Genesys Predictive Routing

Genesys Configuration Options Current

3/12/2020

Table of Contents

Genesys Predictive Routing Options Reference

Welcome to the Options Reference for . This document provides full information about all the configuration options that are set on the application object and in –related configuration sections on other objects, such as DNs.

Options for this product are grouped into the following components:

- Data Loader
- Predictive_Route_DataCfg

Data Loader

Options for this component are contained in the following configuration sections:

> **Tip**
>
> In the summary table(s) below, type in the Search box to quickly find options, configuration sections, or other values, and/or click a column name to sort the table. Click an option name to link to a full description of the option. Be aware that the default and valid values are the values in effect with the latest release of the software and may have changed since the release you have; refer to the full description of the option to see information for earlier releases.
>
> **Power users:** containing default and valid values and descriptions.

The following options are configured at the application level (in other words, on the application object).

default Section

confserv-monitoring-reconnect-count

Default Value: 1
Valid Values: Integers from 10-1000
Changes Take Effect: On restart

Specifies the maximum number of reconnect attempts to Configuration Server before Data Loader generates log event 107-60706, for which you should set an alarm. To be exact, if Data Loader detects a switchover or disconnection the number of times set in this option during the time period set in the **[default].confserv-monitoring-reconnect-min** option, Data Loader generates the log event. The cancel event for this alarm should be 107-60707.

confserv-monitoring-reconnect-min

Default Value: 1
Valid Values: Integers from 10-1000
Changes Take Effect: On restart

Specifies a time interval, in minutes, that Data Loader uses when monitoring multiple Configuration Server switchover events. If Data Loader detects as many switchovers or disconnects as specified in the **[default].confserv-monitoring-reconnect-count** during the time period configured in this option, Data Loader generates log event 107-60702, for which you should set an alarm.

ignore-ascii-characters

Default Value: false
Valid Values: true, false
Changes Take Effect: On restart

Enables you to specify how Data Loader handles Agent Profile columns with the following unsupported ASCII characters: [Space], -, <, >.

- To have Data Loader remove the specified characters for Agent Profile schema columns, but add the affected columns to the schema, set the option to **true**.
- To have columns with the specified characters entirely omitted from the schema, set the option to **false** (the default value).

Important: Columns with other unsupported characters continue to be omitted from the schema. For a complete list of unsupported characters, see Configure Agent Profiles in the *Predictive Routing Help*.

include-groups

Default Value: No default value
Valid Values: A comma-separated list of valid agent group names
Changes Take Effect: On restart

Use this option to specify a list of agent groups for Data Loader to monitor for configuration changes. This list is a subset of the total list of groups present in agent profiles. Data Loader ignores all groups except those you list. To monitor all groups, leave the option value empty (the default setting).

For example, you might set the value of this option as follows to have Data Loader monitor only two groups:
`"GROUP1,GROUP2"`

include-skills

Default Value: No default value
Valid Values: A comma-separated list of valid skill names
Changes Take Effect: On restart

Use this option to specify a list of skills for Data Loader to monitor for updates. This list is a subset of the total list of skills present in agent profiles. Data Loader ignores all skills except those you list. To monitor all skills, leave the option value empty (the default setting).

For example, you might set the value of this option as follows to have Data Loader monitor only two skills:
`"CLOSING_AN_ACCOUNT,SALES"`

password

Default Value: none
Valid Values: A valid password
Changes Take Effect: After restart

Specifies the password Data Loader should use to connect to Genesys Predictive Routing.

platform-api-key

Default Value: No default value
Valid Values: A valid Predictive Routing API key
Changes Take Effect: After restart

Specifies an access key that is used by Data Loader to access the Genesys Predictive Routing API. To obtain the value of this option, open the **Accounts** tab in the Predictive Routing user interface and click the name of your account. The **API key** field appears on the **Account** configuration window. For details, see Configuring Accounts in the *Genesys Predictive Routing Help*.

platform-auth-url

Default Value: No default value
Valid Values: (string) A valid Predictive Routing URL
Changes Take Effect: Immediately

Specifies the Genesys Predictive Routing API authentication endpoint URL. This value is the host name of the server where you access Predictive Routing, followed by **/api/v2.0/authenticate**.

platform-base-url

Default Value: No default value
Valid Values: (string) A valid Predictive Routing URL
Changes Take Effect: After restart

Specifies the common substring of Genesys Predictive Routing API endpoint URLs. This value is the host name of the server where you access Predictive Routing.

You must specify **https://** in the base URL string.

platform-update-thread-wait-timeout

Default Value: 50
Valid Values: Any positive integer
Changes Take Effect: On restart

Specifies the thread waiting timeout, in milliseconds, used when Data Loader subscribes to updates from the Predictive Routing platform. This timeout can prevent a polling loop from taking up unacceptable CPU bandwidth at busy periods.

platform-username

Default Value: No default value
Valid Values: (string) Any valid email address registered with Predictive Routing.
Changes Take Effect: After restart

Specifies the username Data Loader uses to connect to the Genesys Predictive Routing platform.

skip-groups

Default Value: False
Valid Values: True, False
Changes Take Effect: After restart

If this parameter set to **true**, Data Loader ignores all Configuration Server data about groups and events connected with updates to groups.

Set this option to **true** if the scoring request **action_filters** field contains only the skill expression filters and does not include filters by Agent Group names. Data Loader then skips reading Agent Group information from Configuration Server, which should significantly reduce Data Loader initialization time on start up.

Set this option to **false** to have Data Loader use the previously-stored agent profiles.

dataset-<name> Section

The **dataset-<name>** section is used to configure Datasets, in combination with the corresponding **schema-<name>** section. The <*name*> part of the section name should be replaced by a Dataset name of your choice.

Create multiple **dataset-*** sections, each containing the necessary options. Each one corresponds to a Dataset. Note that a Dataset configured in a **dataset-<name>** section can include fields joined from other Datasets, and/or from the Agent Profile and Customer Profile. This joining is also controlled by options configured in that section.

Special Dataset Names and Configuration

The following section names are reserved for the Agent Profile dataset, which is created by direct import from Genesys Info Mart, and the Customer Profile dataset. These reserved names cannot be used for any other purpose. Each has particular configuration options that must be included, while others can be omitted. If an option has a value specified, that option requires that value when you in that section.

- **dataset-agents-gim**
  - **sql-query**
  - **data-type**=agents
  - **enforce-schema-on-joined-data**
  - **join**
  - **join-type**
  - **upload-dataset**
- **dataset-customers**
  - **csv-separator**
  - **data-type**=customers
  - **join-keys**
  - **location**
  - **upload-dataset**

Sections configuring uploads of interaction data from the Genesys Info Mart database do not have a mandatory name, but they do have mandatory options, and some of those options have mandatory values. For example, you might name this section **dataset-interactions-aht**. Interaction datasets require the following options:

-
  - **chunk-size**
  - **sql-query**
  - **data-type**=interactions
  - **enforce-schema-on-joined-data**
  - **join**

- **join-type**
- **upload-dataset**

Note: Interaction datasets are only uploaded from the direct connection to the Genesys Info Mart database. To add other interaction-related data, such as feedback or outcome data not stored in the Genesys Info Mart database, upload a CSV file with the **data-type** option set to `outcomes`.

Sections configuring CSV uploads of agent data do not have a mandatory name, but they do have mandatory options, and some of those options have mandatory values.

- For example, you might name this section **dataset-agents-csv**. It requires the following options:
  - **csv-separator**
  - **data-type**=agents
  - **join-keys**
  - **location**
  - **upload-dataset**

See Configure Data Loader to Upload Data for a comprehensive discussion of how the **dataset-<name>** and **schema-<name>** sections, and their options, work together to configure data for upload.

chunk-size

Default Value: PT15M (15 minutes)
Valid Values: String in ISO 8601 duration format, PT1S (1 second) or higher
Changes Take Effect: Immediately

Defines the chunk size, defined as interactions that happened within the specified length of time, used when extracting data from the Genesys Info Mart Database for a dataset of the *interactions* data type. Interactions that started within the chunk, as defined by this option value, are uploaded to the GPR Core Services platform as a single file and are then appended to the previously uploaded data for the associated dataset.

csv-separator

Default Value: comma
Valid Values: comma, tab
Changes Take Effect: Immediately

Indicates the separator used in CSV data files that Data Loader is to upload, as indicated in the **location** option configured in the same section. This option is necessary only if you are configuring a Dataset that is to be created by uploading a CSV file.

data-type

Default Value: No default value
Valid Values: agent, customer, interactions, outcomes
Changes Take Effect: Immediately

Specifies the type of Dataset you are uploading.

- **agent** - Data Loader uploads the data to the Agent Profile on the GPR Core Services platform. This data can come from Genesys Info Mart or from a CSV file. You can also join it with a Dataset of the "interactions" type.
- **customer** - Data Loader uploads the data to the Customer Profile on the GPR Core Services platform. Its source is a CSV file. You can also join it with a Dataset of the "interactions" type.
- **interactions** - The Dataset contains interactions extracted from Genesys Info Mart database, which Data Loader uploads to the GPR Core Services platform. This data can optionally be joined with the Datasets of the "agents", "customers", or "outcomes" types before it is uploaded.
- **outcomes** - The Dataset contains information extracted from sources other than the Genesys Info Mart database and that is provided as a CSV file, which Data Loader uploads to the GPR Core Services platform. This data can optionally be joined with the Datasets of the "interactions" type.
  Note: This data type is used for *any* data that is not of the "interactions" type and that is being uploaded to a Dataset with a user-specified name (that is, a Dataset other than **dataset-agents-gim** or **dataset-customers**). The data you are uploading does not have to be literal outcome data.

end-date

Default Value: 1970-01-01
Valid Values: date in YYYY-MM-DD format
Changes Take Effect: After 15 min timeout

The last date in the period for which Data Loader should retrieve data for a dataset. This date can be in the future.

- Change the default value to a date suitable for your environment. For example, you might enter 2020-11-04.

This option is required for datasets of the **interactions** and **outcomes** types. It is not used for datasets of the **customers** and **agents** types.

enforce-schema-on-joined-data

Default Value: true
Valid Values: true, false
Changes Take Effect: After 15 min timeout

- If set to **true**, all fields are joined to the "interactions" Dataset from the Datasets listed in the **join** option configured in the same section.
- If set to **false**, all fields from the Datasets listed in the **join** option configured in the same section are added to the "interactions" Dataset.

join

Default Value: No default value
Valid Values: a comma-separated list of section names containing dataset configurations
Changes Take Effect: After 15 min timeout

Specifies the list of the Datasets of the "agents", "customers", or "outcomes" types to join with the current "interactions" Dataset prior to upload to the GPR Core Services platform.

This join can be inner or outer depending on the value of the **join-type** option configured in the same section. The following examples show what you join depending on the value or values specified for this option:

- **agents** - Joins interaction data obtained from Genesys Info Mart with agent information uploaded from Genesys Info Mart or from a CSV file.
- **customers** - Joins interaction data obtained from Genesys Info Mart with customer information uploaded from a CSV file.
- **fcr** - Joins interaction data obtained from Genesys Info Mart with first call resolution (FCR) interaction outcome data provided in a CSV file. For this value to be valid, you must have configured **dataset-fcr** and **schema-fcr** sections.
- **agents, customers** - Joins interaction data obtained from Genesys Info Mart with the data from the Agents and Customer profiles.
- **agents, customers, fcr** - Joins interaction data obtained from Genesys Info Mart with the data from the the Agents and Customer profiles and the FCR interaction outcome data.

join-keys

Default Value: No default value
Valid Values: Comma-separated list of column names
Changes Take Effect: After 15 min timeout

A comma-separated list of the column names defined in the **schema-agents-gim** section that contain key values by which to join the data from this agent Dataset to an interaction type Dataset.

join-type

Default Value: inner
Valid Values: inner, outer
Changes Take Effect: After 15 min timeout

- **inner** - Only the records successfully joined with the specified Datasets (outcomes, agents, customers, FCR, and so on) are uploaded to the GPR Core Services platform. This is the the typical value used in production environments.
- **outer** - All interaction records are uploaded to the GPR Core Services platform. Any missing data is replaced with **null** values. Typically this value is used only for troubleshooting.

location

Default Value: No default value
Valid Values: A valid path name string for a file containing a dataset in CSV format
Changes Take Effect: After 15 min timeout

Specifies the path to a CSV file containing a dataset. Required for the datasets provided as CSV files.

Configure the file location as described in the following steps:

1. Place the file itself in the Data Loader IP folder structure using the following path:
   `<ip_folder>/ai-data-loader-scripts/scripts/datasets_<dataset_type>`
2. Specify the location as the value for the **location** option using only the final part of the full path:
   `/datasets/<dataset_type>`

The possible dataset types are **agents**, **customers**, and **outcomes**.

Example:

- The folder path for the Customer Profile dataset is: `<ip folder>/ai-data-loader-scripts/scripts/datasets_customers`
- The **location** option value for this file is `/datasets/customers`

Note: Interactions are only uploaded using the direct Genesys Info Mart-Data Loader connection. If you are uploading additional interaction data from a CSV file, use the **outcome** dataset type.

If you want to update the dataset using a new CSV file, it must have the same file name or the option value must be changed to reflect the new file name. In either case, the folder where the file is located must remain the same.

sql-query

Default Value: file:/dl/agents_data_gim.sql
Valid Values: A string starting with "file:" and followed by a valid path to a file in the Data Loader Docker container containing an SQL query
Changes Take Effect: After 15 min timeout

This option is mandatory when configuring Data Loader to upload data from the Genesys Info Mart database; that is, when configuring upload of Agent Profile data and interactions data. Datasets created from CSV files, such as

Customer Profile data, outcomes data, and agent data from sources other than Genesys Info Mart, do not require you to configure the **sql-query** option.

Two default SQL queries are provided in the Data Loader installation package:

- **/dl/interaction_data_aht.sql** - the query to collect the interactions dataset for the AHT metric.
- **/dl/agents_data_gim.sql** - the query to collect the default Agent Profile dataset.

The following is an example of a valid value for this option: **file:/dl/agents_data_gim.sql**

If you need to create your own SQL query, see Create your own SQL query in the *Deployment and Operations Guide*.

start-date

Default Value: 1970-01-01
Valid Values: date in YYYY-MM-DD format
Changes Take Effect: After 15 min timeout

The earliest date in the period for which Data Loader should retrieve data for a dataset.

- Change the default value to a date suitable for your environment. For example, you might enter 2018-11-29.

This option is required for datasets of the **interactions** and **outcomes** types. It is not used for datasets of the **customers** and **agents** types.

update-period

Default Value: P24H
Valid Values: String in ISO 8601 duration format, from PT15M to P30D
Changes Take Effect: After 60 sec timeout
Related Options: chunk-size

Specifies the interval at which Data Loader uploads data, enabling fresh data stored in the Genesys Info Mart database to be automatically uploaded to the associated dataset. Used with **dataset-agents-gim** and the main interactions dataset, dataset, which are created directly from Genesys Info Mart data.

- If this value is less than the value for the **chunk-size** option, Data Loader uploads all data since the watermark marking the end of the previous upload.
- If this value is larger than the value of the **chunk-size** option, Data Loader uploads from the watermark, indicating when the previous upload stopped, to the end of the period specified in the **chunk-size** option.

Examples

- If **update-period** is set to 1 day (P1D) and **chunk-size** is set to one hour (P1H), all the data since the previous watermark is uploaded in 1-hour chunks. This chunking is designed to prevent overloading your infrastructure.
- If you are uploading a dataset for the first time and set the start date to 90 days in the past, **update-period** to 1 day (P1D), and **chunk-size** to 30 days, then Data Loader uploads the 90 day's worth of data in three 30-day chunks.

upload-dataset

Default Value: true
Valid Values: true, false
Changes Take Effect: After 60 sec timeout

Notifies Data Loader that the dataset is fully configured and the data processing for this dataset can be started. Data Loader checks every 60 seconds to see whether the value of this option has changed.

If set to **true**, Data Loader starts the Dataset upload. If set to **false**, Data Loader does not upload data.

schema-<name> Section

The **schema-<name>** section is used to define the schema for the dataset with the matching **<name>**. That is, the **schema-mydataset** section contains options describing the data schema to be used in the dataset configured in the **dataset-mydataset** section.

The options in the **schema-<name>** sections depend on the requirements for the specific dataset. Each option name is a dataset column name. The option values are the value for the field (which might be the joined schema from which the value is obtained), the datatype, and, if the field contains sensitive or PII data, the value `anon`.

Special Schema Names and Configuration

The following section names are reserved for the Agent Profile schema and Customer Profile schema, and cannot be used for any other purpose.

- **schema-agents-gim**
- **schema-customers**

See Configure Data Loader to Upload Data for the options required for each type of reserved schema configuration section.

No public options in this section.

log Section

all

Default Value: stdout
Valid Values: stdout, stderr, network, memory, <filename>
Changes Take Effect: Immediately

Specifies the outputs to which an application sends the log events of the **all** level.

- stdout - Log events are sent to the Standard output (stdout).
- stderr - Log events are sent to the Standard error output (stderr).
- network - Log events are sent to Message Server, which can reside anywhere on the network. Message Server stores the log events in the Log Database.
  Setting the **all** log level option to the network output enables an application to send log events of the Standard, Interaction, and Trace levels to Message Server. Debug-level log events are neither sent to Message Server nor stored in the Log Database.
- memory - Log events are sent to the memory output on the local disk. This is the safest output in terms of the application performance.
- <filename> - Log events are stored in a file with the specified name. If a path is not specified, the file is created in the application working directory.

The log output types must be separated by a comma when more than one output is configured. For example:

all = stdout, logfile

If you specify a file path, you must use the following format: **/log/asc/*Expected_File_Name*** . This is the default path used by the **docker-compose.yml** file, which maps the Data Loader log directory the specified folder in the host machine. If you want to use a different log file location, you must specify the in both the all option and the **docker-compose.yml** file.

standard

Default Value: stdout
Valid Values: stdout, stderr, network, memory, <filename>
Changes Take Effect: Immediately

Specifies the outputs to which an application sends the log events of the Standard level.

- stdout - Log events are sent to the Standard output (stdout).
- stderr - Log events are sent to the Standard error output (stderr).
- network - Log events are sent to Message Server, which can reside anywhere on the network. Message Server stores the log events in the Log Database.
  Setting the all log level option to the network output enables an application to send log events of the Standard, Interaction, and Trace levels to Message Server. Debug-level log events are neither sent to Message Server nor stored in the Log Database.
- memory - Log events are sent to the memory output on the local disk. This is the safest output in terms of the application performance.
- <filename> - Log events are stored in a file with the specified name. If a path is not specified, the file is created in the application working directory.

The log output types must be separated by a comma when more than one output is configured. For example:

standard = stderr, network

verbose

Default Value: standard
Valid Values: all, debug, trace, interaction, standard, none
Changes Take Effect: Immediately

Determines whether a log output is created. If it is, specifies the minimum level of log events generated. The log events levels, starting with the highest priority level, are Standard, Interaction, Trace, and Debug.

- all - All log events (that is, log events of the Standard, Trace, Interaction, and Debug levels) are generated.
- debug - The same as **all**.
- trace - Log events of the Trace level and higher (that is, log events of the Standard, Interaction, and Trace levels) are generated, but log events of the Debug level are not.
- interaction - Log events of the Interaction level and higher (that is, log events of the Standard and Interaction levels) are generated, but log events of the Trace and Debug levels are not.
- standard - Log events of the Standard level are generated, but log events of the Interaction, Trace, and Debug levels are not.
- none - No output is produced.

Predictive_Route_DataCfg

Options for this component are contained in the following configuration sections:

> **Tip**
>
> In the summary table(s) below, type in the Search box to quickly find options, configuration sections, or other values, and/or click a column name to sort the table. Click an option name to link to a full description of the option. Be aware that the default and valid values are the values in effect with the latest release of the software and may have changed since the release you have; refer to the full description of the option to see information for earlier releases.
>
> **Power users:** containing default and valid values and descriptions.

The following options are configured at the application level (in other words, on the application object).

default-predictor and <predictor_name> Section

> **Important**
>
> All options in this section can be configured either in the **[default-predictor]** section or the **[<*predictor_name*>]** section, where <*predictor_name*> is the user-configured name of a specific Predictor.

Some functionality has multiple options controlling the desired behavior:

- Agent Occupancy Options
- Agent Holdout Options
- Dynamic Interaction Priority Options

Agent Occupancy Options

Agent occupancy is the percentage of time that an agent is working while logged in, a service objective that can be specified when building a staffing forecast. Agent occupancy data is taken from Stat Server by URS using the SData function. Stat Server collects agent occupancy data using the StatAgentOccupancy statistic. The routing strategy filters agents by occupancy in the ScoreIdealAgent callback subroutine. The agent occupancy results are used to sort the agents in the target agent group; over-occupied agents drop down lower in the sorted list.

max-agent-occupancy-factor
max-agent-occupancy-threshold
min-agent-occupancy-factor
min-agent-occupancy-threshold
use-agent-occupancy

Agent Holdout Options

Agent hold-out enables you to have an interaction wait a specified time, even when an agent has become available, if the available agent is has a low score for the interaction and there is a chance a better-matched agent might become available within the configured time window.

initial-threshold-timeout
score-base-threshold
threshold-relaxation-step
threshold-relaxation-timeout

Dynamic Interaction Priority Options

If an interaction has a low score for all targeted agents, it can stay in a queue for a long time. To avoid such situations, you can configure a schedule for incremental priority increases. The schedule is set once for each interaction processed by GPR. The following options control interaction priority increments.

> **Important**
>
> If you already use priority increments for the strategy into which you are inserting the GPR subroutines, you doo not need to configure these options. If you are using priority increments only for predictive routing, use the following options to configure it.

priority-increment
priority-init-interval
priority-interval
set-dynamic-priority

ab-test-time-slice

Default Value: 1741
Valid Values: Any positive integer
Changes Take Effect: Immediately

Specifies the length, in seconds, of the periods of time when Predictive Routing and skill-based routing are alternately turned on when you have set the **[default-predictor].prr-mode** configuration option to `ab-test-time-sliced`. Genesys recommends that you do not set the value of this option to less than `600` seconds in a production environment.

context-id-key

Default Value: ANI
Valid Values: A valid customer ID or the ANI
Changes Take Effect: Immediately

Specifies the name of the user data key containing an ID for the current interaction, using which the Predictive

Routing scoring engine can retrieve a record from an internal database of customer profiles (CRM database) and use features from the record to compute agents scores for the interaction.

To incorporate customer profile data into models for matching the agents, a copy of the CRM database must be uploaded to the GPR Core Platform before you train a Model. The URS ActivatePredictiveRouting subroutine attaches a `context_id` key to the scoring request body and provides the value of the user data key defined by this option as the `context_id` value.

If the returned customer ID is empty or you set the option value to `ANI`, the interaction ANI is used.

default-agent-score

Default Value: No default value
Valid Values: A valid agent score
Changes Take Effect: On the next interaction

The option specifies the value the ScoreIdealAgent and isAgentScoreGood subroutines should use as the agent score for an interaction for those agents who belong to the target Agent Group but that GPR did not score. For example, an agent might be logged out, or in another status configured as unavailable, until after the scoring request it sent. If such an agent then becomes available before the interaction is routed, GPR assigns that agent the default score.

If an agent is assigned a score of 0, the agent is unlikely to receive an interaction from the queue.

Important: This option functions differently depending on the release of URS Strategy Subroutines you have deployed:

- In release 9.0.015.00 and higher, gpmAgentScore records the default score assigned to agents GPR did not score. The ScoreIdealAgent subroutine uses this value to sort the scores and the isAgentScoreGood subroutine compares it against any threshold you have configured to determine whether the agent is acceptable.
- In release 9.0.014.04 and lower, the gpmAgentScore user data KVP always contains the value `0` for unscored agents. The score specified in this option is used only when URS is sorting the agents in the target group according to their scores.

initial-threshold-timeout

Default Value: 0
Valid Values: (integer) 0 - <max>
Changes Take Effect: On the next interaction processed

Defines a timeout, in seconds, during which the `isAgentScoreGood` URS callback function uses an initial minimum agent score, defined by the **[default-predictor].score-base-threshold** option, to match agents to an interaction. After this timeout expires, the minimum score required to allow an agent to handle the interaction is gradually decreased.

login-status-expression

Default Value: no default value
Valid Values: &((loginStatus>0&loginStatus<23)|loginStatus>23), &(loginStatus=4|loginStatus=9)
Changes Take Effect: On the next interaction

If you set the value of the **[default-predictor].use-login-status** option to **true**, the value of the **login-status-expression** option is added to the action_filters expression in the ActivatePredictiveRouting_v3 subroutine when the scoring request is created.

- &((loginStatus>0&loginStatus<23)|loginStatus>23) - Instructs the scoring engine to evaluate scores for those agents identified as part of the target group by a skill expression or an Agent Group name who are logged into the voice channel.
- &(loginStatus=4|loginStatus=9) - Instructs the scoring engine to evaluate scores for those agents identified as part of the target group by a skill expression or an Agent Group name who are ready to accept an interaction, or have status AfterCallWork on the voice channel.

The following numerical values correspond to the following agent login states:

- 4 - WaitForNextCall (Ready)
- 5 - OffHook
- 6 - CallDialing
- 7 - CallRinging
- 8 - NotReadyForNextCall
- 9 - AfterCallWork
- 13 - CallOnHold
- 16 - ASM_Engaged
- 17 - ASM_Outbound
- 18 - CallUnknown
- 19 - CallConsult
- 20 - CallInternal
- 21 - CallOutbound
- 22 - CallInbound
- 23 - LoggedOut

max-agent-occupancy-factor

Default Value: 0.5
Valid Values: Float numbers between 0.0 and 1.0
Changes Take Effect: On the next interaction

If you set the value of the **use-agent-occupancy** option to **true**, and the value of the agent occupancy statistic is higher than the threshold specified in the **max-agent-occupancy-threshold** option, the ScoreIdealAgent subroutine multiplies the score received for each agent for the current interaction by a coefficient defined by this option.

max-agent-occupancy-threshold

Default Value: 100.0
Valid Values: Float numbers between 0.0 and 100.0
Changes Take Effect: On the next interaction

If you set the value of the **use-agent-occupancy** option to **true**, the ScoreIdealAgent subroutine compares the value of the occupancy statistic with the value you set in this option. If the occupancy value is higher than the specified threshold, the subroutine multiplies the score received for an agent for the current interaction by a coefficient defined in the **max-agent-occupancy-factor** option.

max-score

Default Value: 100
Valid Values: (integer) 1 - <max>
Changes Take Effect: On the next interaction processed

Defines the maximum score that an agent can be assigned for an interaction. The value of this option is used by the `ScoreIdealAgent` callback function to re-scale the agent score as the distance from an ideally matched agent for the interaction (assumed by URS to be `0`).

The value you set should correspond to the largest possible value returned by this Predictor from the scoring engine. To function properly, this value must be consistent with the value configured for the Predictor **Score expression** field. Because the GPR scoring engine and URS have different scales, you might need to adjust returned scoring values using the **Score expression** field in the Predictor configuration. See the instructions for how to configure this field in the "Creating and Updating Predictors" topic in the *Genesys Predictive Routing Help* for more information.

To take advantage of the most precise values, set **max-score** to `10000` and the value for Score expression in the Predictor configuration to `10000 * p_score`. (*p_score* is a term used in the GPR documentation to indicate the raw score returned from the scoring engine. It is not in any way derived from or related to the statistical term *P value*.) For example, if scores range from -4 to 10, use the following **p_score** - `((p_score + 5) / 16) * 100`.

min-agent-occupancy-factor

Default Value: 2.0
Valid Values: Float numbers higher than 1.0
Changes Take Effect: On the next interaction

If you set the value of the **use-agent-occupancy** option to **true**, and the value of the agent occupancy statistic is lower than the threshold specified in the **min-agent-occupancy-threshold** option, the ScoreIdealAgent subroutine multiplies the score received for an agent for the current interaction by a coefficient defined by this option. If the resulting adjusted score is higher than the value specified in the **max-score** option, the adjusted score is set to the value of the **max-score** option.

min-agent-occupancy-threshold

Default Value: 0.0
Valid Values: Float numbers between 0.0 and 100.0
Changes Take Effect: On the next interaction

If you set the value of the **use-agent-occupancy** option to **true**, the ScoreIdealAgent subroutine compares the value of the occupancy statistic with the value you set in this option. If the occupancy value is lower than the specified threshold, the subroutine multiplies the score received for an agent for the current interaction by a coefficient defined in the **min-agent-occupancy-factor** option.

platform-scoring-url

Default Value: none
Valid Values: A valid GPR API scoring endpoint + a valid Predictor ID
Changes Take Effect: On the next interaction processed

The ActivatePredictiveRouting strategy subroutine in URS uses the URL defined by this option as the HTTP address to send scoring requests to the GPR API. This URL should be the value for the **[default].platform-base-url** option with `<predictor_name>/score` appended.

You can locate the Predictor ID in messages returned from the GPR API or in the browser URL address when you are in the GPR web application with the page for the desired Predictor open.

priority-increment

Default Value: 1
Valid Values: (integer) any integer
Changes Take Effect: On the next interaction

Specifies the increment by which priority is increased each time.

priority-init-interval

Default Value: 300
Valid Values: (integer) any non-negative integer
Changes Take Effect: On the next interaction

Controls the time interval, in seconds, the strategy waits before starting to increment priority for a queued interaction.

priority-interval

Default Value: 10
Valid Values: (integer) any integer greater than 5
Changes Take Effect: On the next interaction

Specifies the time period, in seconds, between priority increments for a queued interaction.

prr-mode

Default Value: off
Valid Values: prod, off, ab-test-time-sliced, dry-run
Changes Take Effect: Immediately

Specifies whether an instance of Predictive Routing should run as a production instance or as a test instance.

- **prod** - All the interactions that pass through the ActivatePredictiveRouting strategy subroutine are processed using Predictive Routing.
- **off** - No interactions use Predictive Routing.
- **ab-test-time-sliced** - The periods of time when Predictive Routing and skill-based routing are alternately turned on. The duration of each period is configured in the **[default-predictor].ab-test-time-slice** option.
- **dry-run** - Predictive Routing scores agents for your interactions, but does not use the scores for routing.

score-base-threshold

Default Value: 0
Valid Values: (integer) 0 - <max>
Changes Take Effect: On the next interaction processed

This option defines the initial minimum agent score required for an agent to be considered a match for an interaction. After the timeout defined by the **[default-predictor].initial-threshold-timeout** option expires, the minimum score required to handle the interaction is gradually decreased. If you set the value to `0`, no initial minimum score is required and agents with any score are considered for an interaction.

set-dynamic-priority

Default Value: False
Valid Values: True, False
Changes Take Effect: On the next interaction

Specifies whether dynamic priority interaction handling is enabled and handled in the GPR subroutines. When set to `true` interaction priority is incremented based on the settings configured for the other priority options. When set to `false`, dynamic priority interaction handling is not set by the Predictive Routing subroutines. If dynamic priority parameters are set elsewhere in the strategy, the option must be set to `false`.

setreadycondition-timeout

Default Value: 600 (seconds)
Valid Values: Any positive integer
Changes Take Effect: On the next interaction

Warning: If you need to change the value of this option, contact Customer Care to ensure that the value you specify is compatible with your environment.

Defines a timeout value that sets the maximum delay, in seconds, between the moment when URS receives an Event from T-Server and when the IsAgentScoreGood subroutine is called. If the delay is greater than the value set in this option, Predictive Routing considers that the call has waited in the IsAgentScoreGood subroutine for the configured period and routes the call to an agent in the target group without checking value configured in the **[default-predictor].score-base-threshold** option.

threshold-relaxation-step

Default Value: 1
Valid Values: (integer) 1 - <value of the **max-score** option>
Changes Take Effect: On the next interaction processed

Defines an increment by which, while an interaction remains queued, the minimum agent score required to match the interaction is decreased after each period defined by the value of the **[default-predictor].threshold-relaxation-timeout** option, following the initial period defined by the **[default-predictor].initial-threshold-timeout** option.

threshold-relaxation-timeout

Default Value: 1
Valid Values: (integer) 1 - <max>
Changes Take Effect: On the next interaction processed

This option defines a timeout, in seconds, after which the minimum agent score required for matching an interaction is decreased by the amount defined by the value of the **[default-predictor].threshold-relaxation-step** option.

use-action-filters

Default Value: true
Valid Values: true, false
Changes Take Effect: Immediately

Note: In a hybrid environment, this option should *always* be set to `false`.

- true - URS uses a skill expression or Agent Group names taken from the action_filters field in the scoring request.
- false - URS checks with the Stat Server for the target list of agents, as specified in the **login-status-expression** option, and adds the target Agent IDs to the scoring request.

Note: If **[default-predictor].login-status-expression** is set to &(loginStatus=4|loginStatus=9), indicating that the agents who are in the Ready state or ACW state (for voice calls) are the designated target agents, then the GetActionFilters subroutine uses a custom statistic called RStatGPRAgentsReadyOrACWvoice. This custom statistic is provided in the **object.kvlt** file in the URS Strategy Subroutines IP.

use-agent-occupancy

Default Value: false
Valid Values: true, false
Changes Take Effect: On the next interaction

The value you set for this option determines whether the ScoreIdealAgent subroutine checks for agent occupancy and adjusts the agent's score for an interaction to increase, or decrease, the probability that the agent receives the interaction. If you set the value of this option to **true** and the value of statistic StatAgentOccupancy is above a threshold specified by the **max-agent-occupancy-threshold** option value, the subroutine adjusts the agent score lower. The score is multiplied by a coefficient defined in the **max-agent-occupancy-factor** option. Similarly, if the agent occupancy is lower than the value of the **min-agent-occupancy-threshold** option value, it is adjusted higher. The score is multiplied by a coefficient defined in the **min-agent-occupancy-factor** option. If the adjusted score exceeds the value specified by the **max-score** option, its value is set to the maximum score specified for the Predictor.

use-crm-query

Default Value: true
Valid Values: true, false
Changes Take Effect: Immediately

Option name reserved for future use.

use-login-status

Default Value: false
Valid Values: false, true
Changes Take Effect: On the next interaction

Set the value of this option to **true** to have the value of the **[default-predictor].login-status-expression** option added to the action_filters expression in the ActivatePredictiveRouting_v3 subroutine when the scoring request is created.

Important: Genesys recommends that you set this option to **true** and provide a valid value for **[default-predictor].login-status-expression** to reduce the number of agents for whom scores are evaluated. The value **false** should be used only for debug and troubleshooting purposes in a staging environment.

use-setreadycondition

Default Value: false
Valid Values: true, false
Changes Take Effect: On the next interaction

If option is set to **true**, the strategy executes calls to the isAgentScoreGood subroutine, which temporarily removes low-scoring agents from consideration for routing. If option is set to **false**, the strategy does not execute calls to the isAgentScoreGood subroutine and, as a result, the interaction is routed to the agent with the highest availability; that is, the one who has been waiting longest for an interaction.

- *Low-scoring agents* - Agents with scores for the current interaction lower than time-dependent minimum required score, which is defined by the following options: **[default-predictor].initial-threshold-timeout**, **[default-predictor].threshold-relaxation-timeout**, **[default-predictor].threshold-relaxation-step**.
- *Temporary* - Until the agent's score for the interaction becomes higher than the time-dependent minimum required score.

Important: This option takes effect only when the **[default-predictor].prr-mode** option is set to **prod** for the same predictor.

default Section

emergency-scoring-token

Default Value: empty string
Valid Values: Any valid security token string
Changes Take Effect: Immediately

Provides an emergency token in the event of continued authentication errors. It is intended for use only in scenarios where the strategy is unable to automatically update the token required to access the Predictive Routing API.

Warning: This option should only be used in an emergency situation.

format-as-map

Default Value: true
Valid Values: true, false
Changes Take Effect: Immediately

The ActivatePredictiveRouting subroutine supports two types of responses to, and score requests to, the Predictive Routing API, either containing both **list** and **list_ranks** fields or just the **list** field.

If set to **true**, the response and the score request to the Predictive Routing API contains two fields, **list** and **list_ranks**. The **list** field contains a JSON dictionary with agent employee IDs as the keys and agent scores for the current interaction as the values. The **list_ranks** field contains a JSON dictionary with agent employee IDs as the keys and agents ranked according to their scores in the target group as values.

If set to **false**, the response and the score request to the Predictive Routing API contains only the **list** field. The value of this field is a JSON list object, where the items in the list are JSON dictionary objects. Each dictionary item contains the fields: **id** (agent employee ID), **score** (the score that agent has for the current interaction), and **score_type** (the type of Model, Local or Global, used to compute the score). The list is sorted by agent score in decreasing order.

global-map-timeout

Default Value: 7200
Valid Values: (integer) any non-negative integer
Changes Take Effect: On the next interaction

Defines the time period, in seconds, during which supporting information about an interaction (such as the predictor name and ID, the model name and ID, the Predictive Routing operation mode, and the interaction time in queue) are stored in the Universal Routing Server (URS) global map. If option value is set to `0`, the records are stored indefinitely.

Important: To improve URS performance, agent scores are stored in the URS global map with a timeout value of `0` (indefinitely). To remove them, you must call the PrrIxnCleanup subroutine after the interaction has been successfully routed.

log-to-api

Default Value: false
Valid Values: true, false
Changes Take Effect: On the next interaction

Specifies whether logging is enabled to the Predictive Routing application REST API from the routing strategy. If the option value is set to **true**, the context of the interaction is submitted to Predictive Routing when the PrrIxnCompleted subroutine is called, before interaction is routed to an agent. If set to **false**, logging is not enabled.

orig-connid-key

Default Value: None
Valid Values: Any valid user data key holding the original interaction connection ID
Changes Take Effect: Immediately

Defines a user data key that the Predictive Routing strategy must attach on initialization. It holds the original connection ID of an interaction, which is used to uniquely identify the interaction for the scoring engine. The ActivatePredictiveRouting subroutine checks for the presence of this key when it starts processing an interaction.

overload-control-timeout

Default Value: 1000
Valid Values: Any positive integer
Changes Take Effect: Immediately

Defines a timeout value that sets the maximum delay, in milliseconds, between the moment when URS receives an Event from T-Server and when URS starts to process the Event in the strategy. If the delay is greater than the value set in this option, Predictive Routing considers the URS application overloaded and temporarily turns off. Once the

URS overload ends and the strategy is processing events within the limit defined by this timeout, Predictive Routing restarts.

password

Default Value: No default value
Valid Values: A valid password
Changes Take Effect: After restart

Specifies the password the ActivatePredictiveRouting subroutine in URS uses to connect to Genesys Predictive Routing.

platform-api-key

Default Value: No default value
Valid Values: Any valid Predictive Routing API key
Changes Take Effect: After restart

Specifies an access key that is used by the ActivatePredictiveRouting subroutine in URS to access the Genesys Predictive Routing API. To obtain the value of this option, open the **Accounts** tab in the Predictive Routing user interface and click the name of your account. The **API key** field appears on the **Account** configuration window. For details, see Configuring Accounts in the *Genesys Predictive Routing Help*.

platform-auth-url

Default Value: none
Valid Values: A valid Predictive Routing URL
Changes Take Effect: immediately

Specifies the Genesys Predictive Routing API authentication endpoint URL. This value is the host name of the server where you access Predictive Routing, followed by **/api/v2.0/authenticate**.

platform-base-url

Default Value: No default value
Valid Values: (string) A valid Predictive Routing URL
Changes Take Effect: After restart

Specifies the common substring of Genesys Predictive Routing API endpoint URLs. This value is the host name of the server where you access Predictive Routing.

You must specify **https://** in your base URL string.

platform-base-url

Default Value: No default value
Valid Values: (string) A valid Predictive Routing URL
Changes Take Effect: After restart

Specifies the common substring of Genesys Predictive Routing API endpoint URLs. This value is the host name of the server where you access Predictive Routing.

You must specify **https://** in your base URL string.

platform-logging-url

Default Value: none
Valid Values: (string) any valid URL
Changes Take Effect: On the next interaction

Defines the URL for logging the interaction routing score log and outcome results to the Predictive Routing web application REST API.

platform-username

Default Value: No default value
Valid Values: (string) Any valid email address registered with Predictive Routing
Changes Take Effect: After restart

Specifies the username the ActivatePredictiveRouting subroutine in URS should use to connect to the Genesys Predictive Routing platform.

scoring-token-expiration

Default Value: 43200
Valid Values: Any positive integer
Changes Take Effect: Immediately

If configured, overrides the default token expiration time of 43200 seconds. For example, if set to `3600`, the token expires in the URS memory map in one hour, and a new token is requested from the Predictive Routing platform.

send-user-event

Default Value: false
Valid Values: true, false
Changes Take Effect: Immediately

When set to **true**, the routing strategy used with Predictive Routing sends the EventUserEvent TEvent, which includes the following attributes:

- AttributeThisDN with a value indicating the virtual queue where the strategy is executed. This is set in the **[default].vq-for-reporting** option.
- AttributeUserData containing the Predictive Routing-specific key-value pairs which provide the foundation for reports on routing outcomes presented in Genesys Interactive Insights/GCXI.

The KVP data is stored in Genesys Info Mart, and is then available to the Genesys reporting suite and to Predictive Routing, which can use this KVP data to refine Predictor and Model performance.

For more information on creating reports based on Predictive Routing data, see Integrate with Genesys Reporting.

udata-keys-to-exclude

Default Value: no default value
Valid Values: a list of KVP names to be excluded, separated by commas and no spaces
Changes Take Effect: On the next interaction

Use this option to exclude unnecessary user data keys from the scoring context.

use-double-selection

Default Value: false
Valid Values: true, false
Changes Take Effect: Immediately

Specifies whether URS uses a double selection mechanism, applying a custom statistic when agents have the same score to select the target agent for an interaction.

If the Predictive Routing routing solution is configured to use the agent hold-out feature (the **[default-predictor].use-setreadycondition** option is set to **true**) and the **use-double-selection** option is set to **false**, when two or more agents are in ready state and have the same score for an interaction, the target agent for an interaction is selected at random. If the **use-double-selection** option is set to **true**, URS selects a target agent from a group of agents with equal scores based on a predefined statistic. This is a statistic passed as an argument to the SelectDN function by the routing strategy or one defined in an IRD routing block.

vq-for-reporting

Default Value: No default value
Valid Values: Any valid virtual queue or DN name
Changes Take Effect: Immediately

Indicates the virtual queue or DN where URS sends the Genesys Predictive Routing (GPR) user event data describing the routing decision made for the interaction. The user event data, in the form of key-value pairs, is attached to EventUserEvent in the AttributeUserData attribute. This should be the same value as AttributeThis DN in the EventUserEvent event.

For more information on creating reports based on Predictive Routing data, see Integrate with Genesys Reporting.