



Gplus Adapter 5.2

for IEX WFM

Installation and Configuration
Guide

The information contained herein is proprietary and confidential and cannot be disclosed or duplicated without the prior written consent of Genesys Telecommunications Laboratories, Inc.

Copyright © 2012 Genesys Telecommunications Laboratories, Inc. All rights reserved.

About Genesys

Genesys is the world's leading provider of customer service and contact center software - with more than 4,000 customers in 80 countries. Drawing on its more than 20 years of customer service innovation and experience, Genesys is uniquely positioned to help companies bring their people, insights and customer channels together to effectively drive today's customer conversation. Genesys software directs more than 100 million interactions every day, maximizing the value of customer engagement and differentiating the experience by driving personalization and multi-channel customer service - and extending customer service across the enterprise to optimize processes and the performance of customer-facing employees. Go to www.genesyslab.com for more information.

Each product has its own documentation for online viewing at the Genesys Technical Support website or on the Documentation Library DVD, which is available from Genesys upon request. For more information, contact your sales representative.

Notice

Although reasonable effort is made to ensure that the information in this document is complete and accurate at the time of release, Genesys Telecommunications Laboratories, Inc. cannot assume responsibility for any existing errors. Changes and/or corrections to the information contained in this document may be incorporated in future versions.

Your Responsibility for Your System's Security

You are responsible for the security of your system. Product administration to prevent unauthorized use is your responsibility. Your system administrator should read all documents provided with this product to fully understand the features available that reduce your risk of incurring charges for unlicensed use of Genesys products.

Trademarks

Genesys and the Genesys logo are registered trademarks of Genesys Telecommunications Laboratories, Inc. All other company names and logos may be trademarks or registered trademarks of their respective holders. © 2012 Genesys Telecommunications Laboratories, Inc. All rights reserved.

The Crystal monospace font is used by permission of Software Renovation Corporation, www.SoftwareRenovation.com.

Technical Support from VARs

If you have purchased support from a value-added reseller (VAR), please contact the VAR for technical support.

Ordering and Licensing Information

Complete information on ordering and licensing Genesys products can be found in the [Genesys 7 Licensing Guide](#).

Released by: **Genesys Telecommunications Laboratories, Inc.** www.genesyslab.com

Document Version: 52gp_icg_iex-wfm_08-2012_v5.2.001.00



Table of Contents

Preface	Preface	5
	About <i>Gplus</i> Adapter for IEX WFM.....	5
	Intended Audience	5
	Making Comments on This Document.....	6
	Contacting Genesys Technical Support.....	6
	Related Documentation Resources	6
	Document Conventions	7
	Document Version Number.....	7
	Screen Captures Used in This Document	7
Chapter 1	Product Description	9
	Historical Reports	9
	Real Time Adherence (RTA)	10
Chapter 2	Installation and Setup	11
	Installation and Windows Permissions.....	11
	Included Files	11
	Logging, FTP and Report Directories	12
	Adding an Adapter Instance to the Configuration Server	13
	Startup Scripts.....	14
	Solution Control Server Integration.....	18
	Configuration Server Connection.....	19
	Logging Configuration	22
	Initial Start Up Test.....	25
	License File.....	25
Chapter 3	Application Options	27
	alarmCodes Section	27
	application Section	30
	attachedDataFilter Section	35
	callTypes.custom Section.....	35
	chat Section	36
	email Section.....	38

	event.properties Section.....	39
	filter:<filterName> Section	41
	genesys.agentGroups Section.....	43
	genesys.placeGroups Section	44
	genesys.queueGroups Section.....	45
	historical.ftp Section	45
	historical.reports Section	49
	historical:<streamName> Section	52
	interactionTargets Section	53
	ixnProcessObjects Section	54
	media:<name> Section.....	55
	outbound Section	60
	reasonCodeMappings Section.....	61
	rta Section.....	62
	rta:<streamName> Section.....	64
	voice Section.....	64
Chapter 4	Additional Configuration.....	67
	Adding T-Servers and Interaction Servers	67
	Threshold Time Format	67
	Adding Annex Data for Virtual Queues and Skills	68
	Adding A PlaceGroup to a Site	70
Chapter 5	Setting Up Secure File Transfer	71
	Generating the Private-Public Key Pair	71
	Client Configuration	72
	Server Configuration	72
Chapter 6	Outbound Voice Campaigns.....	73
	Predictive and Progressive Campaigns	73
	Preview and Push Preview Campaigns	74
	Non Campaign Outbound Calls	74
Chapter 7	Streams and Filters	75
	Multiple Streams.....	75
Appendix A	Time Zone ID List	77
Appendix B	Secure File Transfer Problems.....	85
Appendix C	Reading Log Files	91



Preface

Welcome to the *Gplus Adapter for IEX WFM - Installation and Configuration Guide*. This document describes the *Gplus* Adapter for IEX 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 5.2 release(s) of this product.

Note: For versions of this document created for other releases of this product, visit the Genesys Technical Support website.

For information about related resources and about the conventions that are used in this document, see the supplementary material starting on [page 10](#).

About *Gplus* Adapter for IEX WFM

The *Gplus* Adapter for IEX WFM is a software solution that provides integration between an IEX TotalView 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 IEX TotalView.

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.

- IEX TotalView conventions and reports.
- The network configurations used in the installation computing environment.
- The following Genesys applications and solutions:
 - Framework 7.0 - 8.x
 - Configuration Manager
 - Universal Routing 7.0 - 8.x

Making Comments on This Document

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

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

When you send us comments, you grant Genesys a nonexclusive right to use or distribute your comments in any way it believes appropriate, without incurring any obligation to you.

Contacting Genesys Technical Support

If you have purchased support directly from Genesys, see the [Contact Information](#) on the Tech Support website. Before contacting technical support, refer to the [Genesys Technical Support Guide](#) for complete contact information and procedures.

Related Documentation Resources

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

- The *Framework 8.0 Configuration Manager Help*, which will help when using Configuration Manager.
- The *Genesys 8.0 Security Deployment Guide*, which will help when configuring secure connections to the TServer(s), SIP Server(s), Interaction Server(s) and Configuration Server(s).

Genesys

Consult these additional resources as necessary:

- The *Genesys Technical Publications Glossary*, which ships on the Genesys Documentation Library CD and which provides a comprehensive list of the Genesys and CTI terminology and acronyms used in this document.
- The Release Notes and Product Advisories for this product, which are available on the Genesys Technical Support website at <http://genesyslab.com/support>.

Genesys product documentation is available on the:

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

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:

52gp_icg_iex-wfm_07-2012_v5.2.001.00

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

Screen Captures Used in This Document

Screen captures from the Configuration Manager graphical user interface (GUI), as used in this document, may sometimes contain minor spelling, capitalization, or grammatical errors. The text accompanying and explaining the screen captures corrects such errors *except* when such a correction would prevent you from installing, configuring, or successfully using the product. For example, if the name of an option contains a usage error, the name would be presented exactly as it appears in the GUI; the error would not be corrected in any accompanying text.



Chapter

1 Product Description

Historical Reports

The IEX Historical reports are contained in one file with the start and end of each report indicated by delimiting lines in that file:

- Contact Queue Report - Customer interaction interval report
- Agent Contact Queue Report - Agent/customer interval report
- Agent System Performance Report - Agent activity interval report
- Agent Sign-On/Sign-Off Report - Agent daily sign-on report

A file containing the first three reports is generated on either a 15 or 30 minute interval depending upon the client preference. The daily Agent Sign-On/Sign-Off report is added to the file with the other three reports at midnight.

Real Time Adherence (RTA)

RTA tracks agent state to ensure that the agents are in compliance with their set schedules. IEX 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 IEX WFM.

Agent States	Voice States	Email States
SignOut	CallInbound	EmailInbound
NotReady	DirectCallInbound	EmailReply
Available	CallOutbound	EmailOutbound
	CallInternal	AfterEmailWork
	CallOnHold	
	CallConsult	
	Conference	
	AfterCallWork	
iWD/OpenMedia States	Outbound States	Chat States
InteractionInbound	OutboundPreview	ChatInbound
InteractionInternal	OutboundCampaignCall	ChatInternal
AfterInteractionWork		AfterChatWork

Note: While IEX supports a synchronous and asynchronous connection protocol for the RTA connection, this version of the adapter only supports the asynchronous option.



Chapter

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. An example is shown below:

- GPlusAdapter/config – configuration files and license file
- GPlusAdapter/templates – application template file
- GPlusAdapter/lib – application jar files
- GPlusAdapter/ftp/reports – default temporary reports location
- GPlusAdapter/ftp/reportsBackup – default report backup location
- GPlusAdapter/logs - log files
- GPlusAdapter/recovery – recovery log files

Besides the folders listed above, the following files are also present in the *Gplus* Adapter root directory:

- `bootstrap.jar` - start up jar file
- `startup.bat.example` – example of the Windows start up script file
- `svcinstall.bat.example` – example of the Windows service installation script
- `JavaService.exe` - Windows service installation program
- `JavaService64.exe` – Windows 64 bit service installation program
- `startup.sh.example` - Unix shell startup script file
- `shutdown.sh` - Unix shell shutdown script 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 (with the exception of 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 `out.log` and `err.log` files in the `logs` folder but their location can also be changed by modifying the install script.

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
- 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 or 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_IEX_51.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_IEX_51` 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 name should be entered for the Adapter instance. Multiple instances must have unique names. 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. Changes should then be made to the startup script to include the new `Application` name as entered above and the connection information must be edited to provide access to the Genesys Configuration Server.

Startup Scripts

As mentioned, the startup files are contained in the base directory of the application. Both of the startup script files (Windows batch and Unix shell script) are intended as examples to aid in creating the actual script file required for the particular adapter installation. There are common parameters in each and these will be discussed below.

Locating and Configuring Java

The Java installation is not bundled with the Adapter installation files and the actual location of the Java installation is a variable that is specified in the . It is recommended that the JDK version of Java be installed rather than the JRE version. The JDK version is a more complete implementation with tools and functionality not available in the JRE version.

Setting WFM_JAVA_HOME

The WFM_JAVA_HOME parameter has to set to a base folder in the Java installation as shown below.

```
set WFM_JAVA_HOME=../java/jdk1.6
```

Windows versus Unix (bash) Scripts

The following is the first line of an example `startup.sh` script file showing the WFM_JAVA_HOME variable being set to the path of the Java installation. The script file assumes the Bourne Again Shell (*bash*) is being used.

```
WFM_JAVA_HOME=" ../java/jdk1.6"
```

The following is an example for the `startup.bat` batch file. Obviously, the only difference between the two is how the variables are set in the particular scripting environment; *bash* or Windows. The rest of the examples will use the Windows syntax.

```
set CME_APPNAME="GPlusAdapter_WFM_P"
```

Startup Scripts and java executable

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%m ...
```

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. As can be seen in the excerpt from the `startup.sh` file, the *bash* version is essentially the same:

```
RUN_CMD="$WFM_JAVA_HOME/bin/java -Xms$JVM_MEM ...
```

svinstall.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. The JDK version of the Java installation contains a server version of that file 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" ...
```

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

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 Windows 32 bit OS varies but it should not be set higher than 1.3 GB. 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.

Windows Script Files

There are two Windows script files included with the Adapter installation: `startup.bat` and `svcinstall.bat`.

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.

Installing a Windows Service

The following description discusses installing the adapter as a Windows service using the community version of the Java Service Wrapper from Tanuki Software.

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

```
set SVCNAME=GPlusAdapter_WFM_P
```

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 default script has the following parameters in the last line:

```
... -out logs\out.log -err logs\err.log ...
```

The logging can be disabled by removing the parameters or redirected by specifying a different folder than the default `logs` folder. If the log files are to be written to a different folder, that folder must exist as the application will not create it and the service will fail to start.

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 `JavaService.exe` file is copied and given the name of the new service e.g. `GPPlusAdapter_WFM_P.exe`.

64 bit Service Installation

If a 64 bit Java instance 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 32 bit installation uses the following line:

```
COPY "JavaService.exe" %RENAMED_EXE%
```

The 64 bit version replaces that with the following:

```
COPY "JavaService64.exe" %RENAMED_EXE%
```

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.

However, changing the configuration parameters of the existing service requires modifying the Windows Registry and should be avoided. The recommended method would be to uninstall the original service and install a new one with the parameter changes made in the `svcinstall.bat` file. Uninstalling the service can be carried out with the following command (using the example given above):

```
JavaService.exe -uninstall "GPPlusAdapter_WFM_P"
```

bash Startup Script

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.

Solution Control Server Integration

The Gplus Adapter can be started and stopped using the Solution Control Interface but the `Start Info` tab information must be set to the following.

Working Directory

The working directory is set to the root of the adapter installation files. The directory that contains the `bootstrap.jar` file.

Command Line

The command line starts up the Java Virtual machine with the `java` command as in this example:

```
../java/jdk1.6_33/jre/bin/java
```

Command Line Arguments

The only variable 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 below:

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

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

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 are now defined in the `GPLUSWFM.properties` file contained in the `config` directory of the adapter installation.

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.

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 connecting to the Configuration Server. The delay will be random time longer than `registrationMinDelay` but less than `registrationMaxDelay`. These parameters would only be important if a large number of Adapters were connecting 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=full
```

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 `full` 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 and that is all. All of 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 port.

Logging Configuration

The *Gplus* Adapter has three types of logs and 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.icconnect.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 five levels with `fatal` being the least verbose and `debug` 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: `out.log` and `err.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 `out.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. 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 (IEX)
- Number of seats



Chapter

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 Log Event IDs defined in the Alarm Conditions contained in the Configuration Server.

diskWriteFailure

Type: Optional
Default Value: *Not set*
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: *Not set*
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: *Not set*
 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: *Not set*
 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: *Not set*
 Valid Values: Alarm Condition/Detect Event/Log Event IDs
 Dependencies: None

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: *Not set*
 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 reportFailure Alarm Code has been cleared.

rtaConnected

Type: Optional
 Default Value: *Not set*
 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: *Not set*
 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 IEX server was terminated by either side.

rtaConnected:<streamName>

Type: Optional
 Default Value: *Not set*
 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: *Not set*
 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: *Not set*
 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: *Not set*
 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: *Not set*
 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: *Not set*
 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.

agentIdMode

Type: Mandatory
 Default Value: personUserName
 Valid Values: agentLogin - Switch Login ID field
 personEmployeeId - Employee ID field
 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 and chat implementations, only `personUserName` or `personEmployeeId` option values can be used as no PBX switch is involved.

annexSection

Type: Optional
 Default Value: *Not set*
 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 either 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.
 `queueNumber` list of Virtual Queue Numbers.
 `queueAlias` list of Virtual Queue Aliases.
 `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 contact/queues expected by the IEX server in the Contact Queue report.
2. It must be possible to parse the contact ID from the attributes of an `EventQueued` received from one of the monitored DNs.

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 the soft-phone/hardset allows an agent to 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.

defaultAnnexSection

Type: Deprecated
 Default Value: *Not set*
 Valid Values: Any valid Annex section name
 Dependencies: None

This option specifies an Annex section name to be used by the adapter in the event that the default Annex section name, `GPLUS_WFM`, cannot be used. This option is applicable to all of the configuration objects used by the adapter.

This option has been deprecated and need not be configured.

inheritOptionsFromApp

Type: Optional
 Default Value: *Not set*
 Valid Values: Any *GPlus* 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.

logThreshold

Type:	Mandatory
Default Value:	debug
Valid Values:	fatal Least verbose level
	error
	warn
	info
	debug 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.

multiTenant

Type:	Optional
Default Value:	false
Valid Values:	true, false
Dependencies:	Configuration Server tenant type

This option must be set to true if the *Gplus* Adapter is connected to a Genesys Multi-Tenant Configuration Server.

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 CQ column in the Contact Queue and Agent Contact Queue 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.

timeZone

Type:	Optional
Default Value:	Time zone of the application's host server.
Valid Values:	Listed in Appendix A.
Dependencies:	None.

This option is used to report data for a time zone other than the time zone where the *Gplus* Adapter software is installed. It is most commonly used when configuring a backup *Gplus* Adapter where the physical backup server is located in a different time zone than the Primary *Gplus* Adapter application. In this case, set this option value for the backup application to the same time zone as the primary application's time zone.

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.

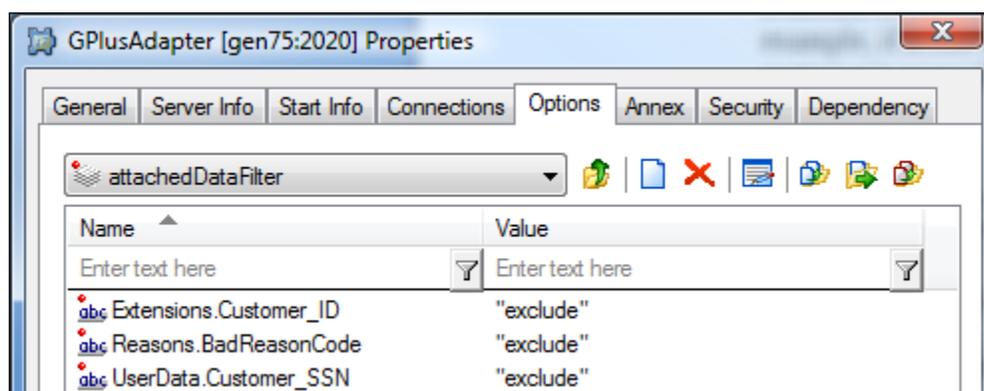
attachedDataFilter Section

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.



callTypes.custom Section

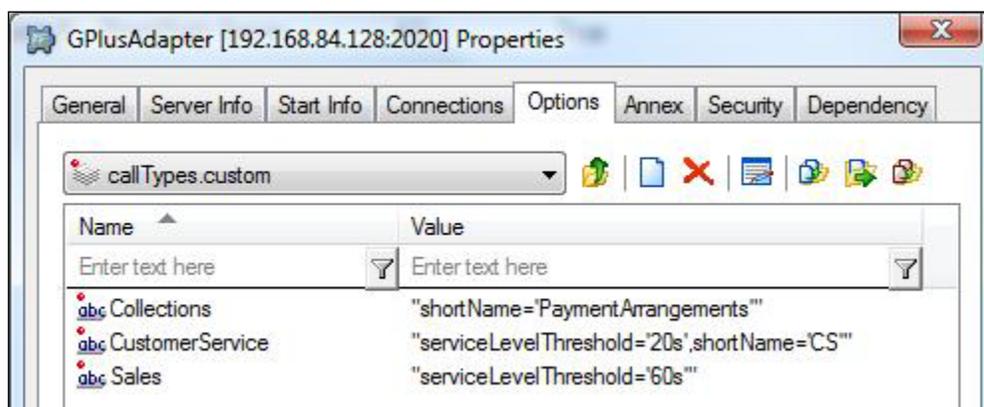
This optional Section is only used if the application/callType Option has been set to custom. The section contains a list of WFM voice contact type/queue names that will be reported by the *Gplus* Adapter. This list is required when there is no one-to-one mapping of expected WFM contact types/queues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

The Option Name (or shortName) must match the exact value generated by the *Gplus* Adapter when applying the event filter specified by the `callType.determiner` Option against the TServer 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:	<code>serviceLevelThreshold</code> and <code>shortName</code>
Dependencies:	<code>application/callType</code> , <code>event.properties/callType.determiner</code>



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 NotReady ReasonCode that will be reported as the equivalent of ACW for the chat statistics and will be reported as the AfterChatWork RTA state..

The text string must be contained in the Reason.ReasonDescription attribute of a chat NotReadyForMedia event.

defaultAbandonedThreshold

Type: Optional
 Default Value: 0s
 Valid Values: See [Threshold Format](#)
 Dependencies: None

This option specifies the default abandoned threshold for the Abandoned In Threshold column in the Contact Queue report. This option is set when a single abandoned threshold is used for all chat targets. Individual abandoned thresholds can be set for each chat target/queue by [adding Annex Data](#) to the chat Virtual Queues included in the genesys.queueGroups Section.

defaultServiceThreshold

Type: Optional
 Default Value: 0s
 Valid Values: See [Threshold Format](#)
 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.

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.

It should be noted that the default for this Option is the same as that for voice and email (UnknownTarget). If the adapter is monitoring multiple media and

the defaults are retained, the calls or interactions that cannot be allocated to a proper target will be combined under `UnknownTarget` in the Contact Queue report.

`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.

email Section

`defaultServiceThreshold`

Type: Optional
 Default Value: `0s`
 Valid Values: See [Threshold Format](#)
 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 `emailVirtualQueues` 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
 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.

It should be noted that the default for this Option is the same as that for voice and chat (UnknownTarget). If the adapter is monitoring multiple media and the defaults are retained, the calls or interactions that cannot be allocated to a proper target will be combined under UnknownTarget in the Contact Queue report.

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 NotReady ReasonCode that will be reported as the equivalent of AfterCallWork for the email statistics in the reports and will be reported as the AfterEmailWork RTA state..

The text string must be contained in the Reason.ReasonDescription attribute of an email NotReadyForMedia event.

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 RTA) in the contact center.

event.properties Section

callType.determiner

Type: Optional
 Default Value: eventAttribute: ThisQueue
 Valid Values: eventAttribute: {EventQueued attribute name}
 class: {custom Java class name}
 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: `eventAttribute: {EventEstablished attribute name}`
 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.

ignoreRONAEventAttribute

Type: Optional
 Default Value: *Not set*
 Valid Values: `UserData. {RONA identifier field name}`
 Dependencies: None

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. Attaching and removing this `UserData` field for specific events is critical for the accurate reporting of routing with RONA calls.

Note: Contact Professional Services prior to configuring this option.

interactionTarget.determiner

Type: Optional
 Default Value: `eventAttribute: ThisQueue`
 Valid Values: `eventAttribute: {EventPlacedInQueue attribute name}`
`class: {custom Java class name}`

Dependencies: chat/enabled, email/enabled

This option specifies how an email and/or chat target is determined from the attributes associated with the Interaction event.

Examples: eventAttribute: ThisQueue
 eventAttribute: interactionProperties.interactionQueue
 eventAttribute: UserData.VQ_Name

reason.logout.determiner

Type: Optional
 Default Value: eventAttribute: Extensions.ReasonCode
 Valid Values: eventAttribute: {EventAgentLogout attribute name}
 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. This Reason Code will be reported as the Sign-Off reason in the Agent Sign-On/Sign Off report and included as the reason code that forms part of the RTA state transition associated with the logout event.

reason.notReady.determiner

Type: Optional
 Default Value: eventAttribute: Reasons.ReasonCode
 Valid Values: eventAttribute: {EventAgentNotReady attribute name}
 class: {custom Java class name}
 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.

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.

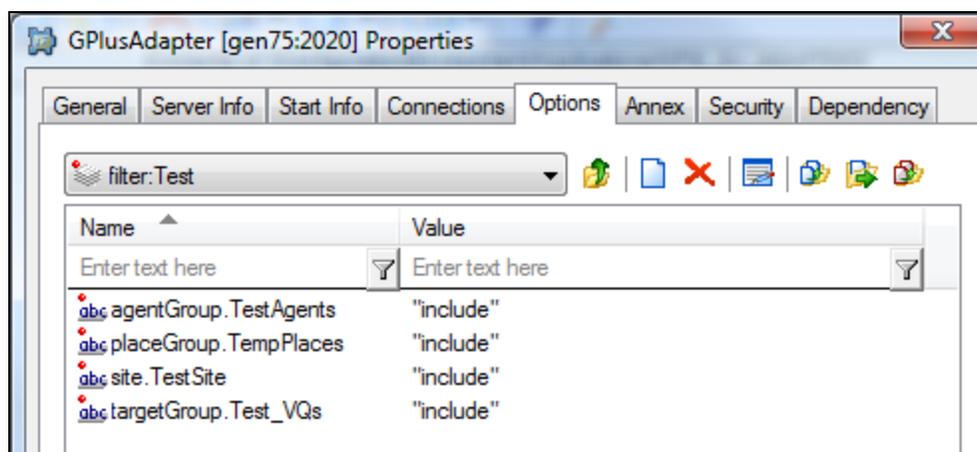
Filters combined with the Stream configurations ([historical](#) and/or [rta](#)) allow the *Gplus* Adapter to support multiple IEX TotalView servers if required.

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 `dataGroup` option allows an alternative method for including groups of Agents. Adding an AgentGroup to a DataGroup is described in a following [section](#). 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
- `dataGroup.<DataGroupName>` : 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 more attention as to how the AgentGroups, PlaceGroups and DNGroups (VQs) are defined in the Configuration Server.

The figure below shows an example where the *Test* filter has been configured:



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:	None
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 Contact Queue, Agent System Performance or Agent Sign-on/Sign-off reports. Additionally, an excluded agent's call activity will not be included in the Contact Queue report; 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:	<code>include</code>
Valid Values:	<code>include</code> , <code>exclude</code>
Dependencies:	None

OR

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

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's (VQs) 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's 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.

backupRetentionDays

Type: Mandatory
 Default Value: 30
 Valid Values: Any positive integer
 Dependencies: localBackupDirectory

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.

connectionMode

Type: Optional
 Default Value: active
 Valid Values: active, passive
 Dependencies: Ignored if secureTransfer 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: *Not set*
 Valid Values: Path to SSH private key file
 Dependencies: secureTransfer

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 conf ig 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.

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: *Not set*
 Valid Values: Host Name or IP Address of the WFM 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.

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 <code>userName</code> .

This option specifies the password for the user identified by the `userName` Option and is required to establish the connection to the ftp server.

historical.reports Section

countIrregularIncoming

Type:	Optional
Default Value:	<code>false</code>
Valid Values:	<code>true</code> , <code>false</code>
Dependencies:	None

This option specifies whether non-routed calls received by an agent will be reported in the Agent System Performance report as internal calls and their handle time allocated toward internal call time. The default adapter behavior is to report only incoming calls with the Genesys `CallType` of `CallInternal` as internal calls. If this option is set to `true`, all non-routed incoming calls received by the agent are counted as internal no matter what their Genesys `CallType` (`CallInbound`, `CallConsult`, etc.).

dailyReportEnabled

Type:	Optional
Default Value:	<code>true</code>
Valid Values:	<code>true</code> , <code>false</code>

Dependencies: None

This option specifies whether the daily Agent Sign-on/Sign-off report will be generated by the *Gplus* Adapter. Daily reports are not required for all WFM integrations since some are replaced by RTA applications or require that optional WFM modules be purchased. This report will be the first report in the report file that is generated at midnight.

directory

Type: Mandatory
 Default Value: ftp/reports
 Valid Values: Any valid folder on the *Gplus* 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: Not set
 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 following three reports will be included in the report file generated by the *Gplus* Adapter on the interval specified by the `intervalReport.interval` Option:

- Contact Queue Report
- Agent Contact Queue Report
- Agent System Performance Report

intervalReport.interval

Type: Mandatory
 Default Value: 15
 Valid Values: 15, 30
 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.

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 IEX TotalView 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

- [countIrregularIncoming](#)
- [dailyReportEnabled](#)
- [enabled](#)
- [filter](#)
- [includeOutboundInternalInNOC](#)
- [intervalReportEnabled](#)
- [intervalReport.interval](#)
- [reportRetentionDays](#)
- `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.

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 IEX server.

- [ftp.keyPath](#)
- [ftp.keyPassphrase](#)

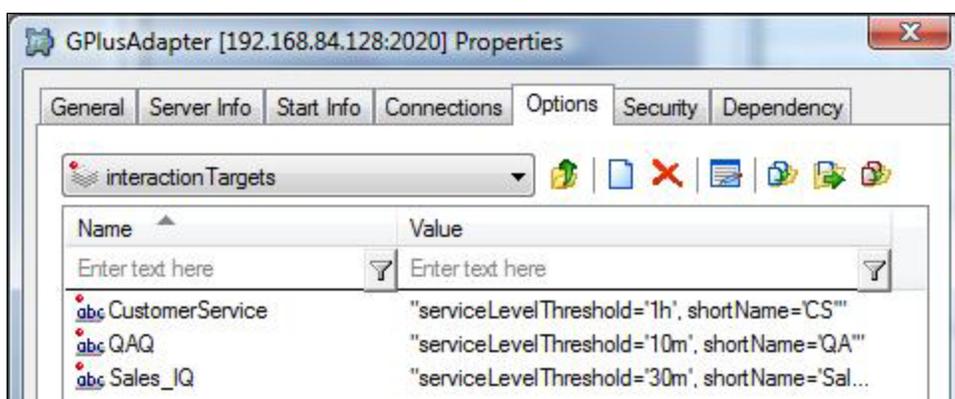
- [ftp.localBackupDirectory](#)
- [ftp.localSourceDirectory](#)
- [ftp.remoteDestinationDirectory](#)
- [ftp.remoteHost](#)
- [ftp.remotePort](#)
- [ftp.secureTransfer](#)
- [ftp.userName](#)
- [ftp.userPassword](#)

interactionTargets Section

This Section is optional and is used when Interaction Queues are used within Business Process Routing Strategies as the reporting objects. If only Virtual Queues defined on a Multimedia Switch are used as report objects for iWD/OpenMedia or chat, this Section is not required. The situation is slightly different for email Interaction Queues as the emails must also be tracked after they leave the agent's desktop so outbound queues or Quality Assurance queues must be monitored. This is explained in more detail in the following section.

The *Gplus* Adapter will report on the list of Interaction Queues contained within this 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` (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



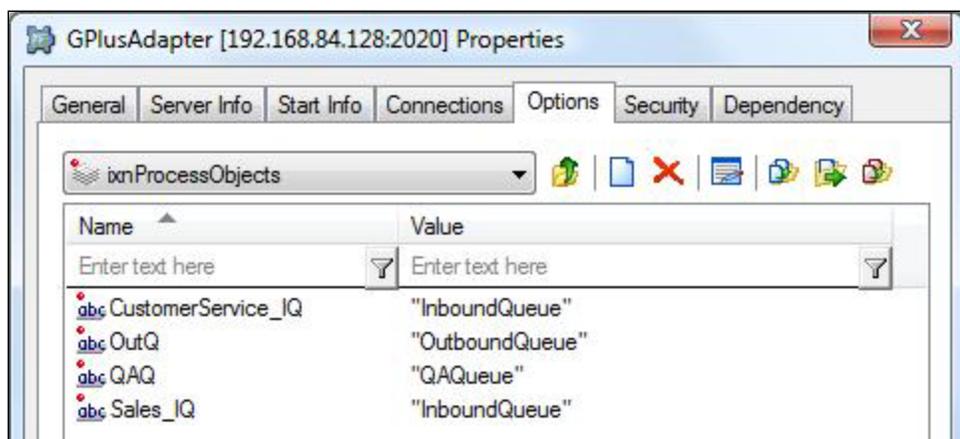
ixnProcessObjects Section

The *Gplus* Adapter uses the list of Interaction Queues contained in this Section to determine how to report on email 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 in sending an email reply, transferring a routed email or holding an email for quality assurance routing must be added and categorized in this Section with one exception: Interaction Queues where emails 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

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 straight forward 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

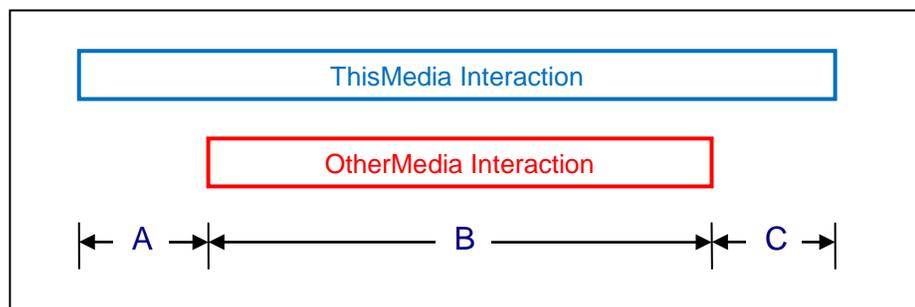
This option identifies the Reason string attached to a NotReady event that will signify the start of a Wrap (AfterInteractionWork) state rather than an Unavailable state.

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 [Threshold Format](#)
 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 Threshold Format
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 wrap up time is defined as the time that the agent spends in an `AfterInteractionWork` 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,
 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.

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.

otherIdDeterminer

Type: Optional
 Default Value: *Not Set*
 Valid Values: Any valid determiner.
 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

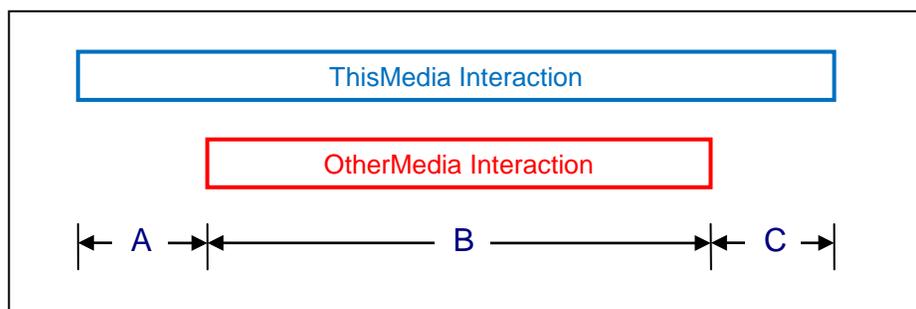
Type: Optional
 Default Value: *Not Set*
 Valid Values: Comma delimited list of media names.
 Dependencies: `OtherMedia`,
`associationType`

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.

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.

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: *Not Set*
 Valid Values: Any valid determiner
 Dependencies: `OtherMedia`,
`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

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.

enabled

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

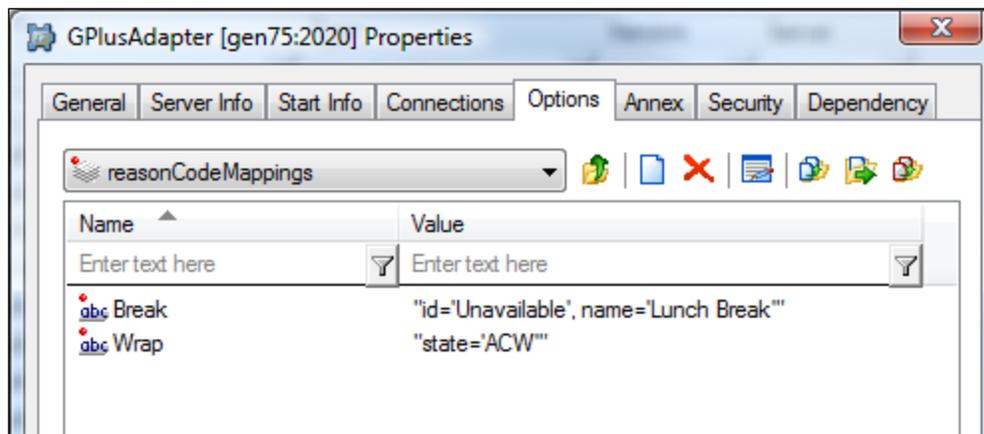
This option allows users to enable reporting of outbound campaign calls in the Contact Queue and Agent Contact Queue reports.

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

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 can be either 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 message sent to the WFM server. 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.

filter

Type: Optional

Default Value: *Not set*
 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.

`iex.listenPort`

Type: Mandatory
 Default Value: 6999
 Valid Values: Any open port on *Gplus* Adapter host
 Dependencies: None

The port that the *Gplus* Adapter listens on while waiting for a connection request from the IEX RTA application

`iex.password`

Type: Optional
 Default Value: IEX
 Valid Values: Any alphanumeric password.
 Dependencies: `iex.userName`

The listen port can be configured to require a password from the connecting IEX RTA application. This option specifies the password for a valid socket request.

`iex.userName`

Type: Optional
 Default Value: Blank (empty text string)
 Valid Values: Any alphanumeric user name.
 Dependencies: `iex.password`

The listen port can be configured to require a user name from the connecting IEX RTA application. This option specifies the user name for a valid socket request.

`stateTransformer.class`

Type: Mandatory
 Default Value: `com.ariasolutions.icconnect.rta.IexBaseRTAStateTransformer`
 Valid Values: `com.ariasolutions.icconnect.rta.IexBaseRTAStateTransformer`

Dependencies: None

This option specifies the Java class that defines the mapping of Genesys events to state transitions in the RTA data stream. There is a standard mapping for each vendor that is defined by the behavior of the state transformer class.

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 IEX TotalView Server. The Options are listed below but are not discussed here as they directly correspond to those listed in the [rta](#) section.

Options

- [enabled](#)
- [filter](#)
- [iex.listenPort](#)
- [iex.password](#)
- [iex.userName](#)
- [stateTransformer.class](#)

voice Section

defaultAbandonedThreshold

Type: Optional
 Default Value: 0s
 Valid Values: See [Threshold Format](#)
 Dependencies: None

This option specifies the default abandoned threshold for the Abandoned In Threshold column in the Contact Queue report. This option is set when a single abandoned threshold is used for all voice targets. Individual abandoned thresholds can be set for each voice target/queue by [adding Annex Data](#) to the voice Virtual Queues included in the `genesys.queueGroups` Section.

defaultServiceThreshold

Type: Optional

Default Value: 0s
 Valid Values: See [Threshold Format](#)
 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.

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.

isAfterCallWork.class

Type: Optional
 Default Value: Not Set

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 with a Nortel Switch to report all `NotReady` time as After Call Work.

`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.



Chapter

4 Additional Configuration

Adding T-Servers and Interaction Servers

The application establishes connections with the TServers, SIP Servers and Interaction 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

Note: Each field size is restricted to two characters so none of the numbers can be larger than 99. It would be advisable to use the ranges specified above.

Adding Annex Data for Virtual Queues and Skills

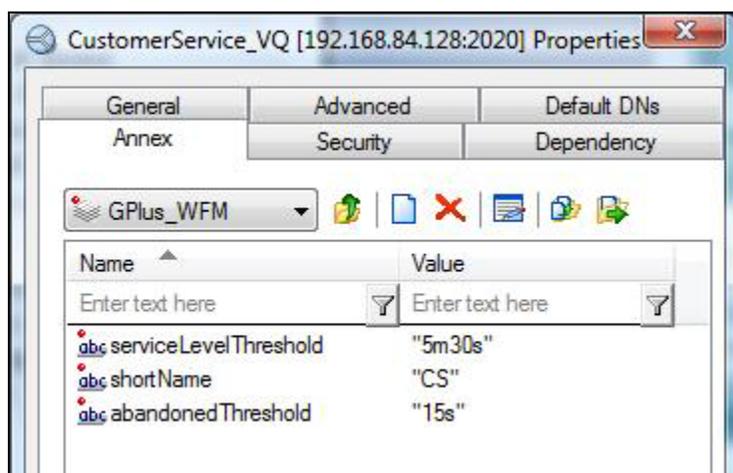
This section discusses adding individual configuration to a Skill or Virtual Queue with the end result being additional configuration of the associated call/interaction target. Three parameters can be added to these Configuration Objects to modify the reported results:

- `abandonedThreshold`
- `serviceLevelThreshold`
- `shortName`

The Contact 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 figure below 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` or `abandonedThreshold` 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` or `abandonedThreshold` with value equal to the new threshold as described [above](#).

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.

Adding A PlaceGroup to a Site

All of the 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

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 IEX 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 `conf ig` folder of the Adapter installation.

Storing the public key will be specific to the SSH server that has been used on the IEX 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.



Chapter

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 four types of Genesys outbound campaigns that can be monitored by the *Gplus* Adapter:

1. Predictive
2. Progressive
3. Preview
4. Push Preview

The first two, Predictive and Progressive, are routed to the agent after being dialed by the dialer while the second two, Preview and Push Preview are essentially dialed from the agent's phone. All four types have a campaign name included in the event attributes that the `event.properties/campaignTarget.determiner` can parse. The relevant difference is that the Adapter can also determine the campaign name for the Predictive and Progressive campaign types by using the `event.properties/callType.determiner`.

Predictive and Progressive Campaigns

Both the Predictive and Progressive campaign types have call flows where the outbound calls are queued prior to the call reaching an agent's desktop. The target/queue for the call can be determined using the `callType.determiner` used for inbound calls. It should be noted that the determiner identifies the target at the queue prior to the call arriving at the agent's desktop. Depending upon whether those queues are monitored by the adapter

and the `callType.determiner` can parse a viable target/queue name, that outbound call may be counted in the Contact Queue report. However, this is not the typical method for associating the outbound calls with the appropriate outbound campaign.

The Adapter defaults to using the `campaignTarget.determiner` to determine the campaign name from the `EventEstablished` that is generated as the agent joins the call. This occurs even if the call were queued in monitored `Virtual Queues` prior to being established and, in most cases, will be the appropriate method for assigning the call to a particular outbound campaign. If required, this behavior can be overridden by setting the `campaignTarget.determiner` to parse a nonexistent event attribute, as an example, `eventAttribute: DoesNotExist`. The Adapter will then take the second choice, the name determined from the `EventQueued` on the monitored VQ.

Preview and Push Preview Campaigns

The Preview and Push Preview campaign types are restricted to using the `campaignTarget.determiner` to identify the campaign name. There are no VQs involved in the campaign call flows so there are no alternatives to how the campaign name will be parsed when the call is established at the agent's desktop. As mentioned, this is the default behavior for the Adapter and the campaign calls will be reported in the Contact Queue report.

Non Campaign Outbound Calls

If the both the `campaignTarget.determiner` and the `callType.determiner` fail to parse a campaign name for an outbound call, the call will not be reported in the Contact Queue report. These calls will be regarded as outbound calls but they will be counted in the Agent System Performance report as non-customer outbound activity.



Chapter

7 Streams and Filters

Multiple Streams

Prior versions of the adapter were limited to a single Stream where there was one set of historical reports generated and one RTA connection supported. Multiple Streams allow subsets of the accumulated data to be sent to different IEX TotalView servers through the use of Filters that identify the data subsets and Streams that identify the destination for that data.

Filters are configured as separate Option Sections in the *Gplus* Adapter Configuration 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.



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

Appendix A: Time Zone ID List

Africa/Ouagadougou	Africa/Porto-Novo	Africa/Sao_Tome
Africa/Timbuktu	Africa/Tripoli	Africa/Tunis
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

Appendix A: Time Zone ID List

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/Aqtau	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

Appendix A: Time Zone ID List

Asia/Krasnoyarsk	Asia/Kuala_Lumpur	Asia/Kuching
Asia/Kuwait	Asia/Macao	Asia/Macau
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

Appendix A: Time Zone ID List

Canada/Yukon	Chile/Continental	Chile/EasterIsland
Cuba	EAT	ECT
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

Appendix A: Time Zone ID List

Europe/Zaporozhye	Europe/Zurich	GB
GB-Eire	GMT	GMT0
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/Fakaofo	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

Appendix A: Time Zone ID List

US/East-Indiana	US/Eastern	US/Hawaii
US/Indiana-Starke	US/Michigan	US/Mountain
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 `Permi tEmptyPasswords` 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 Reading Log Files

Log 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 there, the log files will have the prefix of GP LusAdapterWFM.

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:

```
GP LusAdapterWFM.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:

```
GP LusAdapterWFM.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.icconnect.Application - Launching GPlus Adapter
```

1. 01 Jan 2012 12:00:02,000
2. 2000
3. [main]
4. INFO
5. com.ariasolutions.icconnect.Application
6. 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 that has generated the message.

The **sixth** field is the description of what has occurred to generate the message.

Events and Server Identification

Events are logged 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 `GPUSWFM` prefix for the Adapter's host time (`GPUSWFM.LocalTime`) and the Genesys Server time (`GPUSWFM.RemoteTime`). The `GPUSWFM.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 `GPUSWFM.SourceId` and `GPUSWFM.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=000000000005c85e,
target=VQ_4847]
24 May 2012 21:59:33,613 - 165288 ... - Received event from 'TServer2'
EventQueued
  CallType: Inbound
  ConnID: 000000000005c85e
  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.
