Genesys 7.6

Proactive Contact

Solution Guide

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Preface

Welcome to the *Genesys 7.6 Proactive Contact Solution Guide*. The Genesys Proactive Contact solution results from integrating the Outbound Contact product with the Genesys Voice Platform (GVP) product. The solution provides the ability to proactively initiate and handle outbound campaign calls using GVP.

Deploying the Proactive Contact solution requires configuring various Genesys products. To prevent the solution configurer from having to consult multiple product guides, this guide consolidates proactive contact configuration information into one guide. It starts with an overview of the Proactive Contact solution and continues with step-by-step instructions for configuring the applications and components that are required to run Proactive Contact 7.6. It also provides sample building blocks for VoiceXML applications.

This document is valid only for the 7.6 release(s) of this product.

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 DVD, which you can order by e-mail from Genesys Order Management at orderman@genesyslab.com.

This preface contains the following sections:

Intended Audience

This document is primarily intended for system engineers and other members of an implementation team who will install and maintain Proactive Contact 7.6. This guide assumes that you have a basic understanding of:

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

This guide also assumes that:

- You are familiar with the Genesys Framework architecture and functions that support Outbound Contact 7.6 and Genesys Voice Platform 7.6.
- You have already installed and are familiar with the individual Outbound Contact and GVP solutions.
- If you choose to report on your Proactive Contact solution activity using Genesys tools, you are familiar with the Genesys reporting architecture and reporting-related applications—Genesys Info Mart, Stat Server, Interaction Concentrator, and GVP Voice Application Reporter (VAR).

Chapter Summaries

In addition to this preface, this document contains the following chapters:

- Chapter 1, “Overview,” on page 11, provides a high-level overview of how the component products operate to provide the Proactive Contact solution, including a description of the proactive contact call flow, the deployment scenarios that are supported, and a summary of the steps to configure the solution.
- Chapter 2, “Configuring Genesys Voice Platform,” on page 23, provides detailed information about configuring GVP for the Proactive Contact solution.
- Chapter 3, “Configuring Outbound Contact,” on page 37, provides detailed information about configuring Outbound Contact for the Proactive Contact solution.
- Chapter 4, “Configuring the VoiceXML Application,” on page 49, provides information about how user data is passed to and from OCS, and about VoiceXML building blocks that are particularly relevant for Proactive Contact solution voice applications.
- Chapter 5, “Proactive Contact Solution Reference Information,” on page 59, provides reference information about the Framework port, the Power GVP dialing mode, the messaging behind a typical call flow, and the OBN Error Codes.

Related Resources

This guide assumes that you have already installed and configured the component products listed below.

Outbound Contact

Consult these additional resources as necessary:

- *Outbound Contact 7.6 Deployment Guide*, which provides architectural information, instructions on how to install and configure Outbound Contact 7.6 components, configuration option descriptions, and other related information.
- *Outbound Contact 7.6 Reference Manual*, which describes application features for Outbound Contact 7.6 and provides information about constants, and communication protocols.
- *Outbound Contact Manager 7.6 Help*, which describes how to use Outbound Contact Manager.
- *Genesys 7.6 Log Events Help*, which describes in further detail log event messages for Outbound Contact Server and Call Progress Detection (CPD) Server, among other products.

GVP

Consult these additional resources as necessary:

- *Genesys Voice Platform 7.6 Deployment Guide*, which provides detailed installation and configuration instructions for GVP.
- *Genesys Voice Platform 7.6 Reference Manual*, which provides instructions for the administration, provisioning, and configuring of GVP and its components.
- *Genesys Voice Platform 7.6 Voice Application Reporter Deployment and Reference Manual*, which provides detailed installation and configuration instructions, and describes the interfaces for the Voice Application Reporter (VAR).
- *Genesys Voice Platform 7.6 Voice Application Reporter SDK Developer's Guide*, which provides examples on how to develop VoiceXML applications that interface with the VAR database and generate application reports.
- *Genesys Voice Platform 7.6 Troubleshooting Guide*, which provides trap and basic troubleshooting information for GVP.
- *Genesys Voice Platform 7.6 VoiceXML 2.1 Reference Manual*, which provides information about developing VoiceXML 2.1 applications on GVP. It presents VoiceXML 2.1 concepts and provides examples that focus on the GVP implementation of VoiceXML.

- *Genesys Voice Platform 7.6 Studio Deployment Guide*, which provides installation instructions for Genesys Studio.
- *Genesys Studio Help*, which provides online information about Genesys Studio, a GUI for the development of applications based on VoiceXML.

Optional Supplementary Solutions

Universal Routing

Consult these additional resources as necessary:

- *Universal Routing 7.6 Deployment Guide,* which provides a high-level overview of Universal Routing features and functions, including product architecture, system availability, redundancy information, and deployment planning. It also provides instructions for deploying Universal Routing components, and describes how to start and stop these components once you have configured and installed them.
- *Universal Routing 7.6 Reference Manual,* which describes and defines routing strategies, Interaction Routing Designer (IRD) objects, Universal Routing Server (URS) and other server functions and options, number translation, pegs, and statistics used for routing.
- *Universal Routing Business Process User's Guide*. This guide contains step-by-step instructions for creating interaction workflows (business processes), which direct incoming customer interactions through various processing objects. The goal is to generate an appropriate response for the customer.
- *Universal Routing 7.6 Interaction Routing Designer Help,* which describes how to use IRD to create routing strategies. It also describes Interaction Workflow view, where you create business processes that route incoming interactions through various processing objects with the goal of generating an appropriate response for the customer.
- *Universal Routing 7.6 Routing Solutions Guide*, which contains information on the various types of routing solutions that can be implemented, including skills-based routing, business-priority routing, share agent by service level agreement routing, and cost-based routing.

Genesys Info Mart and Interaction Concentrator

Consult these additional resources as necessary:

- *Genesys Info Mart 7.5 Deployment Guide,* which describes the architecture, configuration requirements, and installation steps for Genesys Info Mart, including information about specific Interaction Concentrator and attached data configuration requirements that allow you to extract outbound campaign information directly from one or more Interaction Concentrator databases.

- *Genesys Info Mart 7.5 Reference Manual* for your relational database management system (RDBMS), which describes the structure of the Genesys Info Mart database and tables.
- *Genesys Info Mart 7.5 User's Guide,* which describes how Genesys Info Mart populates data for outbound contact attempts.
- *Interaction Concentrator 7.6 Deployment Guide,* which describes the architecture, configuration requirements, and installation steps for Interaction Concentrator, including information about how to make data from the Genesys Outbound Contact solution available in Interaction Database (IDB).
- *Interaction Concentrator 7.6 Physical Data Model* for your RDBMS, which describes the structure of the database and IDB tables.

Genesys

Consult these additional resources as necessary:

- *Framework 7.6 Deployment Guide*, which describes how to configure, install, start, and stop Framework components.
- *Framework 7.6 Configuration Options Reference Manual*, which provides you with descriptions of configuration options for other Framework components.
- *Framework 7.6 Configuration Manager Help*, which describes how to use Configuration Manager.
- *Genesys 7 Migration Guide*, also on the Genesys Documentation Library DVD, which contains a documented migration strategy from Genesys product releases 5.x and later to all Genesys 7.x releases. Contact Genesys Technical Support for additional information.
- *Genesys 7 Events and Models Reference Manual*, which contains the T-Library API, information on `TEvents`, and an extensive collection of call models.
- *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 Release Notes and Product Advisories for this product, which are available on the Genesys Technical Support website at `http://genesyslab.com/support`.

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

- *Genesys 7 Supported Operating Systems and Databases*
- *Genesys 7 Supported Media Interfaces*

Genesys product documentation is available on the:

- Genesys Technical Support website at http://genesyslab.com/support.
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Chapter

1 Overview

This chapter provides an overview of the Proactive Contact solution using Outbound Contact 7.6 and Genesys Voice Platform (GVP) 7.6. It introduces a description of the configuration needed for this solution.

This chapter contains the following sections:

Note: This document assumes that you can successfully install and configure the individual Outbound Contact and GVP solutions. This document does not provide installation or configuration information about the individual solutions.

What Is a Proactive Contact Solution?

Outbound Contact integrated with GVP provides the ability for Outbound Contact Server (OCS) to trigger outbound calls, which are dialed using GVP, and to receive responses and results. GVP custom Voice Extensible Markup Language (VoiceXML) applications can automatically process the GVP-dialed outbound calls for self-service, or the calls can be passed to an agent if agent involvement is necessary.

Note: The Proactive Contact solution may also be referred to as Outbound Notification.

Outbound Notification Manager

GVP Outbound Notification (OBN) Manager serves as a gateway between the Outbound Contact and GVP solutions that are brought together to enable Proactive Contact.

OBN Manager accepts dialing requests from OCS and conveys the request to one or more Voice Communication Server (VCS) or IP Communication Server (IPCS) machines to create a new outbound connection.

After a connection is successfully established, OBN Manager transfers control to VCS/IPCS, and then executes a preprovisioned VoiceXML Interactive Voice Response (IVR) application on that outbound connection.

Features and Benefits

The Proactive Contact solution combines the Outbound Contact and GVP solutions to provide the following benefits and to make the following functionality available:

- Use GVP to automatically dial outbound calls.
- Automatically launch a custom VoiceXML application (voice application), and allow it to branch based on the detected call result. For example:
  - If the call reaches a live person, run any custom self-service application.
  - If the call reaches an answering machine, leave a custom message.
- Store in the calling list the result of the call progress detection, call time, other outbound mandatory attributes, and updated user data from the custom voice application for each dial attempt.

  Currently supported call results include:
  - Live person
  - Answering Machine Detection (AMD)
  - Fax/Modem
  - Special Information Tone (SIT)
  - Ring No Answer
  - Busy (or Fast Busy)
  - Operator Intercept

Note: A TDM Solution with CPD enabled provides all the results listed above. For an IP solution, use HMP to get the same call results.

The following outbound-specific actions can be used in the custom voice application:

- Update the calling record attributes, including the call result and the user-specified attributes.
- Add a new record to the calling list for future dialing.
- Mark the record as `DoNotCall` (DNC), or cancel the record.
- Reschedule the record to be called at a future time.

- Apply Outbound Contact treatments to unsuccessful call results. Such treatments can be to redial at a specified time or to dial the next record for a `Busy` call result.
- Finalize the outbound call in GVP or send it to an agent for further processing.

Reporting

If you use Genesys reporting tools to report on Proactive Contact solution activities, you can use the following dimensions for reporting purposes in Genesys Info Mart:

- Agent
- Call Disposition (Call Result)
- Campaign
- Campaign Group
- Contact Information Type
- Call Progress Detection (CPD) Disposition (CPD Call Result)
- Custom
- DN
- List
- Record Type
- Tenant
- Time & Date

Note: The only dimension that is slightly different for the Proactive Contact solution is the `Agent` dimension. It is not applicable when GVP does not transfer any calls to an agent. Calls are associated with the first agent that received the outbound call transfer from GVP. Therefore, the call record chain is associated with the agent that was part of the last call attempt.

Supported Metrics

The following reporting metrics are applicable for the Proactive Contact solution:

- All basic counter metrics
- All snapshot metrics
- All time metrics except:
  - Engage time
  - Preview time

  - Transfer time
  - Hold time
  - ACW time
  - Waiting time
- All operational metrics for GVP-qualified campaigns

New in This Release

The 7.6 releases of OCS and GVP provide the following additional or changed functionality for the Proactive Contact solution:

- Enhanced ability to manage the connections between OCS and OBN Manager:
  - New OBN Manager parameters that prevent unwarranted stale records in OCS. For more information, see "OCS Retransmit Timeout" on page 27 and "Retransmit Interval" on page 28.
  - New SNMP traps and log messages
- Ability for OBN Manager to obtain the T-Server Call GUID from Call Flow Assistant (CFA) as part of the User Data, and to pass the Call GUID to OCS for historical reporting purposes.
- Ability to pass the calling party number (ANI) from OCS to OBN Manager.
- Ability to propagate SIP Header values to the VoiceXML application on IPCS. For more information, see the appendix about SIP Headers in the *Genesys Voice Platform 7.6 VoiceXML 2.1 Reference Manual.*

Component Products

The Proactive Contact solution is enabled through the integration of the following Genesys products/servers:

- Genesys Outbound Contact
  - Outbound Contact Server (OCS) (the dialing engine)
  - Outbound Contact Manager (the campaigns administration GUI)
- Genesys Voice Platform (the routing engine)
  - Outbound Notification Manager (OBN Manager)
  - Voice Communication Server (VCS) for TDM telephony or IP Communication Server (IPCS) for IP telephony (the dialer)
  - Studio (optional—a tool to develop VoiceXML applications)
- Universal Routing (optional—supplementary routing engine)
  - Universal Routing Server (URS)
  - Interaction Routing Designer (IRD)

- Genesys Info Mart (optional—for reporting on Proactive Contact solution activities)
- Interaction Concentrator (optional—required as the data collector if you are using Genesys Info Mart)

For more information about how OBN Manager enables OCS customers to make outbound calls using GVP, see “Outbound Notification Manager” on page 12. For more information about how the other Proactive Contact components function, see the additional deployment guides that are listed in “Related Resources” on page 7.

Note: The GVP components support both single-tenancy and multi-tenancy, but not simultaneously.

Proactive Contact Call Flow

The Proactive Contact solution operates in `Power GVP` mode. Calls are dialed by GVP Dialer.

When an outbound call is made using GVP and the contact is reached, the call is processed by a custom voice application according to the logic scripted in the application. The specific VoiceXML application that is used for all calls dialed by GVP for a campaign is specified in the `IVR Profile` field of the `Campaign Group` object. See page 40 for more information about this field.

Figure 1 shows the call flow for the Proactive Contact solution.

Note: For completeness, the following diagram shows both IP and TDM types of GVP communication server (IPCS and VCS). However, in practice, you cannot have both IPCS and VCS in the same GVP deployment.

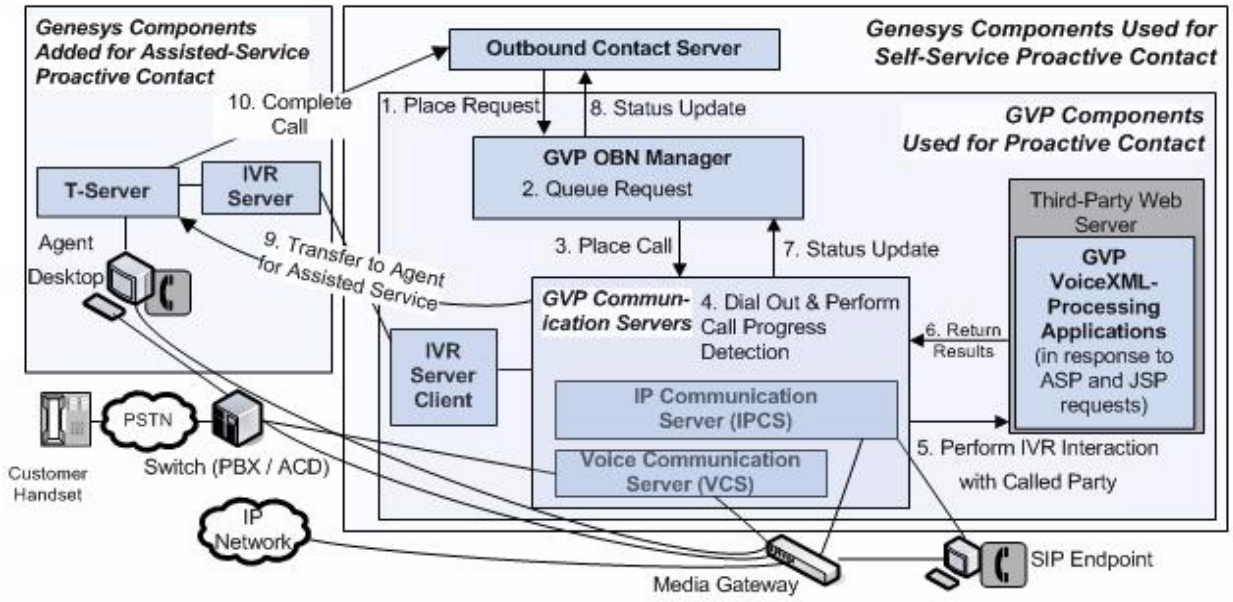

Figure 1: Proactive Contact Call Flow

The proactive call flow is as follows:

1. OCS sends an outbound dialing request to OBN Manager.
2. OBN Manager queues the request in its internal queue.
3. When a call can be placed, OBN Manager sends the request to GVP to place a call.
   - If VCS is used, and if the CPD library is configured, GVP sends a dial request to the Dialogic card using the CPD library for advanced Call Progress Analysis (CPA) detection. Otherwise, GVP sends the request directly to Dialogic.
   - If IPCS is used, the request is sent using the Session Initiation Protocol (SIP) Proxy to the Media Gateway.
4. The customer's number is dialed.
   - If CPA is successful, the call is sent to the voice application that was specified by OCS in the outbound dialing request to OBN Manager.
   - If CPA is unsuccessful, OBN Manager updates the call status and sends it to OCS.

Notes: The voice application is specified in Configuration Manager for the Outbound Campaign. It will be called for both answered and answering machine call results.

CPA is available to the voice application as `$cparesult$` in the query string and/or VoiceXML session variable.

The `User Data` sent by OCS to OBN Manager for the outbound request is available to the voice application as the `$userdata$`

VoiceXML session variable. This includes any user-defined business data and any mandatory OCS fields.

The Routing Point DN (if configured for the campaign in the Voice Transfer Destination field of the Campaign Group object) is available to the voice application as the $voice_dn$ VoiceXML session variable. This will be used by the voice application as the Routing Point DN destination when issuing a RouteRequest message if a call requires further processing by a live agent.

GVP uses the OCS Calling Party Number (CPN) received from OCS as the Automatic Number Identification (ANI) for outbound calls. For information about configuring the CPN, see "CPNDigits" on page 45.

In a Proactive Contact solution, unlike in a stand-alone GVP solution, CFA does not use the CPA Timeout parameter that is provisioned in the EMPS for the outbound IVR Profile, as the timeout for calls that are not answered. Instead, the OCS call_wait_connected_timeout parameter (in the OCS Campaign Group-Level or Application Level options) sets the CPA timeout. For more information about setting this OCS option, see "call_wait_connected_timeout" on page 45.

5. The voice application processes the call, directing the IVR interaction with the called party.
6. The voice application completes its processing of the call, returning call-related data to GVP.
7. GVP updates the call status and sends it to OBN Manager.
8. OBN Manager updates the call status and sends it to OCS.

Note: Steps 5 through 8 are repeated each time the voice application sends call-related data to GVP.

9. If required, the call can be transferred to an agent for Assisted Service.

Notes: If the voice application determines that the call needs to be transferred to an agent, it sends a RouteRequest message to a virtual Routing Point (VRP) DN that was specified in the OCS data by OCS when the dialing request was sent. This is the same DN that was configured as the Voice Transfer Destination DN for the Campaign Group that runs in Power GVP mode. The VRP is controlled by a URS strategy. The strategy can interact with the VoiceXML application in the same way that it interacts during any CTI-enabled call between GVP and Framework. When URS has finished processing the call, it is transferred to an agent desktop.

A call can also be transferred to an agent by VoiceXML transfer without queuing the call first.

10. After the agent processes an Assisted Service call, the call completion status is sent to OCS from the agent's desktop, through T-Server, using the outbound desktop protocol.
11. You can choose to have call data sent to GVP Voice Application Reporter (VAR). This data includes all outbound contact details, so you can use VAR to provide outbound reports.

    You can also choose to have OCS data sent to Interaction Concentrator, which is the data source for outbound contact details for Genesys Info Mart.

For a more detailed description of the messaging underlying a typical call flow, see "Detailed Typical Call Flow" on page 60.

Supported Scenarios

The Proactive Contact solution supports the following environmental scenarios:

- Single- or multi-tenant environments.
- Any currently supported TDM or IP switches and end points.
- GVP can be configured in either `IVR-in-Front` or `IVR-Behind` modes. Any available GVP ports can be used for inbound or outbound calls, but some ports can be reserved for outbound calling only. In addition, these ports can be shared across multiple campaigns. Inbound or outbound ports must be configured accordingly in the Element Management Provisioning System (EMPS) when they are universal ports (such as in the TDM solution). IPCS ports are universal ports by default.

The following figures illustrate the different environments that support the Proactive Contact solution:

- GVP Outbound TDM, Carrier Direct (see Figure 2)
- GVP with OCS—TDM/PBX/CTI (see Figure 3 on page 19)
- GVP Direct SIP with IP Call Progress (HMP) (see Figure 4 on page 20)
- GVP IP HMP with OCS and SIP Server (see Figure 5 on page 20)

Note: Figures 2 through 5 provide a general illustration of the associated scenario. They do not illustrate all of the connections and components included in that scenario.

Figure 2 shows a GVP Outbound TDM environment (Carrier Direct).

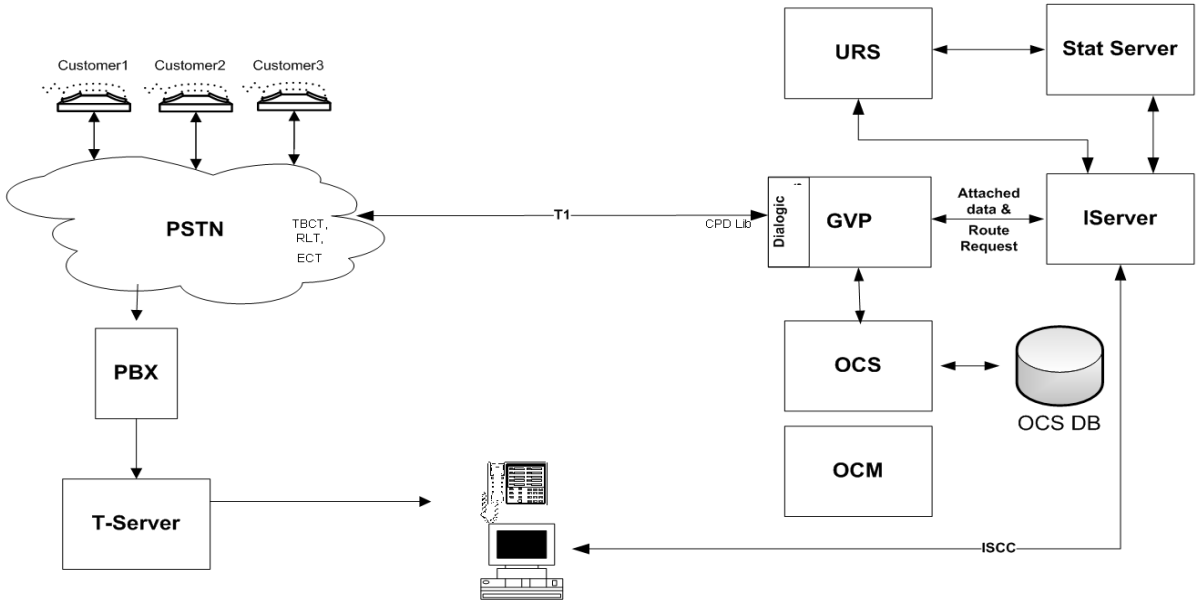

Figure 2: GVP Outbound TDM, Carrier Direct

Figure 3 shows GVP with OCS, using TDM/PBX/CTI.

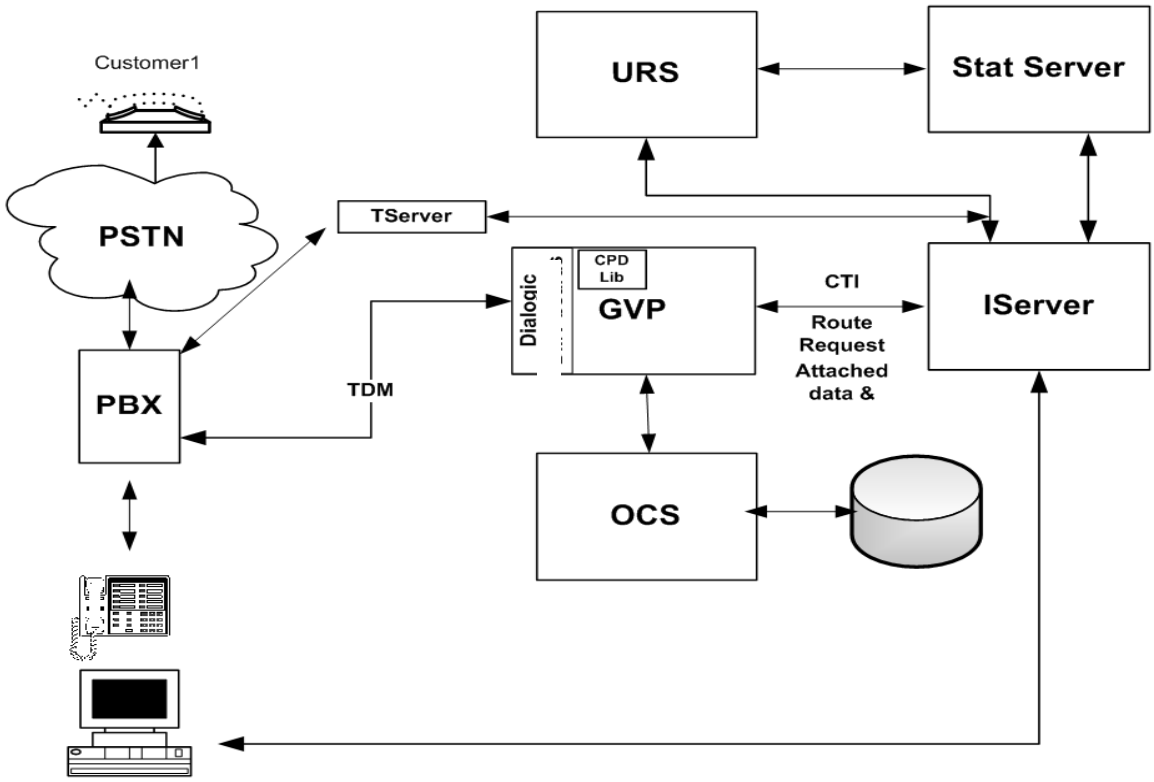

Figure 3: GVP with OCS—TDM/PBX/CTI

Figure 4 shows GVP direct SIP with IP call progress detection using Host Media Processing (HMP) software:

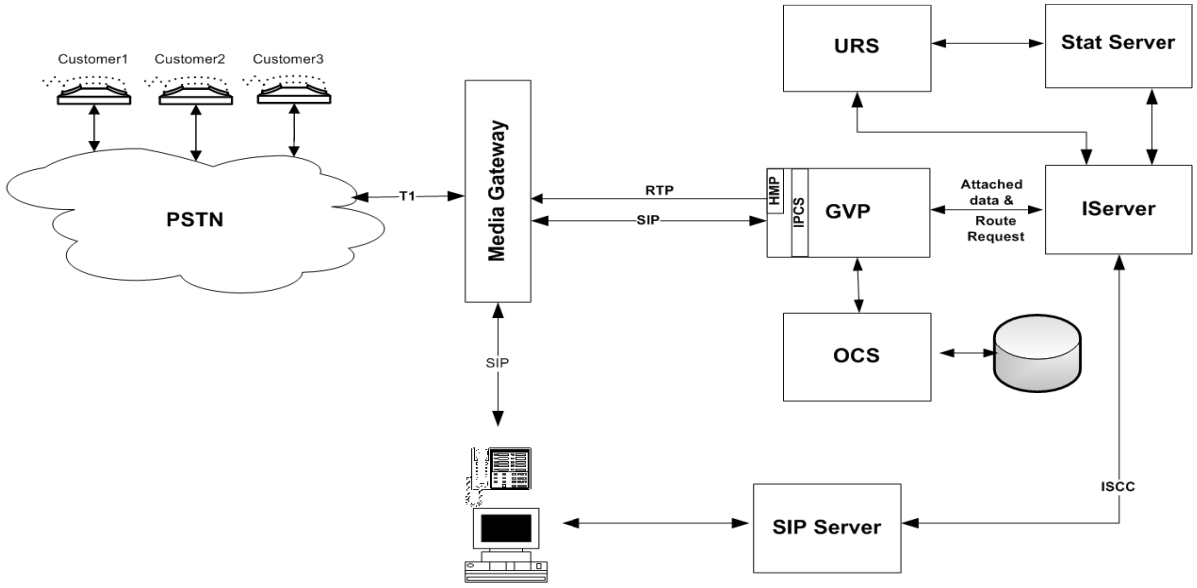

Figure 4: GVP Direct SIP with IP Call Progress (HMP)

Figure 5 shows GVP IP HMP with OCS and SIP Server.

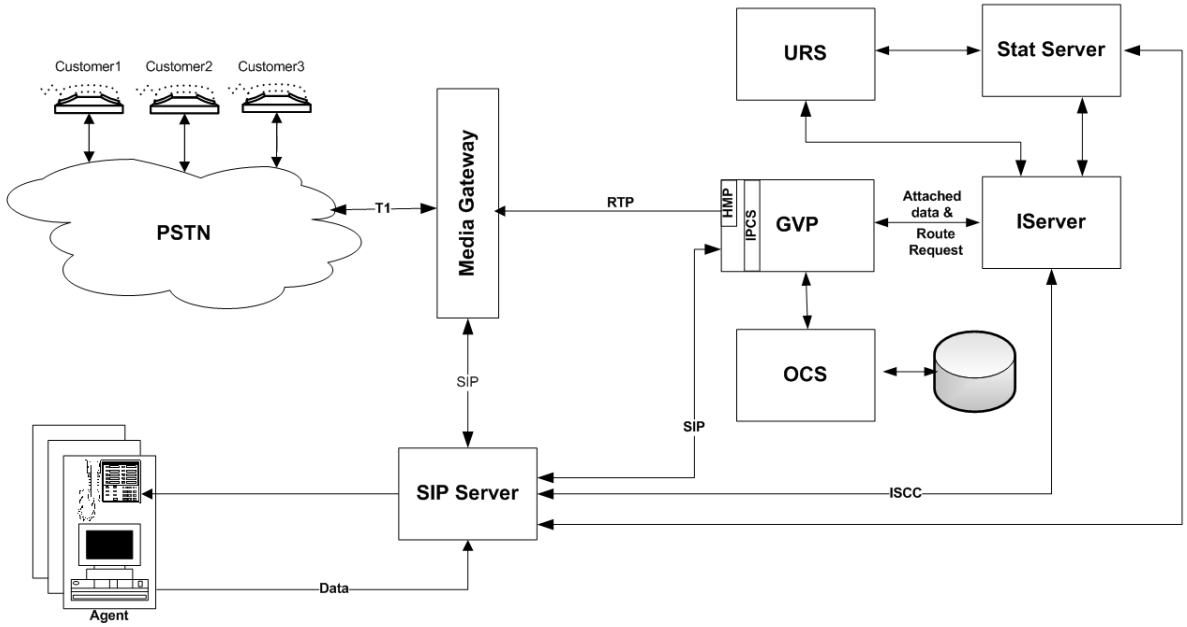

Figure 5: GVP IP HMP with OCS and SIP Server

Summary of Solution Configuration Steps

To configure the Proactive Contact solution, do the following:

1. Install and configure Outbound Contact as described in the *Outbound Contact 7.6 Deployment Guide.*
2. Install and configure GVP as described in the *Genesys Voice Platform 7.6 Deployment Guide.*
3. Create and configure OBN Manager. For more information, see "Creating and Configuring the OBN Manager Application" on page 23.
4. Create or modify the VoiceXML application(s). For more information about creating VoiceXML specifications suitable for the Proactive Contact solution, see Chapter 4, "Configuring the VoiceXML Application," on page 49.
5. Create or modify the IVR Profile. For more information, see "Provisioning the IVR Profile" on page 30.
6. Integrate the GVP VCS with the CPD library. For more information, see "Configuring Voice Communication Server" on page 32.

   Note: There are no special requirements to integrate IPCS.

   For a GVP solution that is configured in `behind-the-switch` mode, additional integration steps are required. For more information, see "Configuring Behind-the-Switch Mode" on page 34.
7. Create `Campaign Group` object(s) to be used for the Proactive Contact solution. If your Proactive Contact solution will not use agents, create empty Agent Group(s).

   For information about the specific configuration requirements for the `Campaign Group` objects, as well as other OCS configuration options that affect Proactive Contact solution operations, see Chapter 3, "Configuring Outbound Contact," on page 37.

   In particular, ensure that you do the following:

   a. Add a connection to the OBN Manager `Application` to the connections of the `Campaign Group` object (and optionally, for Advanced Disconnect Detection Protocol [ADDP] support, to the OCS `Application`). For more information, see "Configuring the Connection Tab" on page 41.
   b. Specify the IVR Profile ID in the `Advanced` tab of the `Campaign Group`. This IVR Profile ID (a string of nine digits) must match the IVR Profile ID that EMPS assigned to the VoiceXML application that you plan to use for this specific Campaign Group. Alternatively, you can specify the IVR Profile ID in the `ivr-profile-name` option in the OCS `Application`. For more information, see "IVR Profile ID" on page 40.

Migration

Be aware of the following:

- Outbound Contact 7.5 is compatible with GVP 7.6 at the 7.5 feature level.
- GVP 7.5 is compatible with Outbound Contact 7.6 at the 7.5 feature level.

Note: For more information about migration, see the GVP chapters and Outbound Contact chapters in the *Genesys 7 Migration Guide.* For information about interoperability, see the *Genesys 7 Interoperability Guide.*

Chapter

2 Configuring Genesys Voice Platform

This chapter describes how to configure Genesys Voice Platform (GVP) for a Proactive Contact solution. It includes the following sections:

Before You Begin

This guide assumes that you have successfully installed and configured the GVP solution. This document provides information about specific configuration requirements to integrate an installed GVP deployment into a Proactive Contact solution. For information about installing and configuring the GVP solution itself, see the *Genesys Voice Platform 7.6 Deployment Guide* and other resources listed in "Related Resources" on page 7.

Creating and Configuring the OBN Manager Application

The key component to integrate the GVP and Outbound Contact solutions is the GVP Outbound Notification (OBN) Manager. For more information about OBN Manager, see "Outbound Notification Manager" on page 12.

To set up OBN Manager for your Proactive Contact solution, do the following:

1. Create the OBN Manager database, which OBN Manager uses to manage requests from the trigger application (see "Configuring the OBN Manager Database" on page 24).
2. Create the OBN Manager `Application` (see "Creating the OBN Manager Application" on page 26).

3. Update the parameters in the GVP Element Management Provisioning System (EMPS) (see "Updating EMPS Parameters" on page 26).
4. Identify the Voice Communication Server (VCS) or IP Communication Server (IPCS) servers that you want to use for the Outbound application (see "Creating IPCS/VCS Server Groups for OBN Manager" on page 29).

Configuring the OBN Manager Database

Create a database with the name `obnmanager` using your database management system (DBMS) tools—Microsoft SQL Server for Windows installations, and Oracle for Solaris installations. After you have created the database, you can run the database scripts.

Creating the OBN Database Schema

Before you can use OBN Manager, you must run database scripts to create the database schema. The following sections describe how to run the scripts:

- For Microsoft SQL Server 2000
- For Microsoft SQL Server 2005 (see page 25)
- For Oracle 10g (see page 25)

For Microsoft SQL Server 2000

1. Open SQL Enterprise Manager.
2. Expand the `Microsoft SQL Servers` node.
3. Expand the `SQL Server` group. This now displays a list of servers that it is managing.
4. Select your local machine.
5. Expand the `Databases` node.
6. Right-click `Databases` and select `New Databases`.
7. In the `Name` box, enter `obnmanager`. Leave the other fields at their default values.
8. Click `OK`. The database now appears in the list on the left pane.
9. From the `Tools` menu, select `SQL Query Analyzer`.
10. When the new dialog box opens, select `GVP_OBNManager` from the drop-down list.
11. From the `File` menu, select `Open`.
12. Select the `<Installation Drive>\GVP\CN\config\database\sqlserver` folder.
13. Select `OBN_DB_NEW_76.sql`.
14. Click anywhere inside the script that opens.

15. From the Query menu, select Execute. After the script has finished running, the following message should appear: The command completed successfully.
16. Repeat Steps 12–15 for the script OBN_PROC_NEW_76.sql. This script is located in the same folder as the previous script.

For Microsoft SQL Server 2005

1. To launch the SQL Server Management Studio, from the Start menu, select Programs > Microsoft SQL Server 2005 > Management Studio.
2. Click File > Connect Object Explorer.
3. Enter sa as the User Name and Password.
4. Expand the server name on the Object Explorer.
5. Right-click Databases, and then select New Database.

   The New Database dialog box pops up.
6. Enter the Database name.
7. Make changes to the Database files, if required.
8. Click OK.

   The database is created.
9. To verify that the database was created, refresh Object Explorer.
10. Select File > Open > File.
11. Use the FileOpen dialog box to select the script <Installation Dir>\GVP\Cn\config\database\sqlserver\OBN_DB_NEW_76.sql.
12. Connect as sa when prompted.
13. Change the database in the DB List to the required database.
14. Press F5 to execute the script.
15. Repeat Steps 10–14 for the script OBN_PROC_NEW_76.sql. This script is located in the same folder as the previous script.

For Oracle 10g

1. Log in to SQL Plus, and connect with the obnManager user.
2. Execute the scripts contained in the following files. These are located in the <CN Dir>/config/database/oracle directory:

Note: The obnManager tablespace and the obnManager user must be created before running these scripts.

- OBN_DB_NEW_760_oracle.sql
- OBN_DB_NEW_OBN_PKG_760_oracle.sql
- OBN_DB_NEW_OBN_PKG_BODY_760_oracle.sql

Creating the OBN Manager Application

The OBN Manager Application template is distributed with Outbound Contact Server (OCS). To create the OBN Manager Application:

1. In Configuration Manager, import the OBN Manager Application template.
2. Use the template to create the primary OBN Manager Application.

   Configure only the host and port where OBN Manager listens for the OCS connection. Ensure that the host and port match the host and port configured for OBN Manager in EMPS.
3. If desired, create a separate backup OBN Manager Application, as described in Step 2, and specify this backup in the Backup Server field on the Server Info tab of the primary OBN Manager Application.

Note: OCS ignores all other properties in the OBN Manager Application object.

Updating EMPS Parameters

You must verify or update the parameters for the OBN Manager in the EMPS.

1. In a web browser, access the EMPS login screen by entering the URL http://<EMPS-hostname>:9810/spm/login.php.
2. Log in to the EMPS as Admin, and enter the password as admin password.
3. On the EMPS navigation tree, expand the objects Servers > Outbound Notification Manager > <ServerName>, and then right-click OBNManager.
4. From the shortcut menu, select Edit, which opens the Property page.
5. Verify or enter values for the parameters listed in Table 1, and then click Save. Restart the WatchDog application on the OBN Manager host after you have completed any configuration changes.

Table 1: OBN Manager Configuration Parameters

Tab	Parameter	Description	Example Values
Advanced Configuration	Min DB Pool Size	Minimum number of database connections kept alive for use in QManager.	`5`
	Max DB Pool Size	Maximum number of database connections kept alive for use in QManager.	`20`
	OCS Retransmit Timeout	Interval, in seconds, during which OBN Manager will try to retransmit GVP responses to OCS, if the socket connection between OCS and OBN Manager has gone down. OBN Manager regularly scans the OBN database to detect responses that have not been transmitted to OCS. (The interval at which OBN Manager scans the database is configurable—see the "Retransmit Interval" parameter.) For each response that has failed to transmit, the `OCS Retransmit Timeout` interval starts when the failure first occurs and is recorded in the OBN database. If OBN Manager has not succeeded in transmitting the response by the time that the `OCS Retransmit Timeout` interval expires for that response, OBN Manager flushes the response from its storage, and does not attempt to retransmit it again.	`18000`
	ORP Threads	Number of Outbound Request Processor (ORP) threads that should process requests prepared by QManager.	`10`
	Queue Batch Size	Number of entries that QManager adds to the queue at one time for ORP to pick up and process.	`200`
	Clean Interval	Interval, in seconds, at which QManager removes expired or completed requests from the database.	`300`

Table 1: OBN Manager Configuration Parameters (Continued)

Tab	Parameter	Description	Example Values
Advanced Configuration (continued)	QCheck Interval	Interval, in milliseconds, at which QManager removes expired requests from the prepared queue, so that ORP does not pick up.	`3000`
	Queue Interval	Interval, in milliseconds, at which QManager populates the internal queue.	`2000`
	VCS/IPCS Inactive Interval	Interval, in seconds, after OBN Manager receives a `NO_PORTS` message in a failure URL from Call Flow Assistant (CFA), for which OBN Manager will not send any requests to the VCS or IPCS that sent the message. The applicable VCS or IPCS is marked as `stale` (or inactive) for the duration of the inactivity interval. If the applicable VCS or IPCS is the only communication server that has been configured for OBN Manager, requests to the stale server will fail and will be treated as failed attempts. If the applicable VCS or IPCS is not the only communication server that has been configured for OBN Manager, requests will be sent to the other active servers, in round-robin fashion.	`60`
	Retransmit Interval	Frequency, in seconds, with which OBN Manager scans the OBN database for failed GVP responses, to retransmit to OCS. See also the "OCS Retransmit Timeout" parameter.	`180`
	Max Active Requests	Maximum number of requests that are prepared for processing by ORP. Genesys recommends that you set this to at least five times the size of the "Queue Batch Size" parameter.	`1000`

Table 1: OBN Manager Configuration Parameters (Continued)

Tab	Parameter	Description	Example Values
OCS Configuration	OCS Configured	Select this check box for OCS-OBN integration.	Selected
	OCS Listener Port	Port used to establish a connection with OCS. The port is set to `2355`.	`2355`
Data Store	Database Server Name (Oracle Net Service Name in case of Oracle)	Name of the database server machine.	Oracle: `GENGRP_172.24.129.52` Microsoft SQL: `172.24.129.52`
	Database Username	Username for database user account.	`obnmanager`
	Database Password	Password for database user account.	`obnmanager`
	Database Catalog **Note:** There is no database catalog for Solaris hosts, and therefore this parameter will not be displayed.	Name of the database instance on which OBN Manager data is stored.	`OBN_MT`
System	Log Levels	Control the amount of information that is written to the log file.	`*:0x3`

Creating IPCS/VCS Server Groups for OBN Manager

Follow these steps to create IPCS/VCS server groups for Outbound applications:

1. On the EMPS navigation tree, right-click `Server Groups`, and select `Add New Group`.
2. In the `Group Name` field, enter the name of the group.
3. From the `Server Group Type` drop-down list, select `OBNCS`.

   The `Available` list in the `Servers Selection` section is populated with all of the IPCS and VCS servers that have been provisioned.
4. For each IPCS or VCS server that you want to use as an Outbound Application, click the server in the `Available` list, and then click `>>` to move it to the `Selection` list.
   - For VCS, ensure that you select only servers that have provisioned Outbound ports (the `Route Type` of the `Route1` node has been set to either `Inbound & Outbound` or `Outbound`)
   - For IPCS, you can select any server, because the ports are universal.

To remove a server from the `Selection` list, click the server, and then click `<<`.

5. Click `Save`.

Integrating with Outbound Contact Server

To enable the Proactive Contact solution, you must perform the following steps to integrate GVP with OCS:

- Configure the IVR profile to provision the voice application (see "Provisioning the IVR Profile").
- Integrate the GVP VCS with the Call Progress Detection (CPD) library (see "Configuring Voice Communication Server" on page 32).

Note: There are no special configuration requirements for the IPCS.

- For a GVP solution that is configured in `behind-the-switch` mode:
  - Modify the parameter (`PrependHostIPToCalledNum`) that controls what information is sent from the IVR Server Client to the IVR Server in a New Call request.
  - Ensure that the port range of the VCS matches the corresponding range of the Voice Treatment Ports defined in the Configuration Layer.

  For more information, see "Configuring Behind-the-Switch Mode" on page 34.

Provisioning the IVR Profile

To use Outbound Notification, you must create and provision an IVR profile in the EMPS. This provisions the VoiceXML application that will be used in the outbound campaigns.

For general information about creating or modifying an IVR Profile, see the section about IVR Profiles in the *Genesys Voice Platform 7.6 Reference Manual*. This guide provides information about configuring the OBN Property page only.

Note: On the IVR Profile `Main` page, ensure that the `Application Type` is `Outbound`.

Figure 6 shows the OBN Property Page.

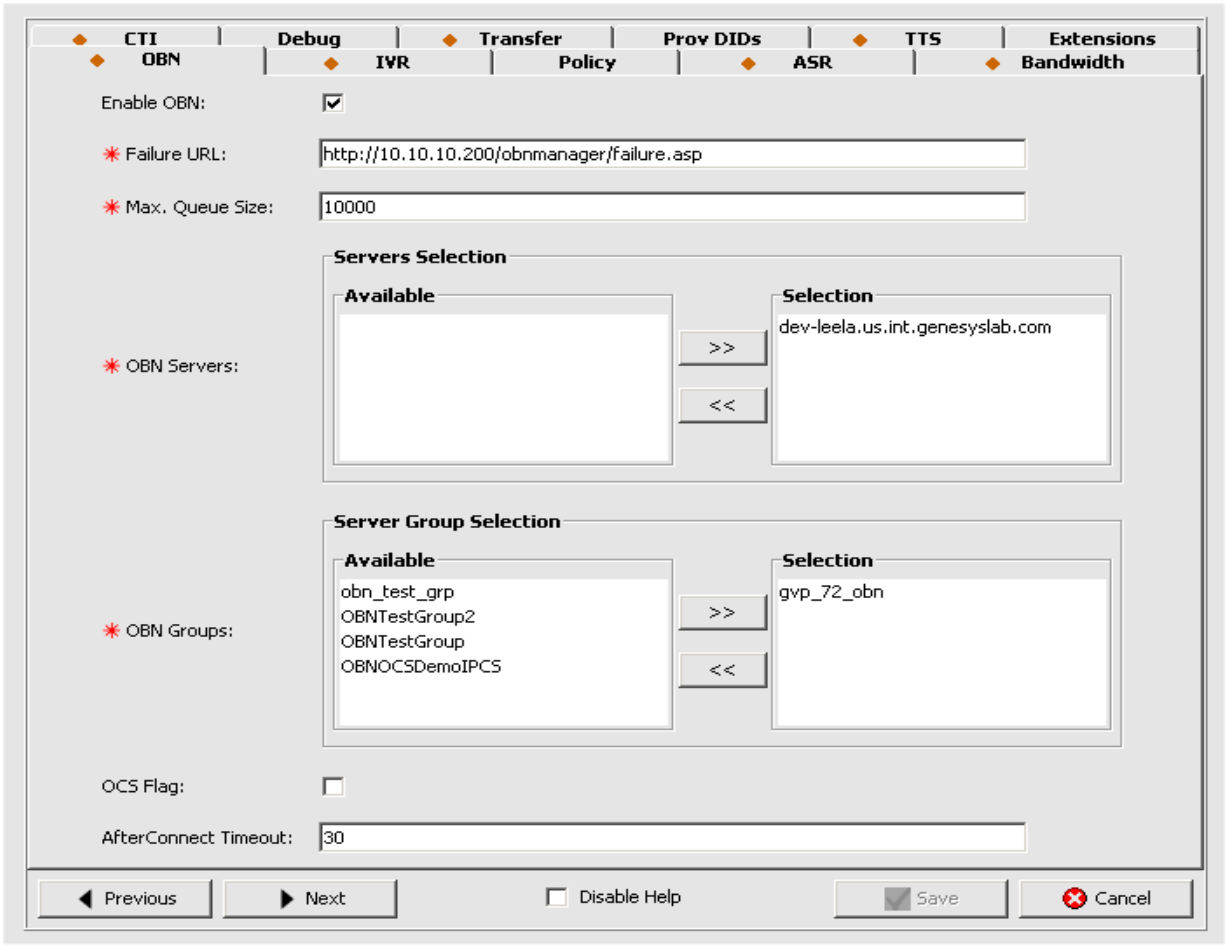

Figure 6: Provision IVR Profile—OBN Property Page

1. Select the `Enable OBN` check box.

   Note: You can select this check box only if you selected `Outbound` as the IVR profile type when you created the IVR profile.

2. Enter the `Failure URL` that the OBN Manager calls if a call is not placed for any reason. If the trigger request contains a value for the `failure_url` parameter, that URL is used instead of this one. However, if a failure URL is not specified as part of the trigger request, this URL is used by OBN Manager for requests of this IVR profile.
3. In the `Max Queue Size` field, enter the maximum number of unprocessed requests that OBN Manager queues for this IVR profile at any given time. The number that you enter should be large enough to accommodate the expected number of requests from the trigger IVR profile.
4. The `OBN Servers` box lists all OBN Manager machines. From this list, select the machines on which you want to process requests for this IVR profile. You must select at least one machine, but there is no upper limit to

the number of machines that you can select. If you want to prevent an OBN Manager machine from processing this IVR profile's requests, do not select that machine.

5. The `OBN Groups` lists all groups of the type `OBNCS`. (These are the groups you created as described in "Creating IPCS/VCS Server Groups for OBN Manager" on page 29.) From this list, select one or more groups. The OBN Manager machines that you selected in the previous step will use VCS/IPCS machines that are members of these groups to make calls for this IVR profile.
6. Select the `OCS Flag` check box if you want OBN Manager to accept outbound call requests from OCS for this this IVR profile.
7. Enter a value, in seconds, in the `AfterConnect Timeout` field. This timeout is set when the IVR profile (voice application) needs to detect an answering machine or fax. If this timeout is set, after the outbound call is answered, it will wait for specified `afterconnecttimeout` seconds to detect a fax or answering machine.
8. Click `Save` to save the profile.

Configuring Voice Communication Server

For Proactive Contact support, GVP VCS has been integrated with the CPD library to provide for superior Call Progress Analysis (CPA) detection through the combination of T-Server and Dialogic technology. To enable CPD, you must configure the server parameters in EMPS as shown in Table 2.

Notes: When the VCS is behind a Nortel Symposium switch, and the VCS has been configured to use the CPD library for outbound calls, you must set these two parameters as follows in order for the calls to go through:

- CPD Off-hook Delay: `-500`
- CPD Calls Cleared by TServer: selected

When the VCS is behind a Nortel Symposium switch, and the CPD library is enabled to make outbound calls, the AutoLogin option in the Symposium should be turned off. If the AutoLogin option is turned on, the switch provides a special dialtone instead of the regular dialtone. The VCS will not recognize this special dialtone and will not start dialing after offhook.

Table 2: Call Progress Detection Parameters

Location of Parameter	Parameter	Description
Servers > VCS > PopGateway > Route node	Enable Genesys CPD Library	Check box that specifies whether outgoing calls are to be made using the Genesys CPD library.
Servers > VCS > PopGateway > Route node	Range of Directory Numbers	Specifies the directory number range for the route. Specify directory numbers that are separated by a dash or commas—for example: `101-110, 115, 120-130`
Servers > VCS > PopGateway > CPD node	IP Address of Primary TServer	Specifies the IP address of the primary T-Server.
Servers > VCS > PopGateway > CPD node	Primary TServer Listening Port	Specifies the port for the primary T-Server.
Servers > VCS > PopGateway > CPD node	IP Address of Backup TServer	Specifies the IP address of the backup T-Server.
Servers > VCS > PopGateway > CPD node	Backup TServer Listening Port	Specifies the port for the backup T-Server.
Servers > VCS > PopGateway > CPD node	CPD Calls Made by TServer	Specifies whether outgoing calls are to be made by T-Server.
Servers > VCS > PopGateway > CPD node	CPD Calls Cleared by TServer	Specifies whether outgoing calls are to be cleared by T-Server.
Servers > VCS > PopGateway > CPD node	CPD Off-hook Delay	This parameter is used only if the parameter `CPD Calls Made by TServer` is selected. Specifies the off-hook delay in milliseconds. A negative value specifies to go off-hook first, wait for the specified time, and then dial a number. A positive value specifies to dial first, wait for the specified time, and then set the channel off-hook. Default value: `0`

Table 2: Call Progress Detection Parameters (Continued)

Location of Parameter	Parameter	Description
Servers > VCS > PopGateway > CPD node	For CPD, go Off-hook Before Dial	This parameter is used only if the parameter `CPD Offhook Delay` has a negative value. If this parameter is selected, the CPD library waits for the off-hook confirmation event from T-Server before dialing.
Servers > VCS > PopGateway > CPD node	CPD Preconnect	Specifies whether priority should be given to either T-Server or Dialogic in the event of conflicting CPD results. Values are: · `TServer` · `Dialogic`
Servers > VCS > PopGateway > CPD node	CPD Postconnect Priority	Specifies whether priority should be given to T-Server or Dialogic in the event of conflicting CPD results. Values are: · `TServer` · `Dialogic`
Servers > VCS > PopGateway > CPD node	For CPD, FAX2 Tone as Ans Machine	Check box that specifies whether the CPD library should accept the FAX2 tone as answering machine.
Servers > VCS > PopGateway > CPD node	CPD Reconnect Timeout for TServer	Specifies the dialer's reconnect timeout for T-Server in milliseconds. Default: `20000`

Configuring Behind-the-Switch Mode

If your GVP solution is configured in `behind-the-switch` mode, the following additional steps are required:

1. In EMPS, expand `Servers > GQA > <server host name>`, and then click on the `<customer process name>` node.
2. Click `Edit Node`.
3. Click `Add New Attribute`.
4. Enter the following values in the text boxes that appear:

   `Parameter Name: PrependHostIPToCalledNum`

   `Parameter Value: 0`

   This parameter removes an IP address from the New Call request that the IVR Server Client sends to the IVR Server.
5. Click `Save`.

You must also ensure that the port range of the VCS matches the corresponding range of the Voice Treatment Ports defined in the Configuration Layer. The Voice Treatment Port range must be contiguous (for example, `001-023`).

Chapter

3 Configuring Outbound Contact

This chapter describes how to configure Outbound Contact for a Proactive Contact solution. It includes the following sections:

Before You Begin

This guide assumes that you have successfully installed and configured the Outbound Contact solution. This document provides information about specific configuration requirements to integrate an installed Outbound Contact deployment into a Proactive Contact solution. For information about installing and configuring the Outbound Contact solution itself, see the *Outbound Contact 7.6 Deployment Guide* and other resources listed in "Related Resources" on page 7.

Configuring a Campaign Group

A `Campaign Group` is the main configuration object in Outbound Contact. It can be found as a subfolder within the `Campaign` object in Configuration Manager. The Campaign Group is defined as a Campaign (a set of calling lists) that is assigned to work resources such as an Agent Group or a Place Group.

Note: To be able to create a Campaign Group, you must have one or more Agent Groups or Place Groups. If there are no agents who will handle Genesys Voice Platform (GVP) outbound calls, so that all calls are processed by voice application(s) only, Genesys recommends that you create an empty Agent Group or Place Group, so that you can create a Campaign Group.

The following sections describe how to configure a Campaign Group for the Proactive Contact solution:

- "Configuring the General Tab"
- "Configuring the Advanced Tab" on page 39
- "Configuring the Connection Tab" on page 41
- "Configuring the Annex Tab" on page 43

See also "Configuration Options" on page 43 for additional Outbound Contact Server (OCS) configuration options related to Campaign Groups that are relevant for the Proactive Contact solution.

Configuring the General Tab

Table 3 describes the parameter settings that you must configure on the `General` tab of the `Campaign Group` object.

Table 3: General Tab Parameters

Parameter	Comment
Name	The name of the Campaign Group. The format is `[<Campaign name>@<Agent Group name or Place Group name>]`. This name must be unique within the tenant. The name is automatically populated by the system.
Tenant	Automatically populated by the system.
Campaign	The name of the campaign that is used to form the `Name` field.
Group	The name of the group that is used to form the `Name` field.
Group Type	The type of group (agent or place).

Table 3: General Tab Parameters (Continued)

Parameter	Comment
Description	Optional: default is `[Blank]`. A brief description of the campaign group.
State Enabled	Required: default is `[on]`. A check box that indicates that this campaign group is active and can be loaded and started by OCS. For more information, see *Framework 7.6 Configuration Manager Help.*

Configuring the Advanced Tab

Table 4 describes the parameter settings that you must configure on the `Advanced` tab of the `Campaign Group` object.

Table 4: Advanced Tab Parameters

Parameter	Comment
Dialing Mode	Choose `Power GVP`.
Voice Transfer Destination	The DN to which calls are to be delivered for handling by live agents. **Note:** In addition to the `Voice Transfer Destination` DN, any `ACD Queue`, `Virtual Queue`, `Routing Point`, or `Service Number` DN that may be part of a call flow involving this group of agents or places must be specified as an `Origination DN` in the `Advanced` tab of the `Agent Group` or `Place Group` objects in Configuration Manager. OCS needs to monitor these DNs to identify "foreign" inbound or outbound calls that are delivered to agents but were not issued by OCS on behalf of the `Campaign Group`, or if the `ACD Queue` DN is configured as an "overflow" DN. To avoid incorrect results with the dialing algorithm, do not configure the same DN as an `Origination DN` for more than one Agent Group or Place Group that is part of a predictive or progressive dialing mode campaign.
Operation Mode	Not applicable to the Proactive Contact solution.
Optimization Method	Not applicable to the Proactive Contact solution.
Target Value	Not applicable to the Proactive Contact solution.

Table 4: Advanced Tab Parameters (Continued)

Parameter	Comment
Max Queue Size	Determines the number of records to keep in OBN Manager's queue. It is an internal counter that is used when OCS performs with the `Power GVP` mode. OCS tries to always keep dialer's buffer full with the specified Max Queue Size, subject only to a record's availability in the calling list. See also Buffer Size Coefficient.
IVR Profile ID	The nine-digit IVR Profile ID that is specified in the GVP Element Management Provisioning System (EMPS), IVR Profile. An ID is created automatically in EMPS when the IVR profile is created. In EMPS, when you select `Edit` on the IVR Profile, the ID is visible in the User Interface as the first parameter, and is labelled as `Application ID`. In order for OCS to supply OBN Manager with Voice Application ID in Request `OBNRecordStartDial`, OCS derives this ID from the value of the `ivr-profile-name` option. If you created different IVR Profiles (Voice Applications) to be used by different Campaign Groups on different Outbound Campaigns, specify the nine-digit IVR Profile ID in the `IVR Profile ID` field of the Campaign Group `Advanced` tab. In this case, a section named `OCServer` that contains the `ivr-profile-name` option is created automatically by Configuration Manager in the `Annex` tab of the `Campaign Group` object. Alternatively, if you intend to use the same Voice Application for all campaigns, you can configure this option manually in the `Options` tab of the OCS `Application` object. In this case, you can leave the `IVR Profile ID` field on the `Advanced` tab of the `Campaign Group` object empty.
Interaction Queue	Not applicable to the Proactive Contact solution.
Script	Defines the `Script` object that contains all of the attributes that are required by Agent Scripting. See the "Attaching Script Information to OCS User Event and Telephony Events" in Chapter 2 of the *Outbound Contact 7.6 Reference Manual.*

Table 4: Advanced Tab Parameters (Continued)

Parameter	Comment
Buffer Size Coefficient	For the `Power GVP` dialing mode, both the minimum and the optimum buffer size coefficients are set as a percentage of the desired `Max Queue Size` value. For example, if the `minimum = 100`, `optimum = 150`, and `Max Queue Size = 200`, OCS will keep 300 chains in its buffer for the given Campaign Group, and then fetch more records when the buffer size falls to fewer than 200 chains.
Number of CPD Ports	Not applicable to the Proactive Contact solution.

Configuring the Connection Tab

The `Connection` tab enables you to specify all server connections (besides T-Server) that are required to run an outbound campaign in a certain dialing mode for a particular campaign group. For the `Power GVP` dialing mode, the GVP OBN Manager `Application` and a Stat Server `Application` must be specified in the `Connection` tab of the `Campaign Group` configuration object in order to enable GVP integration.

Figure 7 shows an example of the Connection tab.

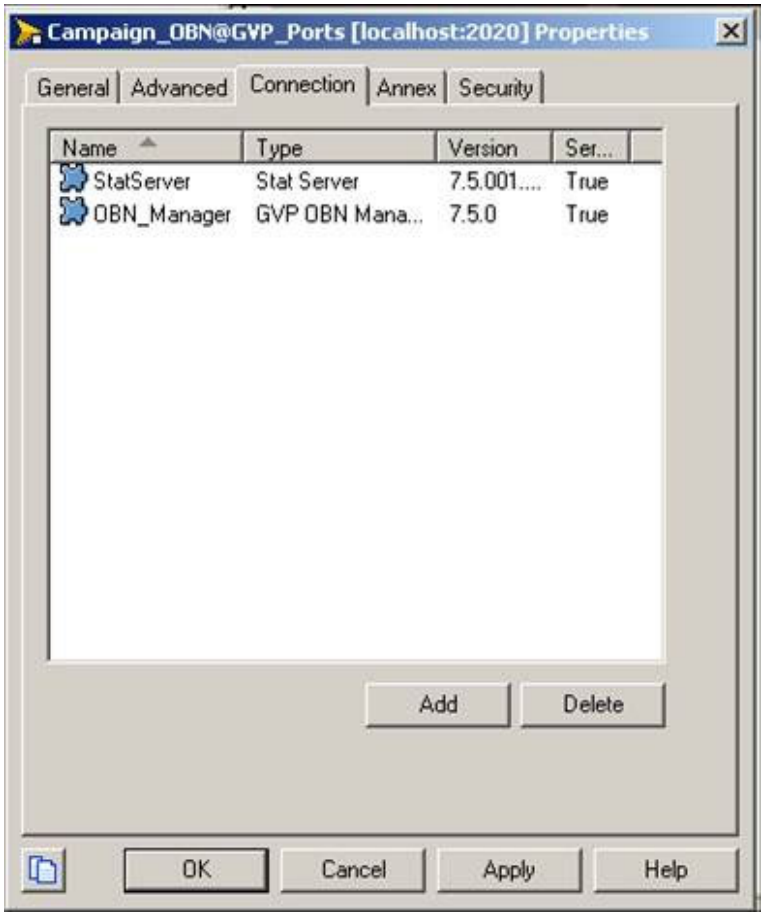

Figure 7: The Campaign Group Connection Tab

When configured to enable OCS connections, the GVP OBN Manager opens a predefined port (for listening purposes) and then accepts requests from an OCS application on this port. For information about configuring OBN Manager, see "Creating and Configuring the OBN Manager Application" on page 23.

Notes: If you configured a backup OBN Manager in the Server Info tab of the primary OBN Manager Application, add only the primary OBN Manager Application to the Campaign Group connections and (optionally) to the OCS Application connections.

The Campaign Group connection provides basic host/port connectivity only. It does not provide features such as Advanced Disconnect Detection Protocol (ADDP). You can also add your OBN Manager Application to the Connection tab of the OCS Application object in order to configure any additional connection parameters (such as ADDP).

Configuring the Annex Tab

Use this tab to define options related to the Outbound Campaign Group. An option defined in this tab fine-tunes the system on the individual campaign group level.

Configuration Options

The following OCS configuration options are either required or else particularly useful for the Proactive Contact solution:

- Campaign Group-Level options
- Calling List options (see page 46)

Campaign Group–Level Options

Configure the Campaign Group–Level options on the `Options` tab of the OCS `Application` or on the `Annex` tab of the `Campaign Group`.

Required The following Campaign Group–Level options are required:

dialer-ttl

Type: Optional
Default Value: `5`
Valid Values: `3–1440`

Specifies the Time To Live (in minutes) during which OBN Manager will attempt to pass a request to the GVP dialer (IP Communication Server [IPCS] or Voice Communication Server [VCS]) for a dial from its internal dialing queue.

dialer-num-attempts

Type: Optional
Default Value: `3`
Valid Values: `1–25`

Specifies the number of times that OBN Manager will attempt to pass a request to the GVP dialer (IPCS or VCS) for a dial from its internal dialing queue.

Note: Both of the above options are used with OBN Manager in `Power GVP` dial mode only.

Optional The following Campaign Group–Level options significantly affect the performance of proactive contact campaigns:

dialing_rate_limit

Type: Optional
Default Value: `100`
Valid Values: `0–N`

Specifies the maximum number of dialing requests per second. If the option is set to `0` (zero), then OCS does not dial at all. Use this option to adjust the speed of sending dialing requests from OCS to OBN Manager, especially when dialing has just been started and the Max Queue Size is significant.

call_answer_type_recognition

Type: Optional
Default Value: `no_am_detection`
Valid Values: `no_progress_detection, no_am_detection, positive_am_detection, full_positive_am_detection, accurate_am_detection, diversion_am_detection`

Specifies whether answering machine and fax detection are enabled or disabled. This option applies only when OCS uses CPD Server. It does not apply when OCS uses PBX equipment for call progress detection.

- `no_progress_detection` disables CPD, and the call is transferred as soon as it is established.
- `no_am_detection` disables answering machine detection, but detection of all other devices is still enabled.
- `positive_am_detection` enables standard answering machine detection (`Positive Answering Machine [PAM]` mode).
- `full_positive_am_detection` enables full positive answering machine detection (`Full Positive Answering Machine [FPAM]` mode).
- `accurate_am_detection` enables or disables detection, based on an analysis of the duration of the greeting.

Note: For Proactive Contact only, this option applies only when the GVP dialer (VCS/IPCS) uses the CPD Library.

call_timeguard_timeout

Type: Optional
Default Value: `0` (milliseconds)
Valid Value(s): `0...<N>` (milliseconds)

Enables a user to set a timeout interval for post-connect call progress detection. The call is transferred to a queue when the timeout expires, regardless of the call result or the completion of call progress detection. The timeout is calculated from the moment that CPD Server receives an `EventEstablished`

message. If this option is set to `0 (zero)` or if it is not present, CPD Server does not break call progress detection.

This option applies only when OCS uses CPD Server. It does not apply when OCS uses PBX equipment for call progress detection.

CPNDigits

Type: Optional
Default Value: Empty string
Valid Value(s): String of characters, according to the formats specified in the appropriate numbering/dialing plan.

Specifies the Calling Party Number (CPN). It enables OCS to pass the ANI to OBN Manager when it is using the `Power GVP` dialing mode.

For more information about the Caller ID Support feature and the CPN options, see:

- Extensions related to `TMakePredictiveCall()` in the "Extensions" section of the "Unstructured Data" chapter in the *Genesys Developer Program TLibrary SDK Developer's Guide, 7.6*
- *Framework 7.6 T-Server for Alcatel A4400/OXE Deployment Guide*
- *Framework 7.6 T-Server for Avaya Communication Manager Deployment Guide*
- Q.931 ISDN user-network interface layer 3 specification for basic call control

Note: This option is new for Proactive Contact 7.6 but not new for Outbound Contact Server.

call_wait_connected_timeout

Type: Optional
Default Value: `120` (seconds)
Valid Value(s): `0`·`7200` (seconds)

- For ISDN: Specifies the timeout, in seconds, between dialing and the determination that the called party is not answering.
- For analog and line-side DNs: Specifies the timeout, in seconds, between the first ring and the determination that the called party is not answering.

When the called party is not answering, this option value overrides of the `OBN Timeout` value, which is set in the `IVR` tab of the OBN `Application` object.

Note: In the Proactive Contact solution, the value of the OCS `call_wait_connected_timeout` option is used by the GVP Call Flow Assistant (CFA) as the Call Progress Analysis (CPA) timeout for calls that are not answered.

stale_clean_timeout

Type: Optional
Default Value: `30`
Valid Value(s): Any positive integer

Specifies the timeout (in minutes) before OCS marks any records that remain in the buffer as `Stale`. Such records may have been sent for processing, but were not processed.

Note: The time OCS requires to process all of the dialing requests sent to OBN Manager may be longer than the default value of `30` minutes, depending on the number of such requests (defined by the `Max Queue Size` parameter on `Advanced` tab of Campaign Group configuration object). Therefore, Genesys recommends that you configure this option with a value higher than the default so that OCS does not mark those records as stale in a calling list before GVP is able to process them.

Calling List–Level Options

You can configure the Calling List–level options on the `Options` tab of the OCS `Application`, or you can store them at the Calling List level.

Note: You can also configure treatments that define how OCS reacts to unsuccessful dial attempts for each calling list. Configure these treatments in the `Treatments` tab of the `Calling List` configuration object.

Optional

The following Calling List–level option significantly affects the performance of proactive contact campaigns:

am-detection-map

Type: Optional
Default Value: `NULL`
Valid Values: Any name of a `Business Attribute` value configuration object, or `default`

Specifies the name of the `Business Attribute` value configuration object that contains the Answering Machine (AM)–detection map to be used for a particular Calling List or to be used application-wide.

Enabling Historical Reporting for Genesys Info Mart

OCS passes an outbound call's GUID, received from OBN Manager, to Interaction Concentrator, which is the source of OCS data for Genesys Info Mart.

The following requirements and limitations apply for Outbound Contact 7.6 historical reporting, when using Interaction Concentrator:

- To enable reporting on all activity for a specific Campaign Group, including chain activities:
  - You must specify a valid `Voice Transfer Destination` DN in the configuration properties of the `Campaign Group`.
  - The `Voice Transfer Destination` DN must be located on the switch that is served by the T-Server to which OCS is currently connected.
  - T-Server must be running and must have a CTI link with the switch.
- In the following scenarios, OCS is not able to obtain `CallGUID` information when the Campaign Group is running in `Power GVP` mode:
  - The connection between I-Server Client and I-Server is broken.
  - I-Server Client is not configured correctly, neither in GVP nor in Framework.
  - The connection between I-Server and T-Server is broken.
  - The connection between T-Server and the switch is broken.
  - There is no T-Server in the deployment.

  Chain-related events for these types of calls do not contain the unique identifier (Call GUID) of the outbound call(s) dialed during chain processing. As a result, Interaction Concentrator does not receive the information it needs to create records in its database.

Chapter

4 Configuring the VoiceXML Application

Proactive Contact solution outbound calls are processed by custom voice applications that are written in standard Voice Extensible Markup Language (VoiceXML) 2.1. Genesys provides an optional tool, Studio, to assist you in developing voice applications for Genesys Voice Platform (GVP).

This chapter provides information about VoiceXML building blocks that are particularly relevant for Proactive Contact solution applications. It includes the following sections:

For more information about developing VoiceXML applications for GVP, see the *Genesys Voice Platform 7.6 VoiceXML 2.1 Reference Manual.*

User Data

This section describes how user data is passed between Outbound Contact Server (OCS) and the VoiceXML application.

User Data from OCS

User data from OCS is made available to the voice application through $variables. User data is passed as key-value pairs (KVPs) from OCS. The GVP Call Flow Assistant (CFA) passes the KVPs to the PopGateway in `<DIAL_CALL>` as $variables. All $variables that are passed from CFA are, in turn, made available to the voice application.

If the key of a key-value pair of the `user_data` is `<token>`, then `$<token>$` is used by the voice application to access the value.

User Data to OCS

The voice application can post user data back to OCS by using the VoiceXML 2.1 `<data>` tag. The URL is provided by OCS through `$obn_url$`.

VoiceXML Application Variables

This section provides information for users who write stand-alone VoiceXML applications (not using Studio) for the Proactive Contact solution. It describes the set of OCS keys that form the user data between OCS and the VoiceXML application.

Note: If you are using Studio, see page 54.

The following variables are used in the VoiceXML application:

- OCS Flag Variable
- CPA Result Variable
- UserData from OCS (see page 51)
- Call Result User Data (see page 52)
- User Data for Schedule Call Back or Campaign Reschedule (see page 52)
- Customized User Data to OCS from the Voice Application (see page 54)

OCS Flag Variable

The voice application checks for the OCS flag in the arrived data from OCS. If this flag is set to `0`, the voice application stops the data processing. Otherwise, it processes the rest of the data.

Example

```
<var name="OCSApplicationFlag" expr="session.genesys.OCSFlag" />
```

This will be used as follows:

```
<if cond="session.genesys.OCSflag == 0">
  <throw event="Throw your error" message="Not configured as an outbound application" />
</if>
```

CPA Result Variable

The `session.genesys._cparesult` variable branches out the voice application logic. The voice application checks for the values `CPA_NORMAL` and `CPA_ANSWERMACHINE` for this variable. The other values received by the voice application for this variable are `CPA_BUSY`, `CPA_NOANSWER`, and so on, but the voice application can ignore these values.

Example

```
<var name="CPAResult" expr="session.genesys._cparesult" />

<block>
<if cond=" OCSApplicationFlag == 1 and
                CPAResult == 'CPA_NORMAL'">
<var name="user_data" expr="'GSW_CALL_RESULT=0'" />
<data method="post" namelist="user_data" srcexpr="session.genesys.obn_url" />
</if>

<if cond=" OCSApplicationFlag == 1 and
                OCSCPAResult == 'CPA_ANSWER_MACHINE'">
<var name="user_data" expr="'GSW_CALL_RESULT=9'" />
<data method="post" namelist="user_data" srcexpr="session.genesys.obn_url" />
</if>
</block>
```

UserData from OCS

The `session.genesys.User_Data` variable receives the posted OCS User Data.

Example

```
<var name="OCSUserData" expr="session.genesys.User_Data" />
```

The OCS user data looks like the following:

```
GSW_TZ_OFFSET=-28800&GSW_PHONE=6504664689&BusinessStringData1=Hello
   World&BusinessIntegerData1=12345&GSW_CALLING_LIST=obn_call_list&GSW_CAMPAIGN_NAME=ob
   n_campaign&GSW_CONTACT_MEDIA_TYPE=voice&GSW_RECORD_HANDLE=178&GSW_APPLICATION_ID=106
   &GSW_CALL_ATTEMPT_GUID=C6083O88F3BK5F50LPDM6I70EC00002P&GSW_CAMPAIGN_GROUP_DBID=101&
   GSW_CAMPAIGN_GROUP_NAME=obn_campaign@OBN Agent
   Group&GSW_CAMPAIGN_GROUP_DESCRIPTION=&GSW_CALLING_LIST_DBID=101&GSW_CHAIN_ID=3&GSW_S
   WITCH_DBID=0&GSW_ATTEMPTS=33&GSW_CALL_RESULT=1&InteractionType=Outbound&InteractionS
   ubtype=OutboundNew
```

The voice application usually receives the OCS keys in key-value form in the user data from OCS. Table 5 lists some of the user data attributes that are available from OCS.

Note: The OCS key names in Table 5 are the default keys that are specified in Studio as User Data attributes for the `get` operation.

Table 5: OCS User Data Attributes

OCS Key Name	Data Type	Description
GSW_ATTEMPTS	Integer	Number of attempts made to this target DN.
GSW_CALLING_LIST	String	Name of the outbound calling list.

Table 5: OCS User Data Attributes (Continued)

OCS Key Name	Data Type	Description
GSW_CAMPAIGN_NAME	String	Name of the Outbound campaign.
GSW_PHONE	String	Outbound dialed DN.
GSW_TZ_OFFSET	Integer	Time offset between GMT and the dialed DN's time zone.
GSW_RECORD_HANDLE	Integer	Unique identifier of the calling list record.

Call Result User Data

The OCS key `GSW_CALL_RESULT` sends the call result back to OCS. Sample values are as follows:

```
GSW_CALL_RESULT = 51 > Don't call Record Action
GSW_CALL_RESULT = 52 > Cancel Record Action
GSW_CALL_RESULT = 33 > Answer
```

The `GSW_CALL_RESULT` is part of `user_data`, and it is sent in HTTP `Post` from the voice application. The following is sample code:

```
<var name="user_data" expr="'GSW_CALL_RESULT=3'" />
       <data name="PutOCSUserData" method="post" namelist="user_data"
   srcexpr="session.genesys.obn_url" />
```

User Data for Schedule Call Back or Campaign Reschedule

The OCS keys `GSW_PHONE`, `GSW_DATE_TIME`, and `GSW_TZ_TIME` are used in conjunction with each other for rescheduling.

- `GSW_PHONE`—Used for the outbound dialed DN. This key is part of the user data from either OCS or the voice application. It is a string data type.
- `GSW_DATE_TIME`—Used to reschedule the call. This key is part of the user data, and it is present in the response from the voice application to OCS. It is a string data type in `MM/DD/YYYY HH:MM` format, where `HH` is `00-23`.
- `GSW_TZ_NAME`—Represents the time zone. This key is part of the user data from the voice application to OCS. It exists in the user data whenever `GSW_DATE_TIME` exists in the user data from the voice application to OCS. It is a string data type. The values for this are various time zones such as `PST`, `CST`, `EST`, and so on.
- `GSW_CAMPAIGN_NAME` and `GSW_CALLING_LIST`—Represent the active campaign name and the calling list name from which the user data has arrived to the voice application from OCS. The voice application has the capability to reschedule the call at different active campaign calling lists. Therefore, when the voice application needs to reschedule the call at a different phone

number than the number that it received from OCS, it must also send the valid active campaign name and calling list name using these keys. The values for these keys can be the same values that the voice application has received in the user data from OCS or new valid values.

The voice application handles the Campaign Rescheduling or Scheduled Call Back in four different ways:

Reschedule at Same Phone Number (1)

- The voice application can use the same `GSW_PHONE` value that it received in the user data from OCS, and build the new user data with `GSW_PHONE`, `GSW_DATE_TIME`, and `GSW_TZ_NAME`. As a result, OCS reschedules the call on the same phone number at a different time.

  The following is sample code:

```
<var name="user_data" expr="'GSW_DATE_TIME=01/01/2007
   10:20&GSW_PHONE=408xxxyyyy&GSW_TZ_NAME=PST'" />
  <data name="PutOCSUserData" method="post" namelist="user_data"
   srcexpr="session.genesys.obn_url" />
```

Reschedule at Same Phone Number (2)

- The voice application can set the `no` value for the `GSW_PHONE` value. In such a case, OCS uses the same value that it sent out in its user data. The voice application builds the new user data with `GSW_PHONE` (no value is set), `GSW_DATE_TIME`, and `GSW_TZ_NAME`. As a result, OCS reschedules the call on the same phone number at a different time.

  The following is sample code:

```
<var name="user_data" expr="'GSW_DATE_TIME=01/01/2007
   10:20&GSW_PHONE=&GSW_TZ_NAME=PST'" /> <data name="PutOCSUserData" method="post"
   namelist="user_data" srcexpr="session.genesys.obn_url" />
```

Reschedule at Same Phone Number (3)

- The voice application can remove the `GSW_PHONE` key from its response to OCS. The voice application builds the new user data with `GSW_DATE_TIME`, and `GSW_TZ_NAME`. As a result, OCS reschedules the call on the same phone number at a different time.

  The following is sample code:

```
<var name="user_data" expr="'GSW_DATE_TIME=01/01/2007   10:20&GSW_TZ_NAME=PST'" />
   <data name="PutOCSUserData" method="post" namelist="user_data"
   srcexpr="session.genesys.obn_url" />
```

Reschedule at Different Phone Number

- The voice application can modify the `GSW_PHONE` value that it received in the user data from OCS, and build the new user data with `GSW_PHONE`, `GSW_DATE_TIME`, and `GSW_TZ_NAME`. As a result, OCS reschedules the call at a different phone number at a different time. OCS adds a new record in its calling list.

The following is sample code:

```
<var name="user_data" expr="'GSW_DATE_TIME=01/01/2007
   10:20&GSW_PHONE=650xxxyyyy&GSW_TZ_NAME=PST&
   GSW_CAMPAIGN_NAME=Campaign1&GSW_CALLING_LIST=CallingList1'" />
  <data name="PutOCSUserData" method="post" namelist="user_data"
   srcexpr="session.genesys.obn_url" />
```

Customized User Data to OCS from the Voice Application

The voice application can update the customized user data from OCS, and send it back to OCS by using the HTTP `Post` method.

The following code shows how to send the user data back to OCS. The keys `BusinessString1` and `BusinessintegerData1` are customized keys between OCS and the voice application; they are not predefined keys.

```
<var name="user_data" expr="'BusinessStringData1=Hello
   World&BusinessIntegerData1=12345'" />
       <data name="PutOCSUserData" method="post" namelist="user_data"
   srcexpr="session.genesys.obn_url" />
```

Genesys Voice Platform Studio

Genesys Voice Platform Studio is a graphical user interface (GUI) for the development of voice applications using VoiceXML.

Studio provides the following new features for the Proactive Contact solution:

- Block for getting and setting OCS data
- Exceptions and global variables in the Studio Start and subcall flow blocks
- Support for `Do Not Call` information

For more information, see the *Genesys Studio Help* file.

Figure 8 shows the OCS Data tab to get information.

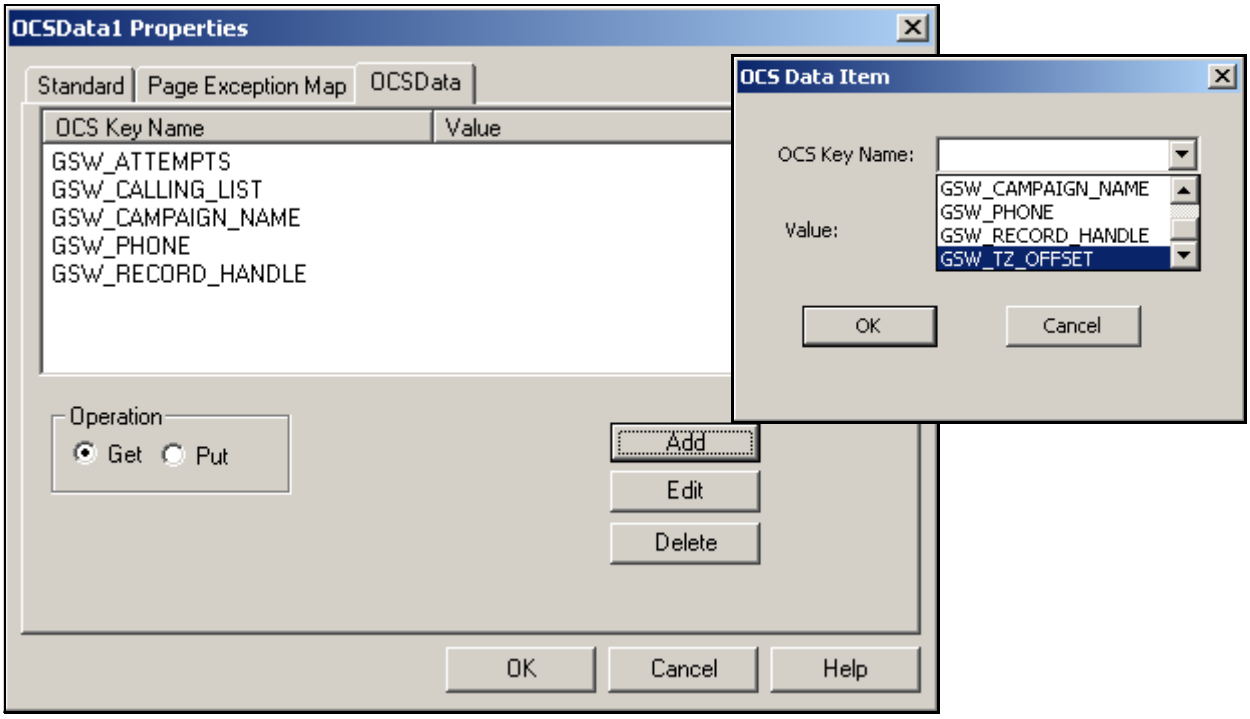

Figure 8: New OCS Data Block—Get

To specify a User Data attribute for the `get` operation:

1. On the `OCSData` tab, in the `Operation` section, select the `Get` check box.
2. Click `Add`.

   The `OCS Data Item` dialog box displays.
3. Type the name of the key into the `OCS Key Name` drop-down box, or select one of the predefined keys.
4. Click `OK`.

   The attribute is added to the `OCS Key Name` list on the `OCSData` tab.

The OCS key names that are shown in Figure 8 are the default User Data attributes that are available for the `get` operation. For descriptions of the default attributes, see Table 5 on page 51.

Figure 9 shows the OCS Data tab to send information back to OCS.

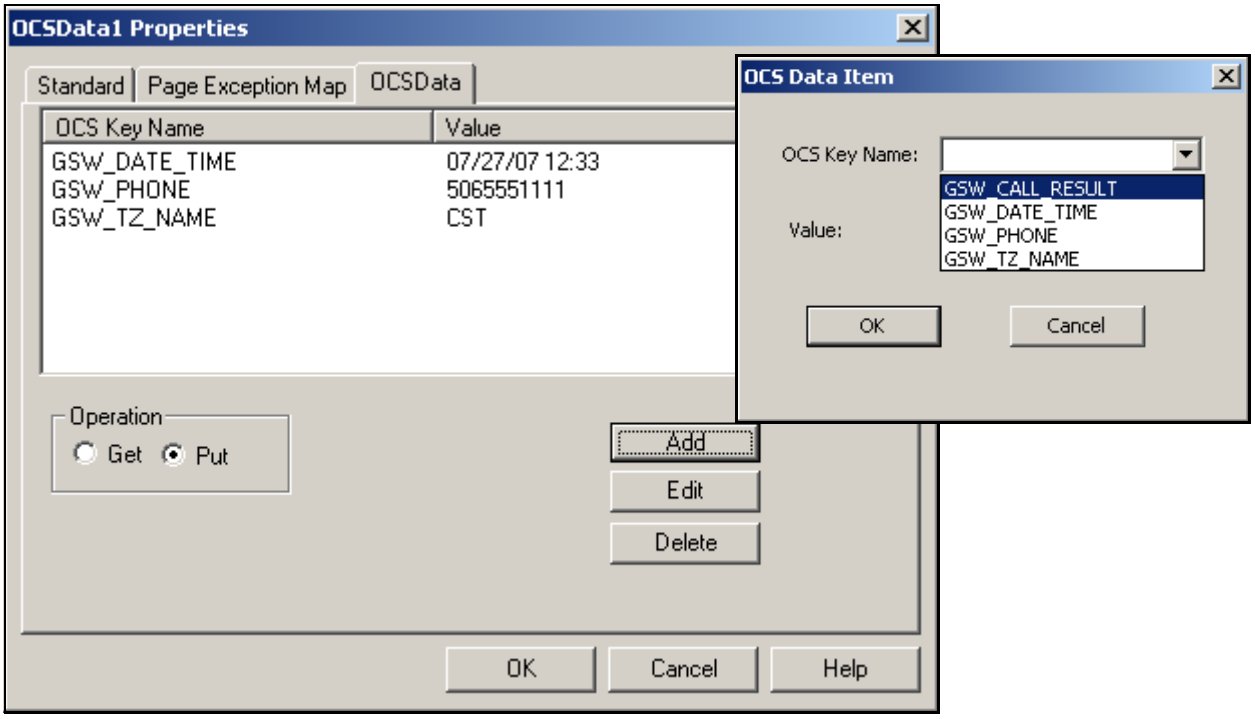

Figure 9: New OCS Data Block—Put

To specify a User Data attribute for the `put` operation:

1. On the `OCSData` tab, in the `Operation` section, select the `Put` check box.
2. Click `Add`.

   The `OCS Data Item` dialog box displays.
3. Type the name of the key into the `OCS Key Name` drop-down box, or select one of the predefined keys. Similarly specify applicable values for the key in the `Value` box.
4. Click `OK`.

   The attribute is added to the `OCS Key Name` list on the `OCSData` tab.

Table 6 lists the default User Data attributes for the `put` operation.

Table 6: OCS User Data Attributes—Send

OCS Key Name	Data Type	Description
GSW_CALL_RESULT	Integer (0–53)	End result of the current outbound dialed call. For sample values, see "Call Result User Data" on page 52. For the full list of possible call results, see the *Outbound Contact 7.6 Reference Manual*. For the default value options that Studio presents for selection, see Figure 10. **Note:** The `GSW_CALL_RESULT` is automatically set in the `START` block so that it corresponds to the `OCSCPAResult` value.
GSW_DATE_TIME	String (MM/DD/YYYY HH:MM)	Date and time of the scheduled call back.
GSW_PHONE	String	Outbound dialed DN.
GSW_TZ_NAME	String	Current time zone of the call.

Figure 10 shows the default call result attributes that are available in Studio.

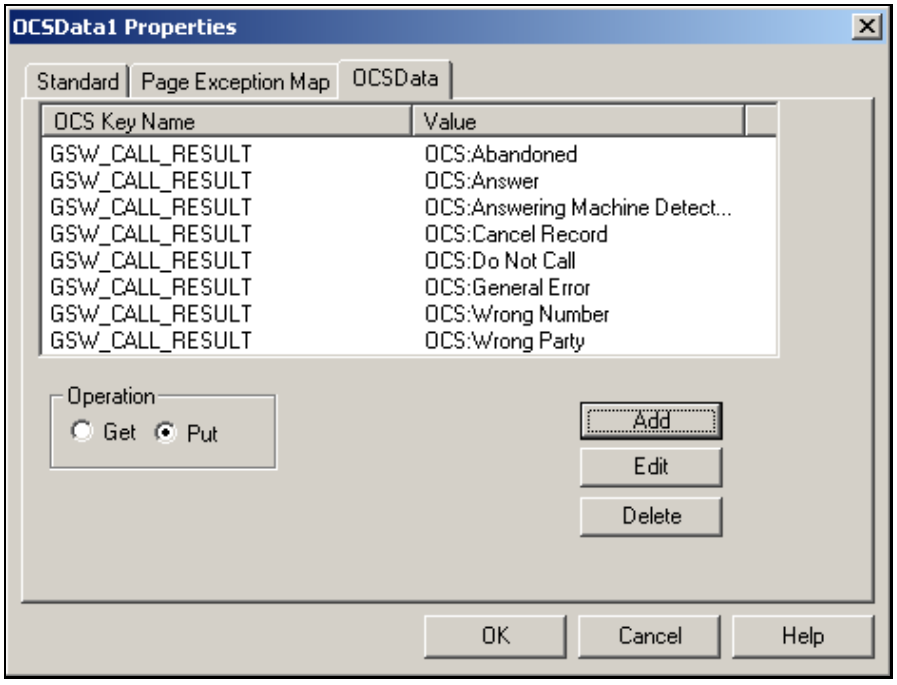

Figure 10: Sending Call Result Data Back to OCS

Chapter

5 Proactive Contact Solution Reference Information

This chapter provides reference information about the Proactive Contact Solution. It includes the following sections:

Framework Port

For the Proactive Contact solution, the Voice Communication Server (VCS)/IP Communication Server (IPCS) passes to Call Flow Assistant (CFA) the Framework port number of the channel used for the outbound call. This enables the Voice Extensible Markup Language (VoiceXML) application to interface with Framework as it does with inbound calls. For more information, see the *Genesys Voice Platform 7.6 VoiceXML 2.1 Reference Manual*.

Power GVP Dialing Mode

A proactive contact campaign operates in `Power GVP` mode.

The following sections describe how calling records are dialed:

Dialing Algorithm

In a Genesys Voice Platform (GVP)-assisted campaign, outbound calls are dialed from GVP ports, and they can be completely processed and released by GVP. GVP issues information about call processing (such as call results and modified user data) to OBN Manager, which relays this information to OCS. OCS processes this information accordingly, applies any necessary treatments, and updates the records.

For more information about the messaging underlying the call flow, see "Detailed Typical Call Flow".

Calculating the Number of Records

The procedure that OCS uses to calculate the number of records (or actual chains) to retrieve from the database when a proactive contact campaign is loaded differs from traditional `Predictive`, `Progressive`, or `Preview` modes. When a proactive campaign is loaded, OCS selects records for retrieval from the database based on the value of the `MaxQueueSize` parameter for the Campaign Group. If more than one calling list is used in the campaign, the number of records retrieved from each calling list is determined by the specified list weight that is set in Configuration Manager when the calling list is added to the campaign.

OCS then submits the records to OBN Manager using the following criteria:

- The total number of interactions or dialing requests submitted is equal to the `MaxQueueSize` value for the Campaign Group.
- OCS retrieves records from the calling list table in the database to replenish its buffer when the number of calling list records in the OCS buffer is below the minimum buffer size specified for the Campaign Group.

Do Not Call Records

OCS issues an `EventOBNRecordStopProc` message to OBN when it receives a `DoNotCall` request and determines that records are currently being processed by OBN. OBN immediately attempts to stop processing the specified record.

Detailed Typical Call Flow

1. Outbound Contact Server (OCS) uses an Outbound Notification (OBN) Manager `Application` to make an outbound call using GVP. When a `Power GVP` mode campaign is loaded in Outbound Contact Manager (OCM), OCS uses the `RequestOBNRegisterClient` and the `EventOBNAdapterConnected` messages to register with OBN Manager.

2. After a `Power GVP` mode campaign is started, OCS issues an outbound call request to GVP by sending a `RequestOBNRecordStartDial` message to OBN Manager for each record retrieved from a calling list. This message includes all dialing parameters and any `UserData` parameters. OBN Manager sends an `EventOBNRecordStartDialAck` message back to OCS when dialing has begun.

   Note: `UserData` is sent in this request only. No user data is sent in any other requests.

3. OBN Manager forms an HTTP request to CFA, using the `Start Dial` parameters and the `UserData` attributes, in a `NEW_SESSION_REQ` message.
4. CFA processes the `NEW_SESSION_REQ` message from OBN Manager and uses a `CREATE_LEG_REQ` message to request IPCS/VCS to make an outbound call to the customer's DN.
5. IPCS/VCS updates CFA with a Call Progress Analysis (CPA) result in the `DIAL_AND_BRIDGE_DONE_REQ` message.

Note: If the customer DN requests a call transfer to an agent, the call can be transferred by CTI or by the SIP `REFER` method on the platform.

To transfer a call using CTI:

- Enable the CTI call transfer in the `CFA` section of EMPS. This enables a one-step call transfer from GVP to IServer.

To transfer a call using the SIP `REFER` method:

- Enable the transfer type as `OneSignalChannel` containing the SIP `REFER` method as the `Transfer Option` in IVR Profile provisioning of EMPS.
- Configure the `Transfer Type` in the CFA section of EMPS as `Transfer on Platform`. With this type of transfer, the SIP `REFER` request goes directly to SIP Server, and the transfer occurs on platform.

6. CFA updates OBN Manager with the following information:
   - The CPA result and the DN that it received from IPCS/VCS.
   - The UUID information that it received from the I-Server client.
   - In a deployment that includes a T-Server, CFA passes the T-Server Call GUID to OBN Manager as part of the user data. OBN Manager then passes the Call GUID to OCS as part of the RequestProcessing event information.
7. OBN Manager translates the CPA result from CFA into a call result that becomes the `GSW_CALL_RESULT` OCS key.

8. OBN Manager sends the information to OCS in the `EventOBNRecordProcessing` message. If the call result is `CPA_NORMAL`, IPCS/VCS instructs an IVR application to begin processing the call. The application information is provided by OCS to GVP using the `app_dbid` attribute in the `RequestOBNRecordStartDial` message.

   Note: The IVR application can be a Genesys Studio VoiceXML application or any another VoiceXML application. The IVR application information is provisioned in the Element Management Provisioning System (EMPS) in GVP.

9. The application-specific data is sent by the VoiceXML application to OBN Manager using the `HTTP Post` method. All the incremental data from the application is updated and saved locally by OBN Manager.
10. Once the application is successfully completed for the customer DN, IPCS sends an `END_SESSION_REQ` message back to CFA.
11. CFA ends the outbound call. It also translates the `END_SESSION_REQ` message into a call result, and updates OBN Manager that the outbound call has ended.
12. OBN Manager uses the `EventOBNRecordProcessed` message to inform OCS that the outbound call has ended. The `EventOBNRecordProcessed` message contains all updated `UserData` parameters, and is the last message from OBN Manager to OCS.

    The `EventOBNRecordProcessed` message contains an important attribute named `RecordAction`, which identifies the outcome of record processing within GVP. The outcome can be one of the following: `Processed`, `Rescheduled`, `Canceled`, `DoNotCall`, `Transferred`.
13. When the campaign is unloaded, OCS closes the connection to OBN Manager and receives an `EventOBNAdapterDisconnected` message, which confirms OCS disconnection from OBN Manager.

Notes: If the VoiceXML application wants to reschedule a record for a different phone number than the one originally dialed, OBN Manager uses the `RequestOBNAddRecord` message. After OCS has added a new record containing the new phone number into the calling list, OCS acknowledges this request with an `EventOBNAddRecordAck` message.

If OCS wants to cancel processing a record that has already been dialed, OCS sends a `RequestOBNRecordStopProc` message to OBN Manager. OBN Manager responds with an `EventOBNRecordStopProcAck` message.

All error messages between OBN Manager and OCS use the `EventOBNError` message.

Any CTI communication between OCS and GVP uses the IServer client in GVP.

OBN Error Codes

Table 7 shows the error code and error text that OBN Manager sends to the trigger application if OBN fails to queue the input request.

Table 7: Error Codes and Error Text

Error Code	Severity	Description
100	FATAL	Missing record handle
101	WARNING	Missing application name
102	WARNING	Missing customer name
103	WARNING	Missing reseller name
104	FATAL	Missing contact number
105	FATAL	Missing TimeToLive value
106	FATAL	Missing Maximum Attempts value
200	INFO	Invalid Maximum Attempts value
201	INFO	Invalid TimeToLive value
202	ERROR	Invalid application name
203	ERROR	Invalid customer name
204	ERROR	Invalid reseller name
300	ERROR	Maximum attempts exhausted
302	ERROR	Time to live is exhausted
304	ERROR	Application Queue size is exceeded
310	WARNING	Request cannot be canceled because it is being processed
311	WARNING	Record not found with the specified record handle
400	FATAL	OBN database error
500	FATAL	OBN shutdown in progress
501	FATAL	OBN initialization is in progress
600	FATAL	Undefined error

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