

Call Center Statistics Reference Guide

AiTech Hosted PBX Call Center





Introduction

The AiTech Hosted PBX Call Center solution proposes two options for queue and agent statistics:

- The basic statistics option is implemented on the platform. These statistics are kept for a minimum of 48 hours on the platform. They can be retrieved from the web portal by specifying the start and end time of the period for which statistics are requested. Alternatively, a reporting function can be enabled such that e-mail reports are sent on a daily basis. These reports provide statistics with a granularity as small as 15 minutes.

NOTE: Generally, a Call Center consists of multiple queues and a set of agents that are allocated to one or more queues. On the AiTech Hosted PBX Platform in related documentation, the terms “ACD”, “call center” or “call center instance” are often designated to represent a queue. In this document, these terms are used interchangeably.

Basic Option

This section describes the basic statistics that are accumulated and provided by the platform.

The statistics described in this section are provided for the time interval that is inherent to the interface used for display and/or retrieval.

- If the statistics are retrieved through the web portal, then the statistics are provided for the time period specified by the user.

The queue statistics are provided for specific time intervals (15, 30, or 60 minutes) for the day ending at midnight. The agent statistics are provided for the 24-hour period ending at midnight when the report is generated.

Statistic Definitions

The following table shows the queue statistics. These statistics are listed in the order in which they are displayed in the files in a statistics report as well as on the web interface.

Statistic	Description
Number of busy overflows	This is the number of calls that came in after the queue limit was exceeded. Such calls are likely forwarded to voice mail.
Number of calls answered	This is the total number of calls answered handled by an agent.
Number of calls abandoned	This is the total number of calls for which the caller has hung up or selected to leave a message before an agent became available.
Number of calls transferred	This is the total number of calls that are transferred out of the Call Center queue. Typically, a call is transferred from a given Call Center queue to another Call Center queue using a client application (for example, using the AiTech Hosted PBX Platform Supervisor client).
Number of calls timed out	This is the total number of calls that remain unanswered and that are forwarded out of the Call Center queue upon timeout.
Average wait time	This is the average amount of time that callers spend waiting for the next available agent to answer the call.
Average abandonment time	This is the average time that callers spend waiting for an agent before hanging up or selecting the option to leave a message.
Average number of agents staffed	This is the average number of agents staffed during the period for this Call Center instance. An agent who has joined the Call Center campaign and who is not in the <i>sign-out</i> state is considered as staffed.
Average number of agents talking	This is the average number of agents who were in the <i>talking</i> state during the period for this Call Center instance.

Table 1 Basic Option – Queue Statistics

The following table shows the agent statistics. Agent statistics are available on a per-queue basis. If an agent is assigned to multiple queues, then agent statistics are independently maintained and provided for each queue. These statistics are listed in the order in which they are displayed in the files in a statistics report as well as on the web interface.

Statistic	Description
Number of calls handled	This is the total number of calls that the agent has handled. This statistic accounts for all Call Center calls that are released by the agent during the specified period.

Statistic	Description
Average call time	<p>This is the average time that an agent spends on calls from the Call Center instance.</p> <p>This statistic accounts for all Call Center calls that are released or transferred by the agent during the specified period.</p> <p>If the agent transfers a call (for example, to another queue), then the call time only accounts for the time spent on the call by the agent prior to the call transfer. In previous releases, the call time after the call transfer would be allocated to both the redirecting agent and the agent answering the call from the other queue. This behavior is changed upon upgrade and is not activatable.</p>
Number of calls unanswered	<p>This is the total number of calls extended to the agent that are not answered (for any reason other than because the agent is busy).</p> <p>Note that for a single call to a Call Center instance, an agent may be rung multiple times as the call can be placed in the queue and presented to the agent again. Therefore, this statistic may be incremented more than once for a given call to the Call Center instance.</p>
Total Talk Time	The amount of time that the agent was busy handling calls for this Call Center instance.
Total staffed time	The amount of time that the agent has joined the Call Center instance and was not in the <i>sign-out</i> state.

Table 2 Basic Option – Agent Statistics

Statistics Report

Statistics reporting is configured by providing one or two destination e-mail addresses and specifying a sampling interval. The sampling interval can have one of the following values: 15, 30, or 60 minutes. A statistics report is generated at the end of each day using the time zone of the Call Center instance as the time reference.

The statistics report is sent to the specified e-mail addresses with two file attachments encoded in ASCII comma separated value (CSV) format: YYYYMMDD_group_statistics and YYYYMMDD_agent_statistics, where YYYY is the year, MM the month, and DD the day. The e-mail includes the following details, which identify the Call Center and provide other information about the focus of the attached reports.

```
FROM: CallCenterStats@broadsoft.com
TO: <call center destination email address>
SUBJECT: <call center name>
BODY:
  Report generated on: <date and time, ex: Tue, July 20, 2003 at 00:17 (EST)>
  For: Group name: <group name>
      Department name: <department name>
  On Application Server: <host name>
```

Important Information about Generating Statistic Reports

The following is important information regarding report generation:

- The report generation time is set just before the report e-mail is actually sent and uses the time zone of the group that owns the Call Center.
- If the Call Center does not belong to a specific department, the Department name field is empty.



- Even if there are no agents defined in the Call Center, an agent file is still sent.
- If a report cannot be generated, an e-mail is still sent but no files are attached.
- If an e-mail cannot be sent, there is no attempt to retry sending.
- When a report has been sent successfully to the destination e-mail address, the platform increments a performance measurement.

Report Examples

Call Center Statistics Report

The following file is an example of a small part of a Call Center Statistics Report, which includes the statistics described in this document.

```
timestamp,num. busy overflows,num. calls answered,num. calls abandoned ,num.
calls transferred ,num. calls timed out ,avg. num. agents talking ,avg. num.
agents staffed ,avg. wait time ,avg. abandonment time
200905250015,0,0,0,0,0,0.0,0.0,0:00,0:00
...
200905251100,4,65,3,5,4,5.6,9.0,2:34,4:01
200905251115,1,70,6,2,1,5.6,8.5,2:50,4:56
...
200905260000,0,0,0,0,0,0.0,0.0,0:00,0:00
```

Agent Statistics Report

The following file is an example of a small part of an Agent Statistics Report, which includes the statistics described in this document.

```
agent name,num. calls handled ,num. calls unanswered ,avg. call time ,total
talk time ,total staffed time
...
John Smith,43,6,2:56,2:06:08,7:58:12
Bill Johnson,48,2,3:14,2:35:23,7:55:23
...
```



Exporting Statistics to Microsoft Excel

To export the statistics to Microsoft Excel:

- 1) Import the data into an Excel sheet from a comma separated value (CSV) file.
- 2) Insert a column to the right of the Timestamp column.
- 3) Select the Timestamp column, and then go to Data → Text to columns.
 - In step 1, choose Fixed Width.
 - In step 2, keep only one line in Data Preview (between date and time).
 - In step 3, select Date, MDY from drop-down list.

This results in data being separated into two columns, that is, date and time.

Statistic Definitions

The following table shows the queue statistics. Note that all times are in milliseconds.

Statistics	Description
Longest Waiting Time for a Call in Queue	The length of time the oldest ACD call has waited in queue or ringing (at an agent's voice terminal before being answered).
Calls to Queue	The number of ACD calls waiting to be answered. This includes calls that are in queue and calls that are ringing at an agent's voice terminal.
Calls Abandoned	The number of calls that are abandoned by the caller when calls are in queue or when calls are ringing for an agent. NOTE: When a stranded call (that is, a queued call with no agents staffing the queue) is removed from the queue and given busy treatment, the call is counted as an abandoned call.
Calls Answered	The number of calls answered during the defined interval.
Calls Unanswered	The number of calls unanswered during the defined interval.
Calls Overflowed	The number of calls that were transferred to voice mail because the queue overflowed.
Total Queue Time	The total amount of time that calls were in queue.
Staff Time	The total length of time during which agents were joined in.
Total Agent Staffed	The number of agents joined in.
Calls Answered in Service Level N	The number of ACD calls that were answered by an agent within the predetermined time (this is the acceptable service level).
Total Call Time Answered in Service Level N	The total time that calls were in queue before being answered by an agent within the predetermined time (this is the acceptable service level).
Total Ring Time	The total length of time that calls were ringing.
Total Abandonment Wait Time	The sum of all times that calls waited before abandoning the queue.

Table 3: Enhanced Option – Queue Statistics

The following table shows the agent statistics. These statistics are not specific to a queue. Instead, they provide cumulative values across all queues that the agent is assigned to. Note that all times are in milliseconds.

Statistics	Description
ACD Calls	The number of ACD calls that were answered by the agent.
Inbound Calls	The number of inbound calls (excluding ACD calls) that were answered by the agent.

Statistics	Description
Outbound Calls	The number of answered outbound calls made by the agent. NOTE: This includes calls that were made while performing Consultative Transfer, Escalate to Supervisor, and Conference. However, if the agent transfers the call before the third party answers, then the call is not included. In addition, calls resulting from a blind transfer initiated by the agent are not included.
Held Calls	The number of calls the agent put on hold.
Internal Calls	The number of internal calls made or received by the agent (for future use).
Num Wrap-up	The number of times the agent was in Wrap-up.
Total ACD Call Time	The total length of this agent's ACD calls.
Total Inbound Call Time	The total length of this agent's inbound calls.
Total Outbound Call Time	The total length of this agent's outbound calls. NOTE: This includes calls that were made while performing Consultative Transfer, Escalate to Supervisor, and Conference. However, if the agent transfers the call before the third party answers, then the call is not included. In the case where the agent transfers the call after the third party answers, then the duration does not account for the call time of the other parties after transfer. Calls resulting from a blind transfer initiated by the agent are not included.
Total Internal Call Time	The total length of this agent's internal calls (for future use).
Total Signed-In Time	The total length of time during which the agent was signed in.
Num Sign In	The number of times the agent has signed in.
Total Staffed Time	The time during the collection interval that the agent was not signed out.
Total Available Time	The time during the collection interval that the agent was in the available state.
Total Unavailable Time	The time during the collection interval that the agent was in the unavailable state.
Total Talk Time	The time during collection interval that the agent spent talking but does not include ring time at an agent's telephone.
Total Wrap-up Time	The time during the collection interval that the agent spent in Wrap-up mode.
Total Hold Time	The time during the collection interval that the agent put the caller on hold.

Table 4: Enhanced Option – Agent Statistics

For the agent statistics shown in the table above, the Call Center Reporting Server uses the following time allocation matrix. This matrix shows the relationship between the agent's ACD state, the agent's call state, and the state to which the time is allocated for the purpose of agent statistics.

ACD State	Call State	State Time Allocation	Handle Time
Available	Idle	Available Time	Handle Time
	Talking	Talk Time	
	Hold	Hold Time	
Wrap-up	Idle	Wrap-up Time	
Unavailable	Any	Unavailable Time	

Table 5: Enhanced Option – Time Allocation Matrix

Statistics Compaction and Cleanup

The amount of data stored and kept in the database can become substantial after a few months of operation. Two mechanisms have been put in place to keep the database size under control:

- Compacting interval statistics into a longer interval statistics. For instance, half-hour interval statistics are compacted into one-hour interval statistics. Additionally, one-hour interval statistics are compacted into one-day interval statistics.
- Purging interval statistics. After a certain amount of time, the statistics are deleted from the database.

The following numbers of intervals are kept in the database:

- 180 days of half-hour interval statistics (8,640 intervals)
- 365 days of one-hour interval statistics (8,760 intervals)
- 365 days of one-day interval statistics (365 intervals)

The daily compacting activity looks at the accumulated intervals, and if the maximum number of intervals has been reached, then it starts merging/compacting intervals to create new statistics entries for the next interval.

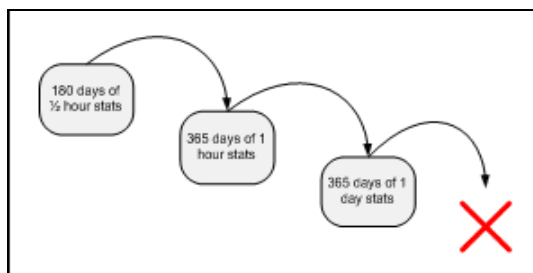


Figure 1 Statistics Compacting and Cleanup

At the end of the process, the statistics are no longer compacted but rather deleted. With these mechanisms in place, a total of 2.5 years of data can be saved in the database for each agent.

Example

A Call Center is created on January 5. The 180 days of half-hourly statistics build up through January, February, March, April, May, and June until July 5. At the beginning of the July 6, all data from January 5 are compacted to hourly statistics. This process continues daily until July 5 the next year. On July 6 the next year, all hourly data from January 5 the first year are compacted to daily statistics. This process continues daily until July 5 the third year. On July 6 the third year, older daily statistics are deleted one day at a time.