Bot Gateway Server Quick Start Guide

Integrating BGS with Genesys Historical Reporting

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For Bot Gateway Server (BGS), historical reporting on chat bot activity supplements the chat session reporting available in eServices premise deployments that include the Genesys Reporting & Analytics offering. Chat bot reporting is supported only for chat bots that are run by BGS.

This page describes the component and configuration requirements to enable historical reporting on BGS-managed chat bot activity in your deployment.

Overview: BGS reporting process

1. After a BGS session is finished or when an attempt to launch a bot session is rejected, BGS produces a reporting event, which it publishes to Kafka. For more information about the reporting event attributes, see Reporting event attributes, below.
2. The BGS reporting event is separate from the Interaction Server reporting event that is generated at the end of the Chat Server session. The chat session reporting event includes some bot-related statistics that are processed as part of chat session reporting (see Integrating Chat Server with Genesys Historical Reporting in the *Chat Server Administrator's Guide*).
3. On a regular schedule, Genesys Info Mart extracts the BGS data from Kafka and transforms it into the BGS_SESSION_FACT table and supporting dimensions in the Info Mart dimensional model. For more information about the Info Mart database tables, see the *Genesys Info Mart Physical Data Model* for your RDBMS. For more information about managing the Genesys Info Mart ETL jobs, see the *Genesys Info Mart Operations Guide*.
4. In deployments that include Reporting and Analytics Aggregates (RAA) and Genesys CX Insights (GCXI), RAA summarizes and organizes the Info Mart data in ways that enable GCXI to extract meaning. For more information about RAA data, see the *RAA User's Guide*.
5. GCXI uses the aggregated data in the Info Mart database to produce a Bot Dashboard. For more information, see Chat reports in the GCXI *User's Guide*.

Enabling historical reporting on BGS activity

Prerequisites

The following table summarizes the minimum release requirements for the Genesys and third-party components that enable chat bot historical reporting.

Component	Minimum release
Bot Gateway Server	9.0.004
Kafka	2.0

Component	Minimum release
Chat Server	8.5.203.09
Genesys Info Mart	8.5.011.18
RAA	8.5.003
GCXI	9.0.005

Setting up historical reporting

1. **Ensure that your deployment has been configured as required for Genesys Info Mart to support chat session reporting.**
   For more information, see Integrating Chat Server with Genesys Historical Reporting in the *Chat Server Administrator's Guide.* If you have not already done so, configure Interaction Concentrator (ICON) to store the user data KVPs listed below (see Chat Server reporting data).
2. **Configure BGS to report bot metrics.**

   By default, BGS captures the minimum attributes required in the reporting event to enable historical reporting out-of-box. However, the default ESP methods do not populate all the parameters that are useful for reports.

   For meaningful reporting, Genesys strongly recommends that you populate the **chatBot_category** and **chatBot_function** attributes, in particular. There are two ways you can populate the category and function attributes:

   - Through the API (in **BotCreationAttributes**) during **createChatBot**
   - By specifying **ChatBotCategory** and **ChatBotFunction** in the parameters of the ESP **StartBot** method

   For more information about the available attributes, see ESP methods and BGS reporting event attributes, below.
3. **Enable the storage of BGS reporting metrics in Kafka.**
   a. Deploy Kafka version 2.0.
   b. Configure BGS to output reporting data into Kafka by configuring the following options in the **channel-chatbot** configuration section:
      - kafka-cluster-brokers or kafka-zookeeper-nodes
      - kafka-topic-name. The default value is `chat-bots-reporting`.
4. **Configure Genesys Info Mart to extract the BGS reporting data from Kafka.**
   a. On the **Options** tab of the Genesys Info Mart application object, create a new configuration section, **kafka-<cluster-name>**. The <cluster-name> can be any string you use to identify the cluster—for example, `kafka-1`.
   b. In the new section, add the following options:
      - bootstrap.servers—The value must match the value of the BGS **kafka-cluster-brokers** or **kafka-zookeeper-nodes** option (see step 3).
      - g:topic:<topic-name>—The <topic-name> must match the value of the BGS **kafka-topic-name** option—for example, **g:topic:chat-bots-reporting**. The value of the option must be BGS_K.
   c. (Optional, but recommended) Set an alarm on log message 55-20049, which identifies that a transformation job error has occurred because of a Kafka exception, such as a complete loss of connection to the cluster.

5. **Enable aggregation of bot-related data. (Required for GCXI reporting or other applications that use RAA aggregation.)**
   In the **[agg-feature]** section on the Genesys Info Mart application object, specify the enable-bgs option. If you haven't already done so, also specify the enable-chat option.

Bot-related reporting data

There are two mechanisms by which Genesys Info Mart receives bot-related reporting data:

- BGS application data
- Chat Server reporting data

BGS application data

After a BGS session is terminated or rejected, BGS generates a reporting event for that session and stores the data in Kafka. There might be multiple BGS sessions within a single chat session.

JSON Example

The following is an example of a BGS reporting event serialized as a JSON file for Kafka storage. See BGS reporting event attributes for the meaning of the attributes.

Click to see example.

BGS reporting event attributes

The following table describes the attributes included in the BGS reporting event. The "Application data attribute" column, which includes the name of the section as well as the attribute itself, represents the XPath search term Genesys Info Mart uses to extract and map the data. The "Info Mart Database Target" column indicates the Info Mart database table and column to which the attribute is mapped.

Application data attribute	Description	Info Mart Database Target
/cbs_endTime	The UTC-equivalent value of the date and time at which the BGS session ended or was rejected.	BGS_SESSION_FACT.END_TS, BGS_SESSION_FACT.END_DATE_TIME_KEY
/chatBot_info/chatBot_category	The generic category describing the type of function performed by the bot, such as Monitoring, Dialog, Notification, or Service. **Default value:** "Unspecified"	BGS_BOT_DIM.BOT_CATEGORY (referenced through BGS_SESSION_FACT.BGS_BOT_DIM_KEY)
Application data attribute	**Description**	**Info Mart Database Target**

Application data attribute	Description	Info Mart Database Target
/chatBot_info/chatBot_function	The specific bot functionality, such as Translator, Advisor, Escalation, Recording, AI, or Questioner. **Default value:** "Unspecified"	BGS_BOT_DIM.BOT_FUNCTION (referenced through BGS_SESSION_FACT.BGS_BOT_DIM_KEY)
/chatBot_info/chatBot_name	The identification of the bot represented by "ChatBotID-ChatBotName" pair, where: • **ChatBotID (always presented)** - The ID of the BGS bot plugin (this ID is hardcoded inside the bot and returned by `getBotId()`). • **ChatBotName (may be empty)** - The name of the "external" bot (for example, if the bot plugin implements a connector to other bot frameworks).	BGS_BOT_NAME_DIM.BOT_NAME (referenced through BGS_SESSION_FACT.BGS_BOT_NAME_DIM_KEY)
/session_info/attr_itx_id	The interaction GUID, as reported by Interaction Server. This value is the ID of the chat session.	BGS_SESSION_FACT.MEDIA_SERVER_IXN_GUID
/session_info/attr_itx_media_type	The media type of the parent interaction. The default value of "NONE" means that BGS was unable to get information about the interaction. **Valid values:** [Chat, Email, sms] **Default value:** "NONE"	MEDIA_TYPE.MEDIA_NAME_CODE (referenced through BGS_SESSION_FACT.MEDIA_TYPE_KEY)
/session_info/attr_itx_submitted_at	The timestamp of the start of the interaction (in other words, the chat session) in Interaction Server. The default value is used when BGS is unable to get information about the interaction. **Default value:** Current DateTime in ISO8601 date format as provided by Interaction Server	BGS_SESSION_FACT.INTERACTION_SDT_KEY
/session_info/attr_itx_tenant_id	The DBID of the Tenant. The default value is used when BGS is unable to get information about the Interaction. **Default value:** -1	BGS_SESSION_FACT.TENANT_KEY
/session_info/cbs_id	The ID assigned by BGS to every bot instance or process connected to the chat session.	BGS_SESSION_FACT.CBS_ID
/session_info/cbs_rejectedToStart	Flags whether the session was	BGS_SESSION_DIM.REJECTED_TO_START
Application data attribute	**Description**	**Info Mart Database Target**

Application data attribute	Description	Info Mart Database Target
	rejected before it started. If the session was rejected (the value of the attribute is 1), the "session_stats" section of the reporting event is omitted. **Valid values:** 0, 1	(referenced through BGS_SESSION_FACT.BGS_SESSION_DIM_KEY)
/session_info/cbs_startTime	The UTC-equivalent value of the date and time at which the bot session was initiated in BGS, regardless of whether the session was accepted or rejected.	BGS_SESSION_FACT.START_TS, BGS_SESSION_FACT.START_DATE_TIME_KEY
/session_stats/cbs_duration	The duration, in milliseconds, of the BGS session.	BGS_SESSION_FACT.DURATION
/session_stats/ cbs_endedAbnormally	Indicates whether the session ended abnormally for a technical reason (for example, a protocol or connection error resulted in disconnection of the bot from the session) **Valid values:** 0, 1	BGS_SESSION_DIM.ENDED_ABNORMALLY (referenced through BGS_SESSION_FACT.BGS_SESSION_DIM_KEY)
/session_stats/cbs_endedBy	The type of participant that initiated termination of the BGS session. **Valid values:** • SYSTEM—Denotes a Chat Server (for example, if Chat Server ended the chat session because of idle control or shutdown). • AGENT—Denotes an agent who participated in the chat session, regardless of whether that agent was visible to the customer. • BOT—Denotes the chat bot. • CBP—Denotes Bot Gateway Server (for example, if BGS ended the session because all participants left, or as a reaction to `StopBotOnCustomerLeft` if provided during bot startup, or during server shutdown, or because of a malfunction).	BGS_SESSION_DIM.ENDED_BY (referenced through BGS_SESSION_FACT.BGS_SESSION_DIM_KEY)
/session_stats/cbs_endReason	The reason the BGS session was terminated. **Valid values:**	BGS_SESSION_DIM.END_REASON (referenced through BGS_SESSION_FACT.BGS_SESSION_DIM_KEY)
Application data attribute	**Description**	**Info Mart Database Target**

Application data attribute	Description	Info Mart Database Target
	• ESP_REQUEST — Stopped by ESP request. **Possible associated values for:** • cbs_endedBy: SYSTEM • cbs_endedAbnormally: 1/0 • AGENT_JOINED — Configured with **StopBotOnAgentArrival**, and agent joined. **Possible associated values for:** • cbs_endedBy: CBP • cbs_endedAbnormally: 1/0 • ALL_CLIENTS_LEFT — Configured with **StopBotOnCustomerLeft**, and the last client (cusomer) left. **Possible associated values for:** • cbs_endedBy: CBP • cbs_endedAbnormally: 1/0 • ALL_PARTICIPANTS_LEFT — All participants (except bots, external users, and system users) left the session. **Possible associated values for:** • cbs_endedBy: CBP • cbs_endedAbnormally: 1/0 • RELEASED_BY_PARTY — A party release event was received, and the asker was not the current bot. **Possible associated values for:** • cbs_endedBy: AGENT or BOT • cbs_endedAbnormally: 1/0 • RELEASED_BY_SELF — A party release event was sent by the bot (through **leaveSession**). **Possible associated**	
Application data attribute	**Description**	**Info Mart Database Target**

Application data attribute	Description	Info Mart Database Target
	values for: • cbs_endedBy: BOT • cbs_endedAbnormally: 1/0 • REMOVED_BY_SERVER — Chat Server removed a bot participant. **Possible associated values for:** • cbs_endedBy: SYSTEM • cbs_endedAbnormally: 1/0 • IDLE_CONTROL — A bot participant was removed because the chat session was closed because of inactivity. **Possible associated values for:** • cbs_endedBy: SYSTEM • cbs_endedAbnormally: 1/0 • DISCONNECTED — A protocol or connection error resulted in disconnection from the session. **Possible associated values for:** • cbs_endedBy: SYSTEM/CBP • cbs_endedAbnormally: 1 • CBP_SHUTDOWN — CBP was shutting down. **Possible associated values for:** • cbs_endedBy: CBP • cbs_endedAbnormally: 1/0	
/session_stats/cbs_endResult	Not currently populated by BGS. In the future, this attribute might be populated with information provided by bots about the business result of the session: Success or Fail.	BGS_SESSION_DIM.END_RESULT (referenced through BGS_SESSION_FACT.BGS_SESSION_DIM_KEY)
/session_stats/ cbs_messagesReceived	The number of messages received by the bot in the BGS session.	BGS_SESSION_FACT.MESSAGES_RECEIVED
Application data attribute	**Description**	**Info Mart Database Target**

Application data attribute	Description	Info Mart Database Target
/session_stats/cbs_messagesSent	The number of messages sent by the bot in the BGS session.	BGS_SESSION_FACT.MESSAGES_SENT
Application data attribute	**Description**	**Info Mart Database Target**

Chat Server reporting data

When the chat session is finished, Chat Server attaches reporting statistics to the user data of the interaction in Interaction Server.

The following table describes the bot-related reporting statistics that Chat Server includes in the user data if any BGS-managed chat bots participated in the chat session. The "Info Mart Database Target" column indicates the Info Mart database table and column to which the user data KVP is mapped. (For information about the rest of the chat session KVPs that Chat Server sends, see Chat Server reporting data in the *Chat Server Administration Guide*.)

> **Important**
>
> If the BGS session is rejected, no KVPs related to the rejected session are included in the user data that Chat Server attaches, regardless of the attach-session-statistics option value.

KVP	Description	Info Mart Database Target
csg_MessagesFromBotsCount	The total number of messages visible to the customer that were sent by all bots that participated in the chat session.	CHAT_SESSION_FACT.MSG_FROM_BOTS_COUNT
csg_MessagesFromBotsSize	The total character count (including spaces) of all messages sent by bots that participated in the chat session.	CHAT_SESSION_FACT.MSG_FROM_BOTS_SIZE
csg_PartiesAsBotCount	The number of parties that participated in a chat session as bots. If the same bot (in other words, a bot with the same ID) connects multiple times, it is counted as a separate participant each time it joins.	CHAT_SESSION_FACT.BOTS_COUNT
csg_SessionUntilFirstBotTime	The duration of the waiting period, or the period of time a customer waits until the first bot (visible to a customer) joined the chat session.	CHAT_SESSION_FACT.UNTIL_FIRST_BOT_DURATIO
KVP	**Description**	**Info Mart Database Target**

KVP	Description	Info Mart Database Target
	Note: The 0 (zero) value has two alternative interpretations: No bots ever joined the session (if csg_PartiesAsBotCount=0) or a bot joined immediately when the chat session was started (if csg_PartiesAsBotCount > 0).	
KVP	**Description**	**Info Mart Database Target**