wrap-Up workmode is handled by the Adapter as a `NotReady` request with `Unknown` or `AfterCallWork` options (see "processWrapUpAsACW" option on page 49.)

Configuring Agent Channels

Configuring the E-Mail Channel

The `GPMC_Email\available` option controls whether an agent is about to work with the `E-mail` channels. Table 5 shows the effect of different option values for the `E-mail` channels.

Table 5: Agent Channels Options for the E-Mail Channels

Value	Description
0	The `E-mail` channel is turned off (the agent settings are discarded).
1	The `E-mail` channel is turned off for all agents, unless it is explicitly turned on for a particular agent. If no channel configuration is specified on the agent's `Annex` tab, that channel is enabled or disabled according to the configuration of the agent's `Annex` tab.
2	The `E-mail` channel is turned on for all agents, unless it is explicitly turned off for a particular agent. If no channel configuration is specified on the agent's `Annex` tab, that channel is enabled, otherwise, the channel is enabled or disabled according to the configuration of the agent's `Annex` tab.

If the channel is not disabled in the Adapter application, the channel's configuration may be specified on the agent's `Annex` tab.

Table 6 shows the available `E-Mail` channel values.

Table 6: Available E-mail Channel Values

Value	Description
`0`	The channel is disabled.

Table 6: Available E-mail Channel Values (Continued)

Value	Description
1	The channel is enabled.
not specified	The default configuration from the application's `available` option.

The `Annex` tab has an option in the `media` section for every channel configured. For example, the option for the e-mail channel is called `email`.

If you want to disable the e-mail channel for a specific agent, the `Annex` tab must contain the following options:

```
media
    email =0
```

If you want to enable the e-mail channel for a specific agent, the `Annex` tab must contain the following options:

```
media
    email=1
```

Note: The changes for the agent are applicable both after the Adapter's restart or (and) after the next agent's subscription.

Configuring the ActionItem Channels

The `GPMC_ActionMedia\available` option controls whether an agent is about to work with the `ActionItem` channel. Table 7 shows the different `Agent Control` options for the `ActionMedia` channels.

Table 7: Agent Channels Options for the ActionItem Channels

Value	Description
0	The `ActionItems` channel is turned off (the agent settings are discarded).
1	The `ActionItems` channel is turned off for all agents, unless it is explicitly turned on for a particular agent. If no channel configuration is specified on the agent's `Annex` tab, that channel is enabled or disabled according to the configuration of the agent's `Annex` tab.
2	The `ActionItems` channel is turned on for all agents, unless it is explicitly turned off for a particular agent. If no channel configuration is specified on the agent's `Annex` tab, that channel is enabled; otherwise, the channel is enabled or disabled according to the configuration of the agent's `Annex` tab.

If the channel is not disabled in the Adapter application, the channel's configuration may be specified on the agent's `Annex` tab.

Table 8 shows the available `ActionItem` channel values.

Table 8: Available ActionItems Channel Values

Value	Description
0	The channel is disabled.
1	The channel is enabled.
Not specified	The default configuration from the application's `GPMC_ActionMedia\available` option.

The `Annex` tab has a option in the `media` section for every channel configured. For example, the option for the `ActionItems` channel is called `sapemail`.

If you want to disable the `ActionItems` channel for a specific agent, the `Annex` tab must contain the following options:

```
media
    sapemail =0
```

If you want to enable the `ActionItems` channel for a specific agent, the `Annex` tab must contain the following options:

```
media
    sapemail=1
```

`Note`: The changes for the agent are applicable both after the Adapter's restart or (and) after the next agent's subscription.

Restrictions

Only one e-mail channel (`e-mail` or `ActionItems`) can be used in the Adapter at one time. This restriction comes from SAP. SAP can simultaneously work with only one `E-mail` channel, which is switched on from the SAP side. This means that if an agent has both the `E-mail` and `ActionItems` channels logged in, the agent will be able to work with only the channel that is currently switched on from the SAP side.

Chapter

7 Configuring E-Mail

This chapter provides an overview of the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) e-mail functionality. It also describes how to configure routing strategies for e-mail interactions. It contains the following sections:

E-Mail Functionality

This section introduces the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) e-mail functionality.

Note: The Adapter requires Genesys E-mail Server release 7.2 or later in order to maintain the outgoing e-mail format. If a previous release of Genesys E-mail Server (7.0 or 7.1) is used, the e-mail message format is converted to plain text.

Common Settings

In order to show the `Subject` and `Message` text in message events, you must set the `showContentInEvent` option in the `GPMC_Email` section of the Adapter `Application` object to `1` (see "showContentInEvent" on page 53.)

Note: Genesys E-mail Server release 7.2 or later is required in order to prevent conversion of outgoing e-mail to plain text.

Forwarding Incoming E-Mail

The 7.5.1 Adapter forwards incoming e-mail through Genesys Multimedia. This functionality enables e-mail to be forwarded from agent to agent.

Notes: The recipient agent must be logged in.

The sending agent does not receive the `ended` event until the recipient agent accepts the e-mail.

Sending E-Mail to an Agent

This functionality was designed for the G*plus* Adapter 6.5.x for SAP ICI Multi-Channel. Genesys does not recommend using this functionality with the 7.5.1 Adapter, because it impacts Genesys Reporting Solution.

All e-mail sent to addresses in which the domain name section is equal to the value of the `agentEmailDomain` option is sent to internal agents. In this scenario, the account name section (the string before the `@`) will be considered another agent's name. For details, see the description of "agentEmailDomain" on page 52.

The Adapter sends e-mail that is intended for another agent to a special e-mail address, defined in the `transferEmailBox` option (see "transferEmailBox" on page 54, so that it arrives on the Multimedia E-mail Server. This e-mail is then routed to the specified agent.

Note: Multimedia E-mail Server excludes the transfer address from the `e-mail senders` list if the address is the same as the `e-mail address` field in the `pop-client` section. To modify this behavior create a transfer e-mail address alias, and then add the new e-mail alias to the `transferEmailBox` option.

When e-mail is routed to the assigned agent, the `From` and `Reply-To` fields in the source message are replaced with the address of the agent who sent the message. To prevent this replacement, set the `substituteAgentAddress` to `0` (see "substituteAgentAddress" on page 54).

Interaction Workflows

An `interaction workflow` defines how multimedia (non-voice) interactions move through queues, routing strategies, workbins, and other objects.

This section provides sample interaction workflow patterns that are required for the Adapter to work with an e-mail channel (using Genesys Multimedia Solution).

Creating a Business Process

The purpose of a `Business Process` is to direct incoming e-mails through various processing objects, including:

- Queues.
- Views.
- Submitters.
- Routing strategies.

You can use an existing Business Process, or you can create a new one by using Interaction Workflow Designer (IWD). See Figure 22.

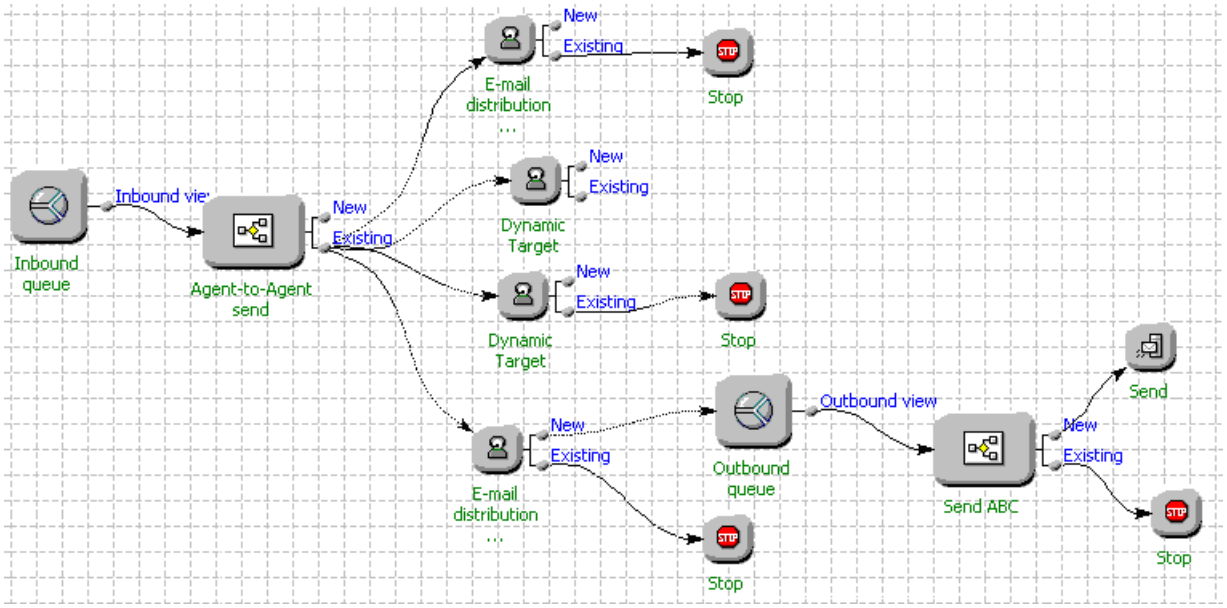

Figure 22: ABC Simple Business Process

The e-mail routing strategy in Figure 22 processes inbound e-mail from the inbound queue. An inbound e-mail can be a new message from a customer, or it can be an existing message that is being transferred from another agent.

- If the e-mail is a new e-mail from the customer, it is routed to the `E-mail distribution` agent group for processing.
- If the e-mail is sent from one agent to another, the e-mail routing strategy obtains the `agent_id` of the agent that the e-mail is to be routed to and then routes the e-mail to that agent. If the e-mail cannot be routed to the specified agent, it is sent to the `E-mail distribution` agent group.

The purpose of the `send ABC` strategy is to route e-mails to `E-mail Server` Java in order to send them to the customer.

Configuring Queues and Workbins

A Business Process requires three queues (see Figure 23):

- An inbound queue for inbound e-mail.
- A draft queue for draft e-mail.

> Note: For a draft view, the parameterized condition must be set in the `agent_id` (a parameter of the `View` object).

- An outbound queue for e-mail sent to a customer.

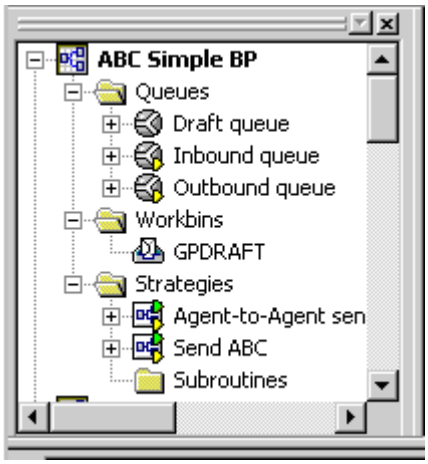

Figure 23: ABC Simple Business Process with Defined Queues

In order to have draft messages, you must create a draft workbin. You do this by configuring three objects:

- Queue
- View
- Workbin

You associate these objects through an Interaction Flow strategy, using IWD.

> Note: The draft workbin must be in the `Workbin` section of the `Draft` view in IWD.

Configuring E-Mail Routing Strategies

Receiving Incoming Messages

Agent capacity *rules* provide information about whether an agent is available for routing. Universal Routing Server (URS) can use agent capacity information that the Stat Server supplies to route interactions.

Capacity rules must be assigned to an agent or an agent's place. In order to ensure that an agent receives just one incoming e-mail from the Virtual Routing Point (VRP), the capacity rule must define the maximum capacity for e-mail media as 1.

Note: You set capacity rules by using the Genesys Agent Capacity Wizard.

Agent-to-Agent Outgoing E-Mail Send Strategy

To deliver incoming e-mail messages directly to an agent, you must modify your default routing strategy (Process ABC). The modified strategy must process the messages sent to the transfer address, and then deliver them to the agent specified in the Subject field of the e-mail.

The following code shows the format of the e-mail Subject field for the e-mail messages that the Adapter sends from agent to agent:

```
[<empToId>|<empFromId>]<Original Subject>
'[', '|', ']' - delimenters
<empToId>-employee ID of an agent to whom a message must be
transferred/sent;
<empFromId>-employee ID of an agent who message was transferred/sent;
<Original Subject> - original subject
```

Values for the transfer to and transfer from agents <empToId> and <empFromId> are extracted from the Subject field of the e-mail message (see Figure 24).

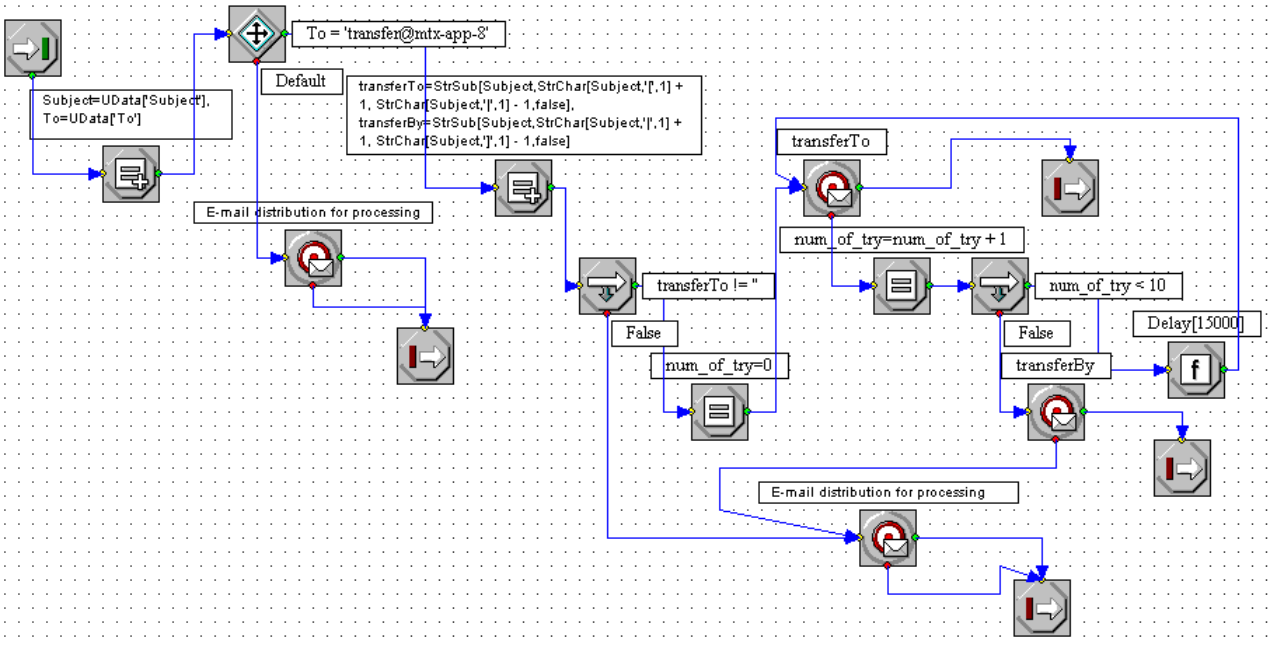

Figure 24: Agent-to-Agent Outgoing E-Mail Send Strategy

For more information about using routing strategies, see the Genesys Universal Routing documentation.

Chapter

8 Configuring the Media Routing Component

This chapter provides an overview of the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) Media Routing Component functionality. It contains the following sections:

Introduction

The Media Routing Component enables the integration of SAP work items (`ActionItems` or SAP E-mail) into the queuing and routing mechanisms of the connected contact center.

Preliminary Procedures

The Media Routing component does not require any additional Genesys applications, other than those listed in Chapter 3 on page 23. In order for the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) to work with SAP `ActionItems`, if must be connected to the same applications that are

required for the e-mail interactions (The only difference is that, for SAP ActionItems, open media interactions are used.) You set the media type for these interactions in Configuration Manager and in the Adapter Application object options. See Chapter 3, "Configuring the Application Object," on page 29.

Open Media (ActionItem) Interactions

If you are using the Adapter for ActionItem interactions, you must create a connection to the following servers:

- Universal Contact Server
- Genesys Multimedia Interaction Server
- Stat Server

Configuring the Media Type

To configure a new media type for open media interactions:

1. In Configuration Manager, click the Business Attributes folder.
2. Click the Media Type folder.
3. Click the Attribute Values folder.
4. Configure the new media type in your existing Tenant.
5. Enter the name of the new media type in the Adapter's Application object options (see the description of the GPMC_ActionMedia options on page 42).

   For example, the ActionItem media type may be added to the Configuration Database (see Figure 25).

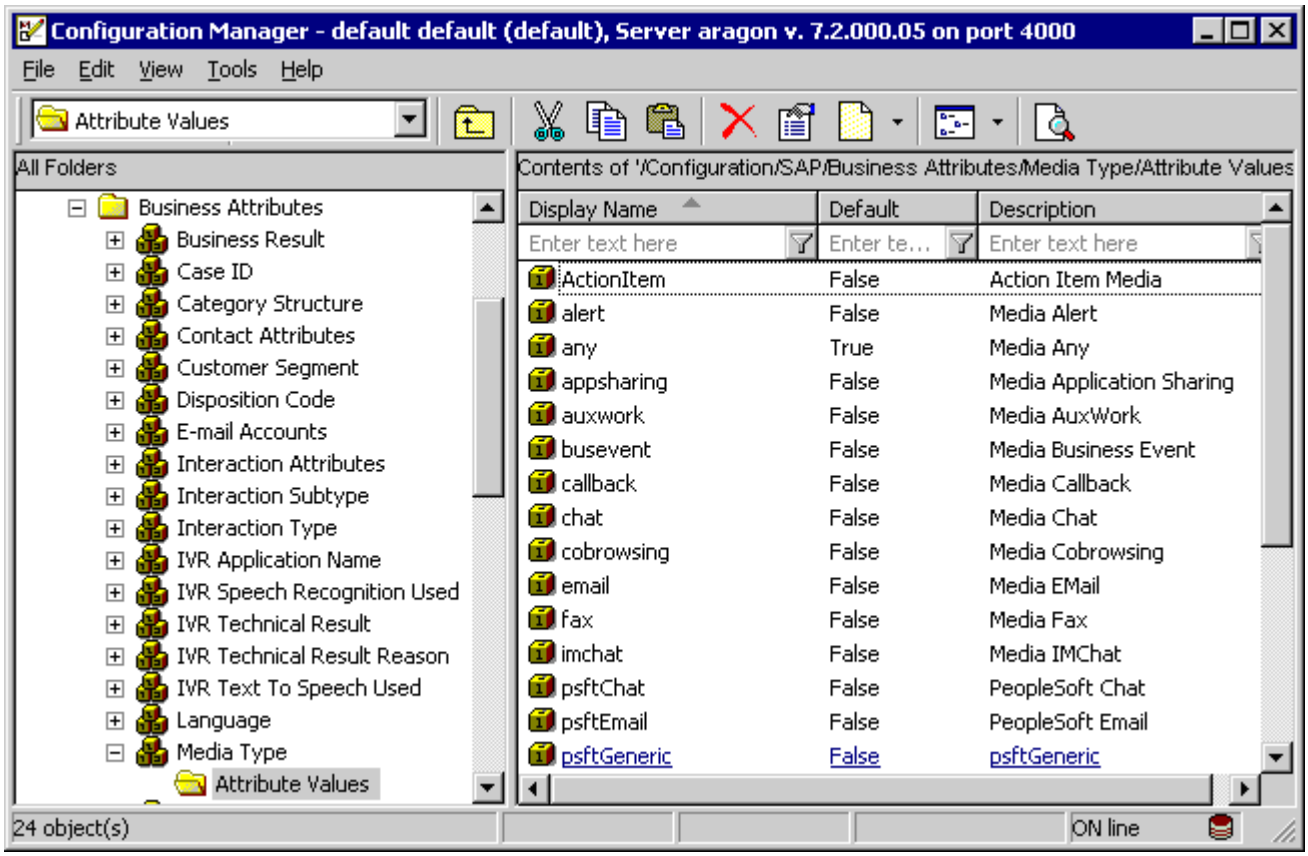

Figure 25: Media Types in Configuration Manager

Figure 26 shows the `Properties` dialog box for this `ActionItem`.

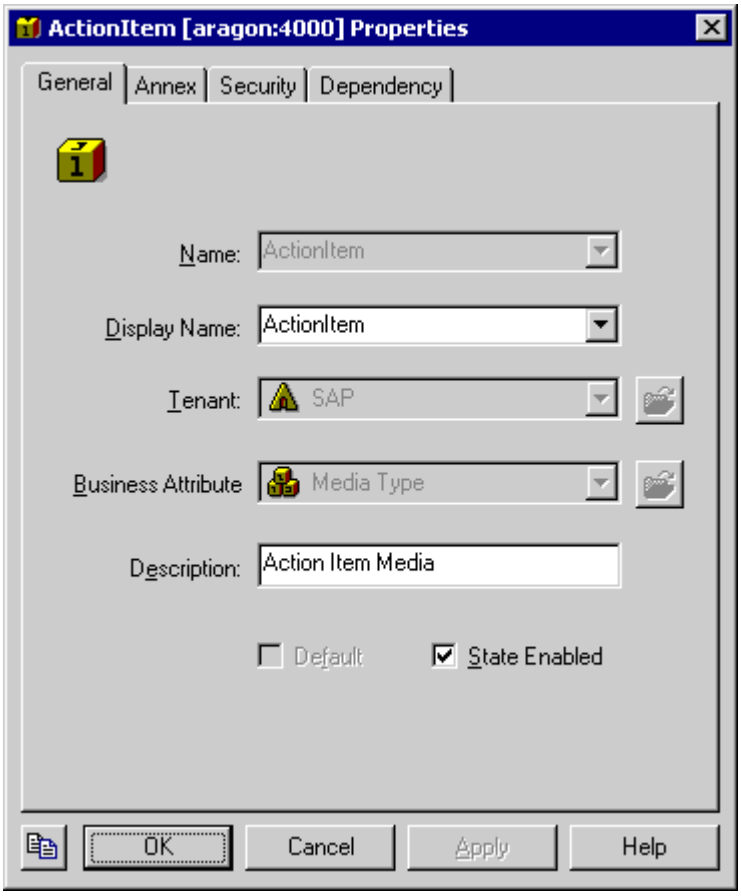

Figure 26: ActionItem Media Type Properties

Installing the Media Routing Component

The following directory on the *G*plus *Adapter 7.5.1 for SAP ICI Multi-Channel* CD contains the Media Routing Component installation package:

```
<cd_drive>/gplus_components/gplus_media-routing /windows/
```

Note: The Media Routing Component can only be installed after the ICI Multi-Channel for SAP Adapter.

The Media Routing Component is installed into the directory where the Adapter is already installed.

You must install the Media Routing Component on the target computer by using an InstallShield Wizard that takes you step-by-step through the installation.

To install the Media Routing Component:

1. If you have not already done so, insert the installation CD into your CD-ROM drive.
2. Locate the `setup.exe` file in the CD path `\gplus_components\gplus_media-routing\windows\`, or in your installation package.
3. Double-click `setup.exe` to run the InstallShield Wizard.

   InstallShield takes you through the installation process step by step.

   After InstallShield prepares the Genesys Installation Wizard, the `Welcome` page appears (see Figure 27).

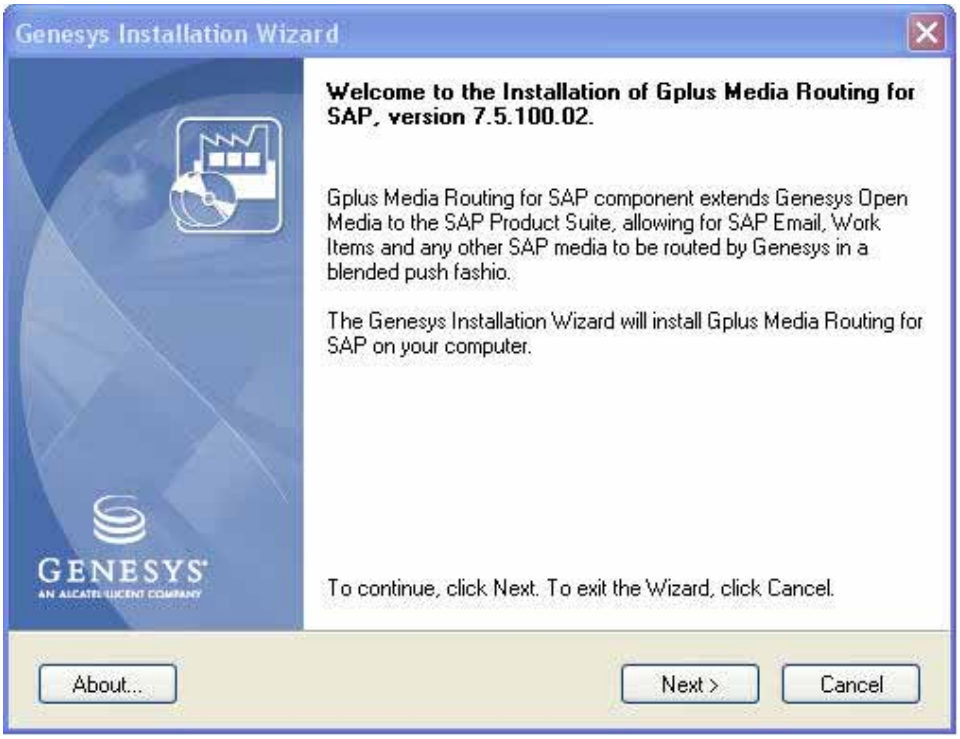

Figure 27: Welcome Page

4. Click `Next` to continue.

   The `Select Installed Application` page appears (see Figure 28). This screen displays a list of configured Adapter `Application` objects for the host on which the installation is running.

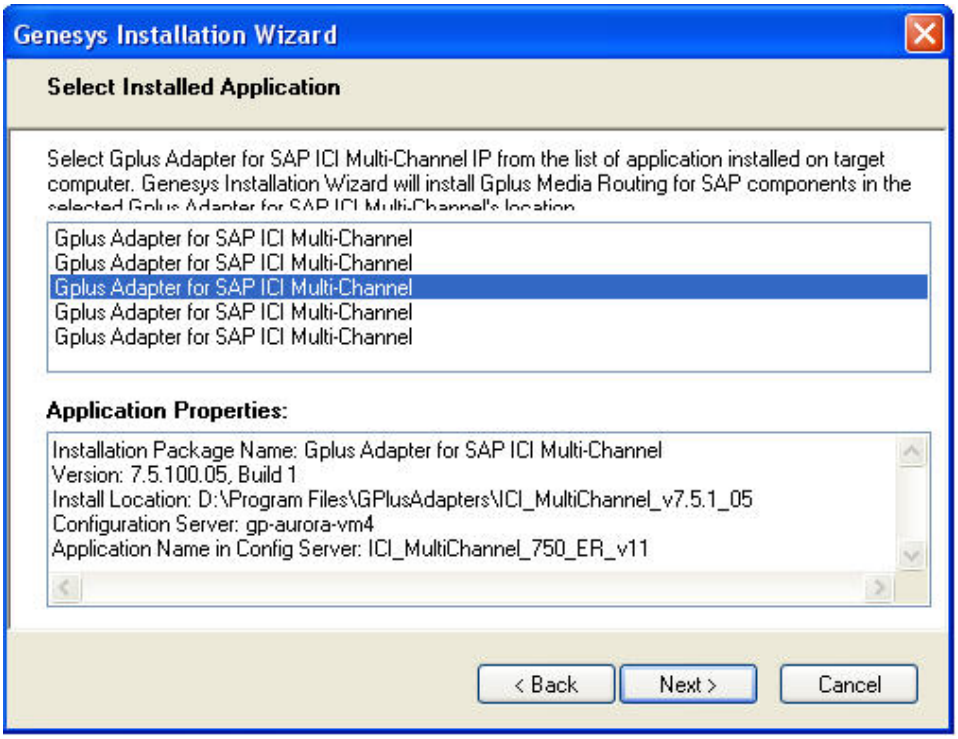

Figure 28: Select Installed Application Page

5. Select the appropriate Adapter `Application` object from the list.
   The bottom half of the page displays the application properties.
6. Click `Next` to continue.
   The `Ready to Install` window appears (see Figure 29).

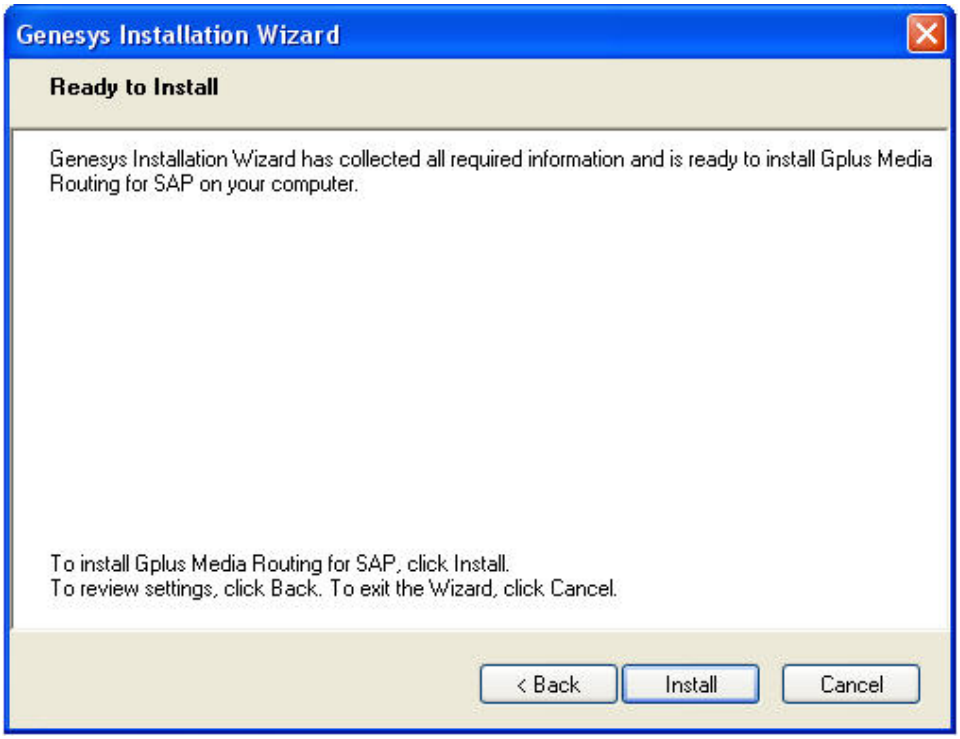

Figure 29: Ready to Install Page

To install the Media Routing Component:

7. Click `Install` to begin copying files.

   After a few moments, the `Installation Status` appears.

8. Wait for the installation to finish, or click `Cancel` if you want to cancel this installation.

   When the installation is finished, the `Installation Complete` page appears (see Figure 30).

9. When the `Installation Complete` window appears (see Figure 30), click `Finish` to complete the installation.

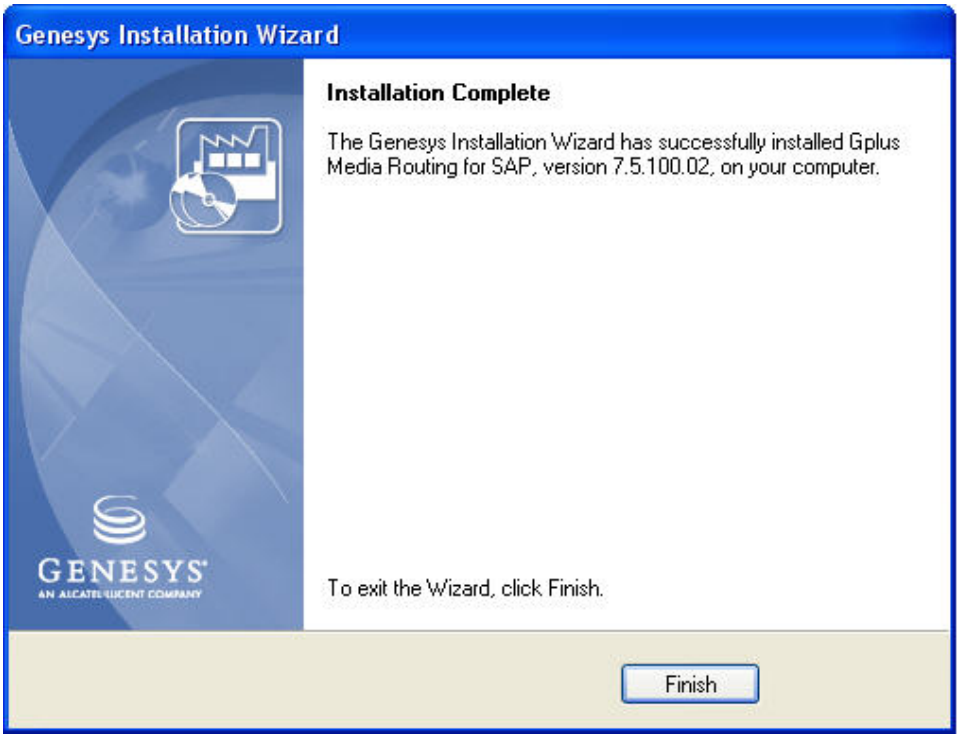

Figure 30: Installation Complete Screen

10. Click `Finished` to complete the installation.

Note: After the installation, a new line that switches on the Media Routing feature is added to the `sapadapter.properties` file:

```
feature.set.MediaRouting=com.genesyslab.gplus.sap.ici.misc.ICIRoutingFeatureSet
```

Uninstalling the Media Routing Component

You can uninstall the Media Routing Component by using the Microsoft Windows `Add/Remove` programs feature.

Note: The uninstallation procedure varies, depending on the version of the Windows operating system that you are running. Keep this in mind as you complete the following procedure.

To completely uninstall the Media Routing component:

1. From the Windows main taskbar, select `Start > Settings > Control Panel > Add/Remove Programs`.

2. Select `Genesys Gplus Media Routing for SAP` as the installed component to remove.
3. Follow the on-screen instructions, and confirm that you want to remove the Media Routing component.

   `Add/Remove` programs removes the Media Routing component, and a message appears, informing you that the uninstallation has been completed.
4. Follow the on-screen instructions to conclude the uninstallation.

Working with ActionItems

ActionItem Workflow

The `ActionItem` life cycle is carried out over two different containers:

- `Server container`: The `ActionItem` life cycle is in charge of transferring the `ActionItem` information from SAP to the Genesys queuing interaction for routing.

  The agent send the `Server container` requests under the name `GPMC_ActionMedia\agent`. The queue requests create the `GPMC_ActionMedia\mediaType` interactions and then submit them to the `GPMC_ActionMedia\queue` queue. The number of working threads that complete the server requests are specified by the `GPMC_ActionMedia\submitters` option.

  Note: The agent with a defined `GPMC_ActionMedia\agent` name option does not exist in the Configuration Database. This agent should be manually created.

- `Agent container`: This container executes the workflow of the `ActionItem` processing by a particular agent (accepting the action item, changing attached data, and so on).

Note: These two containers work in unison, and both must be used at the same time.

See “Interaction Workflows” on page 104 for more information on workflows.

Updating a Business Process

The same queue and strategy used for incoming e-mail interactions may be used for `ActionItem` interactions. The name of this queue is specified by the

Adapter's GPMC_ActionMedia\queue option. The Media Routing component interactions are found in this queue.

Figure 31 shows the new queue Action queue added to the ABC Simple Business Process.

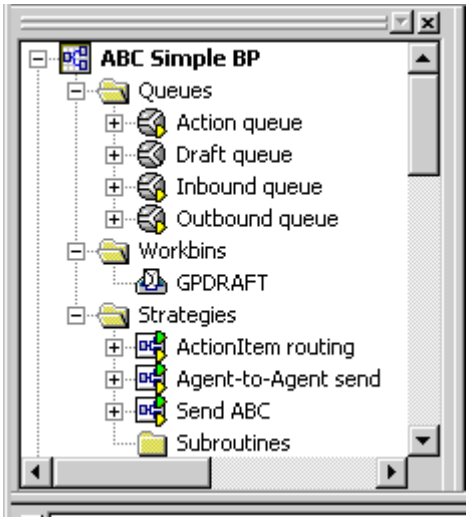

Figure 31: ABC Simple Business Process with Defined Queues

Figure 32 shows the updated ABC Simple Business Process:

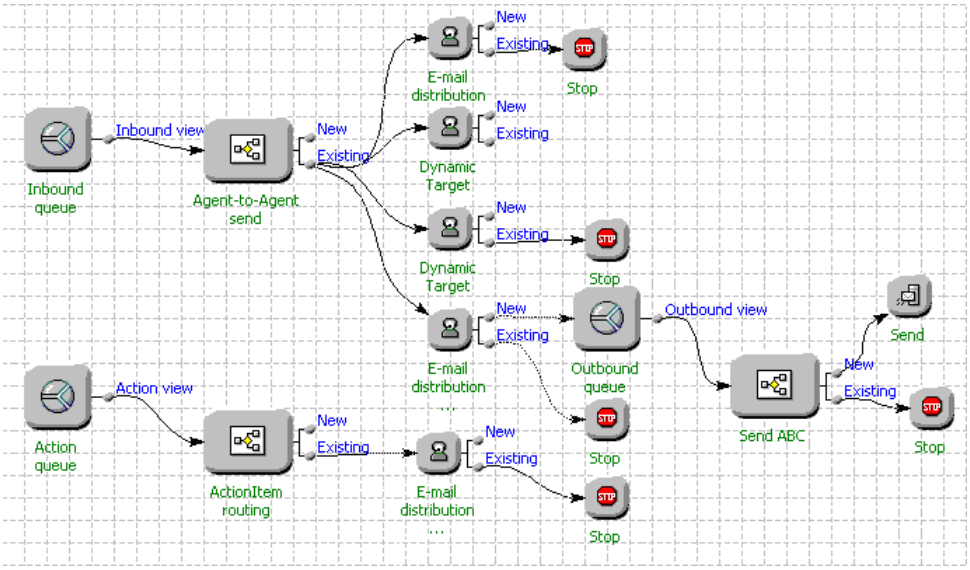

Figure 32: ABC Simple Business Process

The ActionItem routing strategy in Figure 32 processes the open media interactions from the Action queue. Interactions are sent to the Action queue as a result of the Server container workflow.

See "Creating a Business Process" for more information on creating a Business Process.

Configuring ActionItem Strategies

This section contains information about configuring `ActionItem` strategies.

Receiving Incoming ActionItem Interactions

Agent `capacity rules` provide information about whether an agent is available for routing. The Universal Routing Server (URS) can use agent capacity information that the Stat Server supplies in order to route interactions.

Capacity rules must be assigned to an agent or an agent's place. In order to ensure that an agent receives just one incoming `ActionItems` interactions from the Virtual Routing Point (VRP), the capacity rule must define the maximum capacity for `ActionItem` media as `1`.

`Note:` You set capacity rules by using with the Genesys Agent Capacity Wizard.

ActionItem Routing Strategy

Figure 33 shows an example of a simple strategy, which does not perform the processing of any routing attributes. This strategy selects an available agent from the `E-mail distribution for processing` agent group.

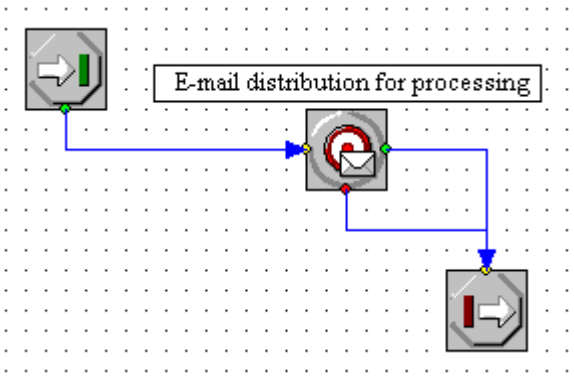

Figure 33: ActionItem Routing Strategy

The `Sent in queuing requests` routing attributes and user IDs are stored in the `Interaction User` data under the `routingAttrinbutes` and `userIds` keys, respectively. These attributes can be used in a strategy to dynamically select an agent to whom the interaction will be routed.

Switching Between E-mail and ActionItems in SAP

To switch between E-mail and `ActionItems` in SAP:

1. On the `SAP SPHB` screen, select `\nspro`.
2. Click `SAP Reference IMG`.
3. Select `Customer Relationship Management`.
4. Click `Business Roles`.
5. Select `Define Business Role`.
6. Locate the `Z_Genxxx` profile.
7. Click the `Assign Function Profile` folder.

You can change between `DEFAULT INBOX` (`Action item`) and `Default` (`ICI`).

Appendix

A Call-Attached Data Conversion Examples

This appendix describes how the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) translates Call-Attached Data (CAD) from Genesys format to SAP format, and vice versa. It contains the following sections:

Introduction

Genesys represents Call-Attached Data (CAD) as a list of key-value pairs (KVPs), in which a value can be an arbitrary string, integer, binary, or nested list of key-value pairs. The SAP Interaction Center (IC) protocol encodes CAD in an Extensible Markup Language (XML) format, in which every application places its data into a separate subtree of an XML document. The following section provides examples of how the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) translates CAD from Genesys KVP format to SAP XML format, and vice versa.

Converting Genesys CAD to XML

This section includes examples of conversions for Call-Attached Data from Genesys format (which uses key-value pairs or a TKVList) to SAP format (which uses XML).

Notation

```
  KVTypeString
name=”...”
  KVTypeInt
Key=123...
  KVTypeBinary
Key = 01 02 03...
  KVTypeList
Key={....}
```

Each node will be written on a separate line except `KVTypeList`, which will be written as follows:

```
Key={
   Value1=...
   Value2=...
}

Comments in XML:
<!--comment-->
```

Top-Level Data Representation

This example shows how the Adapter converts top-level CAD TKVList pairs if the pair type is not `KVTypeList`, or if you want to specify it in XML.

Each `TKVList` pair is represented by an XML node:
`<KVPairName>KVPairValue</KVPairName>`

All top-level `CAD TKVList` pairs of type `KVTypeString`, `KVTypeBinary`, and `KVTypeInt` are placed inside a special *application node*, with the `attribute ID` and the value from the `GPMC_Common\genesysCADApplicationName` Adapter's option. The default value of this option is `GENESYS-CAD`.

To specify pairs of type `KVTypeBinary` or `KVTypeInt` in XML, add the attribute `TKVType` to the corresponding XML node, with the value `KVTypeInt` or `KVTypeBinary`—for example:
`<KVPairName TKVType="KVTypeBinary">KVPairValue</KVPairName>`

All data that is entered in the `Genesys-CAD` XML Application node will be placed at the top level of the CAD KVList.

Genesys CAD

```
StringNode=”somestring”
IntNode=123
BinaryNode= 01 02 03 04 05 06 0E
```

XML

```
<?xml version=”1.0” encoding=”iso-8859-1”?>
<itemAttachedData>
<!--All top-level data (except KVTypeList) will be placed inside
“Genesys-CAD” application
for KVTypeString no additional attributes are saved
for KVTypeInt and KVTypeBinary attribute TKVType will be added and
its value will be “KVTypeInt” or “KVTypeBinary” respectively.
-->
   <Application id=”Genesys-CAD”>
      <StringNode>somestring</StringNode>
      <IntNode TKVType=“KVTypeInt“>123</IntNode>
      <BinaryNode TKVType=“KVTypeBinary“>0102030405060E</BinaryNode>
   </Application>
</itemAttachedData>
```

Top-Level List Representation

This example shows how the Adapter converts top-level TKVList pairs if the pair type is `KVTypeList`.

Each top-level pair of type `KVTypeList` is converted to an application node in the XML representation of CAD. Each Application node will be represented as a top-level pair of type `KVTypeList`, for backward conversion.

Genesys CAD

```
ListNode={
   ListValueString=”liststring”
   ListValueInt=234
   ListValueBinary=0A 0B 0C 0D
}
StringNode=”somestring”
IntNode=123
BinaryNode= 01 02 03 04 05 06 0E
```

XML

```
<?xml version=”1.0” encoding=”iso-8859-1”?>
<itemAttachedData>
<!--All top-level data (except KVTypeList) will be placed inside
“Genesys-CAD” application-->
```

```
   <Application id=”Genesys-CAD”>
      <StringNode>somestring</StringNode>
      <IntNode TKVType=“KVTypeInt“>123</IntNode>
      <BinaryNode TKVType=“KVTypeBinary“>0102030405060E</BinaryNode>
   </Application>
   <!--ListNode will be represented as separate application-->
<Application id=”ListNode”>
   <ListValueString>liststring</ListValueString>
   <ListValueInt TKVType=”KVTypeInt”>234</ListValueInt>
   <ListValueBinary
TKVType=”KVTypeBinary”>0A0B0C0D</ListValueBinary>
</Application>
</itemAttachedData>
```

Specifying the XML Encoding

This example shows how the Adapter specifies the exact encoding for converting CAD from TKVList format to XML format. The value of the top-level pair with the key `XML_Encoding` will be used as an XML encoding attribute. If the encoding attribute is not specified, the Adapter assumes that `encoding="iso-8859-1"`.

Genesys CAD

```
ListNode={
   ListValueString=”liststring”
   ListValueInt=234
   ListValueBinary=0A 0B 0C
}
StringNode=”somestring”
IntNode=123
BinaryNode= 01 02 03 04 05 06 0E
XML_Encoding=”shift_jis”
```

XML

```
<!-- default encoding is iso-8859-1 XML_Encoding value at top-level
overrides it-->
<?xml version=”1.0” encoding=”shift_jis”?>
<itemAttachedData>
<!--All top-level data (except KVTypeList) will be placed inside
“Genesys-CAD” application-->
   <Application id=”Genesys-CAD”>
      <StringNode>somestring</StringNode>
      <IntNode TKVType=“KVTypeInt“>123</IntNode>
      <BinaryNode TKVType=“KVTypeBinary“>0102030405060E</BinaryNode>
   </Application>
<!--ListNode will be represented as separate application-->
<Application id=”ListNode”>
```

```
   <ListValueString>liststring</ListValueString>
   <ListValueInt TKVType=”KVTypeInt”>234</ListValueInt>
   <ListValueBinary TKVType=”KVTypeBinary”>0A0B0C</ListValueBinary>
</Application>
</itemAttachedData>
```

KVTypeList Value at Underlying Levels of CAD

This example shows how the Adapter represents underlying (non-top-level) TKVList pairs as an XML node with child nodes. In addition, the Adapter converts each XML node with child nodes to a pair of type `KVTypeList`, for backward conversion.

Genesys CAD

```
ListNode={
   ListValueString=”liststring”
   ListValueInt=234
   ListValueBinary=0A 0B 0C
ListValueList={
   UnderlyingListString=”a”
   UnderlyingListInt=345
}
}
StringNode=”somestring”
IntNode=123
BinaryNode= 01 02 03 04 05 06 0E
XML_Encoding=”shift_jis”
```

XML

```
<!-- default encoding is iso-8859-1 XML_Encoding value at top-level
overrides it-->
<?xml version=”1.0” encoding=”shift_jis”?>
<itemAttachedData>
<!--All top-level data (except KVTypeList) will be placed inside
“Genesys-CAD” application-->
   <Application id=”Genesys-CAD”>
      <StringNode>somestring</StringNode>
      <IntNode TKVType=“KVTypeInt“>123</IntNode>
      <BinaryNode TKVType=“KVTypeBinary“>0102030405060E</BinaryNode>
   </Application>
<!--ListNode will be represented as separate application-->
<Application id=”ListNode”>
   <ListValueString>liststring</ListValueString>
   <ListValueInt TKVType=”KVTypeInt”>234</ListValueInt>
   <ListValueBinary TKVType=”KVTypeBinary”>0A0B0C</ListValueBinary>
<!-- ListValueList will be represented as parent of two nodes-->
   <ListValueList>
```

```
      <UnderlyingListString>a</UnderlyingListString>
      <UnderlyingListInt>345</UnderlyingListInt>
   </ListValueList>
</Application>
</itemAttachedData>
```

Saving XML Attributes for XML Nodes (XML Node Has Child Nodes)

This example shows how the Adapter saves the attributes of XML nodes in a CAD TKVList if an XML node has a child node. The CAD TKVList creator can generate the same structures in order to specify XML node attributes when converting KVList format to XML format.

XML

```
   <!--default encoding is iso-8859-1 XML_Encoding value at top-
level overrides it-->
<?xml version=”1.0” encoding=”shift_jis”?>
<itemAttachedData>
<!--All top-level data (except KVTypeList) will be placed inside
“Genesys-CAD” application-->
   <Application id=”Genesys-CAD”>
      <StringNode>somestring</StringNode>
      <IntNode TKVType=“KVTypeInt“>123</IntNode>
      <BinaryNode TKVType=“KVTypeBinary“>0102030405060E</BinaryNode>
   </Application>
–ListNode will be represented as separate application-->
<Application id=”ListNode” AppAttr1=”someValue1”
AppAttr2=”someValue2”>
   <ListValueString>liststring</ListValueString>
   <ListValueInt TKVType=”KVTypeInt”>234</ListValueInt>
   <ListValueBinary TKVType=”KVTypeBinary”>0A0B0C</ListValueBinary>
   <!--ListValueList will be represented as node with two child
elements-->
   <ListValueList UnderlyingListAttribute=”underlyingAttrVal”>
      <UnderlyingListString>a</UnderlyingListString>
      <UnderlyingListInt>345</UnderlyingListInt>
   </ListValueList>
</Application>
</itemAttachedData>
```

Genesys CAD

```
ListNode={
XML_Node_Attributes={
   AppAttr1=″someValue1″
AppAttr2=″someValue2″
}
   ListValueString=″liststring″
   ListValueInt=234
   ListValueBinary=0A 0B 0C
ListValueList={
XML_Node_Attributes={
UnderlyingListAttribute=″underlyingAttrVal″
}
   UnderlyingListString=″a″
   UnderlyingListInt=345
}
}
StringNode=″somestring″
IntNode=123
BinaryNode= 01 02 03 04 05 06 0E
XML_Encoding=″shift_jis″
```

Saving XML Attributes for XML Nodes (XML Node Is a Text Node)

This example shows how the Adapter saves the attributes of XML nodes in a CAD TKVList as an XML text node. There is a special case for this type of XML node.

XML

```
   <!--default encoding is iso-8859-1 XML_Encoding value at top-
level overrides it-->
<?xml version=″1.0″ encoding=″shift_jis″?>
<itemAttachedData>
<!--All top-level data (except KVTypeList) will be placed inside
“Genesys-CAD” application-->
   <Application id=″Genesys-CAD″>
      <StringNode>somestring</StringNode>
      <IntNode TKVType=“KVTypeInt“>123</IntNode>
      <BinaryNode TKVType=“KVTypeBinary“>0102030405060E</BinaryNode>
   </Application>
   <!--ListNode will be represented as separate application-->
```

```
<Application id=”ListNode” AppAttr1=”someValue1”
AppAttr2=”someValue2”>
   <ListValueString NewAttr=”a”>liststring</ListValueString>
   <ListValueInt TKVType=”KVTypeInt”>234</ListValueInt>
   <ListValueBinary TKVType=”KVTypeBinary”>0A0B0C</ListValueBinary>
   <!--ListValueList will be represented as node with two child
elements-->
   <ListValueList UnderlyingListAttribute=”underlyingAttrVal”>
      <UnderlyingListString>a</UnderlyingListString>
      <UnderlyingListInt>345</UnderlyingListInt>
   </ListValueList>
</Application>
</itemAttachedData>
```

Genesys CAD

```
ListNode={
XML_Node_Attributes={
   AppAttr1=”someValue1”
AppAttr2=”someValue2”
}
TKVList with same name and additional XML_Node_Attributes node will
wrap simple string.
   ListValueString=”liststring”
ListValueString={
   XML_Node_Attributes={
      NewAttr=”someValue1”
}
ListValueString = ”liststring”
}
   ListValueInt=234
   ListValueBinary=0A 0B 0C
ListValueList={
XML_Node_Attributes={
UnderlyingListAttribute=”underlyingAttrVal”
}
   UnderlyingListString=”a”
   UnderlyingListInt=345
}
}
StringNode=”somestring”
IntNode=123
BinaryNode= 01 02 03 04 05 06 0E
XML_Encoding=”shift_jis”
```

Nonvalid Tag Names

From an XML point of view, a valid XML tag name must begin with an underscore (`_`), or colon (`:`) character, and it must contain letters, digits, or

some other character as specified on the following web page: `http://www.w3.org/TR/2006/REC-xml-20060816`.

For example, the characters `%`, `$`, `?`, and `!` are not allowed in XML tag names.

> Note: The following names are not valid tag names: `Some?Name`, `%Name`, and `Na$me`.

The colon (`:`) character is not allowed *inside* the tag name, except in the case of a name with namespaces. For the namespaces definition, see `http://www.w3.org/TR/2006/REC-xml-names-20060816`.

The nonvalid `TKVlist` pair names are replaced in the resulting XML by the `GPMC_Generated` tag name, with `non-valid` as the value of the `realName` attribute.

Genesys CAD

```
ListNode={
        XML_Node_Attributes={
             xmlns:asx= "http://www.sap.com/abapxml"
}
        asx:string="liststring"
        %Listint=234
        List^Binary=0A 0B 0C 0D
}
StringNode="somestring"
Int?Node=123
Binary:Node= 01 02 03 04 05 06 0E
```

For more information about how to use Call-Attached Data in the SAP IC WebClient for business partner searches, see *Note 707104.*

XML

```
<?xml version="1.0" encoding="iso-8859-1"?>
<itemAttachedData>
<!--All top-level data (except KVTypeList) will be placed inside
"Genesys-CAD" application-->
<Application id="Genesys-CAD">
           <StringNode>somestring</StringNode>
           <GPMC_Generated realName=" Int?Node"
TKVType="KVTypeInt">123</GPMC_Generated>
           <GPMC_Generated realName=" Binary:Node"
TKVType="KVTypeBinary">0102030405060E</GPMC_Generated>
</Application>
<!-- ListNode will be represented as separate application-->
<Application id="ListNode"
xmlns:asx="http://www.sap.com/abapxml">
        <!-- name with namespace-->
```

```
        <asx:string">liststring</asx:string >
        <GPMC_Generated realName="%Listint"
TKVType="KVTypeInt">234</GPMC_Generated>
        <GPMC_Generated realName=" List^Binary"
TKVType="KVTypeBinary">0A0B0C0D</GPMC_Generated>
</Application>
</itemAttachedData>
```

Appendix

B Localizing the Adapter

This appendix describes how to localize the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter). It contains the following section:

The Simple Object Access Protocol (SOAP) packages used between SAP IC WebClient and the Adapter include text strings. These strings are used in the SAP graphical user interface (GUI)—for example, for call status and agent workmode.

By default, all Adapter strings are in English. However, they are provided in an open resource file that enables localization of the Adapter to any language.

All string constants used in SOAP messages (except the text of error messages) are defined in the `gp_resources.properties` file, which is located in the directory in which the Adapter is installed. This is a standard Java resource property file, and it contains sets of pairs, in the format `<key>=<value>`.

To localize the Adapter, change the `<value>` objects; you should not change the `<key>` objects or add new `<key>` objects (except if you are adding reason codes, as described in Chapter 6 on page 87).

Character Encodings

When the Adapter reads this file, it uses the ISO 8859-1 character encoding. For characters that cannot be directly represented in this encoding, you must use Unicode `escapes`. However, only a single *u* character is allowed in an escape sequence. For information about Unicode escapes, see Sun's Java website.

Each `<value>` should be stored in the file according to this rule. You can also use the `native2ascii` tool to convert property files to and from other character encodings. For information about the `native2ascii` tool, see Sun's Java website.

Note: Changes that you make to the `gp_resources.properties` file take effect *after* you restart the Adapter.

Appendix

C Queue Presence Information

This appendix describes how the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) processes requests for presence information. It contains the following sections:

Introduction

The presence information contains data about the groups and queues that are available for transferring.

With regard to queues, there is also information about queue loading (the count of logged-in agents, and pending interactions), which is obtained from the statistical component of Genesys Framework (Stat Server).

An agent will require presence information before each interaction transfer.

Only groups/queues that belong to the Adapter's tenant will be in the presence information.

The structure of the agent's group is loaded at Adapter startup, and it is modified during the processing of the corresponding event from the Configuration Server (as a reaction to the changes in the Configuration Server database).

As stated in the ICI (Integrated Communication Interface), the presence information is required for a specified channel. This means that the Adapter should distinguish between, for example, the voice and e-mail agent groups. The following rules are applied to detect the agent's group type:

1. For `voice channel`, the list of agent groups with ACD queues is considered.

2. For `messaging channel`, the list of Business Processes with Interaction queues is considered.

When processing the request for presence information, the Adapter has a group structure, and it also has information about these groups' channels. This request process consists of the following steps:

1. Creating the group structure by using a specified channel.
2. Applying the information from StatServer (for example, the number of logged-in agents, the number of ready agents, and the number of pending interactions), for all of the queues in the resulting structure.

After executing these steps, the Adapter requests the presence information, which can then be sent to an agent.

Requesting Presence Information

This section includes examples of the StatServer information used to calculate queue characteristics.

The StatServer information, used in Step 2 of the request process, is configured in a `stat.xml` file. This file contains the names of the stat types, as defined in the Stat Server options, that are used to calculate all of the necessary queue characteristics (for example, logged in queue, and pending in queue). The names of the queue characteristics are predefined.

Voice Channel Queue Characteristics

This example shows the voice channel's agent queue characteristics:

- `LoggedInACD`: The number of agents that are currently logged into a given queue.
- `ReadyACD`: The number of agents who are currently in the `Ready` state, and who are waiting for interactions from the given queue.
- `PendingACD`: The total number of live or virtual voice interactions currently waiting at a distribution DN.

E-Mail Channel Queue Characteristics

This example shows the e-mail channel's agent queue characteristics:

- `LoggedInIXN`: The number of logged-in agents.
- `ReadyIXN`: The number of agents who are currently in the `Ready` state, and who are waiting for interactions from the given Virtual Routing Point (VRP).
- `PendingIXN`: The total number of interactions of the specified media type within this staging area at the moment of measurement.

For example, to configure the stat type `CurrNumberWaitingCalls` to obtain the value of the `PendingACD` characteristic, the `stat.xml` file must contain the following line:

```
<stat id="PendingACD" fullname="Calls in Queue" alias="Calls"
statType="CurrNumberWaitingCalls" filter="CALL" />
```

Or, to configure the stat type `OpenMedia_Current_In_Queue` to obtain the value of the `PendingIXN` characteristic for e-mail media, the `stat.xml` file must contain the following line:

```
<stat id="PendingIXN" fullname="Interactions In Queue" alias="In Queue
"statType="OpenMedia_Current_In_Queue" mediaType="email" />
```

Note: The `CurrNumberWaitingCalls` and `OpenMedia_Current_In_Queue Stat` types must be configured on the StatServer. You can use the `StatProfile.cfg` file from the Adapter's folder for the statistics configuration on Stat Server. The `StatProfile.cfg` file contains basic statistic types for the voice and e-mail channels.

You may set the `LoggedIn`, `Ready`, `Pending` characteristics for any of the stat types defined on your Stat Server. The stat types must be calculated for `Queue` or `AgentGroups` objects if they are used for the voice channel, and for `StagingArea` objects if they are used for the e-mail channels.

Appendix

D Canonical Address Format for Phone Numbers

This appendix describes how SAP and the G*plus* Adapter 7.5.1 for SAP ICI Multi-Channel (the Adapter) work with canonical number optimizations. It contains the following sections:

Introduction

The canonical address format is a universal phone number format that identifies the components of a phone number. The canonical address format is as follows:

```
+<Country Code>[(<Area Code>)] <Subscriber Number>.
```

Hyphens (-), spaces ( ), or periods (.) are used to visually separate groups of numbers. Parentheses are used to indicate digits that are sometimes not dialed.

> Note: Parentheses should not be used in the international notation.

SAP has its own method for translating and optimizing canonical numbers. For canonical number translation, G*plus* Adapter for SAP ICI Multi-Channel (the Adapter) uses similar settings to SAP (such as country code, extension length, and so on). For canonical number optimization, the Adapter supports two modes, which are controlled by the application option:

- Simple mode (removal of non digit symbols and addition of a plus sign (+), if it is absent)
- Full mode (inbound optimization and outbound optimization)

Configuring the Adapter's Optimization Options

To enable and/or disable canonical phone number optimization configure the following Adapter options:

- `inbound-optimization`
- `outbound-optimization`.

Generally, a phone number is represented in the following format:

`idd country-code area-code base-number extension`

The `inbound-optimization` and `outbound-optimization` options determine how the phone number is translated. See Table 1 for definitions shared by both options.

Table 1: Telephone Number Format Prefix Definitions

Prefix:	Definition:
`idd` (international direct dialing)	Corresponds to the number used to make a call from one country to another. For example, if you are calling United Kingdom from the United States, the `idd` would be `011`. Conversely, if you called the United States from the United Kingdom, the `idd` would be `001`.
`ndd` (national direct dialing)	Corresponds to the access code used to make a call within a country from one city to another. The `ndd` is followed by the city or area code for the place you are calling. For example, if you are dialing +44-(0)7235-xxxx-xxxx, +44 denotes the country code, whereas (0) denotes the `ndd`.
`country-code`	Corresponds to the country attribute of the SAP site definition.
`area-code`	Corresponds to a number assigned to a geographical telephone area.
`base-number`	Corresponds to the common number before an extension number.
`extension-length`	This prefix corresponds to the number of digits in an extension number.

Inbound Optimization

The `inbound-prefix` option represents the prefix that the Adapter removes from `ANI` numbers provided by the T-Server, before sending the information to the SAP system.

This may be used when there is a discrepancy between the number saved and used in the SAP system and the number the telephony system requires. For example: `0331234567890 <-> 1234567890`.

The inbound-optimization of the incoming number is completed as follows:

1. The incoming number is optimized according to the `inbound-optimization` option.
2. The `inbound-prefix` option is achieved.

If the inbound-optimization is disabled and there is no value defined for the `inbound-prefix` option, no action is taken on the number to dial. If one of these options is defined, the inbound-optimization is completed. Table 2 describes the possible translation of the phone numbers, depending on the value of the `inbound-optimization` option.

Table 2: Inbound-Optimization Values

Value:	Option:
disabled	No optimization is performed.
extension	Only the extension number is passed on to the SAP system (according to the value of `extension-length`) if the previous number parts are the same as in the Adapter's options.
national	Automatic Number Identification (ANI) transferred to the SAP system does not contain any international prefixes and country codes, if they are the same as those defined in the Adapter options.
canonical	ANI is displayed as a `+{countrycode}{area-code}{basenumber}`extension.

Table 3 shows examples of Inbound Optimization.

Table 3: Inbound Optimization Example

Prefix:	Value:
extension-length	4
idd	011
ndd	8
country-code	1
area-code	044

Table 3: Inbound Optimization Example (Continued)

Prefix:	Value:
base-number	913
inbound-prefix	033

The following examples show the different canonical number translations depending on the `inbound-optimization` option:

- `inbound-optimization = extension`
  - Number `01110449131004` will be translated to `1004`
  - Number `80449131004` will be translated to `1004`
  - Number `0449131004` will be translated to `1004`
- `inbound-optimization = national`
  - Number `1004` will be translated to `80449131004`
  - Number `9131004` will be translated to `80449131004`
  - Number `9151004` will be translated to `80449151004`
  - Number `01110449151004` will be translated to `80449131004`
  - Number `01110459151004` will be translated to `80459151004`
  - Number `01110449131004` will be translated `80449131004`
- `inbound-optimization = canonical`
  - Number `1004` will be translated to `+10449131004`
  - Number `9131004` will be translated to `+10449131004`
  - Number `80449131004` will be translated to `+10449131004`
  - Number `01110449131004` will be translated to `+10449131004`
  - Number `80449151004` will be translated to `+10449151004`
  - Number `0449151004` will be translated to `+10449151004`

Outbound Optimization

The `outbound-prefix` option represents the prefix that the Adapter adds onto numbers provided by SAPphone for outbound dialing, before sending the information to the T-Server.

This may be used when there is a discrepancy between the number saved and used in the SAP system, and the number the telephony system requires— for example `1234567890 <-> 00331234567890`.

Table 4 shows the possible optimization options.

Table 4: Outbound Optimization Options

Value:	Option:
outbound-prefix	Represents the prefix that the Adapter adds onto numbers provided by SAPphone for outbound dialling, before sending the information to the T-Server.
outbound-optimization	Represents the type of `Outbound Call Number` optimization the Adapter performs.
outbound-idd-substitute	If this option is set to true, the Adapter replaces the leading plus (`+`) sign with the value of `idd`.
outbound-remove	Represents the characters that are removed from the dialed string before any other processing activity.

If outbound optimization is disabled, no optimization is performed on phone numbers obtained from SAP.

If outbound optimization is enabled (the `outbound-optimization` option is set to `enabled`), the Adapter performs the following steps to translate the phone number before sending it to the T-Server:

1. Remove from the phone number all characters contained in the `outbound-remove` option.
2. Replace the plus sign (`+`) with the `idd` value, if the `outbound-idd-substitute` option is set to `true`.
3. If the country code and/or local area code are the same as those defined in the Adapter options, remove them from the number to dial, according to the following rules:
   a. For `idd country-code area-code base-number` extension format numbers, the `ndd areacode base-number` extension number is dialed if the number's area code is not the same as the Adapter's area code.
   b. For `idd country-code area-code base-number` extension format numbers, the `base-number` extension is dialed if the number's area code is the same as the Adapter's area code.
   c. For `ndd area-code base-number` extension format numbers, the `base-number` extension is dialed.
   d. For `area-code base-number` extension format numbers, the `base-number` extension is dialled.
   e. All other numbers are not changed, and are dialed as is.

> Note: The extension length (the number of digits in the extension number) is determined by the value of the `extension-length` option.

4. Add the value of the set `outbound-prefix` to the numbers before sending the information to the T-Server.

Table 5 shows examples of outbound optimization.

Table 5: Outbound Optimization Example

Prefix:	Value:
outbound optimization	enabled
extension-length	4
outbound-remove	( )
outbound-idd-substitute	true / false
idd	011
ndd	8
country-code	1
area-code	044
base-number	913
outbound-prefix	033

The following examples show the different optimization of numbers when `outbound-idd-substitute` = `true`:

- Number `+1 044 (1004)`:
  - **a.** Spaces and brackets are removed due to the `outbound-remove` option. As a result, `+1 044 (1004)` is optimized to `+10441004`.
  - **b.** The plus sign (`+`) is replaced with the `idd` value `011` due to the `outbound-idd-substitute` value. As a result, `+10441004` is optimized to `01110441004`.
  - **c.** According to Step b on page 141, `01110441004` is optimized to `1004`.
  - **d.** The `outbound-prefix` value `033` is added to the optimized number. The resulting number is `0331004`.
- Number `+1 045 (1004)`:
  - Spaces and brackets are removed due to the `outbound-remove` option. As a result, `+1 045 (1004)` is optimized to `+10451004`.
  - The plus sign (`+`) is replaced with the `idd` value `011` due to the `outbound-idd-substitute` value, As a result, `+10451004` is optimized to `01110451004`.

- According to Step a, on page 141, number `01110451004` is translated to `80451004`.
- The `outbound-prefix` value `033` is added to the optimized number. The resulting number is `03380451004`.

The following example shows the optimization of the number when `outbound-idd-substitute = false`:

- Number `011 1 044 (1004)`:
  - Spaces and brackets are removed due to the outbound-remove option, so `011 1 044 (1004)` will be optimized to `011110441004`.
  - According to Step b, the number `00110441004` is optimized to `1004`.
  - The outbound-prefix `033 i`s added to the optimized number. The resulting number is `0331004`.

Configuring Canonical Numbers

To force SAP to dial the number in the format `+<country_code><area_code><extension>`, based on your SAPphone site settings:

- On the `SAP SPHB` screen, select the `Canon. numbers` check box to activate the generation of canonical numbers for the SAPphone server that you are using. See Figure 1.

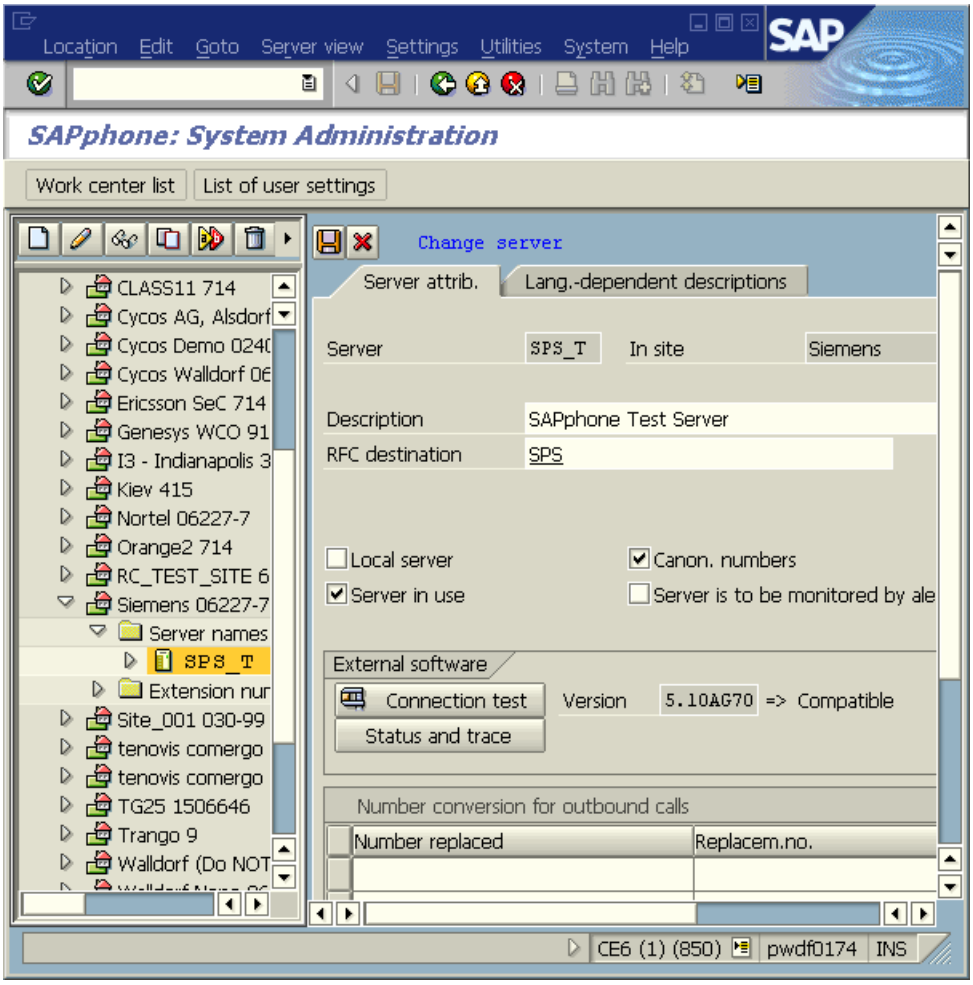

Figure 1: SAP SPHB Screen

To configure and start the Adapter:

1. In Configuration Manager, under the `Adapter` application, configure the required Adapter options.
2. Configure the following additional options:
   - `call-number-translator:outbound-optimization = enabled` (see page 37 for an option description)
   - `call-number-translator:country-code = 1` (see page 37 for an option description)

> Note: The value that you set for `call-number-translator:country-code` must match the value for the SAPphone site definition. In this example, `1` matches the `US` country code on SAP.

Figure 2 shows an example of the configured options.

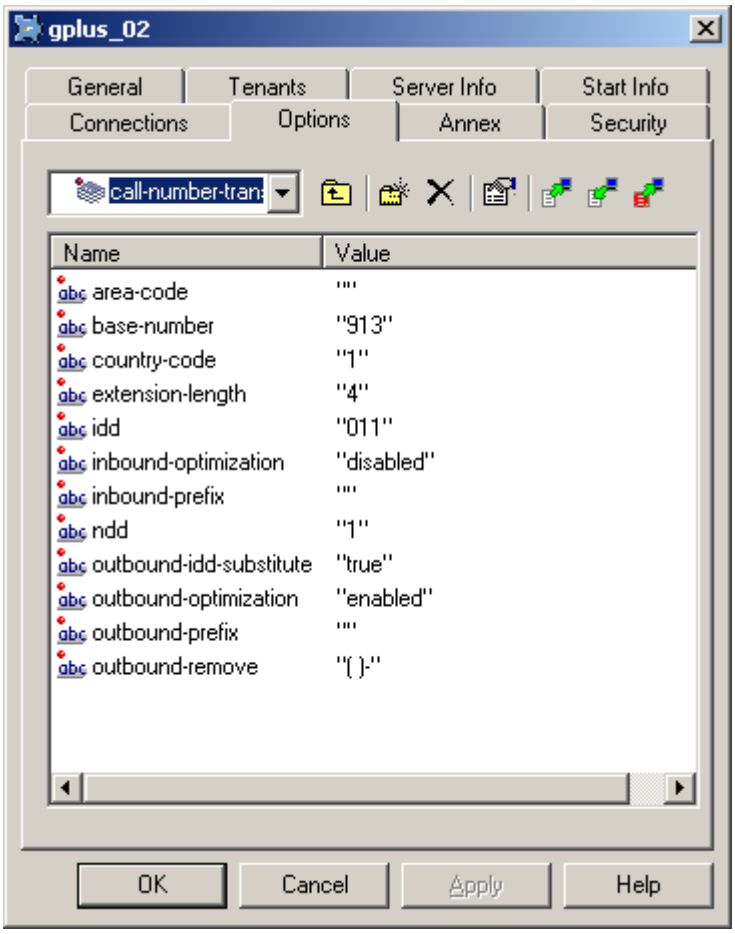

Figure 2: Configuration Manager: Adapter Settings

3. Start the Adapter.
4. From the `SAP SPHA` or `SPHB` transaction, initiate a connection test to check the connectivity between the SAP and the Adapter.

Optimizing the Destination Number

Because of the `Canon. numbers` check box that you selected on page 143, the actual number that is called is `+1 (1004)`. In particular, if you look at the Adapter log output, you will notice that the SAPphone transfer request has the following format for this scenario:

```
 Int 04543 Interaction message "SPS_BTRANSFER" received from 3
("RfcGetData")
 OPER       :RfcGetData
 NAME       :SPS_BTRANSFER
 EXT        :1003
 HANDLE     :0071011ba08a101d_1003
 DESTINATION:+1 (1004)
 EXTCALLS   :SPH_CSTATE
```

The Adapter optimizes this destination number as follows according to the options that you configured in Step 2 on page 144:

1. Spaces and brackets are removed due to the `outbound-remove` option.

   As a result, `+1 (1004)` is optimized to `+11004`.

2. The plus sign (`+`) is replaced with the `idd` value `011` due to the `outbound-idd-substitute` value. As a result, `+11004` is optimized to `01111004`.

3. The `outbound-optimization` engine applies the N2 template, which you can see in the description of the `outbound-optimization` option on page 37. As a result, `01111004` is optimized to `1004`.

As a result of this optimization, the Adapter sends CTI a request to transfer the call to extension 1004, as shown in Figure 3.

Figure 3: CTI — The Call Is Transferred from Extension 1003 to 1004

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