



*Gplus* Adapter 7.0

**Verint WFM**

**Installation and Configuration  
Guide**

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# Table of Contents

|                  |   |           |
|------------------|---|-----------|
| <b>Preface</b>   | <b>Preface</b> .....  | <b>6</b>  |
|                  | About Gplus Adapter for Verint WFM.....                     | 6         |
|                  | Intended Audience.....                                      | 7         |
|                  | Making Comments on This Document.....                       | 7         |
|                  | Contacting Genesys Customer Care.....                       | 7         |
|                  | Related Documentation Resources.....                        | 8         |
|                  | Document Conventions.....                                   | 8         |
|                  | Document Version Number.....                                | 8         |
|                  | Type Styles.....  | 9         |
| <b>Chapter 1</b> | <b>Product Description</b> .....                            | <b>11</b> |
|                  | Historical Reports.....                                     | 11        |
|                  | Real Time Adherence (RTA).....                              | 12        |
| <b>Chapter 2</b> | <b>Installation and Setup</b> .....                         | <b>13</b> |
|                  | Installation and Windows Permissions.....                   | 13        |
|                  | Included Files.....   | 13        |
|                  | Logging, FTP and Report Directories.....                    | 15        |
|                  | Adding an Adapter Instance to the Configuration Server..... | 16        |
|                  | Java Virtual Machine.....                                   | 17        |
|                  | Configuration Server Connection.....                        | 22        |
|                  | Solution Control Server Integration.....                    | 25        |
|                  | Logging Configuration.....                                  | 27        |
|                  | Initial Start Up Test.....                                  | 30        |
|                  | License File.....   | 30        |
| <b>Chapter 3</b> | <b>Application Options</b> .....                            | <b>32</b> |
|                  | alarmCodes Section.....                                     | 32        |
|                  | application Section.....                                    | 37        |
|                  | attachedDataFilter Section.....                             | 43        |
|                  | callback Section.....                                       | 44        |
|                  | callTypes.custom Section.....                               | 47        |
|                  | chat Section.....   | 48        |

## Table of Contents

|                  |  |            |
|------------------|--|------------|
|                  | classifyPartyMappings Section.....                   | 51         |
|                  | email Section.....                                   | 53         |
|                  | event.properties Section.....                        | 57         |
|                  | filter:<filterName> Section.....                     | 61         |
|                  | genesys.agentGroups Section.....                     | 62         |
|                  | genesys.placeGroups Section.....                     | 63         |
|                  | genesys.queueGroups Section.....                     | 64         |
|                  | historical.ftp Section.....                          | 65         |
|                  | historical.reports Section.....                      | 71         |
|                  | historical:<streamName> Section.....                 | 77         |
|                  | im Section.....                                      | 79         |
|                  | individualDNs Section.....                           | 81         |
|                  | interactionCodeMappings Section.....                 | 82         |
|                  | interactionTargets Section.....                      | 83         |
|                  | ixnProcessObjects Section.....                       | 84         |
|                  | media:<name> Section.....                            | 84         |
|                  | outbound Section.....                                | 95         |
|                  | readyCodeMappings Section.....                       | 97         |
|                  | reasonCodeMappings Section.....                      | 99         |
|                  | rta Section.....                                     | 100        |
|                  | rta:<streamName> Section.....                        | 101        |
|                  | vht Section.....                                     | 102        |
|                  | voice Section.....                                   | 104        |
| <b>Chapter 4</b> | <b>Additional Configuration.....</b>                 | <b>109</b> |
|                  | Adding T-Servers and Interaction Servers.....        | 109        |
|                  | Threshold Time Format.....                           | 110        |
|                  | Adding Annex Data for Virtual Queues and Skills..... | 111        |
|                  | Adding A PlaceGroup to a Site.....                   | 114        |
|                  | Event Attribute Determiners.....                     | 115        |
| <b>Chapter 5</b> | <b>Setting Up Secure File Transfer.....</b>          | <b>117</b> |
|                  | Generating the Private-Public Key Pair.....          | 117        |
|                  | Client Configuration.....                            | 118        |
|                  | Server Configuration.....                            | 118        |
| <b>Chapter 6</b> | <b>Outbound Voice Campaigns.....</b>                 | <b>119</b> |
|                  | Predictive and Progressive Campaigns.....            | 120        |
|                  | Predictive and Progressive with ASM.....             | 123        |
|                  | Preview and Push Preview Campaigns.....              | 124        |
|                  | Non Campaign Outbound Calls.....                     | 124        |

## Table of Contents

|                   |   |            |
|-------------------|---|------------|
| <b>Chapter 7</b>  | <b>Streams and Filters.....</b>                 | <b>125</b> |
|                   | “Multiple Adapters” .....                       | 125        |
|                   | Media and Reports.....                          | 126        |
| <b>Chapter 8</b>  | <b>Recovery, Restarts, and Reconnects .....</b> | <b>130</b> |
|                   | Recovery .....                                  | 130        |
|                   | Restarts .....                                  | 131        |
|                   | Reconnects .....                                | 132        |
| <b>Appendix A</b> | <b>Time Zone ID List .....</b>                  | <b>133</b> |
| <b>Appendix B</b> | <b>Secure File Transfer Problems.....</b>       | <b>140</b> |
| <b>Appendix C</b> | <b>Managing Windows Service .....</b>           | <b>145</b> |
| <b>Appendix D</b> | <b>Log Files.....</b>                           | <b>150</b> |
| <b>Appendix E</b> | <b>Windows Installation Script.....</b>         | <b>156</b> |

## Preface

Welcome to the *Gplus Adapter - Verint WFM - Installation and Configuration Guide*. This document describes the *Gplus* Adapter for Verint WFM (the *Gplus* Adapter) and lists the steps required to install and configure the components of this Adapter.

This document is valid only for the 7.0 release(s) of this product.

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**Note:** For versions of this document created for other releases of this product, visit the Genesys Documentation website ([docs.genesys.com](https://docs.genesys.com)).

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For information about related resources and about the conventions that are used in this document, see the supplementary material starting on [page 9](#).

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## About *Gplus* Adapter for Verint WFM

The *Gplus* Adapter for Verint WFM is a software solution that provides integration between a Verint Workforce Management (WFM) system and Genesys routing solutions. Genesys event data is filtered and aggregated to provide interval activity data and a real-time data feed for Verint WFM.

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## Intended Audience

This document is primarily intended for system administrators or other individuals who will be installing the *Gplus* Adapter and have a basic understanding of the following:

- Computer-telephony integration (CTI) concepts, processes, terminology and applications.
- TCP/IP networking fundamentals including routing and client/server application communications via TCP sockets.
- Verint WFM conventions and reports.
- The network configurations used in the installation computing environment.
- The following Genesys applications and solutions:
  - Framework 7.6 - 8.x
  - Configuration Manager
  - Universal Routing 7.0 - 8.x

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## Related Documentation Resources

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

- The *Gplus Adapter for WFM 7.0 Hardware and Software Requirements*, which will help in ensuring that the Adapter is installed with sufficient resources.
- The *Framework 8.5 Configuration Manager Help*, which will help when using Configuration Manager.
- The *Genesys 8.x Security Deployment Guide*, which will help when configuring secure connections to the TServer(s), SIP Server(s), Interaction Server(s) and Configuration Server(s).
- The product documentation, Release Notes, and Product Advisories for this product, which are available on the Genesys Customer Care website after logging in at <https://genesyspartner.force.com/customercare/GenesysCommunityLogin>.

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## Document Conventions

This document uses certain stylistic and typographical conventions—introduced here—that serve as shorthand 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:

70gp\_icg\_verint-wfm\_03-2018\_v7.0.101.00

You will need this number when you are talking with Genesys Customer Care about this product.

error, the name would be presented exactly as it appears in the GUI; the error would not be corrected in any accompanying text.



## Type Styles

The Type Styles table describes and illustrates the type conventions that are used in this document.

### Type Style

| Type Style   | Used For   | Examples  |
|--|--|---|
| Italic   | <ul style="list-style-type: none"> <li>• Document titles</li> <li>• Emphasis</li> <li>• Definitions of (or first references to) unfamiliar terms</li> <li>• Mathematical variables</li> </ul> <p>Also used to indicate placeholder text within code samples or commands, in the special case where angle brackets are a required part of the syntax (see the note about angle brackets below).</p>   | <p>Please consult the <i>Genesys Migration Guide</i> for more information.</p> <p>Do <i>not</i> use this value for this option.</p> <p>A <i>customary and usual</i> practice is one that is widely accepted and used within a particular industry or profession.</p> <p>The formula, <math>x + 1 = 7</math> where <math>x</math> stands for . . .</p>   |
| Monospace font<br>(Looks like teletype or typewriter text) | <p>All programming identifiers and GUI elements. This convention includes:</p> <ul style="list-style-type: none"> <li>• The <i>names</i> 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.</li> <li>• The values of options.</li> <li>• Logical arguments and command syntax.</li> <li>• Code samples.</li> </ul> <p>Also used for any text that users must manually enter during a configuration or installation procedure, or on a command line.</p> | <p>Select the Show variables on screen check box.</p> <p>In the Operand text box, enter your formula.</p> <p>Click OK to exit the Properties dialog box.</p> <p>T-Server distributes the error messages in EventError events.</p> <p>If you select true for the inbound-bsns-calls option, all established inbound calls on a local agent are considered business calls.</p> <p>Enter exit on the command line.</p> |

|                     |  |   |
|---------------------|--|---|
| Angle brackets (<>) | <p>A placeholder for a value that the user must specify. This might be a DN or a port number specific to your enterprise.</p> <p><b>Note:</b> In some cases, angle brackets are required characters in code syntax (for example, in XML schemas). In these cases, <i>italic text</i> is used for placeholder values.</p> | <code>smcp_server -host &lt;confighost&gt;</code> |
|---------------------|--|---|

## Chapter

# 1

# Product Description

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## Historical Reports

Historical Reports are contained in individual files in tab-delimited format for the four Contact Statistics reports and semicolon-delimited for the Agent Scorecard Metric report:

- *Voice Contact Statistics Report* - Inbound customer calls
- *Outbound Statistics Report* - outbound campaign calls
- *Email Contact Statistics Report* - email and iWD/Open Media
- *Chat Contact Statistics Report* - Customer chats
- *Agent Scorecard Metric Report* - Agent activity

Files for the three *Contact Statistics* and the *Outbound Statistics* reports are generated on a 15, 30 or 60 minute interval depending upon the interval option setting. The *Agent Scorecard Metric* report is a daily report that is generated at midnight.

The *Outbound Statistics* report tracks outbound Campaign calls. The present version of the Adapter does not support the *backlog* metric for outbound Campaign calls.

## Real Time Adherence (RTA)

Verint does not stipulate a standard set of RTA states so the states tabulated below have been selected as the “standard” used by the *Gplus* Adapter for Verint WFM. The RTA State Code is the actual AgentMode integer that is included in the RTA state transition message.

| Verint RTA State     | RTA State Code                     |
|----------------------|------------------------------------|
| dndOn                | 1100                               |
| notReady             | 1101                               |
| ready                | 1102                               |
| afterCallWork        | 1103                               |
| afterEmailWork       | 1104                               |
| loggedIn             | 1200                               |
| loggedOut            | 1201                               |
| callInbound          | 1300                               |
| callOutbound         | 1301                               |
| callInternal         | 1302                               |
| callOnHold           | 1303                               |
| callConsult          | 1304                               |
| callConference       | 1305                               |
| directCallInbound    | 1306                               |
| offHook              | 1307 (See <a href="#">Option</a> ) |
| dialing              | 1308 (See <a href="#">Option</a> ) |
| ringing              | 1309 (See <a href="#">Option</a> ) |
| emailInbound         | 1400                               |
| emailReply           | 1401                               |
| emailOutbound        | 1402                               |
| chatInbound          | 1500                               |
| chatInternal         | 1501                               |
| afterChatWork        | 1502                               |
| imInbound            | 1503                               |
| imInternal           | 1504                               |
| afterImWork          | 1505                               |
| outboundPreview      | 1600                               |
| outboundCampaignCall | 1601                               |
| interactionInbound   | 1700                               |
| interactionInternal  | 1701                               |
| afterInteractionWork | 1702                               |

# 2 Installation and Setup

---

## Installation and Windows Permissions

File and folder permissions can be a factor when installing the *Gplus* Adapter on Windows Server versions. It is recommended that the same User with *Administrator* privileges install the adapter files, the Java instance and the Adapter as a Windows Service. The installed service may fail to start if the access permissions are not aligned.

---

## Included Files

The application installation package contains all of the required components with the exception of the Java Runtime Environment (JRE). Installation of the application is a matter of copying the distribution files into a suitable directory. The examples below demonstrate an Adapter instance installed in the `GPlusAdapter` folder.

### Folders

- `GPlusAdapter/config` – configuration files and license file
- `GPlusAdapter/lib` – application jar files
- `GPlusAdapter/ftp` – reports folders
- `GPlusAdapter/licenses` – third party software licenses
- `GPlusAdapter/logs` – log files
- `GPlusAdapter/recovery` – recovery log files
- `GPlusAdapter/scripts` – Windows and “unix” scripts
- `GPlusAdapter/wrappers` – Java Windows Service wrappers

## Files

---

**Note:** The script files with the “.example” suffix listed below require configuration additions before they can be executed. The suffix must also be removed.

---

### GPlusAdapter\

- bootstrap.jar – start up jar file

### GPlusAdapter\scripts\windows\

- windows\_install.bat – installation script
- encryptPassword.bat.example – password encryption script
- serverHostName.bat.example – hostname script
- startup.bat.example – console start up script
- svcinstall.bat.example – service installation script

---

**Note:** The scripts\windows folder contains a subroutines folder that holds the scripts called by windows\_install.bat. There is nothing to configure in this folder and it should not be tampered with.

---

### GPlusAdapter/scripts/unix\_bash/

- encryptPassword.sh.example – password encryption script
- serverHostName.sh.example – hostname script
- shutdown.sh – shut down script
- startup.sh.example – start up script

### GPlusAdapter\config

- GPlusWFM.properties – Configuration Server connection
- product.properties – Adapter name and version
- jvm.properties – JVM location, memory and type
- log4j.xml.example – logging configuration
- license.txt – license file

---

## Logging, FTP and Report Directories

A default set of folders for log files and historical reports are included as part of the installation package. These folders (except for the recovery folder) do not have to be used and the configuration options allow for alternatives.

### Logging

- Default - logs folder
- The number, size and location of the adapter log files are set in the `log4j.xml` file contained in the config folder.
- The default service install script for Windows creates the `AdapterService`, `service-stdout` and `service-stderr` log files in the logs folder but their location can be changed.

### Reports

- Default - `ftp/reports` folder
- Option - `historical.reports/directory`
- Reports folders for historical streams are automatically created as subfolders of the reports folder using the stream name as the subfolder name.
- Normal operation sees the report files transferred to a remote server and the local copy removed from the reports folder.
- The number of days that the report files are retained if they are not transferred is set with the `historical.reports/reportRetentionDays` Option.

### FTP Source

- Default - `ftp/reports` folder
- Option - `historical.ftp/localSourceDirectory`
- The *Gplus* Adapter attempts to transfer all of the files contained in this folder immediately after the report generation task has ended.

### FTP Backup

- Default - `ftp/reportsBackup` folder
- Option - `historical.ftp/localBackupDirectory`
- Backup folders for historical streams are automatically created as subfolders of the backups folder using the stream name as the subfolder name.
- The number of days that the FTP backup files are retained is set as an application option in the `historical.ftp` section.

## Recovery

- Default - recovery folder
- Option – recoveryPath property in the GPlusWFM.properties file.
- This folder contains the archived logs of all of the events received by the *Gplus* Adapter instance for the last seven days.
- Neither the folder nor the log files should be tampered with as the *Gplus* Adapter replays the last day's events at startup to recover the state prior to shutting down.

---

# Adding an Adapter Instance to the Configuration Server

The Adapter does not use a wizard application to simplify the installation but rather requires manual steps to add the application to the Configuration Server and complete the configuration. The present version of the Adapter does not support installation with the Genesys Administrator and its meta-data files. It is recommended that the Adapter be installed using the Genesys Configuration Manager.

## Importing the Application Template

The templates folder contains the GPlus\_Adapter\_Verint\_70.apd file that defines the properties for the adapter's Application Template. This file should be moved to a location accessible by the computer running the Genesys Configuration Manager so that it can be imported into the Configuration Server.

Once the Application Template has been imported, the name should be confirmed prior to saving it. GPlus\_Adapter\_Verint\_70 is one possibility but alternatives are also acceptable as long as the template name is unique.

## Creating the Application in the Configuration Layer

An empty application can be created after the Application Template has been added to the Configuration Layer.

1. Select the Applications folder and right click in the right frame to bring up the menu.
2. Select New ... Application.
3. Select the recently imported *Gplus* Adapter template.

Once the template is selected, an Application Properties window will appear. Once again, a unique name should be entered for the Adapter instance. At this point, one option would be to continue with the configuration of the new application object but it is suggested that new application be saved by selecting the OK button. Saving the new



Application object requires that something be added to the fields in the Start Info tab. Periods ('.') will suffice until the start information is properly configured.

---

## Java Virtual Machine

The *Gplus* Adapter is a Java application that runs in a Java Virtual Machine (JVM) that isolates the application from the underlying operating system.

---

**Note:** The 7.0 version of the Gplus Adapter requires at least Java 1.8 (8.0) as some of the additions in this version rely on the 1.8 Java libraries.

---

The significant benefit is that the same code runs on more than one operating system. One downside is that there is some configuration required to properly start the application in the JVM. There are two steps to successfully starting the *Gplus* Adapter:

- Invoking the Java application launcher to load and run the Adapter application in the JVM.
- Connecting to the Genesys Configuration Server to obtain the saved application configuration options.

The first of these two steps differs slightly between Windows and "unix" installations. Additionally, a *Gplus* Adapter instance installed on a Windows server can be started as a console application or as a Windows Service.

---

**Note:** "unix" is used as a generic description for either the Solaris or Linux operating systems.

---

### JRE or JDK Java Version

The Java Runtime Environment (JRE) is not bundled with the Adapter installation files and the actual location of the JRE is a parameter that is specified in the startup scripts. Confusingly, there are two Java versions available from Oracle: a JRE version that contains the executables and library files to run a Java application and the Java Development Kit (JDK) version that contains additional tools not available in the JRE version. It is recommended that the JDK version of Java 1.8 or higher be installed rather than the JRE version.

## Windows

---

**Note:** The Windows script files are located in the scripts\windows folder of the Adapter installation.

---

### windows\_install.bat

The windows\_install.bat script file performs the installation tasks listed below as a single menu driven script. The use of this script file is described in [Appendix E](#) below and it is recommended that it be used to install the *Gplus* Adapter as a Windows Service.

This script incorporates many of the steps discussed below and it is also recommended that the following steps be read for background. It should be noted that the *Gplus* Adapter can still be installed as described below using the listed script files.

### startup.bat and svcinstall.bat

Both the startup.bat file and the svcinstall.bat Windows script files have common parameters that must be set to identify the JRE that will be used as well as the allocated memory limit for the running *Gplus* Adapter instance.

### Setting WFM\_JAVA\_HOME

The WFM\_JAVA\_HOME parameter has to set to a base folder in the Java installation as shown in the example below.

```
set WFM_JAVA_HOME=../java/jdk1.8
```

### JVM Memory

The memory setting configures the maximum amount of memory that the JVM will allocate on startup. The default is 1024 MB and it should be sufficient for all but the very largest call centers.

```
set JVM_MEM=1024m
```

The maximum memory available to the JVM in a Window 32 bit OS varies but it should not be set higher than 1.3 GB. In the unlikely event that more memory than those limits is required, a 64 bit version of the JVM can be used. The memory available on a 64 bit OS would be constrained by the amount of memory on the server. It should be noted that the memory requirements actually increase with a 64 bit OS as the memory pointer size doubles.

### startup.bat Script

The Windows batch file `startup.bat` is immediately executable as soon as the `.example` suffix has been removed. A console window will be opened and the program will continue to run as long as that window is open. This is fine for debugging and testing the application but is not a viable mode for running a server application. Once the application has been set up and tested using the `startup.bat` file, it should be converted into a Windows service or invoked directly with the Genesys Solution Control Server.

The following is an excerpt from the Windows `startup.bat` script showing part of the command to start the adapter:

```
%WFM_JAVA_HOME%\bin\java.exe -Xms%JVM_MEM%...
```

The `java.exe` file is the executable that starts the JVM. The file path created by the concatenation of the `WFM_JAVA_HOME` parameter and the rest of the file path, `\bin\java.exe`, must point to the actual Java executable.

### svcinstall.bat and jvm.dll

When the Adapter is installed as a Windows service, it does not use the `java.exe` file but rather links to the `jvm.dll` file. There is a server version of that file available and this is the recommended version to use with the *Gplus* Adapter. The excerpt shown below is taken from the `svcinstall.bat` file and the file path assumes that the server version is being used:

```
...%WFM_JAVA_HOME%\jre\bin\server\jvm.dll ...
```

Again, the combination of the `WFM_JAVA_HOME` parameter and the file path must identify an actual file in the Java installation.

### Installing a Windows Service

The following description discusses installing the adapter as a Windows service using the Apache Commons™ *daemon*™ *procrun* Java service wrapper.

The included `svcinstall.bat` file must reference the installed JRE in exactly the same way that the `startup.bat` file was configured with the `WFM_JAVA_HOME` parameter. An additional parameter, `SVCNAME`, must be set to identify the new service in the Services Console as shown below:

```
set SVCNAME=GPlusAdapter_WFM_P
```

The service name must match the Configuration Server application name of the Adapter instance that is configured in the `GPlusWFM.properties` file described [below](#).

One point to note is the location of the `jvm.dll` file as described above. The other is that it is also possible to modify the logging of the service process. The installation script has the following service logs enabled:

- `AdapterService.YEAR-MONTH-DAY.log`
- `service-stdout.YEAR-MONTH-DAY.log`
- `service-stderr.YEAR-MONTH-DAY.log`

The logging can be disabled by removing the parameters or using the [prunmgr](#) application.

This script file must be run once to install the adapter instance as a service after the parameters have been set. As part of the service installation, the `prunsrv.exe` file is copied and given the name of the new service e.g. `GPlusAdapter_WFM_P.exe`.

### 32 bit or 64 bit Service Installation

If a 64 bit JRE is being used to run the Adapter, then it must be installed as a 64 bit service. The only reason to use a 64 bit instance is to increase the memory beyond the limits of the 32 bit JVM.

The default installation uses the following line to rename the `prunsrv.exe` executable but there are three versions of that file available depending on the Windows version and JRE type:

```
COPY prunsrv.exe %RENAMED_EXE%
```

Copies of the versions have been placed in the three folders contained in the `wrappers` folder. The `ia64` version is specific to a 64 bit machine using an Itanium™ processor with the `amd64` version used for all other 64 bit processors. The appropriate file should be placed in the main folder prior to executing the `svcinstall.bat` script.

- `wrappers/32_bit` – default 32 bit JRE version
- `wrappers/amd64` – default 64 bit JRE version
- `wrappers/ia64` – 64 bit JRE on Itanium™ version

### Modifying an Existing Service Installation

After a successful installation, the adapter will automatically start as a service when the server boots up and the service can be stopped or started through the Windows Services Console. For most installations, there is no need to change the JVM parameters from the defaults set in the `svcinstall.bat` script but it is possible to change the start up parameters for the JVM if required using the included `prunmgr.exe` application. This is discussed in detail in [Appendix C](#).

## Removing an Existing Service Installation

Uninstalling the service can be carried out with the following command (using the example service given above):

```
prunsrv.exe //DS//GPlusAdapter_WFM_P
```

## bash Shell Scripts

---

**Note:** The *bash* script files are located in the scripts\unix\_bash folder of the Adapter installation.

---

The startup.sh.example and shutdown.sh files are standard *bash* shell scripts. The startup script has to be renamed to remove the .example suffix and then both files have to be made executable with the chmod command. An example is given below:

```
chmod 751 ./startup.sh
```

The startup.sh script file starts up the Adapter as a background process that will continue to run until the shutdown.sh script is executed. The process ID for the running adapter is contained in the WFM\_PID file and this file should not be tampered with or that particular process will have to be stopped manually.

## Setting WFM\_JAVA\_HOME

The WFM\_JAVA\_HOME parameter has to set to a base folder in the Java installation as shown in the example below.

```
WFM_JAVA_HOME=./java/jdk1.8
```

## JVM Memory

The memory setting configures the maximum amount of memory that the JVM will allocate on startup. The default is 1024 MB and it should be sufficient for all but the very largest call centers.

```
JVM_MEM=1024m
```

The maximum memory available for a Linux 32 bit installation is 2.0 GB. In the unlikely event that more memory than those limits is required, a 64 bit version of the JVM can be used. The memory available on a 64 bit OS would be constrained by the amount of memory on the server. It should be noted that the memory requirements actually increase with a 64 bit OS as the memory pointer size doubles.

---

## Configuration Server Connection

Former versions of the *Gplus* Adapter had configured the connection to the Configuration Server in the startup scripts but the connection parameters should now be defined in the `GPlusWFM.properties` file contained in the `config` directory of the adapter installation. The adapter will still accept the parameters defined in the script files but using the new properties file is recommended.

### Identifying the Adapter's Application Object

This property references the previously created Application object in the Configuration Server so that the proper configuration information can be acquired and used by the associated adapter instance.

```
appName=<applicationName>
```

### Setting the Application Type

Applications registering with the Configuration Server have to identify their application type as part of establishing the connection. The *Gplus* Adapter has been configured as a `ThirdPartyServer` in the application template discussed above. The `cmeAppType` parameter has been set properly and can be ignored in most cases.

```
cmeAppType=ThirdPartyServer
```

Applications configured as a `ThirdPartyServer` application type can register with the Genesys Configuration Server once without specifying a username or password. Multiple registrations with the same Application Name (`appName`) are not allowed.

The properties file still has the username and password parameters listed although they are not usually required and they are only used if the application type is set to `ThirdPartyApplication`.

```
cmeUser=  
cmePass=
```

Configuring the Adapter instance as a `ThirdPartyApplication` would allow for multiple connections to the Configuration Server using the same credentials

### Encrypting the Configuration Server Password

If the application type is set to `ThirdPartyApplication`, it is possible to encrypt the password for the CME user. The `encryptPassword` script files will encrypt the provided

password and store it in the enc file contained in the config folder. The Adapter will check for this file at startup and use the encrypted password as the user's credentials when connecting to the Configuration Server.

The scripts start a small Java application and the JRE to be used to run the application must be identified with the WFM\_JAVA\_HOME parameter. The script file must be run from the console as it does not prompt for the password but rather expects the password as the only parameter.

Example:

```
encryptPassword.bat cmePassword
```

## Setting Configuration Server Connection Parameters

The next set of properties specifies the connection parameters for the Genesys Configuration Server.

### Socket Parameters

The parameters below are mostly self-explanatory. The Adapter instance will be attempting to connect to the Configuration Server through a socket defined by a host name and port number.

```
cmeHost=<hostName>  
cmePort=2020  
cmeBackupHost=  
cmeBackupPort=
```

---

**Note:** The host name is the actual server host name or IP address.

---

The backup Configuration Server host and port can also be added if there is a backup. If there is no backup server, the backup parameters should be set to the primary Configuration Server. The connection parameters defined in the following sections will be shared by both the primary and backup Configuration Server connections.

### Setting Registration Timeout and Delay

The next three connection properties configure how the *Gplus* Adapter registers for notifications after connecting (or reconnecting) to the Configuration Server. These parameters were added to reduce the load on the Configuration Server in a busy call center when a number of applications may be attempting to reconnect and register requests at the same time.

```
configTimeout=10m
registrationMinDelay=5m
registrationMaxDelay=15m
```

The first parameter (`configTimeout`) sets the amount of time the Adapter will wait before attempting to reregister a request for which it has not received a response. The default is 10 minutes and that should be more than sufficient for most call centers but it can be increased if required.

The other two parameters set the bounds for when the Adapter instance will randomly attempt to register for notifications after reconnecting to the Configuration Server. The delay will be random time longer than `registrationMinDelay` but less than `registrationMaxDelay`. Again, these parameters would only be relevant if a large number of Adapters were connected to the same Configuration Server.

### Setting addp Protocol

The next set of parameters configures the `addp` connection protocol. This protocol acts as a *heartbeat* for the connection and each side of the connection can be notified if the connection is inadvertently dropped.

```
addpEnabled=false
addpLocalTimeout=45
addpRemoteTimeout=75
addpTraceMode=Both
```

Both timeouts are in seconds and should be set to different values with the remote timeout greater than the local timeout.

It is recommended that if `addp` is enabled, the `addpTraceMode` should be set to `Both` which is the equivalent of `Trace On Both Sides`. This setting will ensure that the Adapter is notified if the connection to the Configuration Server is disconnected.

### Enabling Transport Layer Security (TLS)

This connection parameter enables the Adapter to use Transport Layer Security (TLS) when connecting to the Configuration Server. The actual configuration for TLS occurs on the server side.



Setting up the Configuration Server for TLS and providing a security certificate for the adapter are well beyond the scope of this document. The *Genesys 8.0 Security - Deployment Guide* does discuss the steps required to set up TLS.

```
tls=false
```

---

**Note:** The secure port on the Configuration Server may not be the default and the `cmePort` parameter has to be set to that secure port if TLS is enabled.

---

### Recovery Log Folder

The path for the recovery logs can be changed from the default recovery folder by modifying the `recoveryPath` property to another existing folder.

```
recoveryPath=./recovery
```

---

## Solution Control Server Integration

---

**Note:** SCS integration also requires a Local Control Agent (LCA) instance installed on the server hosting the *Gplus* Adapter and a properly configured Host object in the Configuration Server.

---

The *Gplus* Adapter can be started and stopped using the Solution Control Interface for both the Windows and “unix” versions by invoking the Java executable with the command line arguments. Additionally, an adapter instance installed as a Windows Service can also be controlled by invoking a command on the `prunsvr.exe` service wrapper.

### Invoking the Application Directly

The following fields in the Start Info tab of the Adapter's Configuration Properties must be set as described for the Solution Control Server to start and stop the application.

### Working Directory

The working directory is set to the root of the adapter installation files:

```
/Applications/GPlus_WFM_Adapter
```

### Command Line

The command line starts up the JVM with the java command as in this example:

```
/java/jdk1.8_151/jre/bin/java
```

It is also possible to just invoke the startup.bat file in the case of a Windows installation if that file was configured properly:

```
startup.bat
```

### Command Line Arguments

If the command line does not use the startup script, then the command line arguments are given below:

```
-Xms1024m -Xmx1024m -jar bootstrap.jar com.ariasolutions.iconnect.BootStrap
```

The only variable set in the command line arguments is the JVM memory size and both the minimum (-Xms) and the maximum (-Xmx) should be set to the same amount. The other parameters should not be changed from the example above which shows the allocated memory set to 1024 MB.

## Start and Stopping a Windows Service

The following instructions are relevant if the Adapter instance has been installed as a Windows Service and the Service is to be started and stopped through the Solution Control Server.

---

**Note:** The LCA version should be 8.1.200.07 or higher and the Solution Control Server should be an 8.1.x version to be compatible with the LCA.

---

### Working Directory

The working directory is still set to the root of the adapter installation files. The directory that contains the renamed prunsvr.exe as described [above](#):

```
/Applications/GPlus_WFM_Adapter
```

### Command Line

The command line just identifies the renamed prunsvr.exe that was created when the Service was installed:

GPlusAdapter\_WFM\_P.exe

### Command Line Arguments

The command line arguments field contains the argument to start the Adapter service and takes the following one word command:

start

---

## Logging Configuration

The *Gplus* Adapter has three types of logs and only the first two are configurable beyond being enabled or disabled.

1. TServer and Interaction Server events with the adapter state changes associated with those events.
2. A summary of errors also logged in the first log.
3. The recovery log.

### Event and Error Logs

#### log4j.xml File Location

The first two log types are configured using the parameters found in the `log4j.xml.example` file contained in the configuration directory (`./config`). This file will not be the active logging configuration until the name is changed to `log4j.xml`.

#### ROLLING Appender - No Compression

The following is an excerpt from the `log4j.xml` file showing some of the parameters that can be set for the ROLLING appender. This appender logs the events to a set of files that are continuously updated.

```
<appender name="ROLLING" class="org.apache.log4j.RollingFileAppender">  
  <param name="File" value="logs/GPlusAdapterWFM.log" />  
  <param name="MaxFileSize" value="50MB" />  
  <param name="MaxBackupIndex" value="2" />  
  ...  
</appender>
```

The log file destination folder and name are specified by the `File` parameter. In the example above, the file (`GPlusAdapterWFM.log`) will be created and updated in the logs

directory that was created when the application was installed. The destination folder could have been set to any folder accessible from the installation.

The ROLLING log files are set to roll over when the file size of the current file (GPlusAdapterWFM.log) reaches the MaxFileSize (50MB). The older files are indicated by an integer appended to the file name. The MaxBackupIndex is set to 2 in the example so only two backup files would be kept: the most recent, GPlusAdapterWFM.log.1 and the previous file, GPlusAdapterWFM.log.2. By adjusting these two parameters and depending upon the call volume, the uncompressed files could keep an hour or two of the recent activity for review.

### **GZIP Appender - Compressed**

The events log records all of the events received by the *Gplus* Adapter as well as operational states. The logs can become quite large and for that reason the GZIP appender was added. The GZIP appender continuously archives the logging information to compressed files. This file space saving feature enables the uncompressed files built by the ROLLING appender to serve as a recent snapshot of adapter activity and the GZIP files provide the longer term archive.

```
<appender name="GZIP" class="com.ariasolutions.iconnect.util.log.GZIPAppender">
  <param name="Prefix" value="logs/GPlusAdapterWFM.log" />
  <param name="RollOverField" value="hour" />
  <param name="MaxBytes" value="1500MB" />
  ...
</appender>
```

The log file destination is specified by the Prefix parameter for the GZIP appender. In the above examples, the logging directory has been set to the logs directory that was created when the application was installed but it could have been set to any folder accessible from the installation.

The GZIP appender is configured to start a new file hourly with the RollOverField parameter set to hour. The MaxBytes parameter specifies the maximum number of storage bytes used for all of the zipped log files. When the MaxBytes limit is exceeded, the adapter will start deleting the oldest zipped files until the limit is not exceeded. Each file name will have the date and time that the file was created appended to the Prefix specified in the configuration file.

### **ROLLING\_ERROR Appender**

The ROLLING\_ERROR appender is essentially the ROLLING appender with the logging threshold level set to error. The errors will still be logged to the ROLLING and GZIP logs but the error log file allows for a quick check to see if the adapter is running error free rather than having to search through the event logs.

## Logging Levels

Logging levels for the log4j library are limited to six levels with fatal being the least verbose and trace being the most. The default level set in the log4j.xml.example file is debug. In production or when detailed log entries are no longer required, the logging threshold could be increased but this can be set easily in the Configuration Layer with the application/logThreshold option discussed [below](#).

## Adding or removing appenders

The example file includes a definition for a STDOUT appender that has been left commented out. This appender allows logging to the console and it is not practical for a production instance. The following excerpt from the example file shows that the STDOUT appender is not included in the logging but the ROLLING, ROLLING\_ERROR and GZIP appenders are included:

```
<root>
  <level value="debug"/>
  <!-- <appender-ref ref="STDOUT"/> -->
  <appender-ref ref="ROLLING"/>
  <appender-ref ref="ROLLING_ERROR"/>
  <appender-ref ref="GZIP"/>
</root>
```

The xml comment tags (<!-- -->) can be used to exclude any of the logging appenders.

## Windows Service - out.log and err.log

The parameters for installing the adapter as a Windows Service include specifying that stdout and stderr for the adapter are redirected to two log files: service-stdout\*.log and service-stderr\*.log. Usually both log files will be empty but in the event of a fault with the JVM, that fault should be logged in the err.log file.

If the STDOUT appender is enabled, the adapter logs will be directed to the service-stdout\*.log file. This is not recommended as the file is not "managed" and it will continue to grow until the available disk space is consumed.

## Recovery Log

The recovery log will be contained separately in the recovery folder. Other than changing the [location](#) to which the logs are written, this log has no configuration options and is managed automatically by the *Gplus* Adapter. The log files contain enough information to restart the adapter after a mishap without losing the data recorded prior to the mishap. It should not be tampered with.

If data contained in the recovery log prevents the adapter from starting up, the log files can be removed from the recovery folder to allow the application to start.

---

## Initial Start Up Test

The application has not been configured in the Configuration Manager but it should now start up and create a log file before failing. This test requires the startup script to be run and then a confirmation that a brief log file has been created listing the exceptions generated from starting without configuration. The log file(s) should be created in the directory specified in the log4j configuration.

In the case of the *bash* shell scripts, shutdown.sh has to be run to ensure that the stalled run state has cleared. Both shell script files should have been modified to be executable during the initial setup of the application.

---

## License File

A temporary license file (license.txt) is included in the config folder of the *Gplus* Adapter installation. This license will allow the adapter to run on any server for a limited amount of days. The expiry date is listed in the license file. When a production license has been purchased, the temporary license file must be replaced with the new file.

While the temporary license allows the Adapter instance to run on any host server, the purchased permanent licenses are created with permanent fields that cannot be altered. Changing any of these fields requires creating a new license e.g. moving the Adapter to a new server would require a new license. The following fields are required and restrict the Adapter to being installed on one host server and acquiring its configuration from an existing Application object in the Configuration Server:

- Host name
- Adapter application name in Configuration Server
- Vendor (*Verint*)
- Number of seats

## Determining the Host Name

Depending upon the host operating system and network configuration, the required host name may be either a simple hostname or a qualified hostname:

- Simple            adapterhost
- Qualified        adapterhost.qualified.domain

The JRE libraries are used to check the licensed hostname in the Adapter and those libraries are also used with the provided serverHostName script file. Executing the script file will display the required hostname in the console window. There are Windows and *bash* versions of these script files. The scripts start a small Java application and the JRE to be used to run the application must be identified with the WFM\_JAVA\_HOME parameter. The .example extension has to be removed from the script name and the bash version has to be made executable.

# 3

## Application Options

Each of the *Gplus* Adapter application options is discussed in this chapter. To change the application options, open the Adapter Application in the Configuration Manager and select the Options tab.

---

### alarmCodes Section

This Option Section deals with the alarm codes sent to the Genesys Message Server. The alarm codes sent must match up with the LogEvent IDs defined in the Alarm Conditions contained in the Configuration Server.

#### **diskWriteFailure**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | diskWriteSuccess                           |

This option identifies the integer Alarm Code sent to the Message Server when the *Gplus* Adapter encounters a problem writing the event logs, the recovery logs or the historical reports to the disk drive.



**diskWriteSuccess**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | diskWriteFailure                           |

This option identifies the integer Alarm Code sent to the Message Server when the problem that generated a diskWriteFailure Alarm Code has been cleared.

**ftpFailure**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | ftpSuccess                                 |

This option identifies the integer Alarm Code sent to the Message Server when the *Gplus* Adapter encounters a problem sending the generated report files to the remote WFM server.

**ftpSuccess**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | ftpFailure                                 |

This option identifies the integer Alarm Code sent to the Message Server when the problem that generated a ftpFailure Alarm Code has been cleared.

**reportFailure**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | reportSuccess                              |

This option identifies the integer Alarm Code sent to the Message Server when the *Gplus* Adapter encounters a problem generating the report files.

**reportSuccess**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | reportFailure                              |

This option identifies the integer Alarm Code sent to the Message Server when the problem that generated a reportFailure Alarm Code has been cleared.

**rtaConnected**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | rtaDisconnected                            |

This option identifies the integer Alarm Code sent to the Message Server when the connection problem that generated a rtaDisconnected Alarm Code has been cleared.

**rtaDisconnected**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | rtaConnected                               |

This option identifies the integer Alarm Code sent to the Message Server when the *Gplus* Adapter's RTA connection to the Verint server was terminated by either side.

**rtaConnected:<streamName>**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | rtaDisconnected:<streamName>               |

This option identifies the integer Alarm Code sent to the Message Server when the connection problem that generated a rtaDisconnected:<streamName> Alarm Code has been cleared.

**rtaDisconnected:<streamName>**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | rtaConnected:<streamName>                  |

This option identifies the integer Alarm Code sent to the Message Server when the *Gplus* Adapter's RTA connection associated with the Stream identified by <streamName> was terminated by either side.

**serverConnected**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | serverDisconnected                         |

This option identifies the integer Alarm Code sent to the Message Server when the connection problem that generated a serverDisconnected Alarm Code has been cleared.

**serverDisconnected**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | serverConnected                            |

This option identifies the integer Alarm Code sent to the Message Server when one the Genesys Server (TServer, SIPServer or Interaction Server) connections has been disconnected.

**serverConnected:<serverName>**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | serverDisconnected:<serverName>            |

This option identifies the integer Alarm Code sent to the Message Server when the connection problem that generated a serverDisconnected Alarm Code has been cleared.

**serverDisconnected:<serverName>**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Alarm Condition/Detect Event/Log Event IDs |
| Dependencies:  | serverConnected:<serverName>               |

This option identifies the integer Alarm Code sent to the Message Server when the Genesys Server (TServer, SIPServer or Interaction Server) connection identified by <serverName> has been disconnected.

---

## application Section

This Option Section deals with the general options for the Adapter instance.

### acwStrategy

|                |                         |
|----------------|-------------------------|
| Type:          | Optional                |
| Default Value: | lastRouted              |
| Valid Values:  | lastRouted, pendingOnly |
| Dependencies:  | None                    |

This option defines how the Adapter handles ACW sessions that were not started within a routed interaction. These ACW sessions can either be associated with the last routed interaction that the agent handled (lastRouted) or be treated as NotReady or Unavailable time (pendingOnly).

### agentIdMode

|                |  |
|----------------|--|
| Type:          | Mandatory  |
| Default Value: | personUserName   |
| Valid Values:  | agentLogin - Switch Login ID field<br>personEmployeeId - Employee ID field<br>personUserName - User Name field |
| Dependencies:  | None   |

This option identifies which of the Genesys Person fields will be reported as the agent identifier in *Gplus* Adapter reports. In multi-site implementations, it is recommended this option be set to personUserName or personEmployeeId to avoid duplicated agentLogin IDs across PBXs. In email, chat and other Open Media implementations, only personUserName or personEmployeeId option values can be used as no PBX switch is involved.

### annexSection

|                |  |
|----------------|--|
| Type:          | Optional   |
| Default Value: | GPlus_WFM  |
| Valid Values:  | Any text string acceptable as an Annex Section name. |
| Dependencies:  | None   |

This option identifies the name of the Annex Section that will contain the *Gplus* specific options added to a Place Group, VQ or Skill object in the Configuration Server. It is most commonly used when multiple primary *Gplus* Adapter applications are configured for site-based reporting. More than one Annex Section containing a site name can be configured for a particular Place Group.

---

**Note:** Contact Professional Services prior to configuring this option.

---

**callType**

|                |  |
|----------------|--|
| Type:          | Mandatory  |
| Default Value: | queueNumber  |
| Valid Values:  | skill list of Skill Names.<br>queueNumber list of Virtual Queue Numbers.<br>queueAlias list of Virtual Queue Aliases.<br>custom list contained in callTypes.custom |
| Dependencies:  | genesys.queueGroups, callTypes.custom  |

This option specifies the Configuration Object type (or in the case of Virtual Queues, the field within the type) that will be used as the contact ID for each voice call. The *Gplus* Adapter uses the appropriate Configuration Objects to create a list of contact IDs. There are two consequences of this setting:

1. The created list of contact IDs must correspond to the contacts/queues expected by the Verint server in the *Contact Statistics* report.
2. It must be possible to parse the contact ID from the attributes of an EventQueued received from one of the monitored DN's.

The use of the [event.properties/callType.determiner](#) allows the event parsing to be customized. This should minimize the need for any changes to the Genesys environment. In addition, if one of the queue values has been selected, all Virtual Queues to be included in the list of reported contact types must be included in the genesys.queueGroup Section of the *Gplus* Adapter application.

When the contact types used by the WFM application do not map to either Skills or Virtual Queues, a custom option value must be used and a callTypes.custom Section containing a list of the reported contact types must be added to the application options.

**countUnattachedACW**

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | false       |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This option is applicable to environments where an agent can choose the ACW (AfterCallWork) state at any time. When set to true, an agent choosing the ACW state in a login session with no previous routed calls to associate with that state (e.g. Login, ACW and Logout) will have the time counted as ACW time against a default callType in the *Gplus* Adapter reports. If set to false, any ACW time in a login session with no previous handled routed calls will be reported as NotReady/Aux time.

**inheritOptionsFromApp**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | Any <i>Gplus</i> adapter application name. |
| Dependencies:  | None                                       |

This option would typically be set when configuring a backup *Gplus* Adapter application. The backup application will inherit relevant options from the adapter instance identified by the specified application name. Any options set for the backup adapter instance will override those set for the primary instance.

**lcaInstalled**

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | true        |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This Option determines whether the Adapter will attempt to connect to an LCA instance at startup. It was added to eliminate the Adapter connection attempts and subsequent failures when Genesys Local Control Agent (LCA) that has not been installed.

**logoutOnEmptyMediaTypes**

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | true        |
| Valid Values:  | true, false |
| Dependencies:  | None        |

When set to true, the adapter will treat a logged in agent who logs out of all media types as logged out instead of in a logged in state. This occurs in certain desktop configurations, but can be left at default values for most customers.

**logThreshold**

|                |                                |
|----------------|--------------------------------|
| Type:          | Mandatory                      |
| Default Value: | debug                          |
| Valid Values:  | fatal      Least verbose level |
|                | error                          |
|                | warn                           |
|                | info                           |
|                | debug                          |
|                | trace      Most verbose level  |
| Dependencies:  | None                           |

The logging level of the application at startup is set to the level defined in the config/log4j.xml file. This option defines the logging level that the application will use after the configuration information is read from the Configuration Server.

[Appendix D](#) discusses different log file examples based on the configured logThreshold.

**pendingLogout**

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | false       |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This Option determines whether the Adapter will process EventAgentLogout events as soon as they are received (the default behavior) or wait until any existing calls are complete first (when set to true). When the logout is processed immediately, all reporting for ongoing calls is terminated at that point.

**shortAbandonEnabled**

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | false       |
| Valid Values:  | true, false |
| Dependencies:  | None.       |

This option enables the removal of abandoned interactions from the *Abandoned* count in the *Contact Statistics* report if the interactions were abandoned prior to a configured time threshold. It should be noted that the interactions are just removed from that one statistic and will continue to be included in the abandoned counts used to calculate the [service levels](#).



As only abandoned interactions for inbound voice, chat or im interactions are reported, this option applies to those media. It is possible to set a defaultShortAbandonThreshold in the [voice](#), [chat](#) and [im](#) Option sections and that Option applies to all interactions of the media type. Further configuration can be carried out by adding the [shortAbandonThreshold](#) Option to the Annex data of a Virtual Queue.

---

**Note:** Contact Professional Services prior to enabling this option.

---

### siteBased

|                |   |
|----------------|---|
| Type:          | Optional                                  |
| Default Value: | false                                     |
| Valid Values:  | true, false                               |
| Dependencies:  | Site name added to Place Group Annex tab. |

This option allows the information presented in the historical reports to be grouped by Sites in a multi-site environment. Sites used by the *Gplus* Adapter are defined by adding Site names to the Annex section options of the Place Group configurations. The Site name will then prefix the Queue name in the Group column of the Contact Statistics reports.

This Option only applies to the stream defined in the historical.reports Section. In the case of multiple streams, each additional historical stream has its own siteBased Option.

---

**Note:** Contact Professional Services prior to enabling this option.

---

### tenantDbid

|                |                                  |
|----------------|----------------------------------|
| Type:          | Optional                         |
| Default Value: | 101 (Resources)                  |
| Valid Values:  | A dbid of a configured Tenant    |
| Dependencies:  | Configuration Server tenant type |

This option must be set if the *Gplus* Adapter is connected to a Genesys Multi-Tenant Configuration Server and the Adapter will be monitoring a different Tenant than the default ResourcesTenant that usually corresponds to a dbid of 101.

**timeZone**

|                |   |
|----------------|---|
| Type:          | Optional                                    |
| Default Value: | Time zone of the application's host server. |
| Valid Values:  | Listed in <a href="#">Appendix A</a> .      |
| Dependencies:  | None.                                       |

This option is used to report data for a time zone other than the time zone where the *Gplus* Adapter instance is installed. It is not required if the server time zone is correct for the locale.

---

**Note:** See Appendix A - Time Zone ID List.

---

**useLocalTime**

|                |                   |
|----------------|-------------------|
| Type:          | Optional          |
| Default Value: | auto              |
| Valid Values:  | auto, true, false |
| Dependencies:  | None              |

The `useLocalTime` option allows the *Gplus* Adapter to set the event time for received events using the local server time. This provides coordination between two or more servers where the event times create synchronization problems. One example would be with the Interaction Server that retains event time in seconds while voice TServers maintain event time to a resolution of milliseconds. Synchronization between the two server types is necessary for monitoring events in Outbound Push Preview campaigns.

If the option is left as `auto`, the adapter will automatically use local time if it is connected to both an Interaction Server and a voice TServer. This can be disabled by setting the option to `false`.

---

**Note:** Contact Professional Services prior to configuring this option.

---

**verint.includeEmptyQueues**

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | false       |
| Valid Values:  | true, false |
| Dependencies:  | None.       |

Enabling this option results in all of the monitored Groups being included in the Contact Statistic reports even if there was no call or agent activity associated with those Groups.

---

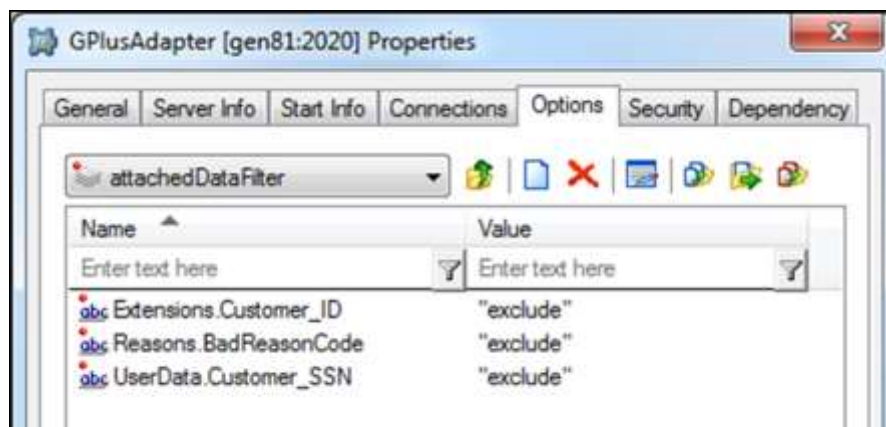
## attachedDataFilter Section

This Option Section is used to remove sensitive or private information from the received events prior to those events being processed or logged. Key/value pairs can be removed from the following Key/Value List attributes:

- UserData
- Reasons
- Extensions

The only allowed Option value is "exclude" and the Option name is the event attribute to be excluded. Nested attributes will be removed if their *root* is identified in Option name.

It should be noted that the attribute will not be available to the Adapter if removed. For example, if a UserData.VQ\_Name attribute was being used to identify a target for a customer's queued call and all of the UserData had been removed, the target determiner would fail.



---

## callback Section

This Option section provides the configuration options for support of the Genesys *Callback 8.5* functionality. The typical configuration should only entail enabling the Option section as the defaults will be correct for the majority of installations. When this Option Section is enabled, the original inbound call and the subsequent successful callback will be counted as a single call.

### abandonDelay

|                |   |
|----------------|---|
| Type:          | Optional                                |
| Default Value: | 0                                       |
| Valid Values:  | See <a href="#">Threshold Format</a>    |
| Dependencies:  | callback/enabled, callback/callbackType |

Tracking unsuccessful callbacks in "agent first" mode of the *Premise* version of *Genesys Callback* requires the Adapter to delay processing those callbacks when determining when the retry limit has been reached. That delay is configurable with this Option. It should be greater than the combination of the configured delay between callback retries and the time threshold that an agent has to refuse a callback retry.

---

**Note:** Setting this Option requires an in-depth level knowledge of the Callback implementation details and should be undertaken with the collaboration of qualified personnel.

---

### callbackType

|                |                  |
|----------------|------------------|
| Type:          | Optional         |
| Default Value: | cloud            |
| Valid Values:  | cloud OR premise |
| Dependencies:  | callback/enabled |

*Genesys Callback* comes in two versions: *Cloud* and *Premise* which have been implemented differently. This Option allows the *Callback* version to be set for the implementation being used in the Genesys environment.

**connectedDeterminer**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: UserData._CB_T_CUSTOMER_CONNECTED |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a>   |
| Dependencies:  | callback/enabled, callback/connectedValue         |

This Option identifies the EventDiverted attribute that contains the callback connected status or connection timestamp.

**dispositionDeterminer**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: UserData._CB_DISPOSITION        |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | callback/enabled, callback/scheduledDisposition |

This Option identifies the event attribute that contains the disposition type for the associated call. Presently, the Adapter only checks this attribute when the original inbound call is *Abandoned* after the caller has elected to be called back rather than waiting for an available agent.

**enabled**

|                |               |
|----------------|---------------|
| Type:          | Mandatory     |
| Default Value: | false         |
| Valid Values:  | true or false |
| Dependencies:  | None          |

This Option enables the Adapter to track *Genesys Callback* interactions where the callbacks are directly associated with the original inbound call and the queue delay is calculated as the period between the inbound call and the successful *callback*.

**idDeterminer**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: UserData._CB_SERVICE_ID         |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | callback/enabled                                |

This Option identifies the event attribute that contains the unique identifier that links the original inbound customer call with the outbound *callback(s)*.

**maxDuration**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | 1d                                   |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | callback/enabled                     |
| Examples:      | 1d2h35m30s, 12h25m etc.              |

This Option specifies a time threshold after which an inbound call is counted as Abandoned if there has not been a successful callback.

**scheduledDisposition**

|                |  |
|----------------|--|
| Type:          | Optional   |
| Default Value: | SCHEDULED  |
| Valid Values:  | Any text string                                  |
| Dependencies:  | callback/enabled, callback/dispositionDeterminer |

This Option specifies value of the event attribute identified by the dispositionDeterminer Option that identifies the disposition type as a scheduled callback. This attribute will be set on the *Abandoned* event generated on the initial inbound call when the caller elects to be called back.

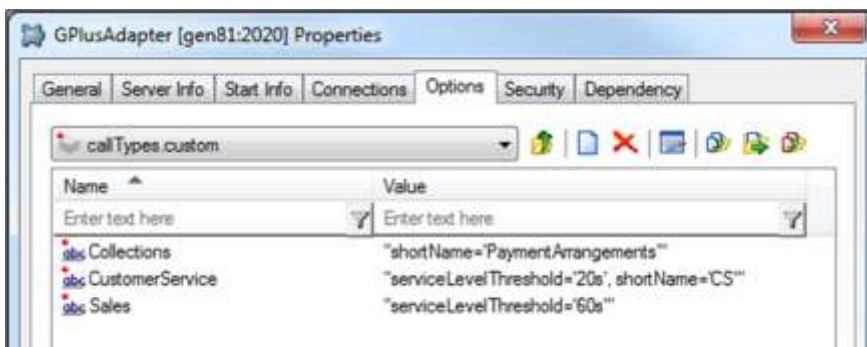
## callTypes.custom Section

This optional Section is only used if the application/callTypeOption has been set to custom. The section contains a list of WFM voice contact type/queue names that will be reported by the *Gplus* Adapter. This list is required when there is no one-to-one mapping of expected WFM contact types/queues to specific Configuration Objects (Skills or Virtual Queues).

The Option Name must match the exact value generated by the *Gplus* Adapter when applying the callType.determiner to the queued events. The Option Value can be left blank or a configuration text string specified. Since this is essentially a custom list of contact types rather than Genesys Configuration Objects, the serviceLevelThreshold (see [Threshold Format](#)) and/or a shortname can be set in a manner similar to that of the [Virtual Queues](#).

If no serviceLevelThreshold is specified, the *Gplus* Adapter will use the defaultServiceThreshold Option from the voice Section of the adapter Options. If no shortname is specified, the *Gplus* Adapter will report the Option Name.

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Section is not used</i>                                    |
| Valid Values:  | serviceLevelThreshold and shortName                           |
| Dependencies:  | application/callType,<br>event.properties/callType.determiner |



---

## chat Section

### chatACWReason

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | ACW   |
| Valid Values:  | Any unique text value.  |
| Dependencies:  | Agent's chat client must be able to set the Reason field when going NotReady. |

This option allows users to specify a NotReadyReasonCode that will be reported as the equivalent of AfterCallWork for the chat statistics in the reports and will be reported as the afterChatWork(1502) RTA state..

The text string must be contained in the attribute of a chat NotReadyForMedia event specified by the [reason.notReady.determiner](#).

### defaultAbandonedThreshold

|                |  |
|----------------|--|
| Type:          | Optional                               |
| Default Value: | 0s                                     |
| Valid Values:  | See <a href="#">Threshold Format</a>   |
| Dependencies:  | historical.reports/serviceLevelFormula |

This option specifies the default abandoned threshold for the service level calculations that form part of the interval reports. Only two of the [service level formulae](#) actually use the abandoned threshold so this option has no effect unless one of those formulae (1 or 4) has been selected. A chat is considered abandoned if the customer leaves the chat session prior to the agent joining the session.

This option should be set when a single abandoned threshold is used as a default for all chat targets. Individual abandoned thresholds can be set for each chat target/queue by adding Annex Data to the chat Virtual Queues as shown in a later [section](#) or adding the threshold to an Interaction Queue as described in the [interactionTargets](#) Section. These individual thresholds will override the default specified with this option.



**defaultServiceThreshold**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | 0s                                   |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | None                                 |

This option specifies the default service threshold for the service level calculations that form part of the interval reports. A chat is considered *serviced* at the time that the agent first joins the chat session with a customer.

This option should be set when a single service threshold is used as a default for all chat targets. Individual service thresholds can be set for each chat target/queue by adding Annex Data to the chat Virtual Queues as shown in a later [section](#) or adding the threshold to an Interaction Queue as described in the [interactionTargets](#) Section. These individual thresholds will override the default specified by this option.

**defaultShortAbandonThreshold**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | <i>Not set</i>                       |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | application/shortAbandonEnabled      |

This option specifies the default time threshold that an abandoned chat must exceed in order to be included in the *Abandoned* column of the *Contact Statistics* report. This option does not affect the service level calculations.

**defaultTarget**

|                |                                |
|----------------|--------------------------------|
| Type:          | Optional                       |
| Default Value: | UnknownTarget                  |
| Valid Values:  | Any text                       |
| Dependencies:  | application/countUnattachedACW |

This option allows users to define a separate chat target/queue other than the default value used by the *Gplus* Adapter to report on an agent's time outside of actual chat activity (including unattached ACW) when that time cannot be associated with an actual chat target/queue.

**enabled**

|                |   |
|----------------|---|
| Type:          | Mandatory                                     |
| Default Value: | false   |
| Valid Values:  | true, false                                   |
| Dependencies:  | A connection to a Genesys Interaction Server. |

Set to true to capture and report on chat activity (historical and RTA) in the contact center.

**interaction.reason.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | chat/enabled, rta/enabled                       |

This option specifies the attribute of a chat Interaction Server Event that will be included as the *Reason* field of an RTA state message generated by one of the following events:

- EventPartyAdded
- EventPropertiesChanged while the agent is a party to a routed chat.

Certain implementations may require that the combination of an InRoutedChat RTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [interactionCodeMappings](#) Section.

---

**Note:** Contact Professional Services before using this option.

---

**maxInteractionTime**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | <i>Not Set</i>                       |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | None                                 |

While unlikely, it is possible for some interactions to become *stuck* in certain states if the terminating events are not received due to a mishap with an Interaction Server connection. Normally, the *stuck* interaction records in the Adapter would be terminated as soon as the connection was lost but this response relies on the [addp protocol](#) being configured properly for the connection(s) to the Interaction Server(s).

This option sets a timeout that defines the maximum amount of time that a chat can remain in a *handled* or *wrap* state before the Adapter automatically terminates its associated record in the data tables. If the Option is not set, the *stuck* records are not terminated until the agent logs out or any agent logs in to the Place associated with the interaction.

If used, this timeout must be set to a value significantly higher than the expected longest chat duration to ensure that an ongoing interaction is not terminated prematurely in the Adapter tables. It should be noted that the timeout also applies to wrap up sessions so the expected duration of the wrap time must be taken into account.

#### **reason.notReady.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: ReasonDescription               |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | chat/enabled, rta/enabled                       |

This option specifies the attribute of a chat Interaction Server Event that will be included as the *Reason* field of an RTA state message generated by one of the following events:

- EventNotReadyForMedia
- EventMediaStateReasonChanged while the agent is NotReady to receive a routed chat.

Certain implementations may require that the combination of an Unavailable RTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [reasonCodeMappings](#) Section

---

**Note:** Contact Professional Services before using this option.

---

#### **reason.ready.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | chat/enabled, rta/enabled                       |

This option specifies the attribute of a chat Interaction Server Event that will be included as the *Reason* field of an RTA state message generated by an EventReadyForMedia event.

Certain implementations may require that the combination of an Available RTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [readyCodeMappings](#) Section.

---

**Note:** Contact Professional Services before using this option.

---



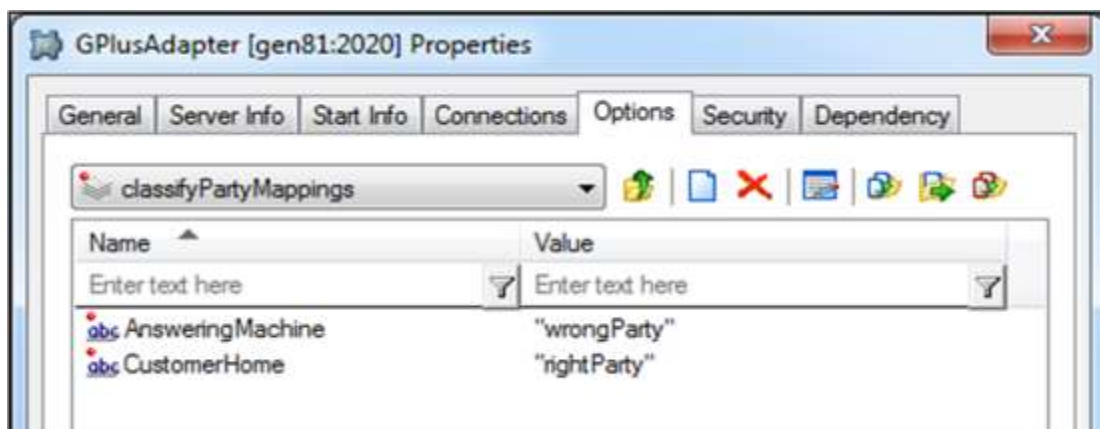
---

## **classifyPartyMappings Section**

This section is optional and must be added manually as it is not included in the Application Template. When the section is included, the Outbound Campaign disposition codes parsed by the [outbound/classifyPartyDeterminer](#) will be compared against the Option key names in this section. If there is a match, the disposition code will be mapped to one of two alternatives specified for the Option value:

- rightParty
- wrongParty

If the disposition code does not match one of the listed Options then the call is considered to be wrongParty and will not be counted against the “Right Party” columns in the Outbound Statistics report.



---

## email Section

### defaultServiceThreshold

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | 0s                                   |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | None                                 |

This option specifies the default service threshold for the service level calculations that form part of the interval reports. An email is considered *serviced* at the time that the agent sends the reply to a customer.

This option should be set when a single service threshold is used as a default for all email targets. Individual service thresholds can be set for each email target/queue by adding Annex Data to the email Virtual Queues as shown in a later [section](#) or adding the threshold to an InteractionQueue as described in the [interactionTargets](#) Section. These individual thresholds will override the default specified by this option.

### defaultTarget

|                |                                |
|----------------|--------------------------------|
| Type:          | Optional                       |
| Default Value: | UnknownTarget                  |
| Valid Values:  | Any text                       |
| Dependencies:  | application/countUnattachedACW |

This option allows users to define a separate email target/queue other than the default value used by the *Gplus* Adapter to report on an agent's time outside of actual email activity (including unattached ACW) when that time cannot be associated with an actual email target/queue.

**emailACWReason**

|                |  |
|----------------|--|
| Type:          | Optional   |
| Default Value: | ACW  |
| Valid Values:  | Any unique text value.   |
| Dependencies:  | Agent's email client must be able to set the Reason field when going NotReady. |

This option allows users to specify a NotReadyReasonCode that will be reported as the equivalent of AfterCallWork for the email statistics in the reports and will be reported as the afterEmailWork(1104) RTA state.

The text string must be contained in the attribute of an email NotReadyForMedia event specified by the [reason.notReady.determiner](#).

**enabled**

|                |   |
|----------------|---|
| Type:          | Mandatory                                     |
| Default Value: | false   |
| Valid Values:  | true, false                                   |
| Dependencies:  | A connection to a Genesys Interaction Server. |

Set to true to capture and report on email activity (historical and real-time adherence) in the contact center.

**interaction.reason.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | email/enabled, rta/enabled                      |

This option specifies the attribute of an email Interaction Server Event that will be included as the *Reason* field of an RTA state message generated by one of the following events:

- EventPartyAdded
- EventPropertiesChanged while the agent is a party to a routed email.

Certain implementations may require that the combination of a ReadingCustomerEmail or ReplyingToCustomerEmail RTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [interactionCodeMappings](#) Section.

---

**Note:** Contact Professional Services before using this option.

---

**maxInteractionTime**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | <i>Not Set</i>                       |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | None                                 |

While unlikely, it is possible for some interactions to become *stuck* in certain states if the terminating events are not received due to a mishap with an Interaction Server connection. Normally, the *stuck* interaction records in the Adapter would be terminated as soon as the connection was lost but this response relies on the [addp protocol](#) being configured properly for the connection(s) to the Interaction Server(s).

This option sets a timeout that defines the maximum amount of time that an email can remain in a *handled* or *wrap* state before the Adapter automatically terminates its associated record in the data tables. If the Option is not set, the *stuck* records are not terminated until the agent logs out or any agent logs in to the Place associated with the interaction.

If used, this timeout must be set to a value significantly higher than the expected longest email duration to ensure that an ongoing interaction is not terminated prematurely in the Adapter tables. It should be noted that the timeout also applies to wrap sessions so the expected duration of any wrap time must be taken into account.

**reason.notReady.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: ReasonDescription               |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | email/enabled, rta/enabled                      |

This option specifies the attribute of an email Interaction Server Event that will be included as the *Reason* field of an RTA state message generated by one of the following events:

- EventNotReadyForMedia
- EventMediaStateReasonChanged while the agent is NotReady to receive a routed email.

Certain implementations may require that the combination of an Unavailable RTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [reasonCodeMappings](#) Section

---

**Note:** Contact Professional Services before using this option.

---

**reason.ready.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | email/enabled, rta/enabled                      |

This option specifies the attribute of an email Interaction Server Event that will be included as the *Reason* field of an RTA state message generated by an EventReadyForMedia event.

Certain implementations may require that the combination of an Available RTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [readyCodeMappings](#) Section.

---

**Note:** Contact Professional Services before using this option.

---



---

## event.properties Section

### callType.determiner

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: ThisQueue                       |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | voice/enabled, application/callType             |

This option specifies what part (attribute) of an EventQueued will be used to determine the contact queue/call target for a routed inbound call.

Examples:

```
eventAttribute: ThisQueue
eventAttribute: UserData.VQ_Name
```

### campaignTarget.determiner

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: UserData.GSW_CAMPAIGN_NAME      |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | outbound/enabled                                |

This option specifies what part (attribute) of an EventEstablished on an agent's outbound campaign call will be used to determine the contact queue/call target for that call. There will rarely be a reason to use anything other than the default.

See [Outbound Campaign Calls](#) for more information.

---

**Note:** Contact Professional Services prior to configuring this option.

---

### chat.target.determiner

|                |  |
|----------------|--|
| Type:          | Optional   |
| Default Value: | eventAttribute: interactionProperties.interactionQueue |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a>        |
| Dependencies:  | chat/enabled   |

This Option identifies the attribute in the queued event to be used as the chat target or queue. It replaces the discontinued interactionTarget.determiner that was formerly used for email and chat interactions.

**email.target.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute:interactionProperties.interactionQueue |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a>       |
| Dependencies:  | email/enabled   |

This Option identifies the attribute in the queued event to be used as the email target or queue. It replaces the discontinued `interactionTarget.determiner` that was formerly used for email and chat interactions.

**ignoreAbandonOnRinging**

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | false       |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This option specifies whether the adapter will continue to track an inbound voice call that is Abandoned while ringing at an agent's Place. Normal behavior would see the call records terminated at that point but in certain *Route On No Answer* (RONA) situations, the Abandoned event is generated when the call is pulled back and requeued. This option allows for those calls to be reported correctly.

---

**Note:** Calls that are actually abandoned by the customer releasing the call while ringing will be counted incorrectly because the call is not terminated if this option is enabled. This option should only be enabled after considering the effect on the report data.

---

**ignoreRONAEventAttribute**

|                |                                       |
|----------------|---------------------------------------|
| Type:          | Optional                              |
| Default Value: | <i>Not set</i>                        |
| Valid Values:  | UserData.{RONA identifier field name} |
| Dependencies:  | Nortel Switch                         |

This option specifies the attached data field that the *Gplus* Adapter will look for to avoid double counting calls in a Route on No Answer (RONA) scenario. This option is required when a RONA call is answered at the agent's desktop and immediately transferred back to the queue to reroute the call.

---

**Note:** Contact Professional Services prior to configuring this option.

---

**im.target.determiner**

|                |  |
|----------------|--|
| Type:          | Optional   |
| Default Value: | eventAttribute: interactionProperties.interactionQueue |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a>        |
| Dependencies:  | im/enabled   |

This Option identifies the attribute in the queued event to be used as the im target or queue.

**ixn.logout.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: ReasonDescription               |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | None  |

This Option identifies the attribute in the Interaction Server logout event to be included as the Reason field in the RTA state message.

**reason.logout.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: Extensions.ReasonCode           |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | voice/enabled, rta/enabled                      |

This option specifies one of the attributes of a voice EventAgentLogout that identifies the reason code associated with an agent logging out. If the reason code is present, it will be included as the reason field in the agent's RTA state transition.

**reason.notReady.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: Reasons.ReasonCode              |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | voice/enabled, rta/enabled, reasonCodeMappings  |

This option specifies attribute(s) of an EventAgentNotReady that identify the reason associated with an agent entering an Unavailable RTA state. Certain implementations may require that the combination of EventAgentNotReady and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [reasonCodeMappings](#) Section

---

**Note:** Contact Professional Services before changing this option from its Default Value.

---

**serviceDate.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | None  |

This option specifies attribute of in a queued event that contains a “to be serviced by” timestamp for the queued interaction. If the attribute is not present, then the defaultServiceThreshold for the media or the configured serviceLevelThreshold for the queue will be used.

The attribute value is a date/time combination that indicates the time that interaction must be serviced by to meet the Service Level expectations. The attribute string must be in the following format and the time is assumed to GMT rather than the local time:

- Format - "YYYY-MM-DDThh:mm:ssZ"
- Example - "2013-12-31T09:30:00Z"

---

## filter:<filterName> Section

There can be more than one instance of this Section type and each is differentiated and made unique by the <filterName> portion of the Section name. The purpose of this Section is to define a subset of the monitored objects that have already been defined in the [genesys.agentGroups](#) , [genesys.placeGroups](#) and [genesys.queueGroups](#) Sections. Filters combined with the Stream configurations ([historical](#) and/or [rta](#)) allow the *Gplus* Adapter to support multiple Verint servers if required.

The filter is equivalent to the group sections listed above with Agent Groups, Place Groups and VQ DN Groups included or excluded as required. The addition of the loginQueue option provides an alternative method for including or excluding groups of Agents. The site option allows a set of Place Groups to be defined in much the same way. Sites and Place Groups are discussed [below](#). The syntax for the group options is as follows:

- agentGroup.<AgentGroupName> : include or exclude
- campaign.<Campaign Name> : include or exclude
- loginQueue.<ACDQueue DN> : include or exclude
- media.<mediaType> : include or exclude
- placeGroup.<PlaceGroupName> : include or exclude
- site.<SiteName> : include or exclude
- targetGroup.<DNGroupName> : include or exclude

---

**Note:** The groups that are included or excluded must correspond to groups already included in the three genesys.\*Groups Sections. This will require attention as to how the AgentGroups, PlaceGroups and DNGroups (VQs) are defined.

---

The campaign.<Campaign Name> filter is similar to the targetGroup.<DNGroupName> filter in terms of its effect. An excluded outbound campaign is not reported in the *Outbound Contact Statistics* report but the agents handling those calls will still have their call activity reported in the *Agent Scorecard Metric* report. However, the campaign.<Campaign Name> filter is quite different from the other filters with the exception of the media.<mediaType> filter in that it references a single campaign rather than a defined group of Agents, Places or VQs.

The media.<mediaType> filter allows for interactions with a specific media type to be included or excluded.

---

## genesys.agentGroups Section

This Section is a list of the Agent Groups that will be included in or excluded from the group of agents being monitored by the *Gplus* Adapter. Valid Option names are either an asterisk (\*) or the name of an Agent Group defined in the Configuration Server. The Option value is the action to be taken with respect to the named Agent Group: include or exclude.

\*

|                |          |
|----------------|----------|
| Type:          | Optional |
| Default Value: | include  |
| Valid Values:  | include  |
| Dependencies:  | None     |

OR

<Agent Group Name>

|                |                                    |
|----------------|------------------------------------|
| Type:          | Optional                           |
| Default Value: | <i>None</i>                        |
| Valid Values:  | include, exclude                   |
| Dependencies:  | Configuration Server Agent Groups. |

The Option Name determines the agents that the *Gplus* Adapter will report upon. An agent that is a member of an excluded or not included Agent Group will have no activity statistics reported in the *Agent Scorecard Metric* report. Additionally, an excluded agent's call activity will not be included in the Contact Statistics reports; a queued call would still be counted as "Offered" but it would not be counted as "Handled".

An excluded agent's activity will not be reported in the RTA data stream.

The asterisk (\*) as the Option Name can be considered to be an Agent Group containing all of the Persons configured as an Agent with an enabled state in the Configuration Server. Including all of the agents is the default configuration and there is little reason to change that unless there is a specific configuration requirement.

The only alternative is to have an Option Name that corresponds to one of the defined Agent Groups in the Configuration Server. Any of those Agent Groups can be excluded or included.

---

## genesys.placeGroups Section

This Section is a list of the Place Groups that will be included in or excluded from the group of Places being monitored by the *Gplus* Adapter. Valid Option names are either an asterisk (\*) or the name of a Place Group defined in the Configuration Server. The Option value is the action to be taken against the named Place Group: include or exclude.

\*

|                |                  |
|----------------|------------------|
| Type:          | Optional         |
| Default Value: | include          |
| Valid Values:  | include, exclude |
| Dependencies:  | None             |

OR

<Place Group Name>

|                |                                    |
|----------------|------------------------------------|
| Type:          | Optional                           |
| Default Value: | <i>None</i>                        |
| Valid Values:  | include, exclude                   |
| Dependencies:  | Configuration Server Place Groups. |

The Option Name determines the Place Group that the *Gplus* Adapter will monitor or not monitor. This will mean that all of the DNs associated with the Places in those groups will be registered with the connected voice TServer(s) and all of the Places will be registered with the connected Interaction Server(s).

Specifying an asterisk (\*) as the Option Name can be considered to be a Place Group containing all of the Places configured in the Configuration Server. The only alternative is to have an Option Name that corresponds to one of the defined Place Groups in the Configuration Server.

Place Groups have two roles in the configuration of the *Gplus* Adapter: identifying the Places that are to be monitored by the application and associating groups of Places with Site names. Sites and Place Groups are discussed in another [section](#).

---

**Note:** When IVR Ports or other non-Agent Places are defined within the Configuration Server, it is common to exclude these places with the use of a Place Group so that IVR (non-Agent) activity is not reported.

---

---

## genesys.queueGroups Section

This Section is a list of the DN Groups that will be included in or excluded from the group of Virtual Queue DN (VQ) groups being monitored by the *Gplus* Adapter. Valid Option names are either an asterisk (\*) or the name of a DN Group defined in the Configuration Server. The Option value is the action to be taken against the named DN Group: include or exclude.

\* (Option Name)  
 Type: Optional  
 Default Value: include  
 Valid Values: include  
 Dependencies: None

OR

<VQ DN Group Name>  
 Type: Optional  
 Default Value: *None*  
 Valid Values: include, exclude  
 Dependencies: VQ DN Groups in the Configuration Server.

The Option Name determines the VQs that the *Gplus* Adapter will monitor. Specifying an asterisk (\*) as the Option Name can be considered to be a DN Group containing all of the VQ DN groups configured in the Configuration Server. The only alternative is to have an Option Name that corresponds to one of the defined DN Groups in the Configuration Server.

This option is used to specify monitored VQs that are defined for an actual Switch object in the Configuration Server. VQs defined on a Multimedia\_Switch can be included but multimedia Interaction Queues defined in a Business Process routing strategy cannot.



---

## historical.ftp Section

This section lists the configuration options for transferring historical report files from the server hosting the *Gplus* Adapter to a folder on the server hosting the WFM Application that uses those files. These options allow the transfer protocol to be configured as plain FTP or to use SSH (Secure Shell) to transfer the files.

With the addition of multiple [Streams](#), this Section should be set up to transfer the report files associated with the Stream defined in the [historical.reports](#) Section.

### agentIntervalDirectory

|                |               |
|----------------|---------------|
| Type:          | Optional      |
| Default Value: | Not set       |
| Valid Values:  | Any directory |
| Dependencies:  | None          |

If this option is set, this directory will be used for the *Agent Scorecard Metric* report. If this is not set, the `remoteDestinationDirectory` Option will be used for this report instead.

### backupRetentionDays

|                |                                   |
|----------------|-----------------------------------|
| Type:          | Mandatory                         |
| Default Value: | 30                                |
| Valid Values:  | Any positive integer              |
| Dependencies:  | <code>localBackupDirectory</code> |

This option determines the number of days that historical report files created by the *Gplus* Adapter will be retained in the directory specified in the `localBackupDirectory` Option. The report files are removed permanently from the back up folder as they expire.

### campaignDirectory

|                |               |
|----------------|---------------|
| Type:          | Optional      |
| Default Value: | Not set       |
| Valid Values:  | Any directory |
| Dependencies:  | None          |

If this option is set, this directory will be used for the *Campaign Contact Statistics* report. If this is not set, the `remoteDestinationDirectory` Option will be used for this report instead.

**chatDirectory**

|                |               |
|----------------|---------------|
| Type:          | Optional      |
| Default Value: | Not set       |
| Valid Values:  | Any directory |
| Dependencies:  | None          |

If this option is set, this directory will be used for the Chat Contact Statistics report. If this is not set, the `remoteDestinationDirectory` Option will be used for this report instead.

**connectionMode**

|                |  |
|----------------|--|
| Type:          | Optional   |
| Default Value: | active   |
| Valid Values:  | active, passive                                    |
| Dependencies:  | Ignored if <code>secureTransfer</code> is enabled. |

This option specifies the ftp connection mode used by the ftp client to connect to the remote ftp server. Some network firewalls will not allow active ftp connections and the connection mode can be changed to passive to allow the report files to transfer through the firewall.

**enabled**

|                |             |
|----------------|-------------|
| Type:          | Mandatory   |
| Default Value: | true        |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This option can disable the ftp client that forwards the report files to the WFM server. This option is often set to false for backup *Gplus* Adapter applications that do not need to send report files on a continuous basis but only in the event of a mishap.

**keyPath**

|                |                              |
|----------------|------------------------------|
| Type:          | Optional                     |
| Default Value: | <i>Not set</i>               |
| Valid Values:  | Path to SSH private key file |
| Dependencies:  | <code>secureTransfer</code>  |

This option defines the full path (including the file name) for the private key file used to establish the SSH connection with the remote server when the `secureTransfer` Option is enabled. The key file should usually be placed in the Adapter's config folder.

**keyPassphrase**

|                |                    |
|----------------|--------------------|
| Type:          | Optional           |
| Default Value: | <i>Not set</i>     |
| Valid Values:  | Valid text string. |
| Dependencies:  | secureTransfer     |

This pass phrase provides additional security for the SSH connection as establishing the connection requires the providing the pass phrase as well as possessing the private key file. The pass phrase must be specified when the SSH keys are created.

**localBackupDirectory**

|                |   |
|----------------|---|
| Type:          | Mandatory   |
| Default Value: | ftp/reportsBackup                                       |
| Valid Values:  | Any existing folder on the <i>Gplus</i> Adapter server. |
| Dependencies:  | None  |

This option identifies the directory on the *Gplus* Adapter server where copies of the historical report files will be saved after those files have been successfully transferred. If the option value is left blank, the report files will be deleted locally after being transferred to the remote WFM server.

**localSourceDirectory**

|                |                              |
|----------------|------------------------------|
| Type:          | Mandatory                    |
| Default Value: | ftp/reports                  |
| Valid Values:  | Any existing folder path.    |
| Dependencies:  | historical.reports/directory |

This option identifies the directory where files will be temporarily stored at each reporting interval prior to being transferred to the WFM Server and subsequently moved to the backup directory or deleted if the backup directory is not configured.

The default location is the default report location specified in the `historical.reports` Option section and setting the two options to the same folder is how the association between the ftp client and the historical Stream is established.

**password**

|                |                             |
|----------------|-----------------------------|
| Type:          | Optional                    |
| Default Value: | <i>Not set</i>              |
| Valid Values:  | Any alphanumeric password   |
| Dependencies:  | User identified by userName |

This option should be used to replace the [userPassword](#) Option if there is a requirement that the password text not be displayed as plain text in either *Genesys Administrator* or the *Configuration Manager*. Both applications automatically hide the Option value if the Option name is “password”.

This Option will take precedence when both password Options have been set.

**remoteDestinationDirectory**

|                |   |
|----------------|---|
| Type:          | Mandatory   |
| Default Value: | ./  |
| Valid Values:  | Any folder path on the remote server relative to the ftp user’s default directory |
| Dependencies:  | None  |

This option identifies the relative directory on the remote WFM Server where the *Gplus* Adapter report files will be transferred. This directory is relative to the configured default directory for the ftp user identified in the userName Option.

---

**Note:** The ftp user must have sufficient access privileges to write the transferred files to the folder identified by the relative path.

---

**remoteHost**

|                |  |
|----------------|--|
| Type:          | Mandatory                                    |
| Default Value: | <i>Not set</i>                               |
| Valid Values:  | Host Name or IP Address of the Verint Server |
| Dependencies:  | None   |

This option specifies the host name or IP address of the server to which the report files will be transferred.

**remotePort**

|                |  |
|----------------|--|
| Type:          | Mandatory                                |
| Default Value: | 21                                       |
| Valid Values:  | FTP or SSH Port on the remote WFM Server |
| Dependencies:  | secureTransfer Option                    |

This option allows users to define the port on the remote WFM Server to something other than the default FTP port of 21. For instance, the default SSH port is 22 and the option should be set to that when secureTransfer is enabled.

**secureTransfer**

|                |                                    |
|----------------|------------------------------------|
| Type:          | Mandatory                          |
| Default Value: | false                              |
| Valid Values:  | true, false                        |
| Dependencies:  | keyPath, keyPassphrase, remotePort |

This option specifies that the file transfer will be made over an SSH (Secure Shell) connection to the remote server rather than the default FTP protocol. A private key file must be created and stored on the server hosting the *Gplus* Adapter and the public key must be registered on the server hosting the WFM reporting application. Configuring an SSH connection is discussed [below](#) and [Appendix B](#) contains troubleshooting tips when problems occur.

**sessionTimeout**

|                |  |
|----------------|--|
| Type:          | Mandatory  |
| Default Value: | 120s   |
| Valid Values:  | A time that can include minutes (m) or seconds (s) |
| Dependencies:  | None   |

This option has been added to set the maximum duration of the file transfer session associated with the transfer of the report files to the remote server for both regular FTP and SSH transfers. It ensures that the session will be closed in the event of a mishap on the remote server side during the transfer.

**userName**

|                |   |
|----------------|---|
| Type:          | Mandatory   |
| Default Value: | <i>Not set</i>  |
| Valid Values:  | Any alphanumeric user name registered on the remote server. |
| Dependencies:  | None  |

This option specifies the username used to log in to the destination FTP server.

**userPassword**

|                |                              |
|----------------|------------------------------|
| Type:          | Mandatory                    |
| Default Value: | <i>Not set</i>               |
| Valid Values:  | Any alphanumeric password    |
| Dependencies:  | User identified by userName. |

This option specifies the password for the user identified by the `userName` Option and is required to establish the connection to the ftp server but both *Genesys Administrator* and *Configuration Manager* display the password as plain text. The `password` Option should be used instead.

---

## historical.reports Section

### dailyReportEnabled

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | true        |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This option specifies whether the daily *Agent Scorecard Metric* report will be generated by the *Gplus* Adapter. Daily reports are not required for all WFM integrations. The reports are contained in the Agent\_YYYYMMdd.txt files.

### directory

|                |   |
|----------------|---|
| Type:          | Mandatory   |
| Default Value: | ftp/reports   |
| Valid Values:  | Any valid folder on the <i>Gplus</i> Adapter server |
| Dependencies:  | None  |

This option specifies the directory where the report files will be saved as they are generated. Typically, this will be the directory monitored by the Adapter's file transfer client and the files will be immediately transferred to the remote server.

### enabled

|                |             |
|----------------|-------------|
| Type:          | Mandatory   |
| Default Value: | true        |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This option allows users to disable all historical reports for this particular Stream when only RTA data is required from the *Gplus* Adapter.

**filter**

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | A filterName (filter:<filterName> Section) |
| Dependencies:  | A filter Section must be defined.          |

This option allows users to associate the options defined in this Section with a defined filter section by setting the value to filterName. If multiple streams are not defined or the reports are going to include all of the Agents, Places and VQs defined in the genesys.\*Groups Sections, then this option can be left blank.

**includeOutboundInternalInNOC**

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | false       |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This option specifies which non-routed calls made by an agent will be reported on agent reports as outbound calls. The default behavior is report only the Genesys CallType of CallOutbound (external to the switch) as outbound calls. If this option is set to true, all non-routed calls (e.g. CallInternal) dialed by the agent are considered outbound calls.

**intervalReportEnabled**

|                |             |
|----------------|-------------|
| Type:          | Mandatory   |
| Default Value: | true        |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This option specifies whether the four following reports will be generated by the *Gplus* Adapter on the interval specified by the intervalReport.interval Option:

- Voice Contact Statistics Report
- Outbound Statistics Report
- Email Contact Statistics Report
- Chat Contact Statistics Report



**intervalReport.interval**

|                |            |
|----------------|------------|
| Type:          | Mandatory  |
| Default Value: | 15         |
| Valid Values:  | 15, 30, 60 |
| Dependencies:  | None       |

This option specifies the period in minutes between interval reports. This option should be set to whatever the duration the WFM solution has been configured for. The reports are generated at set times in the hour depending upon the interval so a 15 minute interval would see reports created at 0:00, 0:15, 0:30 and 0:45 in each hour.

**reportRetentionDays**

|                |                                     |
|----------------|-------------------------------------|
| Type:          | Mandatory                           |
| Default Value: | 30                                  |
| Valid Values:  | Any positive integer                |
| Dependencies:  | historical.ftp/localBackupDirectory |

This option specifies the number of days that copies of the historical reports will be retained in the localBackupDirectory after the originals have been transferred to the remote server. If the localBackupDirectory has not been set, the local copies of the report files will not be backed up after being successfully transferred.

**serviceLevelFormula**

|                |   |
|----------------|---|
| Type:          | Mandatory                                 |
| Default Value: | 3   |
| Valid Values:  | 1 - 4 (formula index listed below)        |
| Dependencies:  | serviceLevelThreshold, abandonedThreshold |

This option specifies which formula the *Gplus* Adapter will be used to calculate the Service Level Percentage in the Contact Statistics reports.

## Formulae:

1.  $(\text{callsAnsweredInThreshold} + \text{callsAbandonedInThreshold}) / (\text{callsAnswered} + \text{callsAbandoned})$
2.  $\text{callsAnsweredInThreshold} / \text{callsAnswered}$
3.  $\text{callsAnsweredInThreshold} / (\text{callsAnswered} + \text{callsAbandoned})$
4.  $\text{callsAnsweredInThreshold} / (\text{callsAnswered} + \text{callsAbandonedAfterThreshold})$

The serviceLevelThreshold that can be set in the related media section and/or individually for each Target. An abandonedThreshold can also be set in the same way to facilitate using Formula 1 or Formula 4 above.

**verint.campaignReportEnabled**

|                |   |
|----------------|---|
| Type:          | Optional                                |
| Default Value: | true                                    |
| Valid Values:  | true, false                             |
| Dependencies:  | outbound/enabled, intervalReportEnabled |

This option can be used to disable the reporting of outbound campaign calls in the *Outbound Statistics* report. The Outbound Campaign reports are contained in the Campaign\_MMddhhmm.txt files.

**verint.chatReportEnabled**

|                |                                     |
|----------------|-------------------------------------|
| Type:          | Optional                            |
| Default Value: | true                                |
| Valid Values:  | true, false                         |
| Dependencies:  | chat/enabled, intervalReportEnabled |

This option can be used to disable the reporting of chat and im interactions in the *Chat Contact Statistics* report. The reports are contained in the Chat\_MMddhhmm.txt files.

**verint.emailReportEnabled**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | true  |
| Valid Values:  | true, false   |
| Dependencies:  | email/enabled, media:<name>/enabled,<br>intervalReportEnabled |

This option can be used to disable the reporting of email and /or iWD/OpenMedia interactions in the *Email Contact Statistics* report. The generic media are included in the email reports because Verint does not yet have a report type for generic media.

These reports are contained in the Email\_MMddhhmm.txt files.

**verint.version**

|                |                                  |
|----------------|----------------------------------|
| Type:          | Optional                         |
| Default Value: | legacy                           |
| Valid Values:  | legacy, 11.x                     |
| Dependencies:  | Verint <i>Impact 360</i> version |

This Option configures how the statistics are generated for the historical reports. There are two possible settings: *legacy* that creates the reports in the same way as earlier versions of the Adapter and *11.x* that meets the new report specifications for the *Impact 360* version 11.0 and later. The differences are described generically for all of the media types below:

**legacy**

- The *Average Handle Time* (AHT) statistic in the reports includes only the handle time that took place in the interval.
- The interaction counts (offered, accepted etc.) are incremented in the interval that the interaction was queued, answered etc. .

**11.x**

- The interaction statistics are reported at the conclusion of the interaction's *handle* time. Identifying the point when the handle time has "concluded" is dependent upon whether the wrap time immediately follows the time that the agent is an active party to the interaction. If the wrap time is contiguous with that time, then the conclusion of the interaction's handle time occurs at the end of the wrap time.
- One example is that the *Volume Handled* (VH) statistic in the voice *Contact Statistics* report is the count of the calls where the handle time concludes in the reported interval.
- The *Average Handle Time* (AHT) statistic includes all of the handle time (including any time from prior intervals) of the interactions that "concluded" in the reported interval.

The Option must be set in the `historical.reports` Option Section as well as all of the configured historical Stream sections. The historical Stream sections cannot have a different Option value than the setting in the `historical.reports` Section.

**verint.voiceReportEnabled**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | true                                 |
| Valid Values:  | true, false                          |
| Dependencies:  | voice/enabled, intervalReportEnabled |

This option can be used to disable the reporting of inbound voice calls in the *Voice Contact Statistics* report. The reports are contained in the `Voice_MMddhhmm.txt` files.

---

## historical:<streamName> Section

This Section is optional and is used when the *Gplus* Adapter instance is providing more than one Stream. This Section is used to configure the historical component of the data feed to the Verint Server. The Options contained in this section combine the Options from both the [historical.reports](#) and [historical.ftp](#) Sections with a few additions. The Options are listed below and the additions are discussed.

### Report Options

- [dailyReportEnabled](#)
- [enabled](#)
- [filter](#)
- [includeOutboundInternalInNOC](#)
- [intervalReportEnabled](#)
- [intervalReport.interval](#)
- [reportRetentionDays](#)
- [serviceLevelFormula](#)
- [siteBased](#)

The [application/siteBased](#) Option only applies to the stream defined in the [historical.reports](#) Section. This stream Option allows the site based reports to be configured on a stream by stream basis.

- [verint.campaignReportEnabled](#)
- [verint.chatReportEnabled](#)
- [verint.emailReportEnabled](#)
- [verint.version](#)
- [verint.voiceReportEnabled](#)

There is no directory option for the Stream configuration as the adapter automatically creates subdirectories in the directory configured by the [historical.reports/directory](#) Option. The created stream directory uses this Section's streamName as its name.

## FTP Options

- [ftp.backupRetentionDays](#)
- [ftp.connectionMode](#)
- ftp.enabled

This Option is the surrogate for the historical.ftp/enabled Option that enables (value = true) or disables (value = false) the transfer of the historical reports to the remote Verint server.

- [ftp.keyPath](#)
- [ftp.keyPassphrase](#)
- [ftp.localBackupDirectory](#)
- [ftp.localSourceDirectory](#)
- [ftp.remoteDestinationDirectory](#)
- [ftp.remoteHost](#)
- [ftp.remotePort](#)
- [ftp.secureTransfer](#)
- [ftp.sessionTimeout](#)
- [ftp.userName](#)
- [ftp.userPassword](#)

---

## im Section

This Section is used to configure the *Gplus* Adapter instance if internal *Interaction Workspace Instant Messaging* interactions are being used by the Agents and those interactions are to be reported to the *Impact 360* application.

### defaultAbandonedThreshold

|                |  |
|----------------|--|
| Type:          | Optional                               |
| Default Value: | 0s                                     |
| Valid Values:  | See <a href="#">Threshold Format</a>   |
| Dependencies:  | historical.reports/serviceLevelFormula |

This option specifies the default abandoned threshold for the service level calculations that form part of the interval reports. Only two of the [service level formulae](#) actually use the abandoned threshold so this option has no effect unless one of those formulae (1 or 4) has been selected. An im interaction is considered *abandoned* if the first agent leaves the im session prior to the second agent replying.

This option should be set when a single abandoned threshold is used as a default for all im targets. Individual abandoned thresholds can be set for each im target/queue by adding Annex Data to the im Virtual Queues as shown in a later [section](#) or adding the threshold to an InteractionQueue as described in the [interactionTargets](#) Section. These individual thresholds will override the default specified with this option.

### defaultServiceThreshold

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | 0s                                   |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | None                                 |

This option specifies the default service threshold for the service level calculations that form part of the interval reports. An im interaction is considered *serviced* at the time that the second agent first joins the im session with the first agent.

This option should be set when a single service threshold is used as a default for all im targets. Individual service thresholds can be set for each im target/queue by adding Annex Data to the im Virtual Queues as shown in a later [section](#) or adding the threshold to an InteractionQueue as described in the [interactionTargets](#) Section. These individual thresholds will override the default specified by this option.

**defaultShortAbandonThreshold**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | <i>Not set</i>                       |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | application/shortAbandonEnabled      |

This option specifies the default time threshold that an abandoned im interaction must exceed in order to be included in the *Abandons (ABD)* column of the *Chat Contact Statistics* report. This option does not affect the service level calculations.

**enabled**

|                |   |
|----------------|---|
| Type:          | Mandatory                                     |
| Default Value: | false   |
| Valid Values:  | true, false                                   |
| Dependencies:  | A connection to a Genesys Interaction Server. |

Set to true to capture and report on *Instant Messaging* (im) activity (historical and RTA) in the contact center.

**interaction.reason.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | chat/enabled, rta/enabled                       |

This option specifies the attribute of an *Instant Messaging* (im) Interaction Server Event that will be included as the *Reason* field of an RTA state message generated by one of the following events:

- EventPartyAdded
- EventPropertiesChanged while the agent is a party to a routed im interaction.

Certain implementations may require that the combination of an RoutedIMRTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [interactionCodeMappings](#) Section.

---

**Note:** Contact Professional Services before using this option.

---



**maxInteractionTime**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | <i>Not Set</i>                       |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | None                                 |

While unlikely, it is possible for some interactions to become *stuck* in certain states if the terminating events are not received due to a mishap with an Interaction Server connection. Normally, the *stuck* interaction records in the Adapter would be terminated as soon as the connection was lost but this response relies on the [addp protocol](#) being configured properly for the connection(s) to the Interaction Server(s).

This option sets a timeout that defines the maximum amount of time that an *Instant Messaging* (im) interaction can remain in a *handled* or *wrap* state before the Adapter automatically terminates its associated record in the data tables. If the Option is not set, the *stuck* records are not terminated until the agent logs out or any agent logs in to the Place associated with the interaction.

If used, this timeout must be set to a value significantly higher than the expected longest im duration to ensure that an ongoing interaction is not terminated prematurely in the Adapter tables. It should be noted that the timeout also applies to wrap up sessions so the expected duration of the wrap time must be taken into account.

---

## individualDNs Section

This section is optional and must be added manually as it is not included in the Application Template. The intent of this Option section to allow for monitoring a small number of DN's that cannot presently be identified with the existing Options. The DN number is the Option key and the value field can be left blank.

---

## interactionCodeMappings Section

This section is optional and must be added manually as it is not included in the Application Template. When the section is included, the reasons parsed by the `interaction.reason.determiner(s)` will be compared against the Option key names in this section. If there is a match, the parameters listed in the Option value will be used. There are two possible parameters:

1. `id` new RTA state.
2. `name` new reason code.

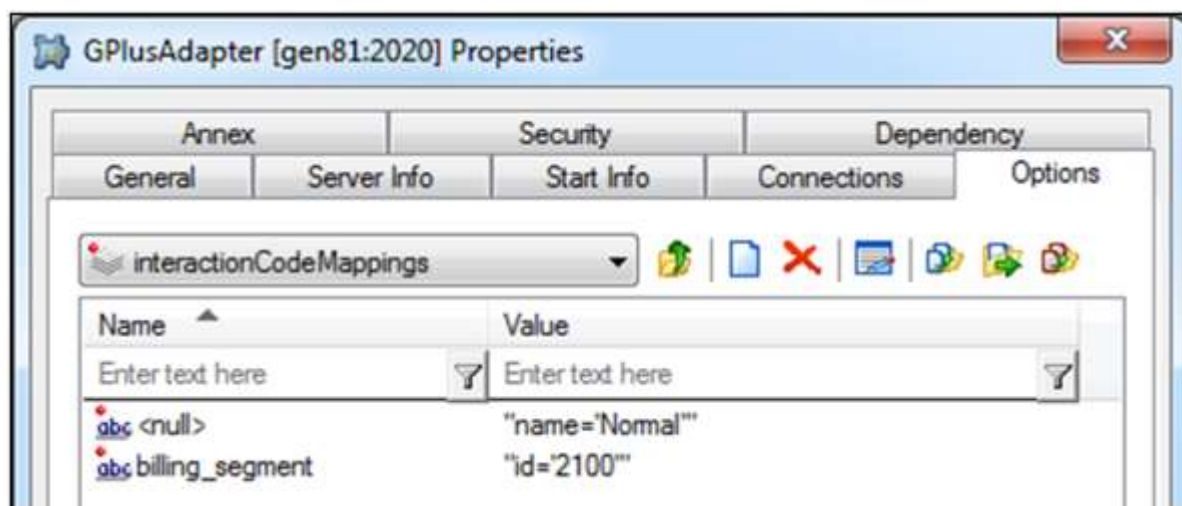
The `id` field can be either the new RTA State Name or State ID as defined in the [RTA State table](#). The `name` field is the new Reason that will be included with the RTA state message sent to the Verint server.

The `<null>` Option key signifies an event with no reason attached and it is used to configure a default behavior for the *Interaction* events.

---

**Note:** Contact Professional Services before configuring this section.

---

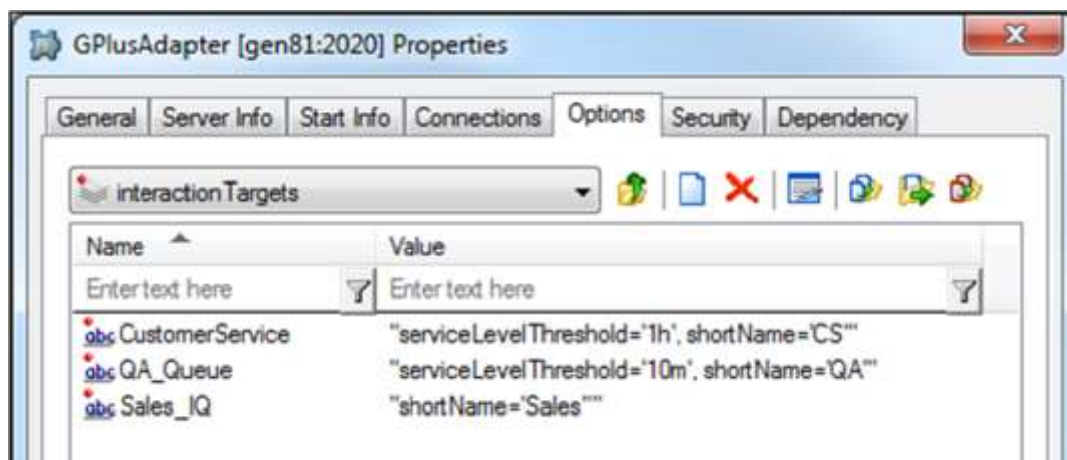


## interactionTargets Section

This Section is optional but it is required when Interaction Queues are used within Business Process Routing Strategies as the reporting objects. If only Virtual Queues defined on a Switch are used as reporting objects, this Section is not required. The situation is slightly different for email or other media where the interactions must also be tracked after they leave the agent's desktop. In that situation, outbound queues or Quality Assurance queues must also be monitored. This is explained in more detail in the following section.

Each Option name represents the specific name of an actual Interaction Queue defined in the Configuration Server. For each Interaction Queue, the Option value can be used to specify the serviceLevelThreshold, abandonedThreshold, shortAbandonThreshold (See [Threshold Format](#)) and the shortName for the Interaction Queue that will be used in the reports sent to the WFM application. It should be noted that the shortName field does not actually have to be shorter than the Interaction Queue name.

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not Set</i>                                    |
| Valid Values:  | See example below                                 |
| Dependencies:  | email/enabled, chat/enabled, media:<name>/enabled |



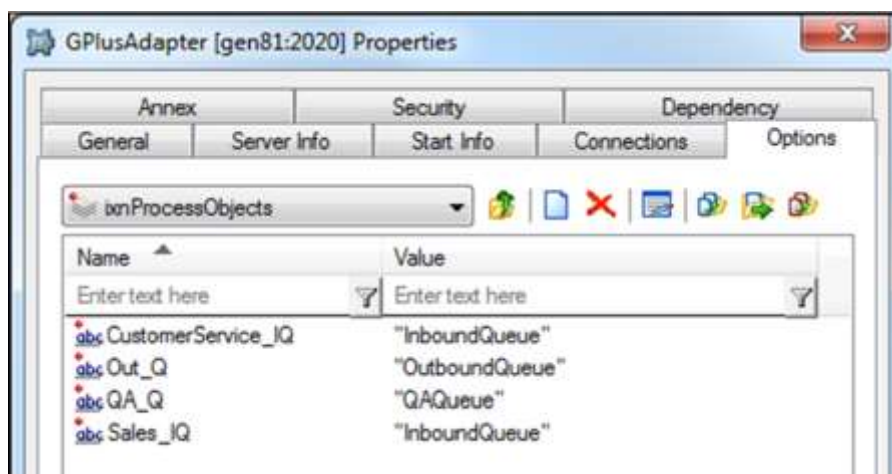
## ixnProcessObjects Section

The *Gplus* Adapter uses the list of Interaction Queues contained in this Section to determine how to report on media activity at various routing stages. The Option values categorize the monitored Interaction Queues as to their role in the Genesys Business Process Routing Strategies.

Each Option name within this section represents the specific name of an Interaction Queue configured as a Script in the Configuration Server. The Option Value associates the queue with one of the routing strategy roles defined by the *Gplus* Adapter.

All Interaction Queues involved with outbound media interactions, transferring a routed media interaction or holding an interaction for quality assurance routing must be added and categorized in this Section with one exception: Interaction Queues where media interactions are parked and waiting to be routed to an agent (e.g. an InboundQueue) should only be added if Interaction Queues instead of Virtual Queues will be used as the reporting “queue” object on the interval report.

|                |  |
|----------------|--|
| Type:          | Mandatory for email  |
| Default Value: | <i>Not Set</i>   |
| Valid Values:  | InboundQueue, OutboundQueue, QAQueue, AgentWorkbin, AgentGroupWorkbin, PlaceWorkbin, PlaceGroupWorkbin |
| Dependencies:  | email/enabled  |



## media:<name> Section

The present version of the *Gplus* Adapter has defined configuration Options for each of the following media:

- voice
- email
- outboundpreview
- chat
- im

This section allows configuration for a generic media supported by the Interaction Server that may be unique to one call center. The <name> portion of the section name must correspond to the Media Type attribute contained in the Interaction Server events.

Besides a straightforward configuration of how the adapter will deal with the new media, this section also has options that define associations with the other configured media types. It should be noted that this section should be used to configure the media that wraps or initiates the associated media interactions.

---

**Note:** ThisMedia is used as an identifier in the following discussion for the media that is configured within this section. OtherMedia describes any media that may be associated with ThisMedia in multiple media interactions.

---

### **acwReason**

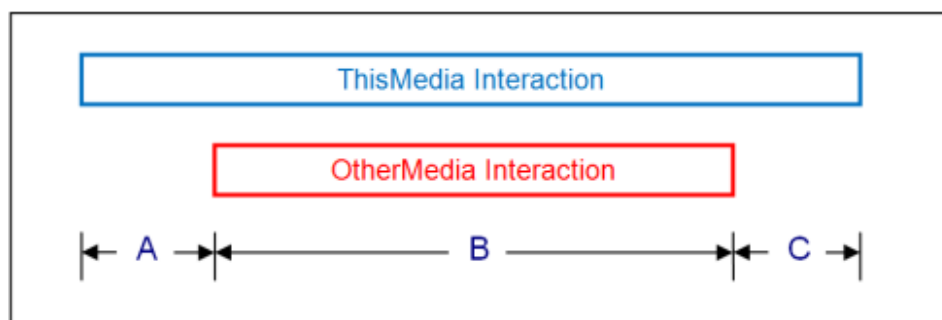
|                |  |
|----------------|--|
| Type:          | Optional                                     |
| Default Value: | ACW  |
| Valid Values:  | Any text string                              |
| Dependencies:  | NotReady Reason is attached by agent desktop |

This option identifies the Reason string attached to a NotReady event that will signify the start of a Wrap (AfterInteractionWork) state rather than an Unavailable state.

**associationType**

|                |                              |
|----------------|------------------------------|
| Type:          | Optional                     |
| Default Value: | none                         |
| Valid Values:  | handle, work, target or none |
| Dependencies:  | OtherMedia                   |

The diagram below demonstrates two associated media interactions and the time intervals defined by the association. This diagram will be used to clarify the alternative values that deal with the non-overlapping time (A and C) for the two media.



- none
  - there is no association with the OtherMedia type
  - all of the interaction time for ThisMedia is reported as handle time
  - all of the interaction time for OtherMedia is reported as handle time if that interaction was routed
- handle
  - non-overlapping time (A and C) will be reported as handle time for ThisMedia
- work
  - non-overlapping time (A and C) will be reported as wrap up (AfterInteractionWork) time for ThisMedia
- target
  - the target determined for ThisMedia interaction will be used for the OtherMedia interaction
  - none of the non-overlapping time (A and C) will be reported

---

**Note:** Contact Professional Services prior to configuring this option as it will require a detailed understanding of the association between the two related media.

---

**defaultAbandonedThreshold**

|                |  |
|----------------|--|
| Type:          | Optional                               |
| Default Value: | 0s                                     |
| Valid Values:  | See <a href="#">Threshold Format</a>   |
| Dependencies:  | historical.reports/serviceLevelFormula |

This option specifies the default abandoned threshold for the service level calculations that form part of the interval reports. It is also quite possible that there is no mechanism to actually abandon a ThisMedia interaction and this option can be ignored.

This option should be set when a single abandoned threshold is used as a default for all ThisMedia targets. Individual abandoned thresholds can be set for each ThisMedia target/queue by adding Annex Data to the ThisMedia Virtual Queues as shown in a later [section](#) or adding the threshold to an Interaction Queue as described in the [interactionTargets](#) Section. These individual thresholds will override the default specified by this option.

**defaultServiceThreshold**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | 0s                                   |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | markServicedOn                       |

This option specifies the default service threshold for the service level calculations that form part of the interval reports. A ThisMedia is considered *serviced* at either the start or the end of the agent's involvement with the interaction depending on the markServicedOn Option.

This option should be set when a single service threshold is used as a default for all ThisMedia targets. Individual service thresholds can be set for each ThisMedia target/queue by adding Annex Data to the ThisMedia Virtual Queues as shown in a later [section](#) or adding the threshold to an Interaction Queue as described in the [interactionTargets](#) Section. These individual thresholds will override the default specified by this option.

**defaultTarget**

|                |                                |
|----------------|--------------------------------|
| Type:          | Optional                       |
| Default Value: | UnknownTarget                  |
| Valid Values:  | Any text string                |
| Dependencies:  | application/countUnattachedACW |

This option allows users to define a separate target/queue for this media other than the default value used by the *Gplus* Adapter to report on unattached wrap up (AfterInteractionWork) time. This option is only applicable when the application/countUnattachedACW Option is set to true.

Unattached AfterOpenMediaWork time is defined as the time that the agent spends in a wrap up state when the agent has not yet received a routed interaction of the ThisMedia type since logging in.

**deleteOnTransfer**

|                |                                |
|----------------|--------------------------------|
| Type:          | Optional                       |
| Default Value: | false                          |
| Valid Values:  | true, false                    |
| Dependencies:  | OtherMedia,<br>AssociationType |

This option deals with a transfer scenario where the OtherMedia interaction is transferred to another agent but there is no "End of Interaction" event received for ThisMedia. If this option is set to true, the ThisMedia interaction will be terminated when the transfer is completed.

---

**Note:** Contact Professional Services prior to configuring this option as it will require a detailed understanding of the association between the two related media.

---

**enabled**

|                |             |
|----------------|-------------|
| Type:          | Mandatory   |
| Default Value: | false       |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This option must be set to true to capture and report on historical ThisMedia activity in the contact center. It is possible to disable the tracking of media activity if required.



**interaction.reason.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | enabled, rta/enabled                            |

This option specifies the attribute of a ThisMedia Interaction Server Event that will be included as the *Reason* field of an RTA state message generated by one of the following events:

- EventPartyAdded
- EventPropertiesChanged while the agent is a party to a routed interaction of the ThisMedia type.

Certain implementations may require that the combination of a RoutedOpenMediaWork RTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [interactionCodeMappings](#) Section.

---

**Note:** Contact Professional Services before using this option.

---

**markServicedOn**

|                |                    |
|----------------|--------------------|
| Type:          | Mandatory          |
| Default Value: | answered           |
| Valid Values:  | answered, released |
| Dependencies:  | None               |

This option indicates when an interaction of the ThisMedia type is considered to be serviced for the Service Level Threshold calculations. Either when the agent first *answers* the interaction or when the agent has completed handling the interaction.

**maxInteractionTime**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | <i>Not Set</i>                       |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | None                                 |

While unlikely, it is possible for some interactions to become *stuck* in certain states if the terminating events are not received due to a mishap with an Interaction Server connection. Normally, the *stuck* interaction records in the Adapter would be terminated as soon as the connection was lost but this response relies on the [addp protocol](#) being configured properly for the connection(s) to the Interaction Server(s).

This option sets a timeout that defines the maximum amount of time that an interaction of the ThisMedia type can remain in a *handled* or *wrap* state before the Adapter automatically terminates its associated record in the data tables. If the Option is not set, the *stuck* records are not terminated until the agent logs out or any agent logs in to the Place associated with the interaction.

If used, this timeout must be set to a value significantly higher than the expected longest duration for the interactions of the ThisMedia type to ensure that an ongoing interaction is not terminated prematurely in the Adapter tables. It should be noted that the timeout applies to wrap sessions so the expected duration of the wrap time must be taken into account.

**otherIdDeterminer**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not Set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | OtherMedia, associationType, thisIdDeterminer   |

This option identifies the determiner used to uniquely identify the OtherMedia interaction and provide the association back to the ThisMedia interaction that forms the other half of connected interactions.

---

**Note:** Contact Professional Services prior to configuring this option as it will require a detailed understanding of the association between the two related media.

---

**otherMediaTypes**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | <i>Not Set</i>                       |
| Valid Values:  | Comma delimited list of media names. |
| Dependencies:  | OtherMedia, associationType          |

This option lists the names of the OtherMedia that could be associated with ThisMedia.

---

**Note:** Contact Professional Services prior to configuring this option as it will require a detailed understanding of the association between the two related media.

---

**reason.notReady.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: ReasonDescription               |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | enabled, rta/enabled                            |

This option specifies the attribute of a ThisMedia Interaction Server Event that will be included as the *Reason* field of an RTA state message generated by one of the following events:

- EventNotReadyForMedia
- EventMediaStateReasonChanged while the agent is NotReady to receive a routed interaction of a ThisMedia type.

Certain implementations may require that the combination of an Unavailable RTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [reasonCodeMappings](#) Section

---

**Note:** Contact Professional Services before using this option.

---

**reason.ready.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | enabled, rta/enabled                            |

This option specifies the attribute of a ThisMedia Interaction Server Event that will be included as the *Reason* field of an RTA state message generated by an EventReadyForMedia event.

Certain implementations may require that the combination of an Available RTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [readyCodeMappings](#) Section.

---

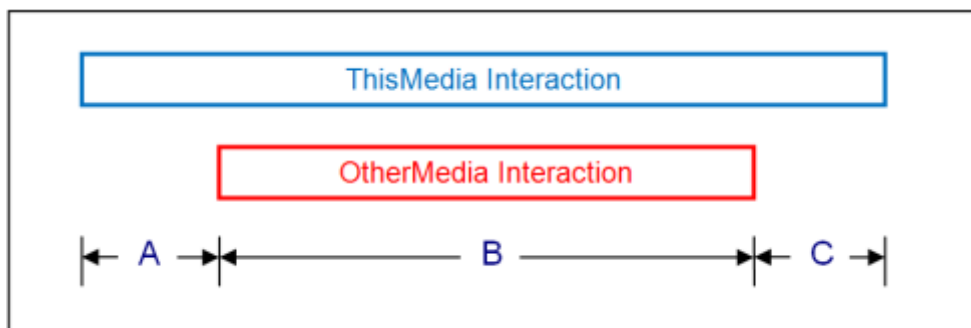
**Note:** Contact Professional Services before using this option.

---

**reportingType**

|                |                                   |
|----------------|-----------------------------------|
| Type:          | Optional                          |
| Default Value: | thisInteraction                   |
| Valid Values:  | thisInteraction, otherInteraction |
| Dependencies:  | OtherMedia, associationType       |

This option determines whether the ThisMedia or the OtherMedia activity is reported upon for the overlapping interval (B) in the offered and handled metrics.




---

**Note:** Contact Professional Services prior to configuring this option as it will require a detailed understanding of the association between the two related media.

---

**rta.routedInteractionState**

|                |  |
|----------------|--|
| Type:          | Optional   |
| Default Value: | 1700 (interactionInbound)                              |
| Valid Values:  | Any 4 digit integer not already defined.               |
| Dependencies:  | rta.nonRoutedInteractionState, rta.acwInteractionState |

This option identifies the agent state value that will be passed to the Verint RTA server when the agent is handling a ThisMedia interaction that was routed through a monitored queue to that agent.

The defined RTA states are integer codes as shown in the [RTA State table](#).

**rta.nonRoutedInteractionState**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | 1701 (interactionInternal)                          |
| Valid Values:  | Any 4 digit integer not already defined.            |
| Dependencies:  | rta.routedInteractionState, rta.acwInteractionState |

This option identifies the agent state value that will be passed to the Verint RTA server when the agent is handling a ThisMedia interaction that was not routed through a monitored queue to that agent.

The defined RTA states are integer codes as shown in the [RTA State table](#).

**rta.acwInteractionState**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | 1702 (afterInteractionWork)                               |
| Valid Values:  | Any 4 digit integer not already defined.                  |
| Dependencies:  | rta.routedInteractionState, rta.nonRoutedInteractionState |

This option identifies the agent state value that will be passed to the Verint RTA server when the agent is wrapping up a concluded ThisMedia interaction that was routed through a monitored queue to that agent.

The defined RTA states are integer codes as shown in the [RTA State table](#).

**targetProperty**

|                |  |
|----------------|--|
| Type:          | Mandatory  |
| Default Value: | eventAttribute: interactionProperties.interactionQueue |
| Valid Values:  | Any valid Interaction target determiner.               |
| Dependencies:  | None   |

This option identifies the event attribute that the adapter will use to identify the target/queue for the ThisMedia in the same way as the event.properties/interactionTarget.determiner is defined for email.

**thisIdDeterminer**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not Set</i>                                    |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a>   |
| Dependencies:  | OtherMedia,<br>associationType, otherIdDeterminer |

This option identifies the determiner used to uniquely identify the ThisMedia interaction and provide the association back to the OtherMedia interaction that forms the other half of connected interactions.

---

**Note:** Contact Professional Services prior to configuring this option as it will require a detailed understanding of the association between the two related media.

---

---

## outbound Section

### classifyPartyDeterminer

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: UserData.GSW_DISPOSITION_CODE   |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | classifyPartyMappings Option Section            |

This option specifies which event attribute contains the disposition code for the associated Outbound Campaign call. Once the disposition code has been parsed from the call event, it can be compared against the Option keys listed in the classifyPartyMappings Option Section to determine if the call was answered by the “right” or “wrong” party.

### defaultTarget

|                |                                |
|----------------|--------------------------------|
| Type:          | Optional                       |
| Default Value: | UnknownTarget                  |
| Valid Values:  | Any text                       |
| Dependencies:  | application/countUnattachedACW |

This option allows users to define a separate outbound target/queue or campaign name other than the default value used by the *Gplus* Adapter for all media. This value is used to report on an agent’s time outside of actual outbound activity (including unattached ACW) when that time cannot be associated with an actual outbound target/queue or campaign name.

### dialingDN

|                |   |
|----------------|---|
| Type:          | Optional                                |
| Default Value: | <i>Not Set</i>                          |
| Valid Value:   | Name of an actual Trunk Group           |
| Dependencies:  | Predictive or Progressive Campaign Type |

This option specifies the name of the Trunk Group that is used in either Predictive or Progressive campaigns to dial the outbound calls. Only calls dialed from a monitored DN will be included in the Dials column of the Outbound Statistics report.

**dialingRouteGroup**

|                |  |
|----------------|--|
| Type:          | Optional                                 |
| Default Value: | <i>Not Set</i>                           |
| Valid Value:   | Name of an actual Routing Point DN Group |
| Dependencies:  | Predictive or Progressive Campaign Type  |

This option specifies the name of the DN Group that contains the Routing Points (RPs) used in either Predictive or Progressive campaigns to dial the outbound calls. Only calls dialed from a monitored RPs will be included in the Dials column of the Outbound Statistics report.

**enabled**

|                |   |
|----------------|---|
| Type:          | Deprecated                                  |
| Default Value: | false                                       |
| Valid Values:  | true, false                                 |
| Dependencies:  | event.properties/campaignTarget.determiner. |

This option allowed users to enable reporting of outbound campaign calls in the Outbound Statistics report

See [Outbound Campaign Calls](#) for more information.

**ignoreCampaignConsults**

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | false       |
| Valid Values:  | true, false |
| Dependencies:  | enabled     |

This Option configures how the Adapter will allocate a routed consult call originating from an outbound Campaign call. Setting this Option to true will prevent the campaignTarget.determiner from being applied to the queued consult call and the determiner specified by the event.properties/callType.determiner will be used instead.

**maxInteractionTime**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | <i>Not Set</i>                       |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | None                                 |

While unlikely, it is possible for some calls to become *stuck* in certain states if the terminating events are not received due to a mishap with a TServer connection.



Normally, the *stuck* interaction records in the Adapter would be terminated as soon as the connection was lost but this response does rely on the [addp protocol](#) being configured properly for the connection(s) to the TServer(s).

This option sets a timeout that defines the maximum amount of time that an outbound campaign call can remain in a *handled* or *wrap* state before the Adapter automatically terminates its associated record in the data tables. If the Option is not set, the records are not terminated until the agent logs out or any agent logs in to the Place associated with the call.

If used, this timeout must be set to a value significantly higher than the expected longest campaign call duration to ensure that an ongoing call is not terminated prematurely in the Adapter tables. It should be noted that the timeout applies to ACW sessions so the expected duration of the wrap time must be taken into account.

### pushPreviewMediaType

|                |   |
|----------------|---|
| Type:          | Optional                                |
| Default Value: | outboundpreview                         |
| Valid Values:  | Any text string                         |
| Dependencies:  | Push Preview outbound record media type |

This option allows the expected media type name for *Push Preview* outbound records to be changed from the default, *outboundpreview*. A mismatch will result in the dialed outbound calls not being properly associated with an Outbound campaign.

### recordProcessedOnRelease

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | true  |
| Valid Values:  | true, false   |
| Dependencies:  | Predictive or Progressive Campaign Type<br>OCS OCServer/record_processed Option |

This option sets when the *Gplus* Adapter considers the Outbound Contact Server (OCS) outbound call record to be finished. If this option is set to true, then the record is marked as processed when the outbound call is released. If the option is set to false, the record is considered processed when a specific EventUserEvent is received after the call has been released.

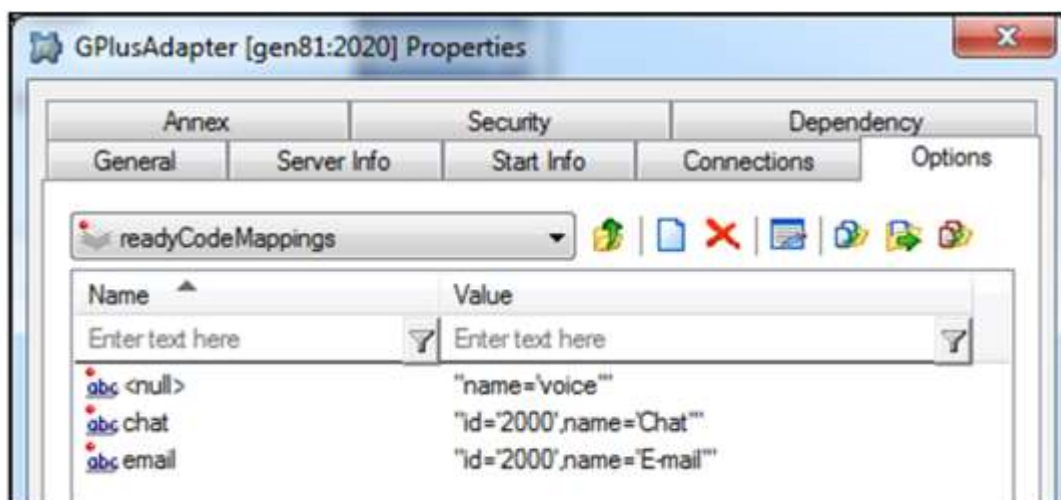
---

## readyCodeMappings Section

This section is optional and must be added manually as it is not included in the Application Template. When the section is included, the reasons parsed by the `reason.ready.determiner(s)` will be compared against the Option key names in this section.

If there is a match, the parameters listed in the Option value will be used. There are four possible parameters:

1. id                    new RTA state.
2. name                new reason code.



The id field can be either the new RTA State Name or State ID as defined in the [RTA State table](#). The name field is the new Reason that will be included with the RTA state message sent to the Verint server.

The <null> Option key signifies an event with no reason attached and it is used to configure a default behavior for the *Ready* events.

---

**Note:** Contact Professional Services before configuring this section.

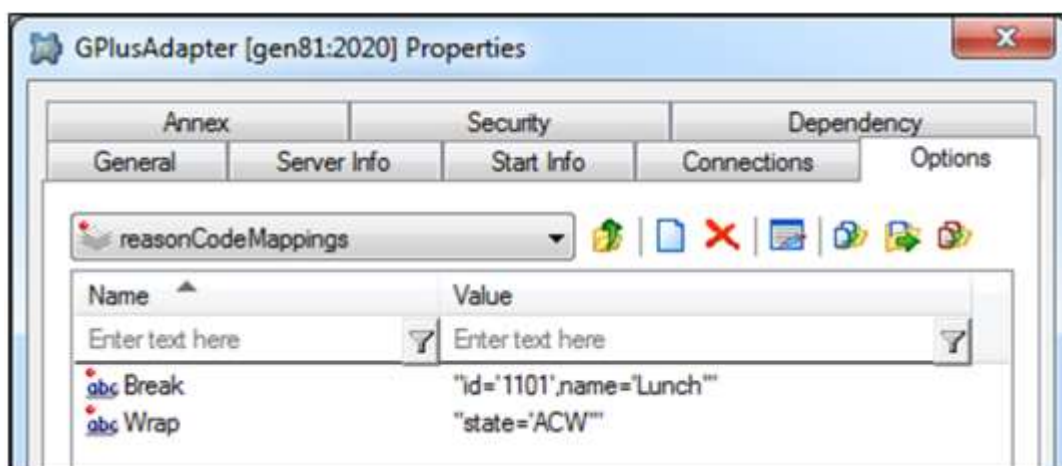
---

---

## reasonCodeMappings Section

This section is optional and must be added manually as it is not included in the Application Template. When the section is included, the NotReady reasons parsed by the reason.notReady.determiner will be compared against the Option key names in this section. If there is a match, the parameters listed in the Option value will be used. There are three possible parameters:

1. id                    new RTA state.
2. name                new NotReady reason code.
3. state                NotReady or ACW



The id field is the new RTA State Name as defined in the [RTA State table](#). The name field is the new Reason that will be included with the RTA state. The state field allows the event to be interpreted as either Unavailable or ACW in the historical reports.

The <null> Option key signifies an event with no reason attached and it is used to configure a default behavior for the NotReady events.

---

**Note:** Contact Professional Services before configuring this section.

---

---

## rta Section

### enabled

|                |             |
|----------------|-------------|
| Type:          | Mandatory   |
| Default Value: | true        |
| Valid Values:  | true, false |
| Dependencies:  | None        |

The option allows users to disable the RTA data stream for *Gplus* Adapter installations where RTA data is not required.

### extendedPhoneStates

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | false       |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This Option adds OffHook (1307), Dialing (1308) and Ringing (1309) phone states to the reported RTA states if set to true.

### filter

|                |  |
|----------------|--|
| Type:          | Optional                                   |
| Default Value: | <i>Not set</i>                             |
| Valid Values:  | A filterName (filter:<filterName> Section) |
| Dependencies:  | A filter Section must be defined.          |

This option allows users to associate the options defined in this Section with a defined filter section by setting the value to filterName. If multiple streams are not defined, then this option can be left blank and the RTA stream will be associated with the Agents, VQs and Places defined by the genesys.\*Groups sections.

### reportDndAsNotReady

|                |             |
|----------------|-------------|
| Type:          | Optional    |
| Default Value: | true        |
| Valid Values:  | true, false |
| Dependencies:  | None        |

The default behavior is for the Adapter to report Do Not Disturb time as the NotReady RTA state. This option allows the Adapter to report that time as the DndOn RTA state if set to false.

**verint.listenPort**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | 12000   |
| Valid Values:  | Any open port on the <i>Gplus</i> Adapter host. |
| Dependencies:  | None  |

This option specifies the port that the *Gplus* Adapter listens on while waiting for a connection request from the Verint RTA application.

---

## **rta:<streamName> Section**

This Section is optional and is used when the *Gplus* Adapter instance is providing more than one data Stream. This Section is used to configure the Real Time Adherence (RTA) component of the data feed to the Verint Server. The Options are listed below but are not discussed here as they directly correspond to those listed in the [rta](#) section.

### **Options**

- [enabled](#)
- [extendedPhoneStates](#)
- [filter](#)
- [reportDndAsNotReady](#)
- [verint.listenPort](#)

---

## vht Section

This Section is optional and is used to configure how the *Gplus* Adapter instance tracks *VirtualHold* callbacks. The Adapter presently only supports *Virtual Hold – Concierge* mode and tracking other *VirtualHold* modes could result in unexpected behavior. The other requirement is that the call must be redirected from the IVR to a monitored VQ after the caller has selected the *Virtual Hold* callback option. This VQ is used to initialize the information maintained by the Adapter to track the callback and the queued event starts the timer for the queue delay calculation.

The default behavior is to treat the initial inbound customer call and the delayed callback as two calls. The options listed configure the association between the two calls and treat the callback delay as “queue time” for a single call that is included in the *Offered* statistic of the *Contact Statistics* report.

---

**Note:** Contact Professional Services before configuring this section.

---

### attribute.determiner

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | voice/enabled                                   |

This Option identifies the call attribute that provides the link between the initial customer call and the eventual *Virtual Hold* callback. Setting this option enables the functionality where the Adapter tracks the linked calls as a single call with the extended queue time.

The specified linking attribute must be contained in the TServer/SIPServer EventDiverted generated when a caller chooses a *Virtual Hold* callback rather than waiting for the next available agent. As mentioned above, the call must be queued in and diverted from a monitored VQ.

The Adapter first parses the call target from the attributes of the EventQueued using the event.properties/callType.determiner. It then parses the linking attribute from the EventDiverted generated as the call leaves the monitored VQ. The parsed attribute value must be the unique call ID that will also be attached to the outbound callback.

The presence of the linking attribute is then checked in the EventDialing generated from the monitored Trunk Group or Routing Point at the start of the callback. It will also be checked in the EventEstablished generated when the Agent picks up the outbound callback. The same attribute.determiner is used for the initial customer call and the subsequent callback(s) so the linking attribute must have the same key and value for both calls.

**defaultRetries**

|                |           |
|----------------|-----------|
| Type:          | Optional  |
| Default Value: | 1         |
| Valid Values:  | 1 to 1000 |
| Dependencies:  | None      |

The option specifies the maximum number of callback attempts that will be made to contact the customer. It should be exactly the same value as the *Virtual Hold* setting that specifies the number of callbacks that will be attempted. Once this limit has been reached without an answer from the customer, the initial customer call is reported as *Abandoned*.

It should be noted that the retry count maintained by the Adapter for the callbacks will only be incremented if the linking attribute described above is contained in the EventDialing generated from the monitored Trunk Group or Routing Point.

This option can also be set for an individual VQ using the vhtRetries Option as described in the [Adding Annex Data for Virtual Queues and Skills](#) section of Chapter 4.

**defaultTimeout**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | 24h                                  |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | None                                 |

This option specifies the amount of time (starting from the initial queued event) that the Adapter will wait before reporting the initial call as *Abandoned* if none of the callbacks are successful.

This option can also be set for an individual VQ using the vhtExpiry Option as described in the [Adding Annex Data for Virtual Queues and Skills](#) section of Chapter 4.

**timeToFlushAt**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | <i>Not set</i>                       |
| Valid Values:  | 00:00 to 23:59 (24 hour clock - GMT) |
| Dependencies:  | None                                 |

The *Virtual Hold* application can be configured to clear or flush all of the pending callbacks daily. This Option should be set to the time of day when that "flush" occurs. Inbound calls associated with the flushed pending callbacks will be reported as *Abandoned*.

This option can also be set for an individual VQ using the vhtFlushTime Option as described in the [Adding Annex Data for Virtual Queues and Skills](#) section of Chapter 4.

---

## voice Section

### defaultAbandonedThreshold

|                |  |
|----------------|--|
| Type:          | Optional                               |
| Default Value: | 0s                                     |
| Valid Values:  | See <a href="#">Threshold Format</a>   |
| Dependencies:  | historical.reports/serviceLevelFormula |

This option specifies the default abandoned threshold for the service level calculations that form part of the interval reports. Only two of the [service level formulae](#) actually use the abandoned threshold so this option has no effect unless one of those formulae (1 or 4) has been selected. An inbound voice call is considered *abandoned* if the customer releases the call prior to an agent answering it.

This option should be set when a single abandoned threshold is used as a default for all voice targets. Individual abandoned thresholds can be set for each voice target/queue by adding Annex Data to the voice Virtual Queues as shown in a later [section](#). These individual thresholds will override the default specified with this option.

### defaultServiceThreshold

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | 0s                                   |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | None                                 |

This option specifies the default service threshold for the service level calculations that form part of the interval reports. An inbound voice call is considered *serviced* at the time that the agent answers the call.

This option should be set when a single service threshold is used as a default for all inbound voice call targets. Individual service thresholds can be set for each inbound voice call target/queue by adding Annex Data to the voice Virtual Queues as shown in a later [section](#). These individual thresholds will override the default specified by this option.

### defaultShortAbandonThreshold

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | <i>Not set</i>                       |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | application/shortAbandonEnabled      |

This option specifies the default time threshold that an abandoned call must exceed in order to be included in the *Actual Abandons (ABD)* column of the *Forecast* report. This option does not affect the service level calculations.



**defaultTarget**

|                |                                |
|----------------|--------------------------------|
| Type:          | Optional                       |
| Default Value: | UnknownTarget                  |
| Valid Values:  | Any text string                |
| Dependencies:  | application/countUnattachedACW |

This option allows users to define a separate contact type/queue other than the default value used by the *Gplus* Adapter to report on unattached After Call Work time. This option is applicable if the application/countUnattachedACW Option in the application Section is set to true.

Unattached After Call Work time is defined as the time that the agent spends in a NotReady state initiated by an EventAgentNotReady containing a WorkMode attribute of 3 during the portion of a login session when the agent has not yet answered a routed call.

**enabled**

|                |             |
|----------------|-------------|
| Type:          | Mandatory   |
| Default Value: | false       |
| Valid Values:  | true, false |
| Dependencies:  | None        |

This option is set to true to capture and report on inbound voice call activity in the contact center. It is possible to disable the tracking of voice activity if the *Gplus* Adapter was installed to only track the agents' other media interactions.

**interaction.reason.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | voice/enabled, rta/enabled                      |

This option specifies the attribute of a TServer/SIPServer voice Event that will be included as the *Reason* field of an RTA state message generated by one of the following events:

- EventEstablished
- EventHeld
- EventPartyAdded
- EventPartyChanged
- EventPartyDeleted
- EventRetrieved

Certain implementations may require that the combination of a voice call RTA state and its reason code map to a different RTA state and reason text string. This mapping can be configured in the [interactionCodeMappings](#) Section.

---

**Note:** Contact Professional Services before using this option.

---

**isAfterCallWork.class**

|                |                               |
|----------------|-------------------------------|
| Type:          | Optional                      |
| Default Value: | DefaultAfterCallWorkProperty  |
| Valid Values:  | Check with Technical support. |
| Dependencies:  | None                          |

The option overrides the default behavior for determining whether an agent has entered an ACW state. One, PresumptiveAfterCallWorkProperty, can be used to report all NotReady time as After Call Work.

**maxInteractionTime**

|                |                                      |
|----------------|--------------------------------------|
| Type:          | Optional                             |
| Default Value: | <i>Not Set</i>                       |
| Valid Values:  | See <a href="#">Threshold Format</a> |
| Dependencies:  | None                                 |

While unlikely, it is possible for some calls to become *stuck* in certain states if the terminating events are not received due to a mishap with a TServer connection. Normally, the *stuck* interaction records in the Adapter would be terminated as soon as the connection was lost but this response relies on the [addp protocol](#) being configured properly for the connection(s) to the TServer(s).

This option sets a timeout that defines the maximum amount of time that an inbound routed call can remain in a *handled* or *wrap* state before the Adapter automatically terminates its associated record in the data tables. If the Option is not set, the records are not terminated until the agent logs out or any agent logs in to the Place associated with the call.

If used, this timeout must be set to a value significantly higher than the expected longest routed inbound call duration to ensure that an ongoing call is not terminated prematurely in the Adapter tables. It should be noted that the timeout also applies to ACW sessions so the expected duration of the wrap time must be taken into account.

**parallelQueuesEnabled**

|                |                  |
|----------------|------------------|
| Type:          | Optional         |
| Default Value: | false            |
| Valid Values:  | true, false      |
| Dependencies:  | Routing strategy |

This option is set to true to report a call against a different queue than the first monitored queue in one particular circumstance. Genesys routing can place a call in additional queues to broaden the target agent group if the call has been waiting in the original queue for a set period. This option, if set to true, allows the target for the customer call to be associated with the queue that the call was diverted from rather than defaulting to the original queue.

---

**Note:** Contact Professional Services prior to changing this option.

---

**reason.notReady.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | eventAttribute: Reasons.ReasonCode              |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | voice/enabled, rta/enabled                      |

This option specifies the attribute of a voice TServer/SIPServer event that will be included as the *Reason* field of an RTA state message generated by an EventAgentNotReady.

Certain implementations may require that the combination of an Unavailable RTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [reasonCodeMappings](#) Section

---

**Note:** Contact Professional Services before using this option.

---

**reason.ready.determiner**

|                |   |
|----------------|---|
| Type:          | Optional  |
| Default Value: | <i>Not set</i>                                  |
| Valid Values:  | See <a href="#">Event Attribute Determiners</a> |
| Dependencies:  | enabled, rta/enabled                            |

This option specifies the attribute of a voice TServer/SIPServer event that will be included as the *Reason* field of an RTA state message generated by an EventAgentReady

Certain implementations may require that the combination of an Available RTA state and the reason code map to a different RTA state and reason text string. This mapping can be configured in the [readyCodeMappings](#) Section.

---

**Note:** Contact Professional Services before using this option.

---

# 4 Additional Configuration

---

## Adding T-Servers and Interaction Servers

The application establishes connections with the TServers, SIP Servers, Interaction Servers and Message Servers listed under the Connections tab of the Properties window. Adding a server is accomplished in exactly the same way that any other Genesys application would add connections to servers in the Genesys environment.

Select the Add button and then the Browse button at the end of the Server line on the Connection Info Properties window. The adapter supports connections to multiple TServers/SIP Servers/Interaction Servers and using the addp connection protocol for those connections. Only the Primary servers should be added to the Connections tab, as the Backup servers will be identified from the Primary's configuration and included automatically.

Transport Layer Security (TLS) can also be added to a server connection by checking the Secure checkbox. This assumes that the *Security Deployment Guide* has been followed to properly install certificates etc.

---

## Threshold Time Format

The service level calculations are based upon calls/interactions that meet or do not meet configured service or abandoned time thresholds. These thresholds can be set as a default per media or added to the following configuration objects: Skills, Virtual Queues and interactionTargets. The default for setting the threshold time is to specify it in milliseconds. However, a more user friendly version is also available where the threshold time is specified in terms of days, hours, minutes and seconds. A typical call center would have a service (answered) threshold for inbound calls that would be in the range of 20 to 30 seconds whereas a threshold for emails may be measured in hours or days. The following format allows a range of time values to be specified without having to calculate the millisecond equivalent:

`{0-31}d{0-24}h{0-60}m{0-60}s`

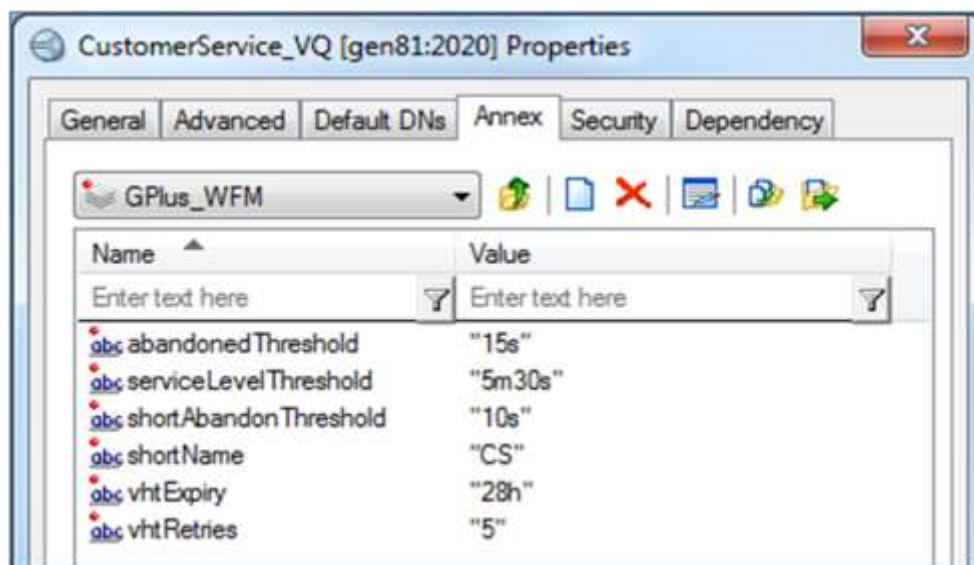
Examples:

- 15000            15000 milliseconds
- 60s             60000 milliseconds
- 45m            2700000 milliseconds
- 1d12h30m      131400000 milliseconds

## Adding Annex Data for Virtual Queues and Skills

This section discusses adding individual configuration to a Skill or Virtual Queue with the end result being additional configuration of the associated call/interaction target. The following parameters can be added to these Configuration Objects to modify the reported results:

- abandonedThreshold Skill or VQ
- serviceLevelThreshold Skill or VQ
- shortAbandonThreshold Skill or VQ
- shortName Skill or VQ
- vhtExpiry VQ only
- vhtFlushTime VQ only
- vhtRetries VQ only



**abandonedThreshold**

**serviceLevelThreshold**

**shortAbandonThreshold**

The *Queue* report deals with statistics for each Contact Group and the two thresholds can differ between Groups as the business expectations for each type of customer call will vary. Associating the thresholds with a specific Skill or Virtual Queue allows the reports to take into account the different response expectations.

Configuring abandoned thresholds for an email Virtual Queue while allowed would have little effect as emails are not abandoned.

The abandoned threshold can also be set for each Skill or Virtual Queue but it only affects the service level calculation and not the abandoned count in the *Contact Statistics* reports.

Conversely, the shortAbandonThreshold option does remove interactions from the *Abandons* count if those interactions are abandoned prior to the threshold time but the option does not affect the service level calculations.

The figure above shows an example with the opened Annex tab for a Virtual Queue object in the Configuration Manager. Adding the threshold settings to a Skill object is essentially the same process. The question of which of the two object types will be configured with the thresholds is answered by the [application/callType](#) Option.

The following steps should be followed to add a serviceLevelThreshold, abandonedThreshold or shortAbandonThreshold to a Virtual Queue:

1. Select the Virtual Queue in the Configuration Manager and open the Properties frame.
2. Select the Annex tab.
3. Add a GPlus\_WFM Section or if the [application/annexSection](#) Option has been set, add a Section with the name configured there.
4. In the new Section, add an Option with the Name set to serviceLevelThreshold, abandonedThreshold or shortAbandonThreshold with value equal to the new threshold as described [above](#).



### shortName

If the Skill or Virtual Queue (Number or Alias fields) name exceeds the report field size or the *WFM* application requires something different than the actual name, the shortName option can be added to the Annex tab of the Virtual Queue as follows:

1. Create a GPlus\_WFM section in the Annex tab if it does not exist already.
2. Add a new option to this section named shortName with the Value set to the new text string.
3. This value will now be used in place of the original Virtual Queue/Skill name in all reports.

### vhtExpiry

### vhtFlushTime

### vhtRetries

These three *Virtual Hold* options can only be added to the Annex tab of a Virtual Queue that queues an initial customer inbound call. They provide a VQ level of configuration versus the three *vht* options, [defaultRetries](#), [timeToFlushAt](#) and [defaultTimeout](#), that set application level defaults for the *Virtual Hold* configuration.

1. Create a GPlus\_WFM section in the Annex tab if it does not exist already.
2. Add a new option to this section named vhtExpiry with the Value set to the amount of time that the Adapter will wait for a successful callback using the Threshold Time Format described [above](#).
3. Add a new option to this section named vhtFlushTime with the Value set to the time during the day that the Adapter will flush the calls that have not resulted in a successful callback and count those calls as *Abandoned*. This time setting will be in the GMT in the range from 00:00 to 23:59.
4. Add a new option to this section named vhtRetries with the Value set to an integer value equal to the number of callback attempts that could be made before the call is reported as Abandoned.

---

## Adding A PlaceGroup to a Site

All of the Contact Statistics reports can include Site information if required. The *Gplus* Adapter creates an association between Place Groups and Sites by adding a `siteName` option to a Place Group's Annex Data. Only the Place Groups included in the `genesys.placeGroups` Section of the Options will be included and, therefore, only those Place Groups should be modified.

To add a Site name for use in reporting:

1. Add a `GPlus_WFM` Section or if the [application/annexSection](#) Option has been set, add a Section with the name configured there.
2. Add a new option to this section named `siteName` with the new Site name as the value.
3. This name will be used as the Site identifier in the reports

---

## Event Attribute Determiners

There are a number of *determiner* Options in the Adapter configuration. These Options are used to identify an event attribute that can be used for any number of purposes; some of which are listed below:

- Contact queue or target
- Not Ready reason
- Outbound Campaign name
- Link attribute for Virtual Hold™ and Genesys callbacks

All of the determiners share common functionality and work in exactly the same way.

### Event Attributes

The Adapter works with the low level events received from the Genesys Servers and the configurable determiners are the main tools used to access information from those events. An event is essentially a collection of key/value pairs (attributes) that describe the event and the determiners retrieve information from one of those key/value pairs.

An example event that will be used to demonstrate how the `reason.notReady.determiner` can be configured is shown below. One thing to note is that the value part of the key/value pair can also be a collection of key/value pairs; the attributes can be nested in other attributes. Both the *Extensions* and *Reasons* attributes are key/value collections. However, the *GPlusWFM* prefix does not indicate a collection as it just identifies the extra attributes added to the event by the Adapter.

```
EventAgentNotReady
AgentID: 12345
AgentWorkMode: AuxWork
EventSequenceNumber: 123456789
Extensions.ReasonCode: 5
Extensions.AgentSessionID: ABCDEFGHIJ1234567890KLMNPQR
GPlusWFM.LocalTime: 1234567890000
GPlusWFM.RemoteTime: 1234567890000
GPlusWFM.SourceId: 101
GPlusWFM.SourceName: TServer_A
GPlusWFM.Time: 1234567890000
Reasons.Break: 5
ThisDN: 60000
ThisQueue: 3000
TimeinSecs: 1234567890
TimeinuSecs: 000000
```

## Determiner Types

The event attributes can be accessed by one of the three determiner types:

### **eventAttribute**

This determiner type specifies the actual attribute key name when identifying the attribute and returns that attribute's value.

```
eventAttribute: Extensions.ReasonCode -> 5
```

### **eventAttributeKey**

This determiner type specifies the attribute name for the collection attribute that contains the actual attribute of interest. The key name for the first attribute in the collection is returned.

```
eventAttributeKey: Reasons -> Break
```

### **eventAttributeValue**

This determiner type specifies the attribute name for the collection attribute that contains the actual attribute of interest. The value for the first attribute in the collection is returned.

```
eventAttributeValue: Reasons -> 5
```

The `eventAttributeKey` and `eventAttributeValue` determiners address a problem that usually arises with `NotReady` reasons where the attribute key name is descriptive (e.g. `Break`, `Meeting`, `Lunch` etc.) and as a result, there are multiple possible key names that cannot be addressed with a single `eventAttribute` determiner.

## Multiple Determiners

Determiners can also be combined to parse more than one attribute in an event. The Adapter iterates through the list of determiners until a value is returned. The alternatives are formatted as a comma separated list:

```
eventAttribute: NonExistent, eventAttributeKey: Reasons -> Break
```

# 5

## Setting Up Secure File Transfer

The file transfer protocol that forwards the historical reports to the remote WFM server can be configured to use SSH (Secure Shell) as the underlying network channel. Three options are included in the [historical.ftp](#) section of the application configuration to set up the *Gplus* Adapter as an SSH client. The configuration of the client side of the SSH channel is reasonably simple as most of the complexity is reserved for the configuration of the server side.

A description of some of the possible errors due to a misconfigured client or server has been included as Appendix B.

---

### Generating the Private-Public Key Pair

The authentication of the SSH login to the remote server can be carried out using a public-private key pair. The private key is stored on the *Gplus* Adapter server and the public key is stored on the remote Verint server. When the keys are generated, it is also possible to specify a key passphrase to further limit access to the private key.

The embedded SSH client supports SSH2 RSA keys. The SSH2 protocol does not specify a standard key format and there are key formats that are not compatible with the SSH client used in the Adapter. Keys generated by the PuTTY `gen key` generation tool are not compatible. Keys generated by the OpenSSH `ssh-keygen` tool are compatible. Tools using the following ciphers should be compatible:

- aes256-ctr
- aes192-ctr
- aes128-ctr
- aes256-cbc
- aes192-cbc

- aes128-cbc
- 3des-ctr
- arcfour
- arcfour128
- arcfour256

As mentioned, the private key is stored with the *Gplus* Adapter where the embedded SSH client can access it. This key is usually stored in the config folder of the Adapter installation.

Storing the public key will be specific to the SSH server that has been used on the Verint server. The public key will have to be placed in a certain folder and the key will have to be registered with the SSH server. Both of these actions are implementation specific and should be fully described in the SSH server documentation.

---

## Client Configuration

The following options in the `historical.ftp` section must be configured or at least considered:

|                             |   |
|-----------------------------|---|
| <code>enabled</code>        | true or the files are not transferred                     |
| <code>remoteHost</code>     | host name of the destination server                       |
| <code>remotePort</code>     | host port on the destination server                       |
| <code>secureTransfer</code> | true to use SSH as a secure connection                    |
| <code>userName</code>       | user registered on the destination server                 |
| <code>userPassword</code>   | password for the user identified by <code>userName</code> |
| <code>keyPath</code>        | path and name of the private key file                     |
| <code>keyPassphrase</code>  | pass phrase that allows access to the private key         |

---

## Server Configuration

The SSH server should support configuration for the authentication modes that it allows and which mode it will attempt first. The two supported options for the Adapter are public key or password. Password authentication is not as secure because the `userPassword` option is retained as plain text in the Configuration Manager. The public key authentication is more secure and more difficult to implement.

# 6 Outbound Voice Campaigns

The *Gplus* Adapter now supports the Outbound Campaign types that did not fit the original inbound voice call model used to define a customer call. This chapter will discuss the Outbound Campaign types and how the Adapter classifies the calls associated with the campaigns.

There are six types of Genesys outbound campaigns that can be monitored by the *Gplus* Adapter:

1. Predictive
2. Progressive
3. Predictive with ASM
4. Progressive with ASM
5. Preview
6. Push Preview

The first four, Predictive (ASM) and Progressive (ASM), have an outbound call routed to the agent after being dialed by a dialer while the last two, Preview and Push Preview, have the outbound dialed from the agent's DN.

The one common requirement is that there must be a campaign name in the event attributes to be parsed by the `event.properties/campaignTarget.determiner`.

## Predictive and Progressive Campaigns

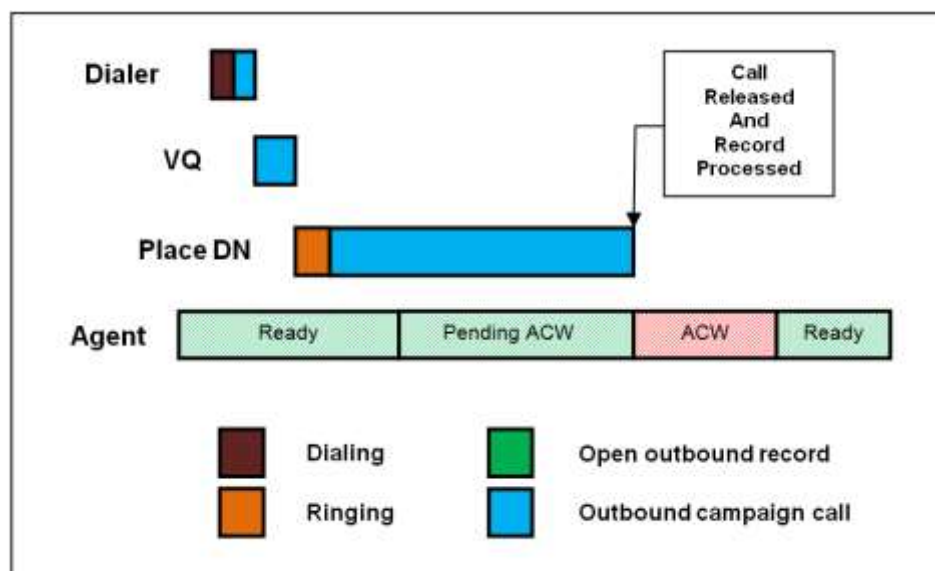
Both the Predictive and Progressive campaign types have call flows that start as a dialing event on a Routing Point, queued on a Virtual Queue, diverted to and then answered by an available agent with an optional ACW interval after the call is released. The adapter does not differentiate between the two Campaign types.

The Adapter attempts to determine the campaign name at two points in the call flow: first by parsing the dialing event associated with the monitored Routing Point and if that fails, parsing the queued event on the monitored Virtual Queue. It is recommended that the dialing Routing Points be monitored and the Campaign Name is one of the attributes attached to the dialing event. Even if the Campaign Name is parsed in the dialing event, it is still important that the Virtual Queue associated with the targeted Agent Group also be monitored. The time that the call waits in queue for an available agent is still required for the *Outbound Contact Statistics* report.

The Figures below illustrate the reason for including the [recordProcessedOnReleased](#) Option depending upon the events generated at the conclusion of the call. This Option specifies whether the Outbound Contact Server (OCS) record associated with the call is closed at the conclusion of the call or at a subsequent point marked by a record processed UserEvent.

### **recordProcessedOnReleased = true**

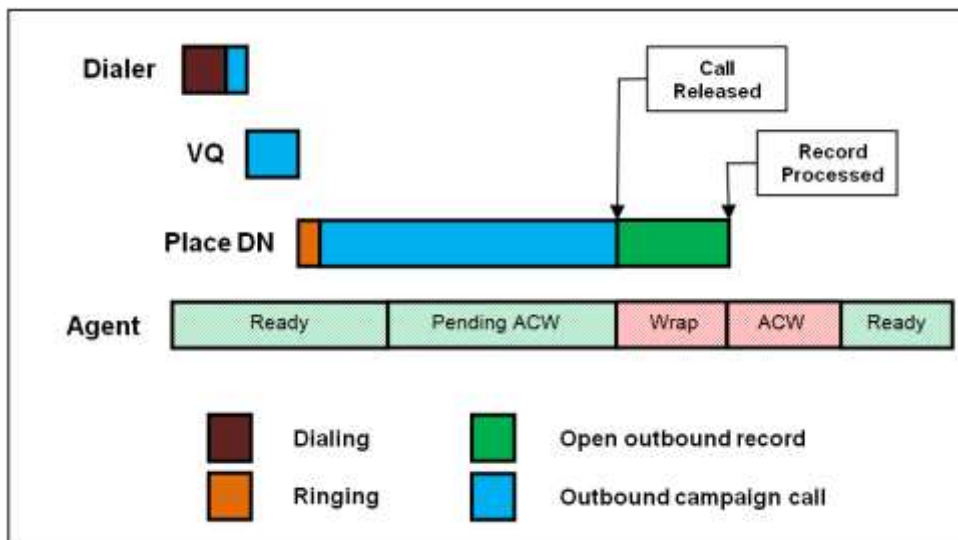
The first Figure shows the record being processed at the conclusion of the call. There is no wrap time associated with an open OCS record and any disposition codes must be attached to the call prior to the call being released.





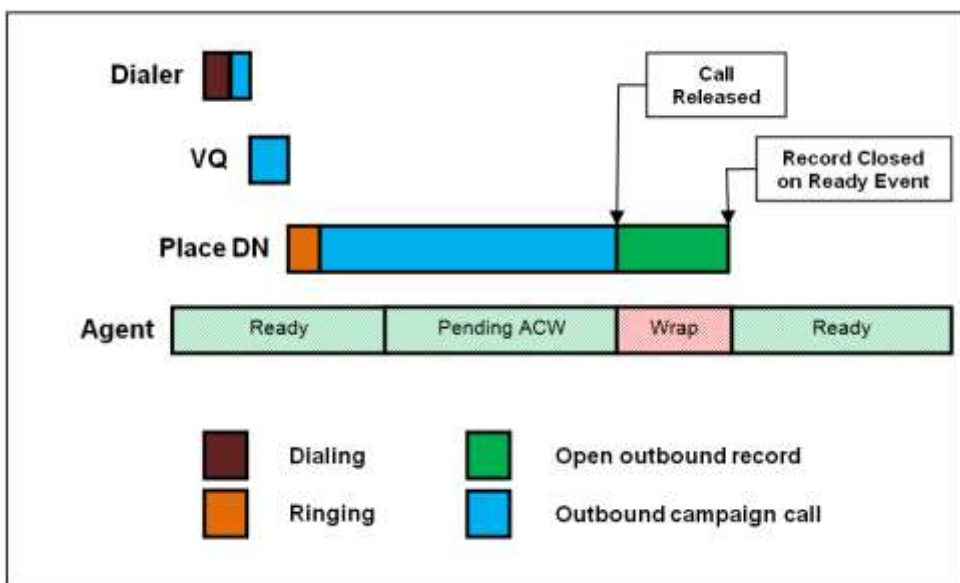
**recordProcessedOnReleased = false**

The second Figure shows the record being processed after the conclusion of the call. There is wrap time associated with an open OCS record and also ACW time associated with the call that is counted after the record is processed. Both will be counted as AfterCallWork in the reports.



**recordProcessedOnReleased = false – Record Closed Prematurely**

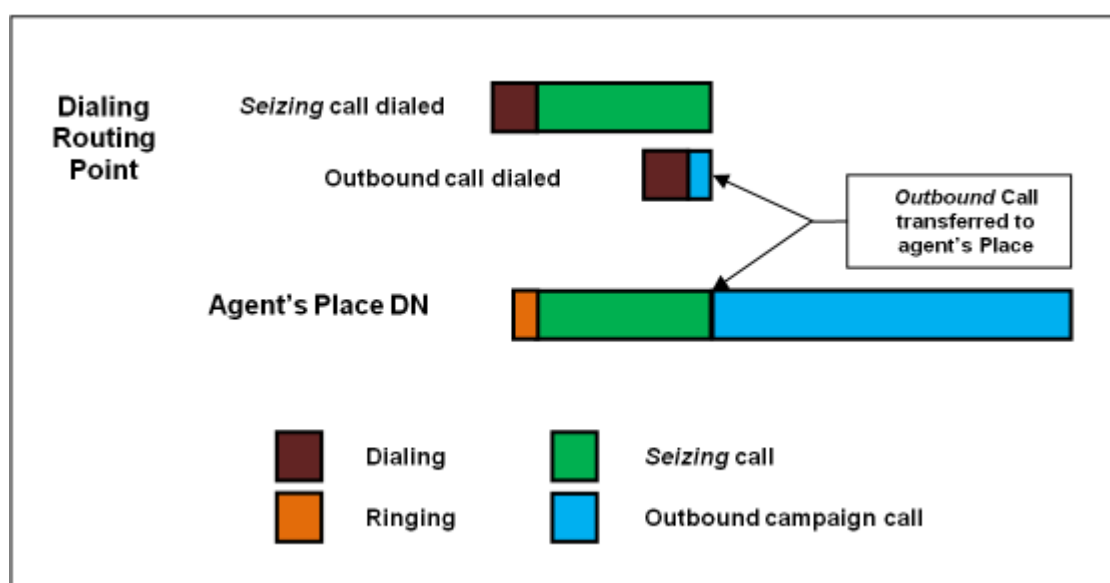
The third Figure shows the record being closed on an error generated by the OCS when the agent goes into a Ready state rather than marking the OCS record as done. Any errors caused by state changes or problems with the OCS will result in the Adapter considering the record closed. There is wrap time associated with an open OCS record up to the agent state change but any disposition codes attached to the call after the state change are discarded by OCS.



## Predictive and Progressive with ASM

*Agent Seizing Mode (ASM)* adds an extra *seizing* call from the dialer to the start of the Predictive and Progressive call flows. This extra call ensures that an agent is engaged to join the successfully completed outbound call immediately after the campaign call is answered.

The figure below shows the extra activity at the start of the call for the *seizing* modes. After the outbound campaign call is transferred to the agent's Place, the call is tracked in exactly the same manner as a normal Predictive or Progressive call.



The Adapter ignores the contribution of the *seizing* call as long as there are no queued events associated with it. It must be noted that if the *seizing* call is routed to the agent through a monitored VQ, that call and the subsequent outbound campaign call will be counted as inbound customer calls. The simple solution to this situation is to [exclude](#) any VQs that might queue a *seizing* call.

---

## Preview and Push Preview Campaigns

The Preview and Push Preview campaigns are tracked properly by the Adapter if the `campaignTarget.determiner` and the `classifyPartyDeterminer` are configured to identify the Campaign Name and disposition code respectively.

---

## Non Campaign Outbound Calls

If the `campaignTarget.determiner` fails to identify a Campaign Name on a Progressive or Predictive call but the `callType.determiner` parses a target name from a queued event on a monitored VQ, the outbound call will be reported in the *Contact Statistics* report. Calls that do not have an associated target will still be regarded as outbound calls but they will be counted in the *Agent Scorecard Metric* report as non-customer outbound activity.

# 7

## Streams and Filters

---

### “Multiple Adapters”

The initial versions of the Adapter were limited to providing a set of historical reports and one RTA data feed to a single IEX TotalView Server. *Stream* functionality was added to the Adapter with Version 5.1 to allow a single Adapter instance to provide historical reports and RTA data feeds to multiple *TotalView* Servers. *Filters* provide a means to tailor the information provided through each *Stream* by including only the VQs, Places, outbound Campaigns and/or Agents that are to be reported upon through the associated *Stream(s)*. One Adapter instance can essentially be configured as multiple Adapters.

There is nothing in the *Stream* and *Filter* functionality that could not be duplicated with multiple Adapter instances. What *Streams* and *Filters* provide is more effective resource utilization:

- Single connection to Genesys environment (Configuration Server, TServers, SIPServers, and Interaction Servers).
- Single Application configuration object in the Configuration Server.
- Runs in a single Java Virtual Machine (JVM).
- Extra memory required per *Stream* is minimal.

---

## Media and Reports

There are two common *Stream* configurations:

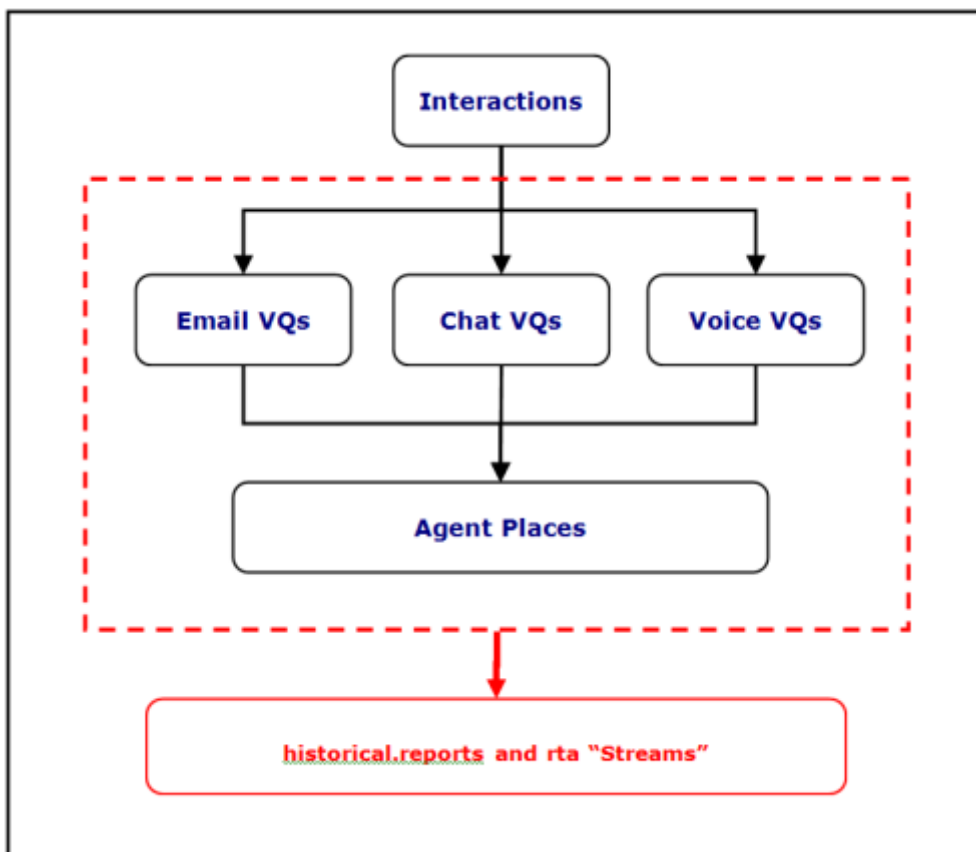
- Consolidating multiple Adapters into a single instance
- Segregating media to their own reports

Individual *Filters* are configured as separate Option as described in the [filter:<filtername>](#) Section. A *Filter* defines a set of monitored Agents, Places and Virtual Queues (VQs) that any associated Stream will report upon. Only Agents, Places and VQs that are part of the groups configured in the `genesys.*Groups` Sections are candidates to be included in a filter. It is not possible to include Agent, Place or VQ groups that are not included in the `genesys.*Groups` Sections.

*Streams* are associated with *Filters* with a singular reference to the *Filter* name but multiple *Streams* can be associated with a single *Filter*. The obvious configuration would be a historical and a rta stream "connected" to the same *Filter*. Another configuration might see two historical streams: one siteBased and the other not.

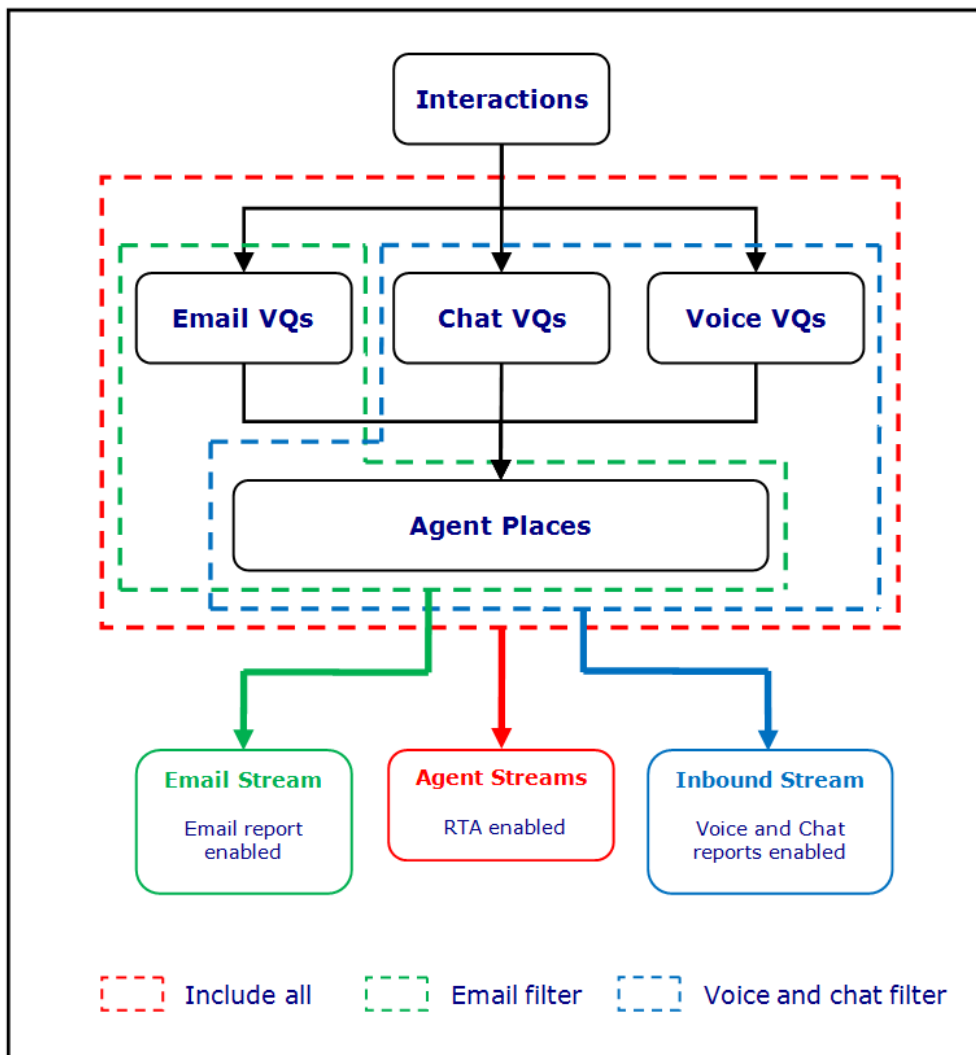
### No Filters and Streams

The figure below shows the Adapter configuration without configured *Filters* and *Streams*. There is a mixing of media in the *Queue* report



### Separated By Media

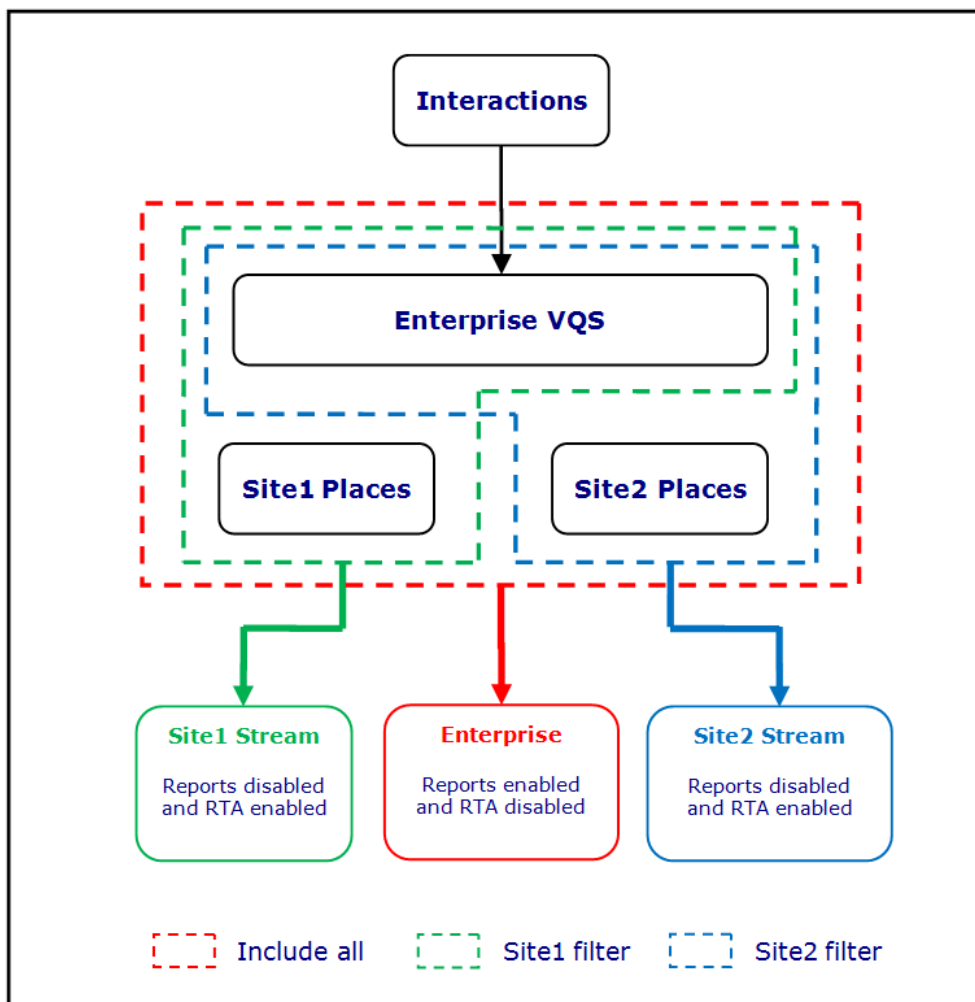
The figure below shows one example of a solution to the media mix described above. Two *Filters* are configured to separate the email VQs from the chat and voice VQs while still including all of the agents.





### Separated By Site

The figure below shows another example where the RTA feeds are separated by Site with the report still including all the Agent activity.



# 8

## Recovery, Restarts, and Reconnects

The Gplus Adapter was designed to run for extended periods with little or no maintenance. However, all of the tracked activity and configuration information is stored in in-memory tables and that data can be lost or left incomplete due to upsets or restarts. The following is a description of the mechanisms used by the Adapter to mitigate the effect of the upsets and restarts.

---

### Recovery

Recovery refers to the processes in place for the Adapter to *recover* after a shutdown and restart. While running, the Gplus Adapter is continuously updating a log file with the events received from the Genesys servers. One of the first steps after a restart is to replay the current day's recovery log and rebuild the internal tables. That data is then used at the end of that day to generate the daily *Agent Productivity* report. While the report will be incomplete, it will include the agent activity prior to the Adapter stopping.

The interval *Forecast* reports will also be generated after the restart but the retained information from the recovery log is not used for those reports. Only the events received after the restart will be processed for these reports. For the most part, the statistics contained in the reports will accurately reflect the activity within an interval or two but there are some cases such as the *Backlog* statistics that might take days or longer to approach the actual number. This occurs because the Adapter is relying on received events to build the statistics. If long lived interactions are not generating events, those interactions are essentially invisible to the Adapter.

---

## Restarts

A restart refers to a shutdown and restart that was not the result of an incident but rather a scheduled downtime for maintenance, an upgrade or some other planned activity. The Adapter still steps through the recovery log and rebuilds the internal tables but there is an additional step if a graceful shutdown was used to stop the Adapter.

---

**Note:** To gracefully shut down the Adapter, right click the adapter in Solution Control Interface or Administrator, select "Graceful Stop" and wait for the adapter to stop.

---

If the Adapter was stopped using *Graceful Stop* through the Solution Control server, a state dump file is written that contains a list of the queued interactions at the time of the shutdown. The adapter uses this list on restart to restore the backlogged interactions and query the Interaction Server to determine if those interactions are still active. Only those active interactions that are still either queued or retained in a workbin will be recovered. Interactions that are no longer queued are truncated. In some cases, those interactions may still be present but no longer in the queue. There is no method to retrieve the activity that occurred as the interaction transitioned from the queue so all of that activity is discarded. Recovered interactions will retain their initial queue times and associated target. Interactions in that list that could not be recovered are truncated.

The graceful shutdown list of queued interactions is restricted to Interaction Server interactions only and does not include queued voice calls. This is intended to mitigate the data loss that occurs for long running interactions when there is an adapter restart. There will be a loss of data for any short term active interactions. This would suggest that any planned restarts should be scheduled for periods of little or no activity.

---

## Reconnects

Disconnects and the subsequent reconnects can occur as the result of two different scenarios:

- the disconnected Genesys server had an upset that caused a shutdown and restart, or
- there was a network problem that resulted in the connection being dropped and eventually re-established.

The Adapter cannot differentiate these two based on the received events so the Adapter response is to treat it as if the Genesys server had undergone an upset and had to be restarted. It turns out that the SIPServers/TServers and the Interaction Server employ different strategies to deal with a restart which, in turn, results in the Adapter treating the disconnects from the two server types differently.

### SIPServer/TServer

If a SIPServer or TServer undergoes an upset and must be restarted, all the former voice interactions are removed. The Adapter response is to truncate the records for all voice calls at the start of the disconnect phase whether those calls are queued or being handled by an agent. Again, it must be emphasized that the Adapter response is the same no matter what caused the disconnect and ongoing voice interactions are truncated even if the fault was a loss of the connection for a few seconds due to a network problem.

### Interaction Server

The Interaction Server retains the prior active interactions on a restart but returns all of them to the original Interaction Queue. Any active interaction that was being handled by an Agent is no longer being handled.

The Adapter response is to query the Interaction Server on reconnect as to the status of the formerly active interactions. Interactions that are still queued either in an Interaction Queue or workbin are maintained in the Adapter tables and processed accordingly when any future activity occurs. Any other prior interactions are truncated in the Adapter tables and reported as completed.

## Appendix

# A Time Zone ID List

The list of acceptable values to specify the *Gplus* Adapter timeZone Option mirrors the list of acceptable Time Zone Ids for the Java JVM. For reference the supported option values are listed in the table below. The recommended value is to use one of the Region/Locale formats if possible as they deal with Daylight Savings Time transparently.

|                     |                    |                      |
|---------------------|--------------------|----------------------|
| ACT                 | AET                | AGT                  |
| ART                 | AST                | Africa/Abidjan       |
| Africa/Accra        | Africa/Addis_Ababa | Africa/Algiers       |
| Africa/Asmara       | Africa/Asmera      | Africa/Bamako        |
| Africa/Bangui       | Africa/Banjul      | Africa/Bissau        |
| Africa/Blantyre     | Africa/Brazzaville | Africa/Bujumbura     |
| Africa/Cairo        | Africa/Casablanca  | Africa/Ceuta         |
| Africa/Conakry      | Africa/Dakar       | Africa/Dar_es_Salaam |
| Africa/Djibouti     | Africa/Douala      | Africa/El_Aaiun      |
| Africa/Freetown     | Africa/Gaborone    | Africa/Harare        |
| Africa/Johannesburg | Africa/Kampala     | Africa/Khartoum      |
| Africa/Kigali       | Africa/Kinshasa    | Africa/Lagos         |
| Africa/Libreville   | Africa/Lome        | Africa/Luanda        |
| Africa/Lubumbashi   | Africa/Lusaka      | Africa/Malabo        |
| Africa/Maputo       | Africa/Maseru      | Africa/Mbabane       |
| Africa/Mogadishu    | Africa/Monrovia    | Africa/Nairobi       |
| Africa/Ndjamena     | Africa/Niamey      | Africa/Nouakchott    |
| Africa/Ouagadougou  | Africa/Porto-Novo  | Africa/Sao_Tome      |
| Africa/Timbuktu     | Africa/Tripoli     | Africa/Tunis         |

Appendix A: Time Zone ID List

|                                |                                |                                  |
|--------------------------------|--------------------------------|----------------------------------|
| Africa/Windhoek                | America/Adak                   | America/Anchorage                |
| America/Anguilla               | America/Antigua                | America/Araguaina                |
| America/Argentina/Buenos_Aires | America/Argentina/Catamarca    | America/Argentina/ComodRivadavia |
| America/Argentina/Cordoba      | America/Argentina/Jujuy        | America/Argentina/La_Rioja       |
| America/Argentina/Mendoza      | America/Argentina/Rio_Gallegos | America/Argentina/San_Juan       |
| America/Argentina/Tucuman      | America/Argentina/Ushuaia      | America/Aruba                    |
| America/Asuncion               | America/Atikokan               | America/Atka                     |
| America/Bahia                  | America/Barbados               | America/Belem                    |
| America/Belize                 | America/Blanc-Sablon           | America/Boa_Vista                |
| America/Bogota                 | America/Boise                  | America/Buenos_Aires             |
| America/Cambridge_Bay          | America/Campo_Grande           | America/Cancun                   |
| America/Caracas                | America/Catamarca              | America/Cayenne                  |
| America/Cayman                 | America/Chicago                | America/Chihuahua                |
| America/Coral_Harbour          | America/Cordoba                | America/Costa_Rica               |
| America/Cuiaba                 | America/Curacao                | America/Danmarkshavn             |
| America/Dawson                 | America/Dawson_Creek           | America/Denver                   |
| America/Detroit                | America/Dominica               | America/Edmonton                 |
| America/Eirunepe               | America/El_Salvador            | America/Ensenada                 |
| America/Fort_Wayne             | America/Fortaleza              | America/Glace_Bay                |
| America/Godthab                | America/Goose_Bay              | America/Grand_Turk               |
| America/Grenada                | America/Guadeloupe             | America/Guatemala                |
| America/Guayaquil              | America/Guyana                 | America/Halifax                  |
| America/Havana                 | America/Hermosillo             | America/Indiana/Indianapolis     |
| America/Indiana/Knox           | America/Indiana/Marengo        | America/Indiana/Petersburg       |
| America/Indiana/Vevay          | America/Indiana/Vincennes      | America/Indianapolis             |
| America/Inuvik                 | America/Iqaluit                | America/Jamaica                  |
| America/Jujuy                  | America/Juneau                 | America/Kentucky/Louisville      |
| America/Kentucky/Monticello    | America/Knox_IN                | America/La_Paz                   |
| America/Lima                   | America/Los_Angeles            | America/Louisville               |
| America/Maceio                 | America/Managua                | America/Manaus                   |
| America/Martinique             | America/Mazatlan               | America/Mendoza                  |
| America/Menominee              | America/Merida                 | America/Mexico_City              |
| America/Miquelon               | America/Moncton                | America/Monterrey                |
| America/Montevideo             | America/Montreal               | America/Montserrat               |

|                                |                       |                             |
|--------------------------------|-----------------------|-----------------------------|
| America/Nassau                 | America/New_York      | America/Nipigon             |
| America/Nome                   | America/Noronha       | America/North_Dakota/Center |
| America/North_Dakota/New_Salem | America/Panama        | America/Pangnirtung         |
| America/Paramaribo             | America/Phoenix       | America/Port-au-Prince      |
| America/Port_of_Spain          | America/Porto_Acre    | America/Porto_Velho         |
| America/Puerto_Rico            | America/Rainy_River   | America/Rankin_Inlet        |
| America/Recife                 | America/Regina        | America/Rio_Branco          |
| America/Rosario                | America/Santiago      | America/Santo_Domingo       |
| America/Sao_Paulo              | America/Scoresbysund  | America/Shiprock            |
| America/St_Johns               | America/St_Kitts      | America/St_Lucia            |
| America/St_Thomas              | America/St_Vincent    | America/Swift_Current       |
| America/Tegucigalpa            | America/Thule         | America/Thunder_Bay         |
| America/Tijuana                | America/Toronto       | America/Tortola             |
| America/Vancouver              | America/Virgin        | America/Whitehorse          |
| America/Winnipeg               | America/Yakutat       | America/Yellowknife         |
| Antarctica/Casey               | Antarctica/Davis      | Antarctica/DumontDUrville   |
| Antarctica/Mawson              | Antarctica/McMurdo    | Antarctica/Palmer           |
| Antarctica/Rothera             | Antarctica/South_Pole | Antarctica/Syowa            |
| Antarctica/Vostok              | Arctic/Longyearbyen   | Asia/Aden                   |
| Asia/Almaty                    | Asia/Amman            | Asia/Anadyr                 |
| Asia/Aqtou                     | Asia/Aqtobe           | Asia/Ashgabat               |
| Asia/Ashkhabad                 | Asia/Baghdad          | Asia/Bahrain                |
| Asia/Baku                      | Asia/Bangkok          | Asia/Beirut                 |
| Asia/Bishkek                   | Asia/Brunei           | Asia/Calcutta               |
| Asia/Choibalsan                | Asia/Chongqing        | Asia/Chungking              |
| Asia/Colombo                   | Asia/Dacca            | Asia/Damascus               |
| Asia/Dhaka                     | Asia/Dili             | Asia/Dubai                  |
| Asia/Dushanbe                  | Asia/Gaza             | Asia/Harbin                 |
| Asia/Hong_Kong                 | Asia/Hovd             | Asia/Irkutsk                |
| Asia/Istanbul                  | Asia/Jakarta          | Asia/Jayapura               |
| Asia/Jerusalem                 | Asia/Kabul            | Asia/Kamchatka              |
| Asia/Karachi                   | Asia/Kashgar          | Asia/Katmandu               |
| Asia/Krasnoyarsk               | Asia/Kuala_Lumpur     | Asia/Kuching                |
| Asia/Kuwait                    | Asia/Macao            | Asia/Macau                  |

Appendix A: Time Zone ID List

|                          |                     |                        |
|--------------------------|---------------------|------------------------|
| Asia/Magadan             | Asia/Makassar       | Asia/Manila            |
| Asia/Muscat              | Asia/Nicosia        | Asia/Novosibirsk       |
| Asia/Omsk                | Asia/Oral           | Asia/Phnom_Penh        |
| Asia/Pontianak           | Asia/Pyongyang      | Asia/Qatar             |
| Asia/Qyzylorda           | Asia/Rangoon        | Asia/Riyadh            |
| Asia/Riyadh87            | Asia/Riyadh88       | Asia/Riyadh89          |
| Asia/Saigon              | Asia/Sakhalin       | Asia/Samarkand         |
| Asia/Seoul               | Asia/Shanghai       | Asia/Singapore         |
| Asia/Taipei              | Asia/Tashkent       | Asia/Tbilisi           |
| Asia/Tehran              | Asia/Tel_Aviv       | Asia/Thimbu            |
| Asia/Thimphu             | Asia/Tokyo          | Asia/Ujung_Pandang     |
| Asia/Ulaanbaatar         | Asia/Ulan_Bator     | Asia/Urumqi            |
| Asia/Vientiane           | Asia/Vladivostok    | Asia/Yakutsk           |
| Asia/Yekaterinburg       | Asia/Yerevan        | Atlantic/Azores        |
| Atlantic/Bermuda         | Atlantic/Canary     | Atlantic/Cape_Verde    |
| Atlantic/Faeroe          | Atlantic/Faroe      | Atlantic/Jan_Mayen     |
| Atlantic/Madeira         | Atlantic/Reykjavik  | Atlantic/South_Georgia |
| Atlantic/St_Helena       | Atlantic/Stanley    | Australia/ACT          |
| Australia/Adelaide       | Australia/Brisbane  | Australia/Broken_Hill  |
| Australia/Canberra       | Australia/Currie    | Australia/Darwin       |
| Australia/Eucla          | Australia/Hobart    | Australia/LHI          |
| Australia/Lindeman       | Australia/Lord_Howe | Australia/Melbourne    |
| Australia/NSW            | Australia/North     | Australia/Perth        |
| Australia/Queensland     | Australia/South     | Australia/Sydney       |
| Australia/Tasmania       | Australia/Victoria  | Australia/West         |
| Australia/Yancowinna     | BET                 | BST                    |
| Brazil/Acre              | Brazil/DeNoronha    | Brazil/East            |
| Brazil/West              | CAT                 | CET                    |
| CNT                      | CST                 | CST6CDT                |
| CTT                      | Canada/Atlantic     | Canada/Central         |
| Canada/East-Saskatchewan | Canada/Eastern      | Canada/Mountain        |
| Canada/Newfoundland      | Canada/Pacific      | Canada/Saskatchewan    |
| Canada/Yukon             | Chile/Continental   | Chile/EasterIsland     |
| Cuba                     | EAT                 | ECT                    |



Appendix A: Time Zone ID List

| EET               | EST               | EST5EDT            |
|-------------------|-------------------|--------------------|
| Egypt             | Eire              | Etc/GMT            |
| Etc/GMT+0         | Etc/GMT+1         | Etc/GMT+10         |
| Etc/GMT+11        | Etc/GMT+12        | Etc/GMT+2          |
| Etc/GMT+3         | Etc/GMT+4         | Etc/GMT+5          |
| Etc/GMT+6         | Etc/GMT+7         | Etc/GMT+8          |
| Etc/GMT+9         | Etc/GMT-0         | Etc/GMT-1          |
| Etc/GMT-10        | Etc/GMT-11        | Etc/GMT-12         |
| Etc/GMT-13        | Etc/GMT-14        | Etc/GMT-2          |
| Etc/GMT-3         | Etc/GMT-4         | Etc/GMT-5          |
| Etc/GMT-6         | Etc/GMT-7         | Etc/GMT-8          |
| Etc/GMT-9         | Etc/GMT0          | Etc/Greenwich      |
| Etc/UCT           | Etc/UTC           | Etc/Universal      |
| Etc/Zulu          | Europe/Amsterdam  | Europe/Andorra     |
| Europe/Athens     | Europe/Belfast    | Europe/Belgrade    |
| Europe/Berlin     | Europe/Bratislava | Europe/Brussels    |
| Europe/Bucharest  | Europe/Budapest   | Europe/Chisinau    |
| Europe/Copenhagen | Europe/Dublin     | Europe/Gibraltar   |
| Europe/Guernsey   | Europe/Helsinki   | Europe/Isle_of_Man |
| Europe/Istanbul   | Europe/Jersey     | Europe/Kaliningrad |
| Europe/Kiev       | Europe/Lisbon     | Europe/Ljubljana   |
| Europe/London     | Europe/Luxembourg | Europe/Madrid      |
| Europe/Malta      | Europe/Mariehamn  | Europe/Minsk       |
| Europe/Monaco     | Europe/Moscow     | Europe/Nicosia     |
| Europe/Oslo       | Europe/Paris      | Europe/Podgorica   |
| Europe/Prague     | Europe/Riga       | Europe/Rome        |
| Europe/Samara     | Europe/San_Marino | Europe/Sarajevo    |
| Europe/Simferopol | Europe/Skopje     | Europe/Sofia       |
| Europe/Stockholm  | Europe/Tallinn    | Europe/Tirane      |
| Europe/Tiraspol   | Europe/Uzhgorod   | Europe/Vaduz       |
| Europe/Vatican    | Europe/Vienna     | Europe/Vilnius     |
| Europe/Volgograd  | Europe/Warsaw     | Europe/Zagreb      |
| Europe/Zaporozhye | Europe/Zurich     | GB                 |
| GB-Eire           | GMT               | GMT0               |

Appendix A: Time Zone ID List

|                     |                   |                      |
|---------------------|-------------------|----------------------|
| Greenwich           | HST               | Hongkong             |
| IET                 | IST               | Iceland              |
| Indian/Antananarivo | Indian/Chagos     | Indian/Christmas     |
| Indian/Cocos        | Indian/Comoro     | Indian/Kerguelen     |
| Indian/Mahe         | Indian/Maldives   | Indian/Mauritius     |
| Indian/Mayotte      | Indian/Reunion    | Iran                 |
| Israel              | JST               | Jamaica              |
| Japan               | Kwajalein         | Libya                |
| MET                 | MIT               | MST                  |
| MST7MDT             | Mexico/BajaNorte  | Mexico/BajaSur       |
| Mexico/General      | Mideast/Riyadh87  | Mideast/Riyadh88     |
| Mideast/Riyadh89    | NET               | NST                  |
| NZ                  | NZ-CHAT           | Navajo               |
| PLT                 | PNT               | PRC                  |
| PRT                 | PST               | PST8PDT              |
| Pacific/Apia        | Pacific/Auckland  | Pacific/Chatham      |
| Pacific/Easter      | Pacific/Efate     | Pacific/Enderbury    |
| Pacific/Fakaofu     | Pacific/Fiji      | Pacific/Funafuti     |
| Pacific/Galapagos   | Pacific/Gambier   | Pacific/Guadalcanal  |
| Pacific/Guam        | Pacific/Honolulu  | Pacific/Johnston     |
| Pacific/Kiritimati  | Pacific/Kosrae    | Pacific/Kwajalein    |
| Pacific/Majuro      | Pacific/Marquesas | Pacific/Midway       |
| Pacific/Nauru       | Pacific/Niue      | Pacific/Norfolk      |
| Pacific/Noumea      | Pacific/Pago_Pago | Pacific/Palau        |
| Pacific/Pitcairn    | Pacific/Ponape    | Pacific/Port_Moresby |
| Pacific/Rarotonga   | Pacific/Saipan    | Pacific/Samoa        |
| Pacific/Tahiti      | Pacific/Tarawa    | Pacific/Tongatapu    |
| Pacific/Truk        | Pacific/Wake      | Pacific/Wallis       |
| Pacific/Yap         | Poland            | Portugal             |
| ROK                 | SST               | Singapore            |
| Turkey              | UCT               | US/Alaska            |
| US/Aleutian         | US/Arizona        | US/Central           |
| US/East-Indiana     | US/Eastern        | US/Hawaii            |
| US/Indiana-Starke   | US/Michigan       | US/Mountain          |

Appendix A: Time Zone ID List

|            |                |          |
|------------|----------------|----------|
| US/Pacific | US/Pacific-New | US/Samoa |
| UTC        | Universal      | VST      |
| W-SU       | WET            | Zulu     |

## Appendix

# B Secure File Transfer Problems

The following excerpt is an example of the logging generated by a successful file transfer using the Secure File Transfer Protocol. Each line shown was actually prefaced with something similar to the following:

```
01 Jan 2011 12:00:00,000 0000 [Connect thread gen75 session] DEBUG SftpTransferAgent.class -
```

### Connecting to remote server:

```
Connecting to gen75 port 22  
Connection established  
Remote version string: SSH-2.0-OpenSSH_3.8.1p1  
Local version string: SSH-2.0-JSCH-0.1.42
```

### Checking ciphers:

```
CheckCiphers: aes256-ctr,aes192-ctr,aes128-ctr,aes256-cbc,aes192-cbc,aes128-cbc,  
3des-ctr,arcfour,arcfour128,arcfour256  
aes256-ctr is not available.  
aes192-ctr is not available.  
aes256-cbc is not available.  
aes192-cbc is not available.  
arcfour256 is not available.
```

### Initializing:

```
SSH_MSG_KEXINIT sent  
SSH_MSG_KEXINIT received  
kex: server->client aes128-ctr hmac-md5 none  
kex: client->server aes128-ctr hmac-md5 none  
SSH_MSG_KEXDH_INIT sent  
expecting SSH_MSG_KEXDH_REPLY  
ssh_rsa_verify: signature true  
Permanently added 'gen75' (RSA) to the list of known hosts.  
SSH_MSG_NEWKEYS sent  
SSH_MSG_NEWKEYS received  
SSH_MSG_SERVICE_REQUEST sent  
SSH_MSG_SERVICE_ACCEPT received
```

#### Iterating through available authentication methods:

Authentications that can continue: publickey,keyboard-interactive,password  
Next authentication method: publickey

#### Successful on *publickey*:

Authentication succeeded (publickey).

#### File transfer:

Attempting to transfer file: 'C:\testFiles\textFile.txt' to 'sftpDestination'  
Successfully transferred file: 'C:\testFiles\textFile.txt'

#### Closing connection to remote server:

Disconnecting from gen75 port 22  
Caught an exception, leaving main loop due to socket closed

## Incomplete host information

The following are required for the destination server:

- Host name.
- Port
- Destination path relative to the user default.

### Incorrect Host Name

An incorrect host name will see the transfer failing as the client attempts to connect to the remote server.

#### Connecting to remote server:

Connecting to something port 22  
Error while connecting to SSH server (host: something user: Administrator port: 22)  
com.jcraft.jsch.JSchException: java.net.UnknownHostException: something

### Incorrect Port

An incorrect port will see the transfer failing as the client attempts to connect to the remote server.

#### Connecting to remote server:

Error while connecting to SSH server (host: 127.0.0.1 user: Administrator port: 1234)  
com.jcraft.jsch.JSchException: java.net.ConnectException: Connection refused:

### Missing Port

If the port has not been specified in the *Gplus* Adapter options, the transfer will fail prior to attempting to connect to the remote server.

Incomplete host information. Host, username and destination port must be defined and valid in the CME

## Public Key Authentication

### Public Key Authentication Not Enabled

Public key authentication was not enabled on the destination SSH server.

#### Iterating through available authentication methods:

```
Authentications that can continue: keyboard-interactive, password
Next authentication method: keyboard-interactive
Authentications that can continue: password
Next authentication method: password
Disconnecting from gen75 port 22
Error while connecting to SSH server (host: gen75 user: Administrator port: 22)
com.jcraft.jsch.JSchException: Auth fail
```

### Public Key Authentication Failed

1. The generated private key did not use one of the following supported ciphers:
  - aes256-ctr
  - aes192-ctr
  - aes128-ctr
  - aes256-cbc
  - aes192-cbc
  - aes128-cbc
  - 3des-ctr
  - arcfour
  - arcfour128
  - arcfour256
2. The public key associated with the private key has not been added to the authorized key file on the SSH server.
3. The private key did not have a matching public key on the SSH server.

#### Iterating through available authentication methods:

```
Authentications that can continue: publickey,keyboard-interactive,password
Next authentication method: publickey
Authentications that can continue: keyboard-interactive, password
Next authentication method: keyboard-interactive
Authentications that can continue: password
Next authentication method: password
Disconnecting from gen75 port 22
Error while connecting to SSH server (host: gen75 user: Administrator port: 22)
com.jcraft.jsch.JSchException: Auth fail
```

### **Incorrect Public Key Path**

The private key path configured in the *Gplus* Adapter options is incorrect and the transfer will fail prior to attempting to connect to the remote server.

```
Private key not found at 'wrongPath'
```

### **Public Key Passphrase Authentication Failed**

The private key was generated with a passphrase but the passphrase was missing from the configuration or it was incorrect.

Iterating through available authentication methods:

```
Authentications that can continue: publickey,keyboard-interactive,password
Next authentication method: publickey
Disconnecting from gen75 port 22
Error while connecting to SSH server (host: gen75 user: Administrator port: 22)
com.jcraft.jsch.JSchException: Auth fail
```

## **Username-Password Authentication**

### **Password Authentication Not Enabled**

Password authentication was not enabled in the SSH server configuration.

Iterating through available authentication methods:

```
Authentications that can continue: publickey,keyboard-interactive
Next authentication method: publickey
Authentications that can continue: keyboard-interactive
Next authentication method: keyboard-interactive
Disconnecting from gen75 port 22
Error while connecting to SSH server (host: gen75 user: Administrator port: 22)
com.jcraft.jsch.JSchException: Auth fail
```

### **Failed Authentication**

1. The username configured for the client does not match one of the usernames configured on the SSH server.
2. The plain text password configured for the client is incorrect for the user identified by the username.
3. The password configured for the client is blank and PermitEmptyPasswords has not been set in the SSH server configuration.

Iterating through available authentication methods:

```
Authentications that can continue: publickey,keyboard-interactive,password
Next authentication method: publickey
Authentications that can continue: keyboard-interactive,password
Next authentication method: keyboard-interactive
Authentications that can continue: password
```

```
Next authentication method: password
Disconnecting from gen75 port 22
Error while connecting to SSH server (host: gen75 user: Admin port: 22)
com.jcraft.jsch.JSchException: Auth fail
```

## Problems with Transfer

### Inaccessible Destination Directory or Insufficient Access Privileges

1. The destination directory cannot be reached as a sub-directory from the user home directory on the SSH server.
2. The user identified by the username has the wrong or insufficient privileges for the destination directory on the SSH server.

#### File transfer:

```
Attempting to transfer file: 'C:\testFiles\textFile.txt' to 'c:/'
Unable to transfer file: 'C:\testFiles\textFile.txt', check that destination directory exists
Failure
    at com.jcraft.jsch.ChannelSftp.throwStatusError(ChannelSftp.java:2289)
    ....
```

### Non-Existent Destination Directory

The destination directory on the SSH server does not exist.

There will be no error indication for a missing destination directory if it was configured as a subdirectory of the user's home directory on the remote server. Despite the logged statements, the file will not have been transferred to the destination directory as the directory will not be created. It is likely that the file was transferred but its location and name may be a combination of the valid and invalid portions of the destination path.

#### File transfer:

```
Attempting to transfer file: 'C:\testUser\testFiles\textFile.txt' to 'sftpDestination'
Successfully transferred file: 'C:\testUser\testFiles\textFile.txt'
```

```
Closing connection to remote server:
Disconnecting from gen75 port 22
Caught an exception, leaving main loop due to socket closed
```

Using the above as an example, if the testFiles directory did not exist in the testUser directory, a successful transfer might see a new file, testFilestextFile.txt, located in the testUser directory. The actual file location and name will be dependent upon the portions of the destination path that are incorrect, the type of SSH server and the underlying operating system for the SSH server.



## Appendix

# C Managing Windows Service

## prunmgr Application

The Apache Commons™ *daemon*™ project also provides a Windows GUI application for managing an installed Service without having to resort to editing Register parameters or reinstalling the Service. This *prunmgr* application will be discussed below with respect to the *Gplus* Adapter installation and there is additional information available on the [Apache website](#). The application is contained in the wrappers folder of the Adapter installation and is started with the following:

```
prunmgr.exe //ES//GPlusAdapterServiceName
```

Any changes to the configuration can be established by stopping and restarting the Service after applying the changes. The options and parameters appropriate to the Adapter Service wrapper are discussed below.

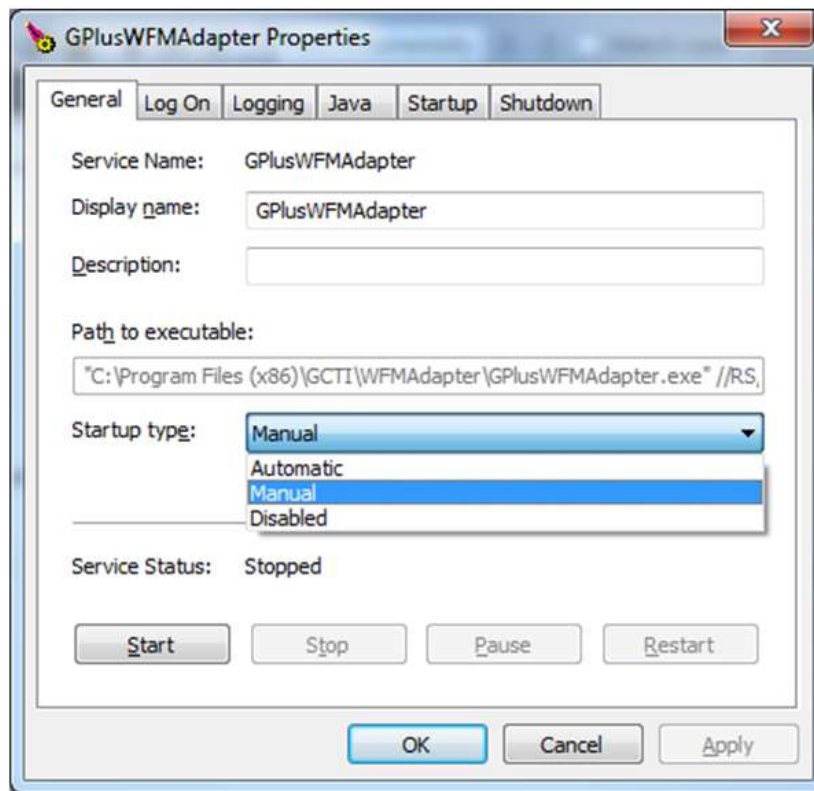
## General Tab

Startup type:

This field should be set to *Automatic* so that the Service will restart if the host server is restarted.

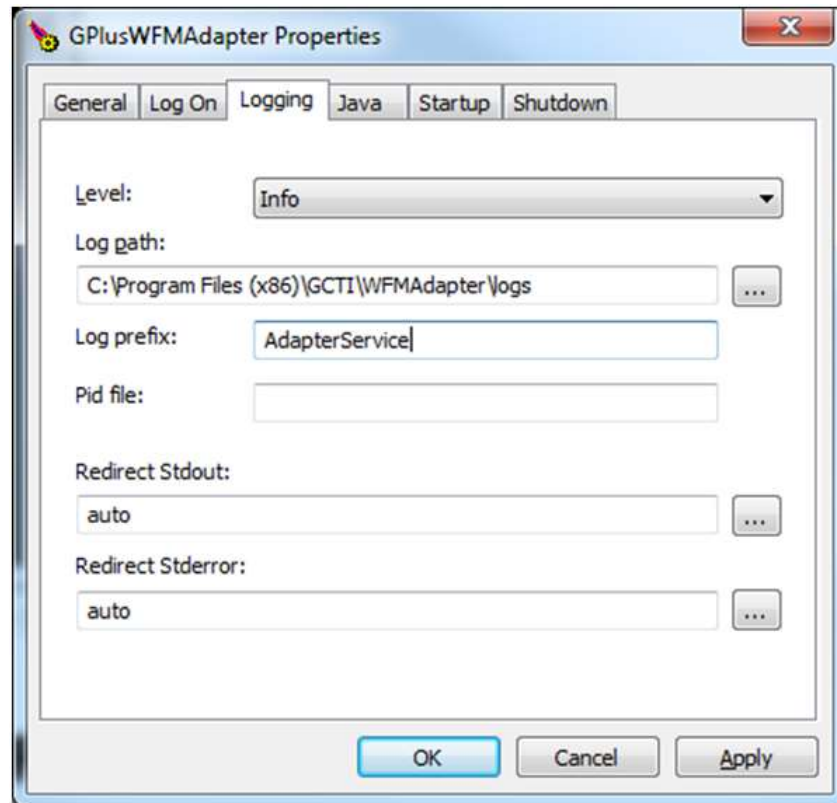
Start, Stop and Restart Buttons

The Service can be started, stopped and restarted. Pausing the Service would have indeterminate results that would probably warrant a restart.



## Logging Tab

It is possible to log the Adapter Service which is helpful when encountering problems with getting the Service properly installed and running.



### Log prefix:

Specifying this parameter will enable logging to the *Log path* folder with the prefix as the start of the log name combined with a .YEAR-MONTH-DAY.log suffix.

### Log path:

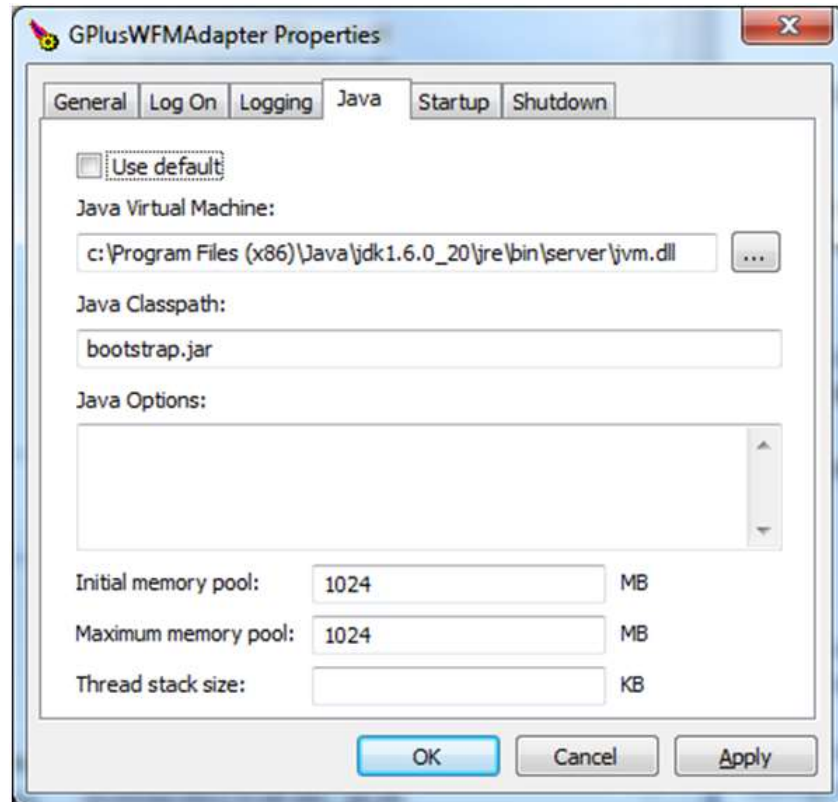
The default is the Adapter's logs folder but this parameter can be set to another folder if required.

### Redirect Stdout: and Redirect Stderr:

Both stdout and stderr can be redirected to files in the *Log path* folder if there is a need to debug JVM problems that are not logged in the regular adapter logs. Both are set to auto in the svcinstall.bat file and that enables the logging with the default file names.

## Java Tab

The *Java* tab configures the operating parameters for the Java Virtual Machine associated with the Service. The default configuration is shown below with the exception of the *Java Virtual Machine* parameter that is installation specific.



### Java Virtual Machine:

This parameter identifies the path to the `jvm.dll` file that will be linked by the Service wrapper to host the Adapter application. The `.dll` file should be a “server” version as described in [Chapter 2](#).

### Java Classpath:

This parameter must not be modified from the default, `bootstrap.jar`.

**Initial memory pool:**

This parameter specifies the amount of system memory that will be allocated to the JVM at startup. This parameter is set to the same amount as the *Maximum memory pool* so that all of the required memory is requested at startup and if the system cannot provide it at that time, the JVM shuts down. This avoids memory problems arising hours after startup because there is insufficient system memory.

Default = 1024 MB

**Maximum memory pool:**

This parameter specifies the maximum amount of system memory that will be requested by the JVM.

Default = 1024 MB

**Java Options:**

This section allows any number of parameters to be added to the JVM configuration. Presently, the parameters that might be added are related to configuring the memory Garbage Collection (GC) and adding logging of the GC activity.

## Appendix

# D Log Files

## Files

Depending upon the logging configuration discussed [above](#), there may be more than one set of logs contained in the logging folder. This chapter is concerned with the event logs that also include logging of state changes for Agents and media interactions.. There will typically be two versions of the event logs contained in the logs folder: ROLLING and GZIP. The actual names of the logs are specified in the log4j.xml file but unless they have been changed in that file, the log files will have the prefix of GPlusAdapterWFM.

The default size for each of the ROLLING logs is 50 MB and they will be rolling over quickly in a large call center. These logs give a snapshot of activity at the time that they are checked but may not be suitable for tracking down problems with the adapter if they cover too short an interval. The most recent of the log files will have a name starting with the prefix described above and then the .log extension. Earlier logs will have numbers added to the extension with .log.1 being the next most recent and .log.2 being earlier again.

Each of the zipped logs contain exactly the same information as the ROLLING logs but summarize an hour of activity and the time at the start of that hour is contained in the log file name:

GPlusAdapterWFM.log.2012.01.01-16.00.00.gz

The time field will always be an even hour except for the log created at startup. That file will have a time stamp indicating when the logging started:

GPlusAdapterWFM.log.2012.01.01-15.50.00.gz

This log will contain useful startup information not available in the other logs. If the Adapter has been running for an extended period of time, the startup log will have been removed as older zipped logs are also deleted to prevent filling up the disk storage.

## Description of Fields

The log files are intended as an aid in debugging the application when problems do occur. The files have a simple format that is described below using the first line of the log file as it starts up as an example.

```
01 Jan 2012 12:00:02,000 – 2000 [main] INFO com.ariasolutions.iconnect.Application - Launching GPlus Adapter
```

```
01 Jan 2012 12:00:02,000
2000
[main]
INFO
com.ariasolutions.iconnect.Application
Launching GPlus Adapter
```

The **first** field shows the date and time that the event or update occurred.

The **second** field shows the number of milliseconds that the application has been running.

The **third** field is the thread name that produced the message.

The **fourth** field is the logging level that the message has been assigned.

The **fifth** field is the Java class (and stream) that has generated the message.

The **sixth** field is the description of what has occurred to generate the message.

## Logging Threshold and Messages

The [logging threshold](#) has more relevance as the types of messages that are generated by the Adapter have been rationalized. The info mode tracks significant events such as report generation and TServer connections but is restricted to logging agent activity by the changes in RTA states. The debug mode adds more detail to the agent activity as well as logging the progress of interactions (voice calls, emails etc.) from monitored queues to the agent desktops. The trace mode provides the most detail with full logging of the incoming events and includes the PlaceListenerLogger and the QueueListenerLogger discussed below.

Both the info and debug modes result in log files that are significantly smaller than those generated with the trace mode.

### **info mode example**

The following is an example of what is logged when the logThreshold is set to info. It shows the messages generated when an agent receives an inbound customer call.

```
01 Jan 2014 12:01:00,000 90000 [main] INFO
com.ariasolutions.icconnect.rta.StateHolder Stream1 - StateHolder.notifyStateChange:
msmith: StateInfo(CallInbound, Mon Jan 01 12:01:00 MDT 2014, null, 2500,
VoiceSales_VQ, )
```

Just the single line is generated showing the change in the agent's state. It should be noted that the stream name of Stream1 has been added to the class name that generated the message. If the message was not associated with a configured stream, then a stream name of default would have been logged.

### **debug mode example**

As can be seen, the debug mode adds call tracking.

```
01 Jan 2014 12:00:45,000 75000 [main] DEBUG
com.ariasolutions.icconnect.eventprocessing.VoiceEventProcessor - Call
00b102420f4e2002 placed in Queue VoiceSales_VQ
01 Jan 2014 12:00:55,000 85000 [main] DEBUG
com.ariasolutions.icconnect.eventprocessing.VoiceEventProcessor - Call
00b102420f4e2002 ringing on Place Place_2500 (Agent msmith)
01 Jan 2014 12:00:59,000 89000 [main] INFO
com.ariasolutions.icconnect.rta.StateHolder default - StateHolder.notifyStateChange:
msmith: StateInfo(CallInbound, Mon Jan 01 12:00:59 MDT 2014, null, 2500,
VoiceSales_VQ, )
01 Jan 2014 12:01:00,000 90000 [main] DEBUG
com.ariasolutions.icconnect.eventprocessing.VoiceEventProcessor - Call
00b102420f4e2002 established on Place Place_2500 (Agent msmith) Pegged to Queue
VoiceSales_VQ
```

### **trace mode**

The trace mode logging for the above example would be several pages long as the full events are logged from the initial queued event to the EventEstablished on the agent's desktop. The extra logging is discussed below in the next three sections.



## Events and Server Identification

Events are logged in trace mode just as they are received from the connected Genesys Server: Interaction Server, SIPServer or TServer. Configuration Server events are logged but not with the detail described below. The following shows a TServer event generated when an Agent answered an incoming call:

- 24 May 2012 21:59:37,183 - 168858 ... - Received event from 'TServer1'
- EventEstablished
- ANI: 4032500001
- AgentID: 200000
- CallState: 0
- CallType: Inbound
- ConnID: 000000000005c85e
- EventSequenceNumber: 112318
- GPlusWFM.LocalTime: 1337885977167
- GPlusWFM.RemoteTime: 1337885977201
- GPlusWFM.SourceId: 133
- GPlusWFM.SourceName: TServer1
- GPlusWFM.Time: 1337885977201
- OtherDN: 4032500002
- OtherDNRole: RoleOrigination
- ThisDN: Test\_2000
- ThisDNRole: RoleDestination
- ThisTrunk: 9999
- TimeinSecs: 1337885977
- TimeinuSecs: 201000
- UserData.SampleBinary1: [B@1c668df
- UserData.SampleInt1: 1
- UserData.inner.inner sample: sample
- UserData.inner.inner int: 3
- UserData.SampleString1: Sample

Some of the enumerated event attributes such as CallType are replaced with the value name to make the logged event easier to read. The adapter also adds attributes with the GPlusWFM prefix for the Adapter's host time (GPlusWFM.LocalTime) and the Genesys Server time (GPlusWFM.RemoteTime). The GPlusWFM.Time attribute indicates which of the

two time sources the Adapter is actually using for the event time as selected by the [application/useLocalTime](#) configuration option.

The GPlusWFM.SourceId and GPlusWFM.SourceName for the originating Genesys Server are also included.

## PlaceListenerLogger

Prior to the event listed above, the Adapter added some state change notifications that were associated with the EventEstablished. The first notification is logged by the PlaceListenerLogger and indicates the answering Agent's state:

- 24 May 2012 21:59:37,183 - 168858 ... PlaceListenerLogger - PlaceState updated to:
- PlaceState for Place: [PlaceName: Place\_2500001, site: Site\_1]
- LoginSession: [LoginID: 200000, AgentUsername: Agent\_200000, DoNotDisturb: off]
- MediaSession: [MediaType: voice, ReadyState: Ready]
- Interaction: [ID: 000000000005c85e, Target: VQ\_Test]

Although the receiving agent was not identified in the EventEstablished attributes, the PlaceListenerLogger has identified the Place and its associated Site for the logged in agent. The agent is indicated as in a Ready state for voice calls and is presently handling one call that was queued on a monitored VQ. If the agent was logged in to additional media (email, chat etc.), there would be additional media sessions listed as well as any ongoing interactions associated with those sessions.

---

**Note:** The absence of any of the above information (with the exception of Site) would indicate a configuration problem as there was insufficient information to create and maintain the required internal associations.

---

## QueueListenerLogger

The second state change notification associated with the EventEstablished was generated by the QueueListenerLogger which logs the state changes for the incoming call. There is not a lot of detail other than logging the target with which the call had been associated and logging the state of the call in generic terms that apply to routing of any media:

24 May 2012 21:59:37,183 - 168858 ... QueueListenerLogger - Interaction 'answered': QueuedInteraction [id=000000000005c85e, target=VQ\_4847]

There are six available states for a queued interaction and they are sufficient to indicate the part of a "call flow" the interaction had reached when the event was generated:

- offered
- abandoned
- expired
- answered
- released
- exitQueue

The QueueListenerLogger had already been logging the interaction state of the call prior to the agent answering it:

- 24 May 2012 21:59:33,613 - 165288 ... QueueListenerLogger - Interaction 'offered': QueuedInteraction [id=00000000005c85e, target=VQ\_4847]
- 24 May 2012 21:59:33,613 - 165288 ... - Received event from 'TServer2'
- EventQueued
- CallType: Inbound
- ConnID: 00000000005c85e
- EventSequenceNumber: 112574
- GPlusWFM.LocalTime: 1337885973613
- GPlusWFM.RemoteTime: 1337885973638
- GPlusWFM.SourceId: 135
- GPlusWFM.SourceName: TServer2
- GPlusWFM.Time: 1337885973638
- OtherDN: 4032350227
- OtherDNRole: RoleOrigination
- ThisDN: VQ\_4847
- ThisDNRole: RoleDestination
- ThisQueue: VQ\_4847
- TimeinSecs: 1337885973
- TimeinuSecs: 638000

---

**Note:** The QueueListenerLogger only logs calls or interactions that the adapter has identified as a "customer call". If the logger has not identified an interaction as 'offered' prior to the first queued event for the interaction, then none of the activity for that interaction will be associated with a VQ or target.

---

## Appendix

# E Windows Installation Script

## Files

The Windows installation script retains the configuration parameters in two files:

- config/jvm.properties
  - contains the location of the jvm.dll and the memory setting
  - required to install the Adapter as a Windows Service
- config/GPlusWFM.properties
  - contains the Application name and the Configuration Server connection parameters
  - the Application name is required for the Service installation
  - the connection parameters are required for the Adapter to run but not for the Service installation

A third file, config/product.properties, contains the WFM vendor, Verint, as well as the version number for the specific release that has been installed. This file is not modified by the installation script but the vendor and release version are displayed.

The Adapter also displays the relevant contents of the license file.

## Invoking the Installation Script

It is important that the script execute with Administrator privileges so that the Windows service can be installed and the properties files modified. This can be accomplished by right clicking on the windows\_install.bat file and selecting *Run as administrator*.

## Initial Screen and Status Display

There are three main menus that will be displayed depending on the context of the Adapter installation:

- Initial Tasks – jvm.dll not set
- Installation Tasks – adapter service not installed
- Management Tasks – adapter service installed

The first, *Initial Tasks*, will appear until the path to the jvm.dll file has been set at which time the second menu will be used.

```
Gplus WFM Adapter - Verint
5.4.001

-----
CME Application name = GplusWFM_Adapter
Configuration Server Host =
Configuration Server Port = 2020
-----
JVM path = not set
JVM memory = 1024 MB
-----
localhost name =
-----
License app name = Any
License host name = Testing
Expiry date = 2014.Apr.15
License type = Temporary
-----
Initial Tasks - jvm.dll not set
-----
1. Set the Application Name
2. Set the JVM parameters
3. Set the Config Server connection parameters
4. Quit

Select a menu item ...
```

The screenshot above shows the default settings from the properties files as well as the parameters for the temporary license provided with the Adapter release.

### Set the Application name

The Application name should be set first. This name must match the name of the *Gplus* Adapter's Application object in the Configuration Server. The name will be used for the name of the installed service and the renamed prunsv.exe (Java service wrapper) that will be copied to the Adapter's main folder.

```
Application Name

The Gplus Adapter's CME Application name will also be used as the Adapter
Service name and must not contain any spaces.

The default Application name initially displayed by this script is taken from
the "appName" property in the config\GPlusWFM.properties file. That file will
updated if and when a new Application name is specified.

Press ENTER to accept ( GplusWFM_Adapter )
or
Type in new application name ... GplusWFM_54_p_
```

The new name is immediately written to the GPlusWFM.properties file and will be displayed in the status section as shown below:

```
CME Application name      = GplusWFM_54_p
Configuration Server Host = 
Configuration Server Port = 2020

JVM path = not set

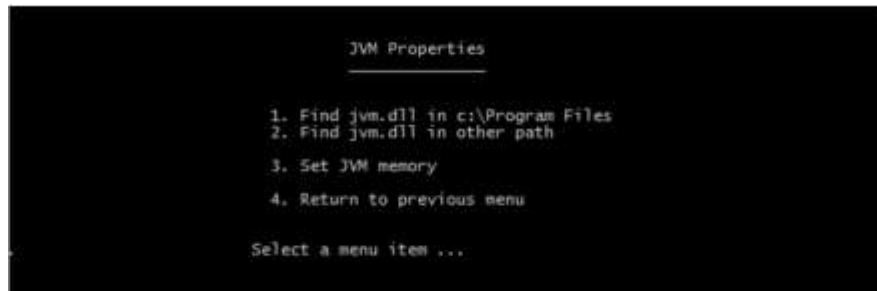
JVM memory = 1024 MB

localhost name =

License app name = Any
License host name = Testing
Expiry date = 2014.Apr.15
License type = Temporary
```

### Set the JVM parameters

This menu item brings up a second menu that allows the Java Runtime Environment to be configured. Once this has been completed, the Adapter can be installed as a service.



There are two different menu options for finding the path to the jvm.dll file. The first just looks in the default locations that the Oracle installation application will place a 32 bit or 64 bit version while the second option allows a path to be set with all of the subfolders being searched.

### Default JVM Locations

The first menu selection will list all of the jvm.dll files found in the default installation locations. Both 32 bit and 64 bit JVM versions will be listed if present on a 64 bit OS. The Adapter will run in either.



The change is immediately written to the config\jvm.properties file and the status section reflects the specification of the 64 bit JVM as shown below.

```
CME Application name = GplusWFM_54_p
Configuration Server Host =
Configuration Server Port = 2020

-----

JVM path = c:\Program Files\Java\jdk1.6.0_20\jre\bin\server\jvm.dll

      JVM memory = 1024 MB
      JVM type = amd64

-----

      Localhost name = wfm_adapter_host

-----

License app name = Any
License host name = Testing

Expiry date = 2014.Apr.15
License type = Temporary
```

There are two things to note in the status section shown above beyond the fact that the path to the jvm.dll file has been identified.

First, a new parameter, JVM type, has been added. This indicates which of the prunsrv.exe service wrappers will be used. In the example above, the 64 bit non-Itanium™ version will be used.

The second addition is that the localhost name parameter has also been set. This is the host name that should be used when requesting a permanent license for the Adapter installation. Once the JVM path was set, a Java application was run to determine the hostname with exactly the same code that is used to confirm the hostname when validating the license.



### Set path to find jvm.dll

If the Java instance has not been installed in a subfolder of either `c:\Program Files` or `c:\Program Files (x86)`, the script will search for the `jvm.dll` file in other locations.

```

jvm.dll not in a subfolder of c:\Program Files or c:\Program Files (x86)

-----

If the JDK version of Java Runtime Environment (JRE) was not installed
in a subfolder of one of the default Oracle JDK installation paths
( C:\Program Files or C:\Program Files (x86) ), a path can be specified
that will be recursively searched for the following file:

    ^\server\jvm.dll

The resulting list will be comprised of all of the server versions of
the jvm.dll file that were found. This script does not determine if the
identified jvm.dll files are 32 bit or 64 bit versions.

Examples:
C:\      search all of the folders on the C: drive
D:\Java  search the \Java folder and all of its
          subfolders on the D: drive

-----

Path to search
-----
Press ENTER to accept ( c:\ )
or
Type the path ... c:\Program Files (x86)
    
```

The result will be a list of the paths to any found `jvm.dll` files but there will no indication as to whether the files are 32 bit or 64 bit versions.

```

JVM paths in c:\Program Files (x86)
-----

The search may take a little time ...

1. c:\Program Files (x86)\Java\jdk1.6.0_20\jre\bin\server\jvm.dll

Select JVM path ... 1
    
```

The script can determine the bitness of the JVM once it has been selected as shown below where the JVM type has been changed to `32_bit`.

```

-----
JVM path = c:\Program Files (x86)\Java\jdk1.6.0_20\jre\bin\server\jvm.dll
-----
JVM memory = 1024 MB
JVM type   = 32_bit
-----
    
```

## Set JVM memory

The amount of memory that the JVM will allocate as it starts up can be set to something other than the default of 1024 MBs.

```
Adapter JVM memory

The default JVM memory setting of 1024 MB should be sufficient for
most Adapter instances running in a 32 bit Java Virtual Machine (JVM).
The maximum JVM memory on a Windows 32 bit OS is anywhere from 1.3 GB to
1.5 GB depending on the Windows version.

If the Adapter is running on a 32 bit JVM, it is recommended that the
JVM memory setting not exceed 1344 MB. If more memory is required, then
a 64 bit JVM should be used.

If the Adapter is running on a 64 bit JVM, the only restriction on the JVM
memory is what memory is available. It should be noted that a instance
running n a 64 bit JVM will use 30% to 40% more memory than the same
instance running in a 32 bit JVM because of the larger memory pointer size.

Press ENTER to accept ( 1024 )
or
Type in JVM memory in MB ... 768_
```

## Installation Tasks

Once the path to the `jvm.dll` file is set, the *Gplus* Adapter can be installed as a Windows Service. The main menu reflects this change in status with the addition of two more menu options. It is possible to install the service with no issues but starting that service or running the Adapter as a console application will fail if the Configuration Server connection has not be configured.

```
Installation Tasks - adapter service not installed

1. Set the Application Name
2. Set the JVM parameters
3. Set the Config Server connection parameters
4. Install Gplus Adapter Service ( GpluswFM_54.p )
5. Run Gplus Adapter as Java application
6. Quit

Select a menu item ...
```

### Set the Config Server connection parameters

Selecting this menu option allows the script to modify the contents of the GPlusWFM.properties file which contains all of the parameters that can set on the connection.

```
Configuration Server Connection
-----
Application Type = ThirdPartyServer
-----
Primary Host =
Primary Port = 2020
-----
Backup Host =
Backup Port =
-----
addp = disabled
Trace Mode =
Local Timeout = not set
Remote Timeout = not set
-----
Transaction Layer Security (TLS) = disabled
-----
Minimum Registration Delay = 5m
Maximum Registration Delay = 15m
Registration timeout = 10m
-----
Configuration Server Properties
-----
1. Set Hosts and Ports
2. Set Application Type
3. Set addp Connection Protocol
4. Enable TLS
5. Set Registration Delays
6. Return to previous menu

Select a menu item ...
```

### Hosts and ports

The host and port can be set for the primary Configuration Server and its backup.

```
Configuration Server - Host and Ports
-----
1. Set Primary Host
2. Set Primary Port
3. Set Backup Host
4. Set Backup Port
5. Return to previous menu

Select a menu item ...
```

The host can be specified with the hostname or the IP address. If TLS has been enabled, the configured port should be the Configuration Server's secure port rather than the default.

```

Configuration Server Hosts and Ports
-----

The Gplus Adapter must be configured manually to connect to the Genesys
Configuration Server. The connection parameters are retained in the
following file:

    config\GPlusWFM.properties

The only properties that must be set for the Adapter to run are the
hostname and port properties for the primary Configuration Server. A
connection to a backup Configuration Server can be specified if present,
updated if and when a new Application name is specified.

It should be noted that if Transaction Layer Security (TLS) has been
enabled, the Gplus Adapter should be configured to connect to the secure
port of the Configuration Server.
-----

Primary Configuration Server Host
-----

Press ENTER to accept ( )
or
Type in a new hostname or IP address ... config_host
    
```

### Set Application type

The Adapter’s Application type affects the parameters that will be sent to the Configuration Server as part of the Adapter’s registration request. A ThirdPartyServer type does not provide a username or password but is only allowed one connection. The alternative, ThirdPartyApplication, requires the username and password but provides better security.

```

Application Type
-----

The Gplus Adapter can register with the Genesys Configuration Server as
one of two application types:

    - ThirdPartyServer
    - ThirdPartyApplication

A "ThirdPartyServer" Application does not require a username and password
to register with the Configuration Server but only one instance can be
registered. A "ThirdPartyApplication" requires that a username and password
be provided when registering.

If "ThirdPartyApplication" is selected, this script provides options to set
the Configuration Server username and password. The password is stored as an
encrypted string in the config\enc file and is not saved as plaintext.
-----

CME Application Type
-----

1. ThirdPartyServer
2. ThirdPartyApplication

Select a value ... 2_
    
```

## ThirdPartyApplication

```
Application Type = ThirdPartyApplication
Username =
Password = not set

-----

Primary Host = config_host
Primary Port = 2020

Backup Host = backup_host
Backup Port = 2025
```

If *ThirdPartyApplication* is selected as the Application type, the script provides a menu option to set both the username and the password. It should be noted that the password is not saved as plain text.

```
Configuration Server Properties
-----

1. Set Hosts and Ports
2. Set Application Type
3. Set username and password
4. Set addp Connection Protocol
5. Enable TLS
6. Set Registration Delays
7. Return to previous menu

Select a menu item ...
```

When the password is set, that string is encrypted and stored in the config/enc file. If that file is present, the script indicates that the password has been *set* but does not display it.

```
Application Type = ThirdPartyApplication
Username = user_1
Password = set

-----
```

## Set addp Connection Protocol

The script provides a menu for configuring the addp connection protocol for the Configuration Server connection.

```
-----
addp - disabled
Trace Mode =
Local Timeout = not set
Remote Timeout = not set
-----
Transaction Layer Security (TLS) - disabled
-----
Minimum Registration Delay = 5m
Maximum Registration Delay = 15m
Registration timeout = 10m
-----
Configuration Server - addp Parameters
-----
1. Enable addp
2. Set Trace Mode
3. Set Local Timeout
4. Set Remote Timeout
5. Return to previous menu

Select a menu item ... _
```

The addp protocol can be enabled or disabled by selecting the first menu option. Both timeouts should be entered as seconds with the Local Timeout being less than the Remote Timeout.

## addp Trace mode

The script lists the allowed trace mode settings. It is recommended that the trace mode be set to *Both*.

```
-----
Configuration Server addp Trace Mode
-----
If the Adapter's connection to the Configuration Server has addp enabled,
the recommended Trace Mode setting is "Both" which corresponds to "Trace
on Both Sides".
-----
Config Server addp Trace Mode
-----
1. None
2. Local
3. Remote
4. Both

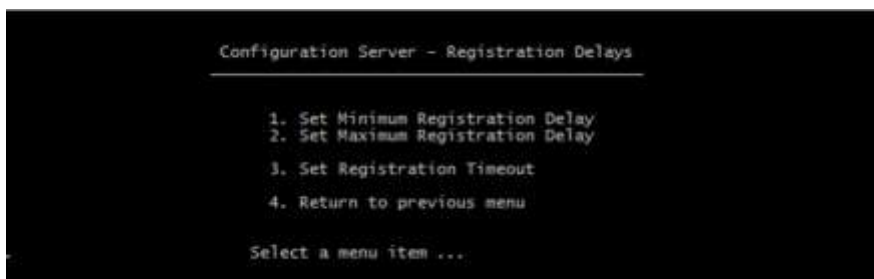
Select a value ... _
```

## Enable/Disable TLS

TLS (Transaction Layer Security) can be set on the Configuration Server connection but the majority of the configuration work will be on the server side. The extent of the changes on the Adapter side is to enable TLS and set the connection to point to the Configuration Server's secure port.

## Set Registration delays

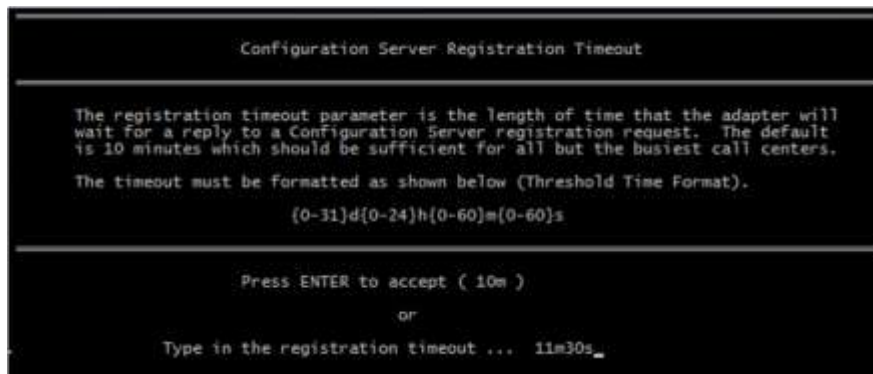
This menu section may be necessary in very busy call centers where there are a number of applications connected to the Configuration Server. In that case, the response to requests may be delayed and it may be necessary to delay those requests when the Configuration Server is restarting after a mishap.



The registration delays are the minimum and maximum bounds of the time that the *Gplus* Adapter will wait before making a registration request of the Configuration Server after the connection has been restored. The Adapter will wait a random time between the two limits.



As mentioned, the response from the Configuration Server can be significantly delayed in very busy call centers. The registration timeout option sets the amount of time that the Adapter will wait before generating a new request.



### Installing the Adapter as a Service

When the option to install the Adapter as a Service is selected, two actions occur:

1. The appropriate version of the prunsvr.exe file is copied to the main Adapter folder from the wrappers folder and renamed to the *CME Application name* e.g. GplusWFM\_54\_p.exe.
2. The install mode on the renamed prunsvr.exe file is used to install the application as a Windows service with the service name set to the *CME Application name*.

The script will check to see if there is a Service installed with the same name as the *CME Application name*. If that is the case, then the script will display the *Management Tasks* menu.



## Management Tasks

```

CME Application name      = GplusWFM_54_p
Configuration Server Host = config_host
Configuration Server Port = 2020

-----

JVM path = c:\Program Files (x86)\Java\jdk1.6.0_20\jre\bin\server\jvm.dll
      JVM memory = 768 MB
      JVM type   = 32_bit

-----

localhost name          = wfm_adapter_host

-----

License app name      = Any
License host name    = Testing
Expiry date          = 2014.Apr.15
License type         = Temporary

-----

Management Tasks - adapter service installed
-----

1. Manage Service
2. Remove Service
3. Set the Config Server connection parameters
4. Run Gplus Adapter as Java application
5. Quit

Select a menu item ...

```

The final menu allows for certain tasks to be carried out once the *Gplus* Adapter has been installed as a Service.

### Manage Service

Selecting the *Manage Service* option invokes the `prunmgr.exe` application that is detailed in [Appendix C](#). Changes can be made to the JVM parameters without having to uninstall the service.

### Remove Service

Selecting this option removes the installed service and deletes the renamed `prunsvr.exe` file. The script menu will return to the *Installation Tasks* menu that is detailed above.

### Set the Config Server connection parameters

The *Gplus* Adapter reads the parameters from the `GPlusWFM.properties` file at start up. It is possible to edit the Configuration Server connection parameters, stop the Adapter, restart the Adapter and have the changes take effect.

### **Run *Gplus* Adapter as Java application**

This option will start the Adapter as a console application using the same configuration as the Windows Service. It is one way to check that the Adapter configuration is correct if there are problems getting the Service to start.

This is not a viable mode for running the Adapter in a production environment but can be useful for debugging the configuration.