



## Avaya Solution & Interoperability Test Lab

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# Application Notes for Calabrio Workforce Management R11.5 with Avaya Call Management System R19.2 – Issue 1.0

### Abstract

These Application Notes describe the configuration steps required for Calabrio Workforce Management to interoperate with Avaya Call Management System. Calabrio Workforce Management is a work force management solution that provides forecasting, scheduling, and monitoring of work for contact center agents. Calabrio Workforce Management uses the historical call measurement data from Avaya Call Management System to produce forecasts and schedules for contact center agents, and the real-time call measurement data from Avaya Call Management System to check the agent adherence to the schedules.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

# 1. Introduction

Calabrio Workforce Management is a work force management solution that provides forecasting, scheduling, and monitoring of work for contact center agents. Calabrio Workforce Management uses the historical call measurement data from Avaya Call Management System (CMS) to produce forecasts and schedules for contact center agents, and the real-time call measurement data from Avaya Call Management System to check the agent adherence to the schedules.

On Avaya Aura® Communication Manager, relevant contact center resources consisting of Vector Directory Number (VDN), Skill, and Agent are configured to be “measured” by Avaya Call Management System. When a call travels through a “measured” resource on Avaya Aura® Communication Manager, the call measurement data is sent to Avaya Call Management System, which in turn provides the data to Calabrio Workforce Management via three historical adapters developed by Avaya Professional Services.

The historical adapters reside on Avaya Call Management System. Every 30 minutes they generate custom formatted ASCII-text historical reports and distribute them to a FTP server on the Calabrio Workforce Management server using the FTP protocol. Calabrio Workforce Management regularly pulls the historical data from the FTP data repository directory and populates the data into a local database. Contact center users such as supervisors and/or agents can use a web browser to access Calabrio Workforce Management to review any collected data and/or produced forecasts and schedules.

The following are the three customized historical reports used for the Calabrio/Avaya integration.

- Agent Interval Report
- Skill Interval Report
- VDN Interval Report

In addition to the three historical reports, the Calabrio/Avaya integration also includes a real-time connection between Calabrio Workforce Management and Avaya Call Management System, to supply real-time agent state information to Calabrio Workforce Management. The real-time connection is achieved through the Generic Real Time Agent (Generic-RTA) adapter developed by Avaya Professional Services and installed on Avaya Call Management System. A TCP client-server model is used for the connection, with Avaya Call Management System being the “client”, and the Calabrio Workforce Management server being the “server”. The Calabrio

Workforce Management server runs a TCP “listener” process to accept data in real-time from Avaya Call Management System.

## 2. General Test Approach and Test Results

The interoperability compliance test included feature and serviceability testing.

The feature test cases were performed manually. Incoming calls were made within a measured interval to the measured VDNs, Skills, and Agents to enable measurement data to be sent to CMS. Manual call controls and work mode changes from the agent telephones were exercised to populate specific fields in the data stream. In the compliance test, the measured interval is fixed at 30 minutes per requirement of Calabrio Workforce Management.

At the end of a measured interval, custom historical reports were generated and transferred to the Calabrio Workforce Management server. Various Calabrio reports were brought up through a web browser to check proper display and correctness of each field against the data in the CMS custom reports.

As calls were made to the agents and work mode changes were performed by the agents, a supervisor user interface supported by Calabrio Workforce Management was brought up to verify proper display and correctness of the real-time data.

The serviceability test cases were performed manually by forcing solution components to go out of service and come back in service and verifying Calabrio server's ability to recover.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

### 2.1. Interoperability Compliance Testing

The feature testing focused on verifying Calabrio Workforce Management correctly parsing and displaying VDN, Skill, and Agent data from CMS. A number of call center scenarios including agent login, agent mode change, agent logout, incoming call to VDN, abandon call, call waiting in queue, call waiting at agent, hold/resume, transfer, conference, direct agent call, extension call from agent, incoming call to agent extension, and redirect on no answer were exercised and a number of vector commands such as queue-to, busy, disconnect, and route-to were executed to generate data for specific fields in the historical reports and real-time supervisor interface.

The serviceability testing focused on verifying the ability of the Calabrio server to recover from adverse conditions, such as stopping the Generic RTA adapter on CMS, disconnecting the Calabrio server from the network, and rebooting the Calabrio server. The serviceability testing also included recovery of historical data.

## 2.2. Test Results

All test cases were executed successfully.

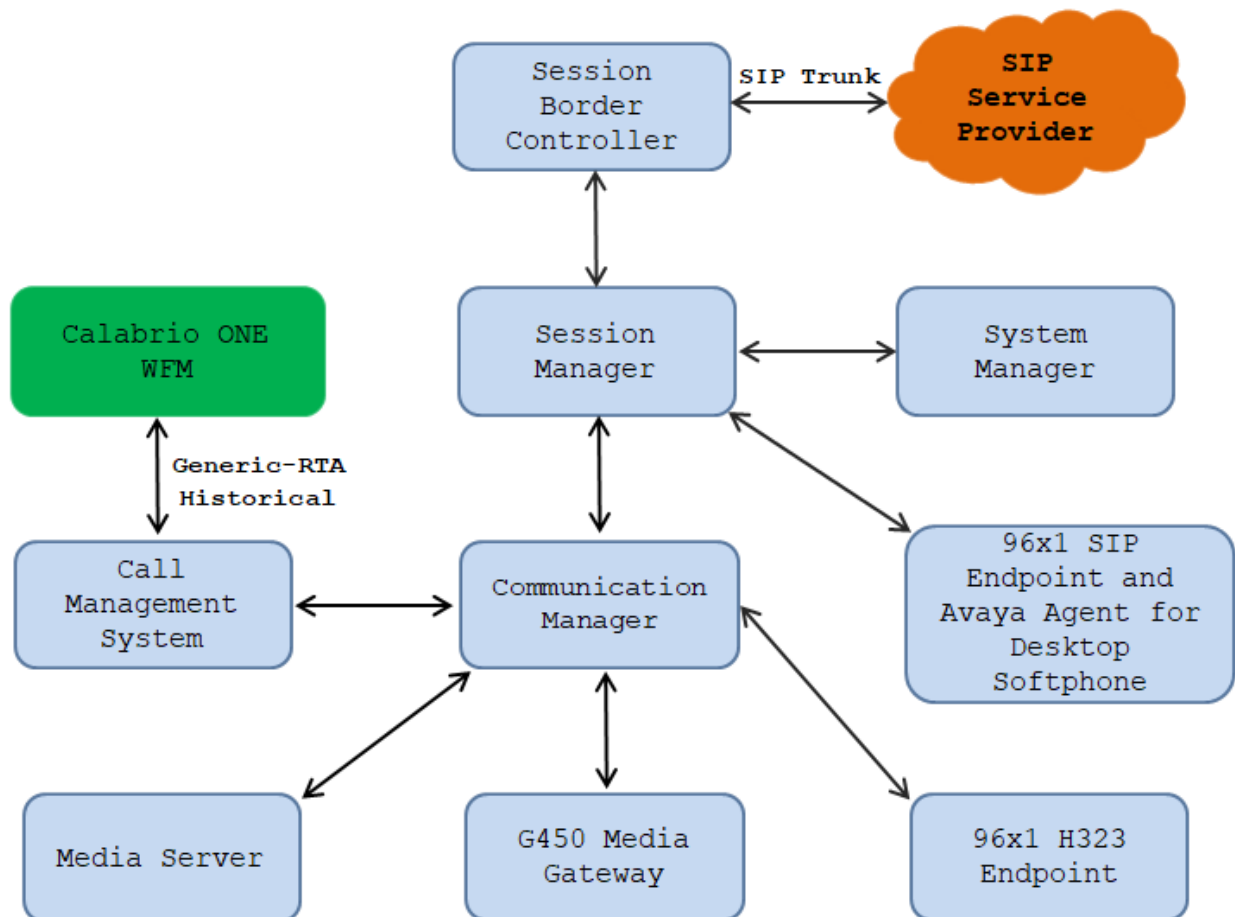
## 2.3. Support

Technical support on Calabrio Workforce Management can be obtained through the following:

- Phone: 1-800-303-1248
- Email: [calabriosupport@calabrio.com](mailto:calabriosupport@calabrio.com)

## 3. Reference Configuration

The compliance test was done with all the test equipment in an Avaya Lab. The Avaya side equipment included Communication Manager, CMS, and several IP phones. The Calabrio application resided on a VMWare virtual machine. The GUI interface of Calabrio Workforce Management was accessible through a web browser. All calls to and from the public network were routed through Avaya Session Border Controller for Enterprise via SIP trunks.



**Figure 1: Calabrio Workforce Management with Avaya Call Management System**

## 4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment/Software	Release/Version
Avaya Aura® Communication Manager running on Virtual Environment	8.1.3 8.1.3.2.0.890.26989
Avaya G450 Media Gateway	41.34.0
Avaya Aura® Media Server running on Virtual Environment	8.0 8.0.2.163
Avaya Call Management System Avaya Real-Time Agent	19.1.0 6.3.15
Avaya Aura® System Manager running on Virtualized Environment	8.1.3 8.1.3.0.1011784
Avaya Aura® Session Manager running on Virtualized Environment	8.1.3 8.1.3.0.813014
Avaya Session Border Controller for Enterprise	8.1.2 8.1.2.0-37-21065
Avaya 9611G IP Deskphone (SIP)	7.1.9.0.8
Avaya Agent for Desktop SIP Softphone (H.323 and SIP)	2.0.6.0.10
Avaya 9641G IP Deskphone (H.323)	6.8304
Calabrio Workforce Management running in Windows Server 2016	11.5

## 5. Configure Avaya Aura® Communication Manager

This section provides the procedures for how to enable VDN, Skill, and Agent measurement data to be sent to CMS. The procedures include the following areas:

- Administer measured VDN
- Administer measured Skill and Agent

The detailed administration of contact center resources and connectivity between Communication Manager and CMS are not the focus of these Application Notes and will not be described. For administration of contact center resources and connectivity to CMS, refer to the appropriate documentation listed in **Section 10**.

### 5.1. Administer measured VDN

Use the “change vdn n” command, where “n” is the extension of the VDN to be measured by CMS. Set the **Measured** field to “both” to enable measurement data on the VDN to be sent to CMS. Repeat this step for all VDNs that will be measured by CMS.

```
change vdn 3340                                     Page 1 of 3
                                                    VECTOR DIRECTORY NUMBER
                                                    Extension: 3340                               Unicode Name? n
                                                    Name*: Contact Center 1
                                                    Destination: Vector Number 1
Attendant Vectoring? n
Meet-me Conferencing? n
Allow VDN Override? n
COR: 1
TN*: 1
Measured: both                               Report Adjunct Calls as ACD*? n
Acceptable Service Level (sec): 20

VDN of Origin Annc. Extension*:
1st Skill*:
2nd Skill*:
3rd Skill*:

SIP URI:

* Follows VDN Override Rules
```

For the compliance testing, three VDNs with extensions 3340, 3341, and 3342 were configured to be measured.

## 5.2. Administer Measured Skill and Agent

Use the “change hunt-group n” command, where “n” is the number of the Skill group to be measured by CMS. Navigate to **Page 2**, and set the **Measured** field to “both” to enable measurement data on the Skill group and the associated Agents to be sent to CMS. Repeat this step for all Skill groups that will be measured by CMS.

```

change hunt-group 1                                     Page 2 of 4
                                     HUNT GROUP
                                     Skill? y      Expected Call Handling Time (sec): 180
                                     AAS? n        Service Level Target (% in sec): 80 in 20
                                     Measured: both
Supervisor Extension:

Controlling Adjunct: none

VuStats Objective:

Multiple Call Handling: none

Timed ACW Interval (sec):                After Xfer or Held Call Drops? n
  
```

For the compliance testing, two Skill groups with group numbers 1 and 2 were configured to be measured. In addition, four agents with extensions 3301, 3302, 3401 and 3402 and agent id 1000, 1001, 1002 and 1003 were used as available agents for the above Skill groups.

```

list agent-loginID                                     Page 1
                                     AGENT LOGINID
Login ID      Name      Extension      Dir Agt  AAS/AUD      COR AgPr SO
              Skil/Lv Skil/Lv Skil/Lv Skil/Lv Skil/Lv Skil/Lv Skil/Lv Skil/Lv
1000          Agent 1000      3301
              1/01      /              /              /              /              /
1001          Agent 1001      3401
              1/01      /              /              /              /              /
1002          Agent 1002      3302
              1/01      /              /              /              /              /
1003          Agent 1003      3402
              1/01      2/01      /              /              /              /
  
```

## 6. Configure Avaya Call Management System

This section provides the procedures for the following:

- Configure Generic-RTA Adapter
- Enable Generic-RTA Adapter
- Check Intra-hour Interval
- Configure Historical Adapters

Note that no special procedure is required to enable the customized historical data interface.

The connectivity between CMS and Communication Manager is assumed to be in place and will not be described. In addition, these Application Notes assume the intra-hour interval is already administered to 30 minutes.



## 6.1. Configure Generic-RTA Adapter

The Generic-RTA adapter is configured through a configuration file named **rta.conf** located in the directory where the adapter software is installed. In the compliance test configuration, the path to the directory was **/export/home/pserv/rta\_gen**. In the **rta.conf** file, select a Session number and configure the following items:

- **HOST**: hostname of the Calabrio server which is defined in **/etc/hosts**.
- **PORT**: Receiving port on Calabrio server to receive data.
- **ACD**: ACD that sources the real-time data, 3 in this case, as preconfigured.
- **REFRESH**: real-time report refresh rate in seconds.

The following screenshot shows how the adapter was configured in the test configuration.

```
#----- Session 1 -----
HOST1=calabrio
PORT1=7003
ACD1=1
OPTS1=""
REPORT1=rta_gen
MONITOR_LIST1="1-2000"
REFRESH1=5
EXT_CLINT_LIC1=no
ENCRYPTED1=no
DEST_APP1="CalabrioWFM"

#----- Session 2 -----
```

## 6.2. Enable Generic-RTA Adapter

Use Avaya Terminal Emulator to connect to CMS, and log in with proper credentials. Enter “cms” at the command prompt to display the **MainMenu** screen. Select the option that corresponds to the customized real-time agent interface created by Avaya Professional Services for Calabrio, in this case the option is **Generic-RTA**. Note that the actual option name may vary. Press the **Enter** key.

```
10/ 1/21 09:53 Avaya(TM) CMS
lMainMenuqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
x Reports> x
x Dictionary> x
x Exceptions> x
x Agent Administration> x
x Call Center Administration> x
x Custom Reports> x
x User Permissions> x
x System Setup> x
x Maintenance> x
x CALA-RTA> x
x Generic-RTA> x
x RT_Socket> x
x Calabrio> x
x ECH Handler> x
x Logout x
x ; x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
```

The **Generic-RTA Menu** is displayed. Enter “1” followed by the **Enter** key, to start the interface.

```
----- Generic-RTA Menu -----  
1) Start Generic-RTA Interface  
2) Stop Generic-RTA Interface  
3) Check Generic-RTA Status  
4) View Maintenance Log  
5) Show Generic-RTA Version  
6) Show/Verify Licensed Authorizations  
7) Show Staffed Agents Count  
8) Change Generic-RTA Split(s)/Skill(s) and/or ACD  
9) Show Generic-RTA Configuration  
Q) Quit  
-----  
Selection: 1
```

The system will prompt for the session number. Enter the session number selected in **Section 6.1** and the **Enter** key. Press the **Enter** key followed by “Q” to return to the **CMS MainMenu**.

```
Generic-RTA session 1 is not running.  
Generic-RTA session 2 is running, not encrypted, and not connected.  
  
Which Generic-RTA session(s) do you want to start?  
Input range must be between 1 and 32.  
Input entries allowed:  
- Enter a single session number (e.g. 5).  
- Enter a range of session numbers separated by a dash (e.g. 6-11).  
- Enter 'all' or just press Enter to select ALL configured sessions.  
- Enter 'q' or 'Q' to quit.  
Enter Generic-RTA session(s) to start: 1  
Starting session(s): 1  
  
Starting Generic-RTA session 1, please wait ...  
WARN: License VALUE_ACMS_GENERIC_REAL_TIME is in the 30-day grace period.  
Verify that the WebLM interface is working correctly.  
WARN: License VALUE_ACMS_GENERIC_REAL_TIME_ADDL_SESSIONS is in the 30-day  
grace period.  
Verify that the WebLM interface is working correctly.  
  
License check: Successful  
  
Press Enter to return to menu:
```

### 6.3. Check Intra-hour Interval

From the **MainMenu** screen, select **System Setup** → **Storage Intervals** and press **Enter**.

```

10/ 1/21  10:05  Avaya(TM) CMS

lMainMenuqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
x Reports>                                     x
x Dictionary>                                 x
x Exceptions>                                 x
x Agent Administration>                       x
x Call Center Administration>                 x
x Custom Reports>                             x
x User Permissilqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
x System Setup>x Switch Setup                 x
x Maintenance> x Pseudo-ACD Setup             x
x CALA-RTA>   x Load Pseudo-ACD Data          x
x Generic-RTA> x Data Storage Allocation       x
x RT_Socket>  x Free Space Allocation          x
x Calabrio>   x Storage Intervals             x
x ECH Handler> x Main Menu Addition            x
x Logout      x CMS State                      x
x ;           x Data Collection                 x
mqqqqqqqqqqqqqqqqx External Application Status x
                   x Data Summarizing          x
                   x Migrate Data              x
                   x Data Summarization Time Zone x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
  
```

The **System Setup: Storage Intervals** screen is displayed. Make certain that the administered **intra-hour interval** for the historical data is “30 minutes”, as it is required by Calabrio Workforce Management.

```

System Setup: Storage Intervals      interopcm
Intrahour interval (Select one):    x Modify
                                     mqqqqbbbbb
    < > 15 minutes
    <x> 30 minutes
    < > 60 minutes

Data summarizing time: 12:35 AM
Switch time zone offset (-23 to +23): 0

Week start day      Week stop day
(Select one):      (Select one):
    <x> Sunday      < > Sunday
    < > Monday      < > Monday
    < > Tuesday      < > Tuesday
    < > Wednesday    < > Wednesday
    < > Thursday      < > Thursday
    < > Friday        < > Friday
    < > Saturday      <x> Saturday

Daily start time: 12:00 AM
Daily stop time: 11:59 PM
  
```

## 7. Configure Calabrio Workforce Management

This section provides the procedures for configuring Calabrio Workforce Management. The procedures include the following areas:

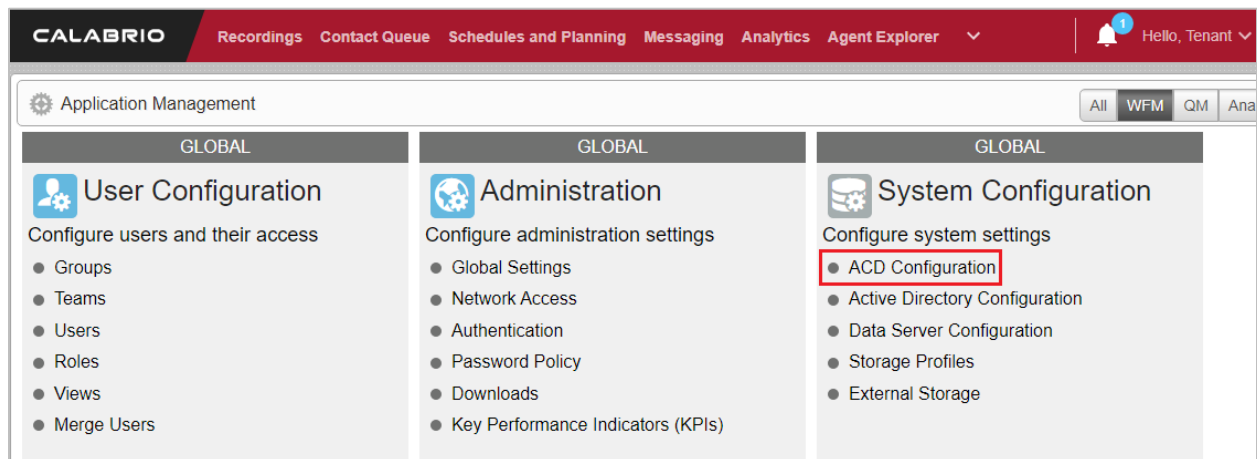
- Administer Real-Time Interface Port
- Administer Historical Report Directory
- Administer Skills
- Administer Teams
- Administer Agents
- Administer DNs

Note that configuration of Calabrio Workforce Management is typically performed by the Calabrio deployment engineers. The procedural steps presented in these Application Notes are for informational purposes.

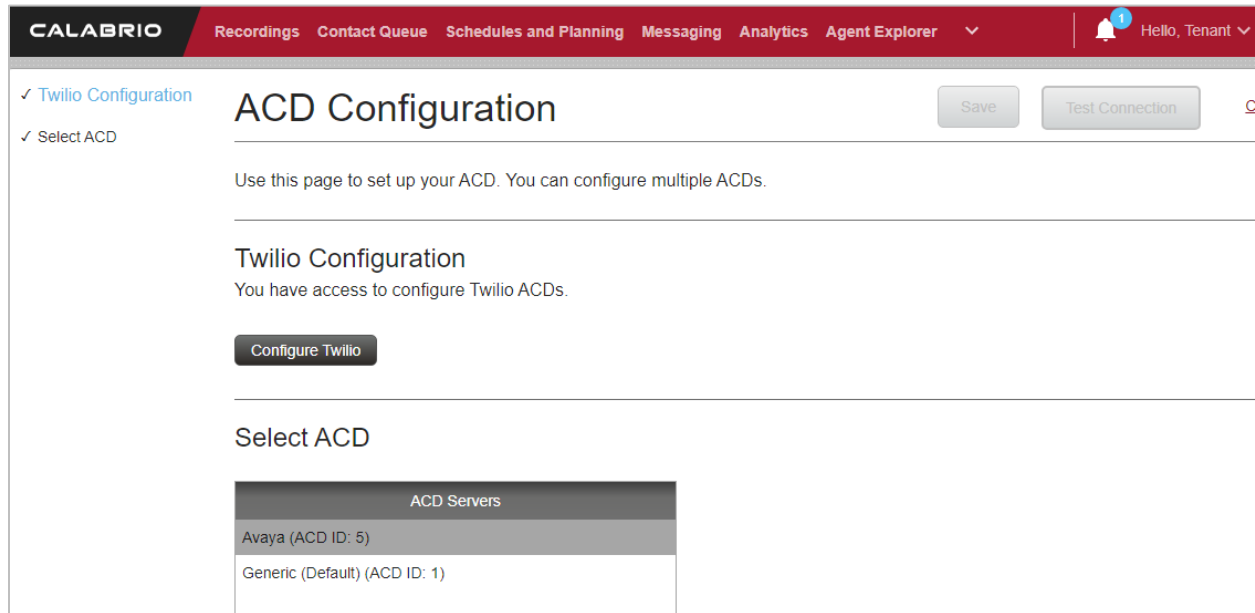
### 7.1. Administer Real-Time Interface Port

The configuration of the Calabrio server is performed using Calabrio One web interface. Access the web interface via a browser to the IP Address of Calabrio One server. Log on using appropriate credentials.

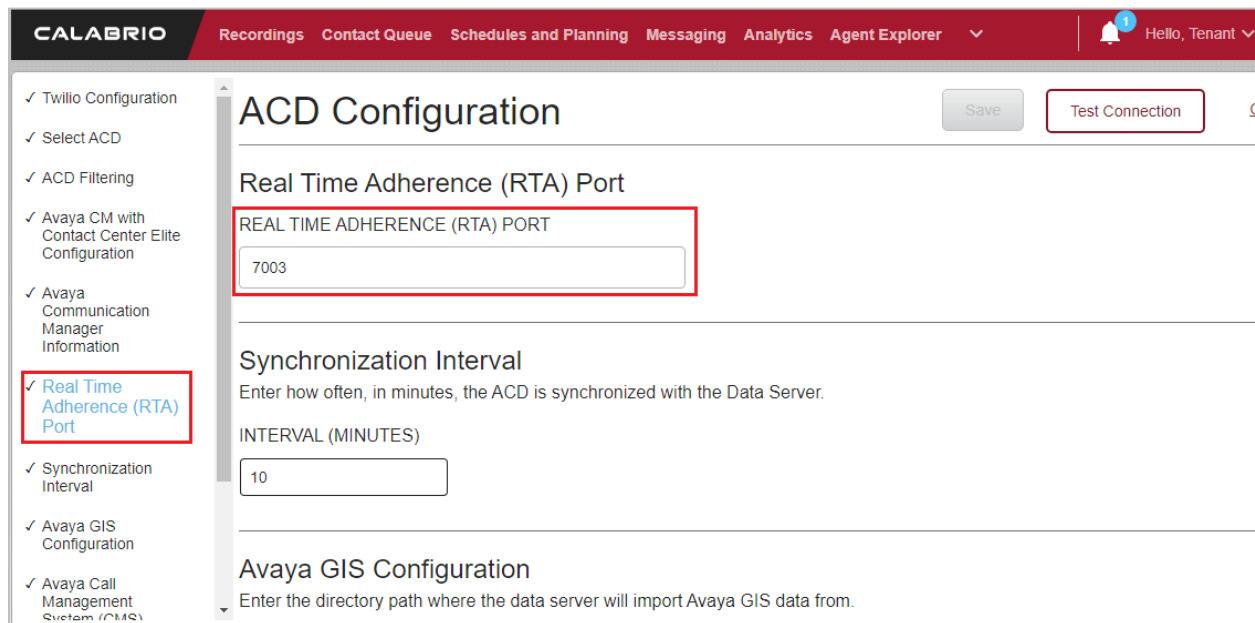
From the **Dashboard**, navigate to **Application Management** → **ACD Configuration**.



On the ACD Configuration, select the ACD **Avaya (ACD ID: 5)** that is previously added.



In the left pane, select **Real Time Adherence (RTA) Port** section, the **Real Time Adherence (RTA) Port** section is displayed in the right pane, enter the assigned port that is configured in the Generic-RTA adapter in **Section 6.1**.



## 7.2. Administer Historical Report Directory

From the ACD Configuration page above, select **Avaya GIS Configuration** item from the left pane and enter a local directory in the Calabrio server where the historical data files uploaded from CMS.

The screenshot shows the Calabrio ACD Configuration page. The left sidebar contains a list of configuration items, with 'Avaya GIS Configuration' highlighted in a red box. The main content area is titled 'ACD Configuration' and includes a 'Save' button and a 'Test Connection' button. Below the title, there is a section for 'Avaya GIS Configuration' with the instruction: 'Enter the directory path where the data server will import Avaya GIS data from.' A text input field labeled 'DIRECTORY' contains the path 'C:\Program Files\Common Files\Calabrio ONE\Data Server\gi'. Below this is a section for 'Avaya Call Management System (CMS) Connection Configuration' with the instruction: 'Use these fields to configure the settings for data reconciliation. This is information used to import CR data and call variables into u defined metadata.' It includes a label 'CMS SERVER ADDRESS' and a text input field for the hostname or IP address.

## 7.3. Administer Skills

To add a new skill, select **Services Queues** under Services and select **Create a new service queue**.

The screenshot shows the Calabrio Service Queues page. The left sidebar contains a list of configuration items, with 'What Do You Want To Do?' highlighted in a blue box. The main content area is titled 'Service Queues' and includes a 'Save' button and a 'Delete' button. Below the title, there is a section for 'What Do You Want To Do?' with two radio button options: 'Edit or delete an existing service queue' and 'Create a new service queue'. The 'Create a new service queue' option is selected.

- Type in the **SERVICE QUEUE ID** as configured in CMS. In this case 11, where 1 is the ACD number and 1 is the Skill number.
- Type in a descriptive name for **SERVICE QUEUE NAME**.
- Set the **Service Queue Type** to the pre-configured **Voice (Interactive)**.

Click **Save** once done. Add additional skills for each skill mentioned in **Section 5.2**.

**CALABRIO** Recordings Contact Queue Schedules and Planning Messaging Analytics Agent Explorer Hello, Tenant

### Service Queues

✓ What Do You Want To Do?  
✓ Service Queue Information  
✓ Service Queue Type  
✓ Time Zone  
✓ Parameters  
✓ Opening and Closing Hours  
✓ Minimum Scheduling Block Duration  
✓ Multiskill Groups  
✓ Skill Mappings  
✓ Virtual Service Queue  
✓ Main Service Queue  
✓ Scheduling Order

Skill-1

SOURCE ACD  
Select the ACD that is the source of the user's data. In a synced environment this value is autofilled.

Avaya

SERVICE QUEUE ID  
Identifies the service queue in the ACD

11

Do not generate forecasts or schedules for this service queue

Service Queue Type  
Select the type of customer contact handled by this service queue. IMPORTANT: Once a service queue type is assigned to a service queue and saved, it cannot be changed.

Voice [Interactive]

## 7.4. Administer Teams

To add a new team, select **Teams** under **Users Configuration**, and select **Create a new team**.

- Type in a name for the team in **Team Name** (not shown).

Click **Save** once done.

**CALABRIO** Recordings Contact Queue Schedules and Planning Messaging Analytics Agent Explorer Hello, Tenant

### Teams

✓ What Do You Want To Do?  
✓ Name  
✓ Group  
✓ Users  
✓ Productivity  
✓ Staged Upload Location  
✓ Storage Profile

Use this page to create and manage teams. If your ACD syncs team data with WFM, consult the documentation to understand how that affects any changes you make here.

What Do You Want To Do?

Edit an existing team  
 Create a new team  
 Import and export teams

## 7.5. Administer Agents

To add a new agent, select **Agents** under **Users**, and select **Create a new agent** (not shown).

- Type in values for **FIRST NAME**, **LAST NAME** and **EMPLOYEE ID** (not shown).

**CALABRIO** Recordings Contact Queue Schedules and Planning Messaging Analytics Agent Explorer Hello, Tenant

### Users

✓ What Do You Want To Do? Save

**User Information**

✓ Password FIRST NAME LAST NAME

✓ ACD Information Agent 1000 Agent 1000

✓ Activate USER NAME  
The user's email address. This will be the user's Calabrio ONE user name which will be used to log in.

Roles Email Address

Team

✓ Associated Groups and Teams WINDOWS LOGIN  
The user's Windows login credentials. In an Active Directory environment, this is the user's AD username.

- Type in the ACD ID as configured in CMS. In this case 11000, where 1 is the ACD number and 1000 is the Agent ID.

Check the box for **Activate this Agent**.

**CALABRIO** Recordings Contact Queue Schedules and Planning Messaging Analytics Agent Explorer Hello, Tenant

### Users

✓ What Do You Want To Do? Save

User Information

✓ Password ACD ID  
The agent's ID as set up in the ACD.

✓ ACD Information 11000

✓ Activate ACD SERVER  
The ACD server that the user is set up in.

Roles Avaya

Team

✓ Associated Groups and Teams

✓ WFM Views

✓ QM Views

✓ Agent's Calls Require Reconciliation

✓ Display Time Zone

✓ Scheduling

### Activate

Users cannot log in unless they are activated.

**Activate this user**

CREATION DATE  
The date the user record was created.

2021-10-05 12:25:15 -0500



- Assign the agent to a **Team** by selecting an **Available** team and clicking >. In this case, team Avaya was added. Note that the team was configured in Section 7.4.

Click **Save** once done. Add additional agents for each agent mentioned in **Section 5.2**.

## 7.6. Administer DNs

To add a new **Directory Number** to map to each VDN, select **Directory Numbers** under **Services Queue**, and select **Create a new DN**.

- Type in the **DIRECTORY NUMBER** as configured in CMS. In this case 13340, where 1 is the ACD number and 3340 is the VDN.

- Assign skills to the DN by selecting **Available** skills and clicking >. In this case, **Skill-1**. Note that these skills are as configured in **Section 7.3**.

Click **Save** once done. Add additional VDNs for each VDN mentioned in **Section 5.1**.

**CALABRIO** Recordings Contact Queue Schedules and Planning Messaging Analytics Agent Explorer Hello, Tenant

✓ What Do You Want To Do?  
 ✓ DN Information  
 ✓ Service Queues

## Directory Numbers

Save Delete

13340 VDN 1

### Service Queues

Select the service queues this DN is routed to and specify the days and hours it is routed.

Basic Filter	Assigned	Start Time	End Time	Sun	Mon	Tue	Wed	Thur	Fri	Sat
Available	Skill-1	00:00	23:59	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

AAEP Virtual  
 AAEP Virtual  
 AMM  
 AMM  
 SIP-HG  
 SIP-HG  
 Skill-1 - Old  
 Skill-2  
 Skill-2  
 Skill-3  
 Skill-3  
 Voice Portal Inbound

## 8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of CMS and Calabrio Workforce Management.

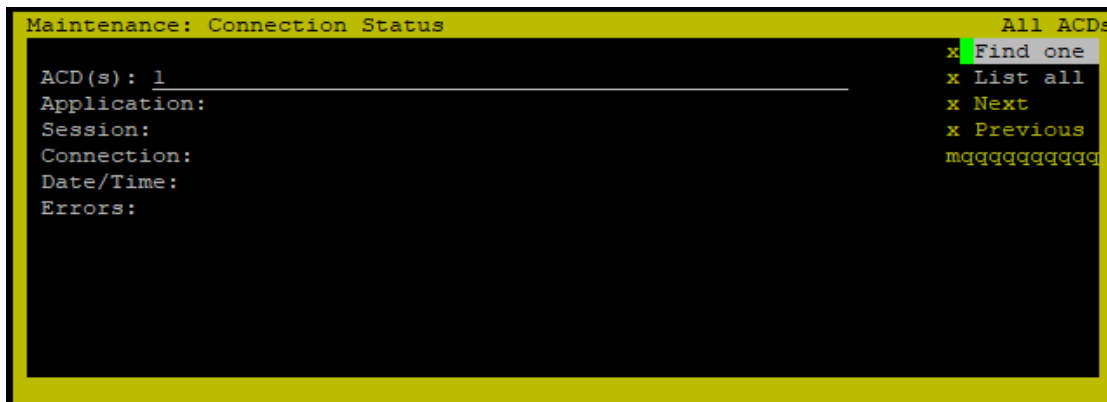
### 8.1. Verify Call Management System

From the CMS server, follow the procedures in **Section 6.2** to display the **MainMenu**. Verify the status of the connection to Communication Manager by selecting **Maintenance Connection Status**, and press the **Enter** key.

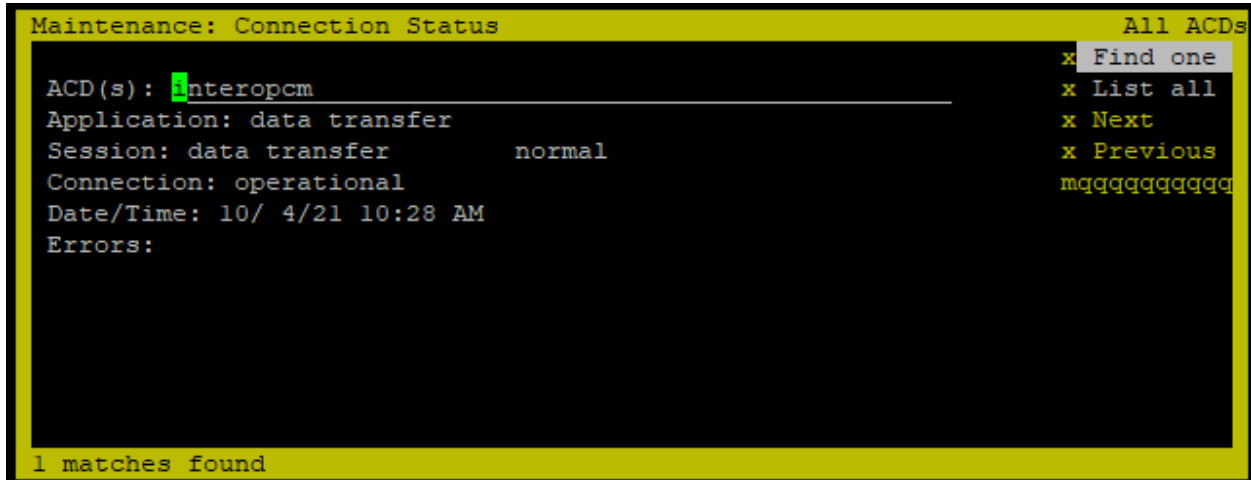
```
10/ 4/21 10:21 Avaya(TM) CMS
Windows: 0 of 10 ^

lMainMenuqqqqqqqqqqqqqqqqqqqqqqqqk
x Reports> x
x Dictionary> x
x Exceptions> x
x Agent Administration> x
x Call Center Administration> x
x Custom Reports> x
x User Permissions> x
x System Setup>lqqqqqqqqqqqqqqqqqqqqk
x Maintenance> x Back Up Data x
x CALA-RTA> x Restore Data x
x Generic-RTA> x Backup/Restore Devices x
x RT_Socket> x Printer Administration x
x Calabrio> x Report Administration x
x ECH Handler> x Connection Status x
x Logout x ACD Status x
x ; x Archiving Status x
mqqqqqqqqqqqqqqqqqqqqqqqx ACD Admin Log Report x
x Error Log Report x
x Firewall Status x
x License Status x
mqqqqqqqqqqqqqqqqqqqqqqqj
```

In the **Maintenance: Connection Status** dialog box, enter the corresponding ACD(s) number followed by the Enter key. For the compliance testing, the corresponding switch connection is ACD “1”. Select **Find one** in the right window and press Enter.

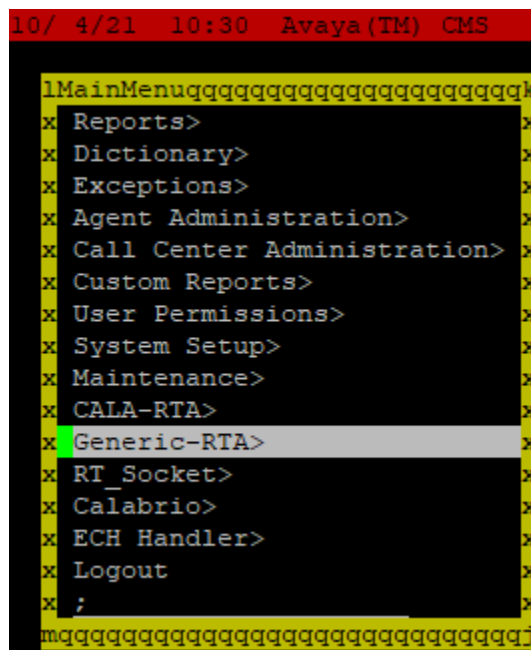


The Maintenance: Connection Status dialog box is updated with status information. Verify that the Session status is “**data transfer**” and “**normal**”, and that the **Connection** status is “**operational**”, as shown below.



## 8.2. Verify Call Management System Real-Time Adapter

From the **MainMenu** screen, select the **Generic-RTA** option and press Enter.



The **Generic-RTA** Menu is displayed. Enter **3** to check the status of the Generic RTA session.

```
----- Generic-RTA Menu -----  
1) Start Generic-RTA Interface  
2) Stop Generic-RTA Interface  
3) Check Generic-RTA Status  
4) View Maintenance Log  
5) Show Generic-RTA Version  
6) Show/Verify Licensed Authorizations  
7) Show Staffed Agents Count  
8) Change Generic-RTA Split(s)/Skill(s) and/or ACD  
9) Show Generic-RTA Configuration  
Q) Quit  
-----  
Selection:3
```

Verify that the session is running and is connected.

```
Current Status of Configured Sessions:  
-----  
Generic-RTA session 1 is running, not encrypted, and connected.  
Generic-RTA session 2 is running, not encrypted, and not connected.  
  
Press Enter to return to menu:
```

### 8.3. Verify Avaya Call Management System Historical Adapters

From the **MainMenu** screen, select the **Calabrio** option and press **Enter**.

```
10/ 4/21 10:36 Avaya(TM) CMS  
  
lMainMenuqqqqqqqqqqqqqqqqqqqqqqqqqqk  
x Reports> x  
x Dictionary> x  
x Exceptions> x  
x Agent Administration> x  
x Call Center Administration> x  
x Custom Reports> x  
x User Permissions> x  
x System Setup> x  
x Maintenance> x  
x CALA-RTA> x  
x Generic-RTA> x  
x RT Socket> x  
x Calabrio> x  
x ECH Handler> x  
x Logout x  
x ; x  
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
```

The **cala Reports Interface** menu is displayed.

```
cala Reports Interface

  1) Display configuration information
  -----
  2) Recover one day           (DAILY DATA)
  3) Recover multiple days    (DAILY DATA)
  -----
  4) Recover one interval     (INTERVAL DATA)
  5) Recover one day          (INTERVAL DATA)
  6) Recover multiple intervals (INTERVAL DATA)
  7) Recover multiple days    (INTERVAL DATA)
  -----
  8) View log (new to old)
  9) View log (old to new)
  -----
  Q) Quit
Selection:
```

Enter **1** followed by the **Enter** key, to display the configuration of the Calabrio Historical Adapters. Verify that the configuration matches what was configured in **Section 6.4**.

```
Current Configuration - V6.3.17

SESSION  ACD      INTRVL  DAILY  DEST  HOST      DIR
1        1       30      0300   ftp   10.33.1.64 .

Press ENTER to continue:
```

Press **Enter** to return to the **cala Reports Interface** menu. Enter **8** followed by the **Enter** key, to display the log. Verify that the Calabrio Historical Adapters have successfully created and transferred three historical reports every 30 minutes.

```
License check: Successful
Check that the weblm interface is working correctly
WARN: License VALUE_ACMS_CALABRIO_HISTORICAL is in the 30 day grace period
and will expire on 2021-10-25 11:47:46 EDT
License check: Successful
Check that the weblm interface is working correctly
WARN: License VALUE_ACMS_CALABRIO_HISTORICAL is in the 30 day grace period
and will expire on 2021-10-25 11:47:46 EDT
2021-10-04 12:35:01 INFO transport: Session 1 FTP SUCCESS, file:
2021100410001.vdn bytes: 156
2021-10-04 12:35:01 INFO transport: Session 1 FTP SUCCESS, file:
2021100410001.skill bytes: 204
2021-10-04 12:35:01 INFO transport: Session 1 FTP SUCCESS, file:
2021100410001.agent bytes: 997
      1 row(s) unloaded.
Check that the weblm interface is working correctly
```

## 8.4. Verify Calabrio Workforce Management

Prior to verifying Calabrio Workforce Management, make calls to the measured resources on Communication Manager, to enable measurement data to be sent to CMS.

### 8.4.1. Verify Real-Time Agent Data

From the Calabrio Workforce Management web-based administration interface, click **Dashboard** (not shown), and verify the agent states under the **Schedules and Planning** → **Agent Schedules**.

The screenshot shows the 'Agent Schedules' page in the Calabrio interface. The top navigation bar includes 'Recordings', 'Contact Queue', 'Schedules and Planning', 'Messaging', 'Analytics', 'Agent Explorer', 'Reporting', and 'Data Explorer'. The main header shows 'Agent Schedules' with filters for '[-0800/-0700] America/Lc' and 'Skill-1 (11)'. A calendar at the top indicates the current date is October 4th. Below the calendar is a table with columns for 'Agents', 'Schedule Activity', 'Agent State', 'Duration', 'RC', 'A %', 'C %', and a grid for time slots (12 PM, 1 PM, 2 PM). The table lists six agents with their respective activities and states.

Agents	Schedule Activity	Agent State	Duration	RC	A %	C %	12 PM	1 PM	2 PM
Agent 1000 Agent 1000	In Service	Ready Available	32:38	--	28	45			
Agent 1001 Agent 1001	In Service	Ready Available	39:43	--	34	44			
Agent 1002 Agent 1002	Break	Logged Out	25:44:47	--	0	0			
Agent 1003 Agent 1003	In Service	Not Ready	33:30	--	0	0			
Agent 1004 Agent 1004	In Service	Logged Out	9:45:41	--	0	0			
Agent 1005 Agent 1005	In Service	Logged Out	9:45:41	--	0	0			

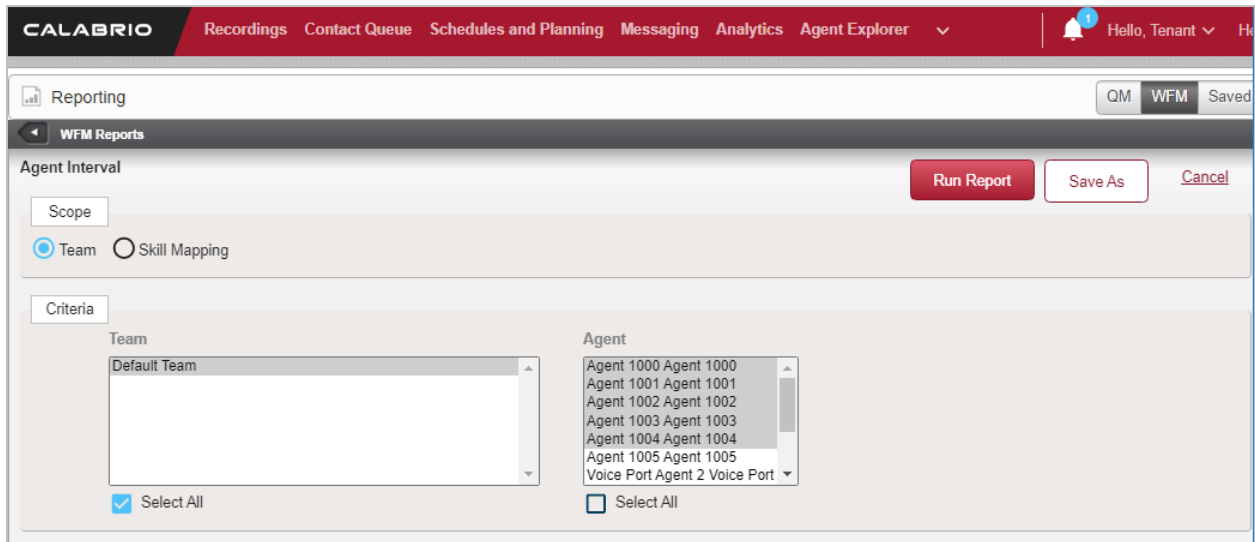
### 8.4.2. Verify Historical Reports

From the Calabrio Workforce Management web-based administration interface, click **Reporting**, and select a report, **Agent Interval** in this case.

The screenshot shows the 'Reporting' page in the Calabrio interface. The top navigation bar includes 'Recordings', 'Contact Queue', 'Schedules and Planning', 'Messaging', 'Analytics', 'Agent Explorer', and a user profile 'Hello, Tenant'. The main header shows 'Reporting' with tabs for 'QM', 'WFM', and 'Saved'. Below the header is a list of 'WFM Reports' organized into several categories with expandable sub-items.

WFM Reports
Agent and Team Performance
▶ Agent and Team Productivity
Service Queue Performance
▶ Agent Interval
▶ Agent Service Queue Interval
▶ Interval Service Queue
▶ Service Queue Agent Interval
▶ Team Agent Interval
▶ Team Interval
Schedule View
▶ Assigned Exception
▶ Agent Overtime
▶ Agent Schedule Daily
▶ Agent Schedule Weekly
▶ Agent Task Percentages
▶ Service Queue Schedule By Agent
▶ Service Queue Schedule By Interval
▶ Team Schedule Task Hours
Performance Analysis
▶ Agent Report Card
▶ Performance Daily
▶ Performance Interval
Planning
▶ Vacation Status
▶ Shift Budget Analysis
Strategic Planning
▶ Facility Planning (hardware)
▶ Staff Planning
▶ Hiring Plan
▶ Budgetary Planning

- Select the team that was configured in Section 7.4 under Team.
- Select an agent or all agents under Agent.
- Click **Run Report**.



Verify that the **Agent Interval** report is displayed in a pop-up window, and that the report is filled with historical agent data, **Agent 1000** in this case.

Agent Interval													Date: 10/04/2021
CALABRIO													
Run By: Tenant Admin													
Agent	Agent ACD ID	Interval	Date	Calls Handled	Average Talk Time	Average Work Time	Average Handle Time	In Service Time	Ready State Time	Busy State Time	Other Occupancy %	Utilization %	
Agent 1001 Agent 1001	11001	10:00	10/04/2021	0	0:00:00	0:00:00	0:00:00	0:24:05	0:24:05	0:00:05	0.0	0.0	
Agent 1001 Agent 1001	11001	Total		0	0:00:00	0:00:00	0:00:00	0:24:05	0:24:05	0:00:05	0.0	0.0	
Agent 1000 Agent 1000	11000	10:00	10/04/2021	1	0:00:44	0:00:00	0:00:44	0:24:43	0:23:57	0:00:04	3.0	3.0	
Agent 1000 Agent 1000	11000	Total		1	0:00:44	0:00:00	0:00:44	0:24:43	0:23:57	0:00:04	3.0	3.0	
Agent 1003 Agent 1003	11003	10:00	10/04/2021	0	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:17:50	--	0.0	
Agent 1003 Agent 1003	11003	Total		0	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:17:50	--	0.0	

Run Date: October 4, 2021 10:00 AM



## 9. Conclusion

These Application Notes describe the configuration steps required for Calabrio Workforce Management R11.5 to interoperate with Avaya Call Management System R19.2, via the real-time and customized historical call measurement data adapters provided by Avaya Professional Services. All feature and serviceability test cases were completed successfully.

## 10. Additional References

Product documentation for Avaya products may be found at <http://support.avaya.com>.

- [1] Administering Avaya Aura® Communication Manager, Release 8.1.x, Issue 12, July 2021.
- [2] Administering Avaya Aura® Session Manager, Release 8.1.x, Issue 10, September 2021.
- [3] Administering Avaya Call Management System, Release 19.x, Issue 11, March 2021.

Product documentation related to Calabrio One can be obtained directly from Calabrio.

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