



Application Notes for Calabrio Workforce Management with Avaya Call Management System R17 – 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 the 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 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 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

Interoperability testing of the sample configuration was completed with successful results for Calabrio Workforce Management.

2.3. Support

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

- **Phone:** 1-800-303-1248
- **Email:** 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, Call Management System, and several IP phones. The Calabrio application resided on a VMWare virtual machine running on a blade server. The GUI interface of Calabrio Workforce Management was accessible through a web browser. All calls to and from the public network were routed through an ISDN PRI trunk.

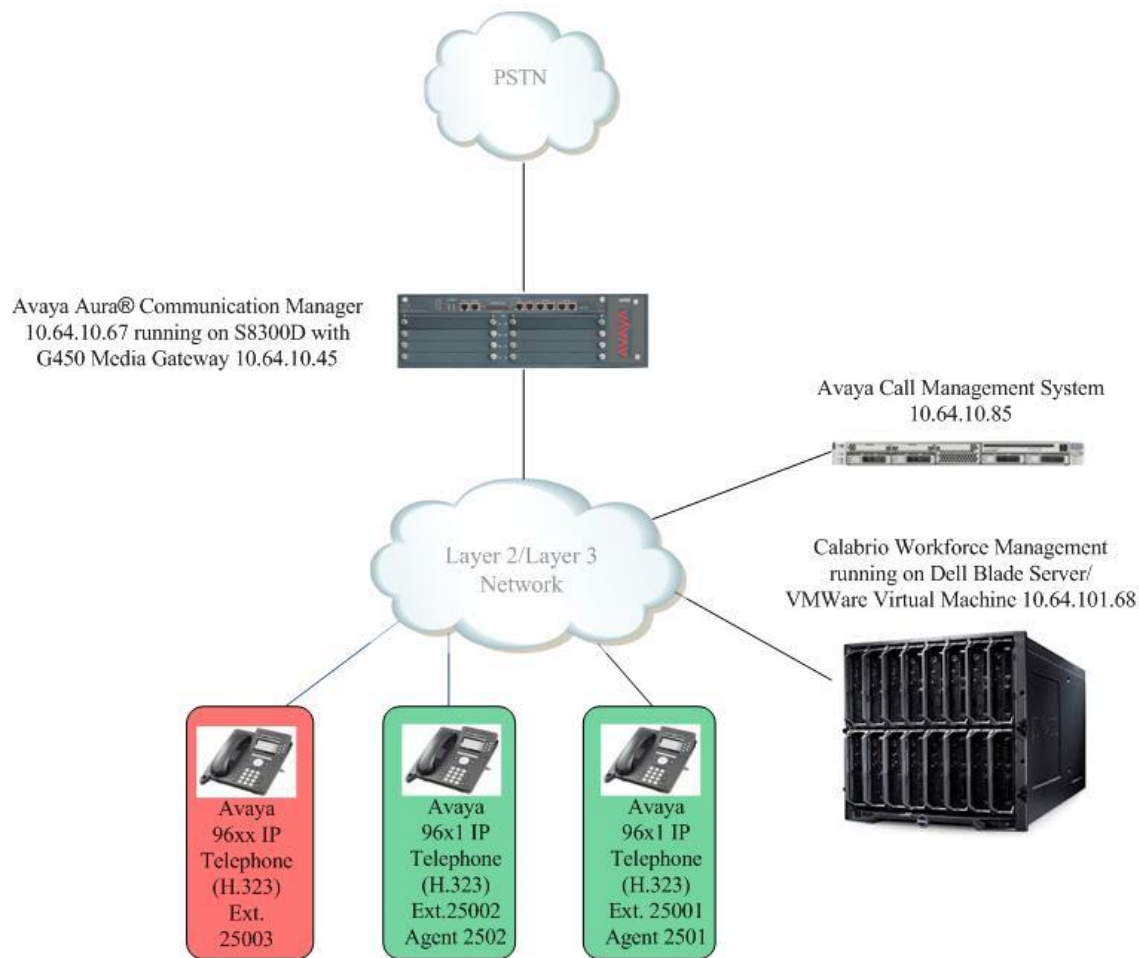


Figure 1: Calabrio Workforce Management with Avaya Call Management System

4. Equipment and Software Validated

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

Equipment/Software	Version
Avaya S8300D Server running Avaya Aura® Communication Manager	Release 6.3 SP 5
Avaya G450 Media Gateway MGP MM710 T1 Module	HW 1 FW 31.20.0 HW 04 FW 015
Avaya Call Management System	R17.3
Avaya 96x1 H.323 Telephones	Avaya one-X® Deskphone Release 6.3.1
Avaya 96x0 H.323 Telephones	Avaya one-X® Deskphone Release 3.1.4
Calabrio Workforce Management running under Windows Server 2008 R2 SP1	Release 9.2

5. Configure Avaya Aura® Communication Manager

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**.

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

For the compliance testing, the following contact center devices were used.

VDN	Skill	Agents
10001	1	2501
10002	2	2502
10003		2503

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 “external” 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 25900	Page 1 of 3
VECTOR DIRECTORY NUMBER	
Extension: 10001	
Name*: cms test - skill 1	
Destination: Vector Number 1	
Attendant Vectoring? n	
Meet-me Conferencing? n	
Allow VDN Override? n	
COR: 1	
TN*: 1	
Measured: external	
VDN of Origin Annc. Extension*:	
1st Skill*: 1	
2nd Skill*:	
3rd Skill*:	

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 “external” 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
                                HUNT GROUP
                                Page 2 of 4

                                Skill? y      Expected Call Handling Time (sec): 20
                                AAS? n      Service Level Target (% in sec): 80 in 20
                                Measured: external
Supervisor Extension:

Controlling Adjunct: none

Multiple Call Handling: none

Timed ACW Interval (sec): 1      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, two agents with extensions 25001 and 25002 and agent id 2501 and 2502 were used as available agents for the above Skill groups.

```

list agent-loginID 2501 count 2

                                AGENT LOGINID
Login ID      Name      Extension      Dir Agt  AAS/AUD      COR Ag Pr SO
              Skil/Lv Skil/Lv Skil/Lv Skil/Lv Skil/Lv Skil/Lv Skil/Lv Skil/Lv
2501          IP Agent 1    25002          1          1    lvl
              1/01    2/01    /      /      /      /      /
2502          IP Agent 2    25001          1          1    lvl
              1/01    2/01    /      /      /      /      /

```


6. Configure Avaya Call Management System

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.

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.

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:

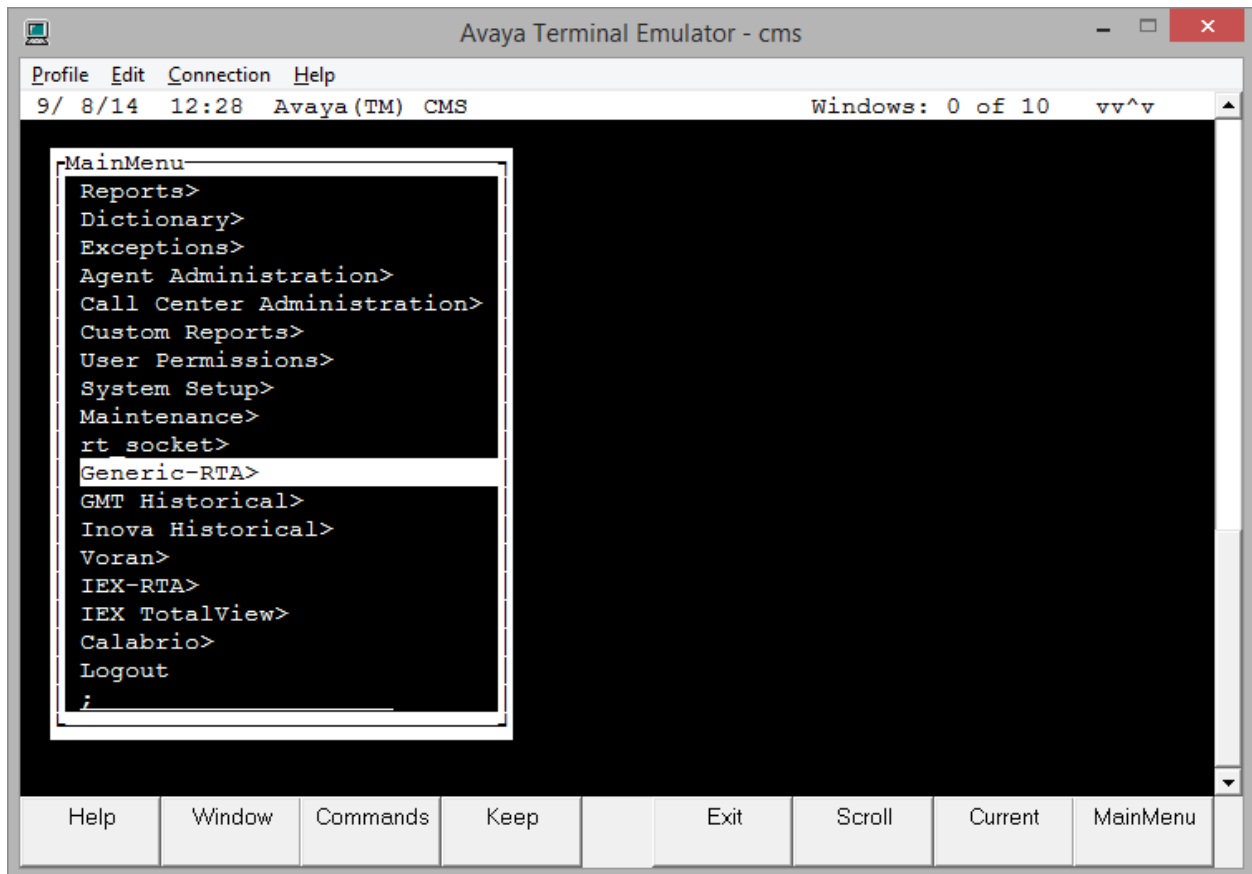
- **HOST:** hostname of the Calabrio server which is defined in **/etc/hosts**
- **PORT:** port for the TCP/IP connection
- **ACD:** ACD that sources the real-time date
- **REFRESH:** real-time report refresh rate

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

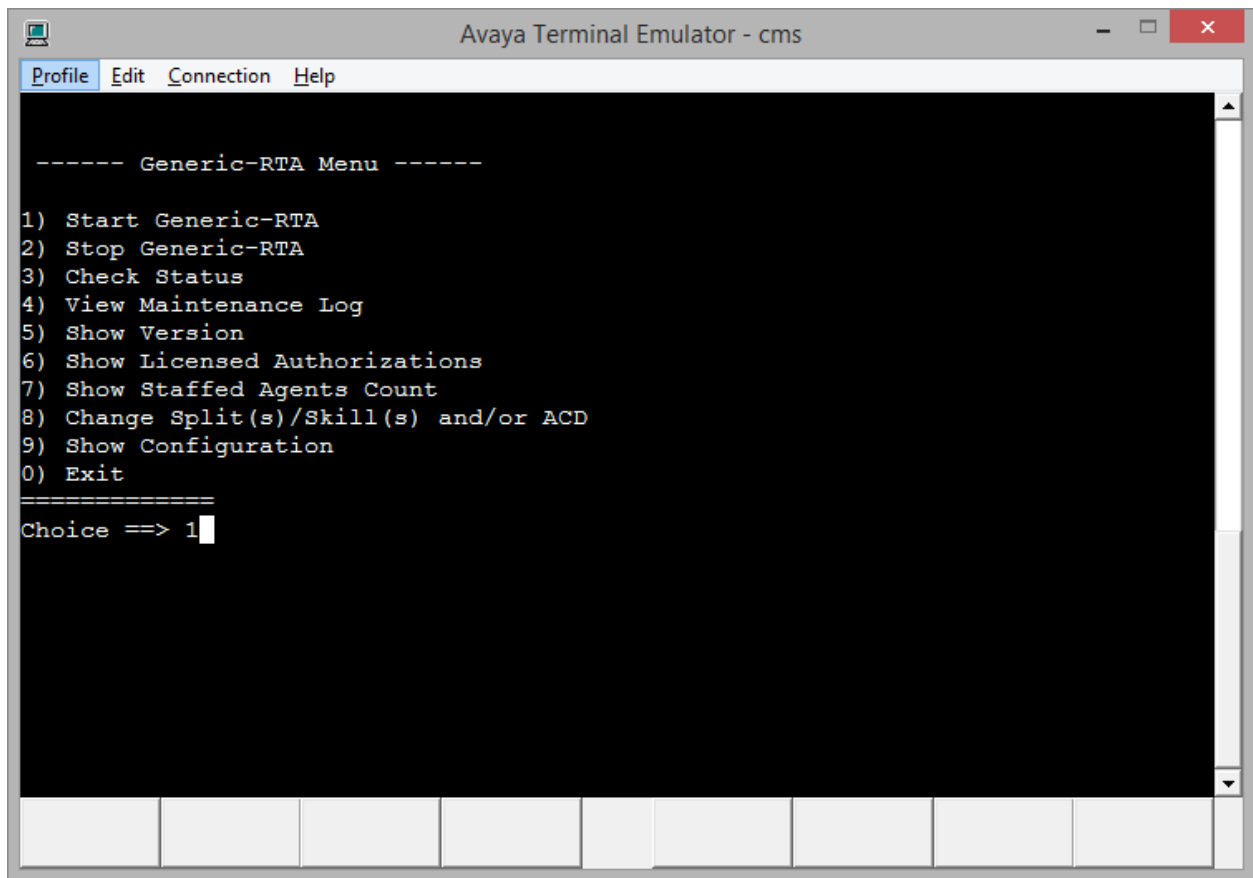
```
#----- Session 1 -----
HOST1=calabrio           # the receiving server's host name in /etc/hosts
PORT1=5000               # the receiving server's port
ACD1=3                   # ACD being monitored
OPTS1=""                 # applicable command line options
REPORT1=rta_gen          # respective custom report name
MONITOR_LIST1="1-999"    # skills to monitor
REFRESH1=15              # respective report refresh rate
```


6.2. Enable Generic-RTA Adapter

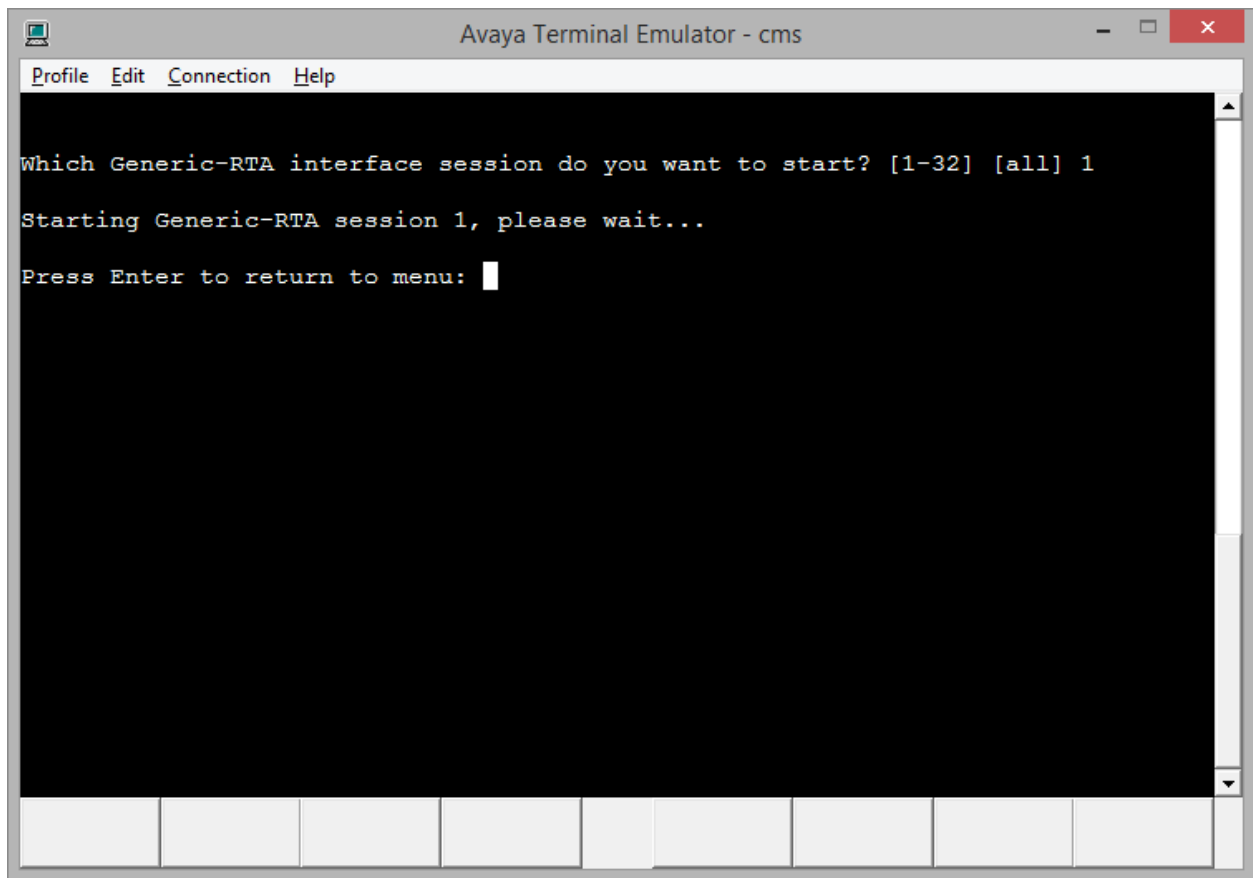
Use Avaya Terminal Emulator to connect to CMS, and log in with proper credentials. Enter “cms” at the command prompt to display the **MainMenu** screen. Select the option that corresponds to the customized real-time agent interface created by Avaya Professional Services for Calabrio, in this case the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



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



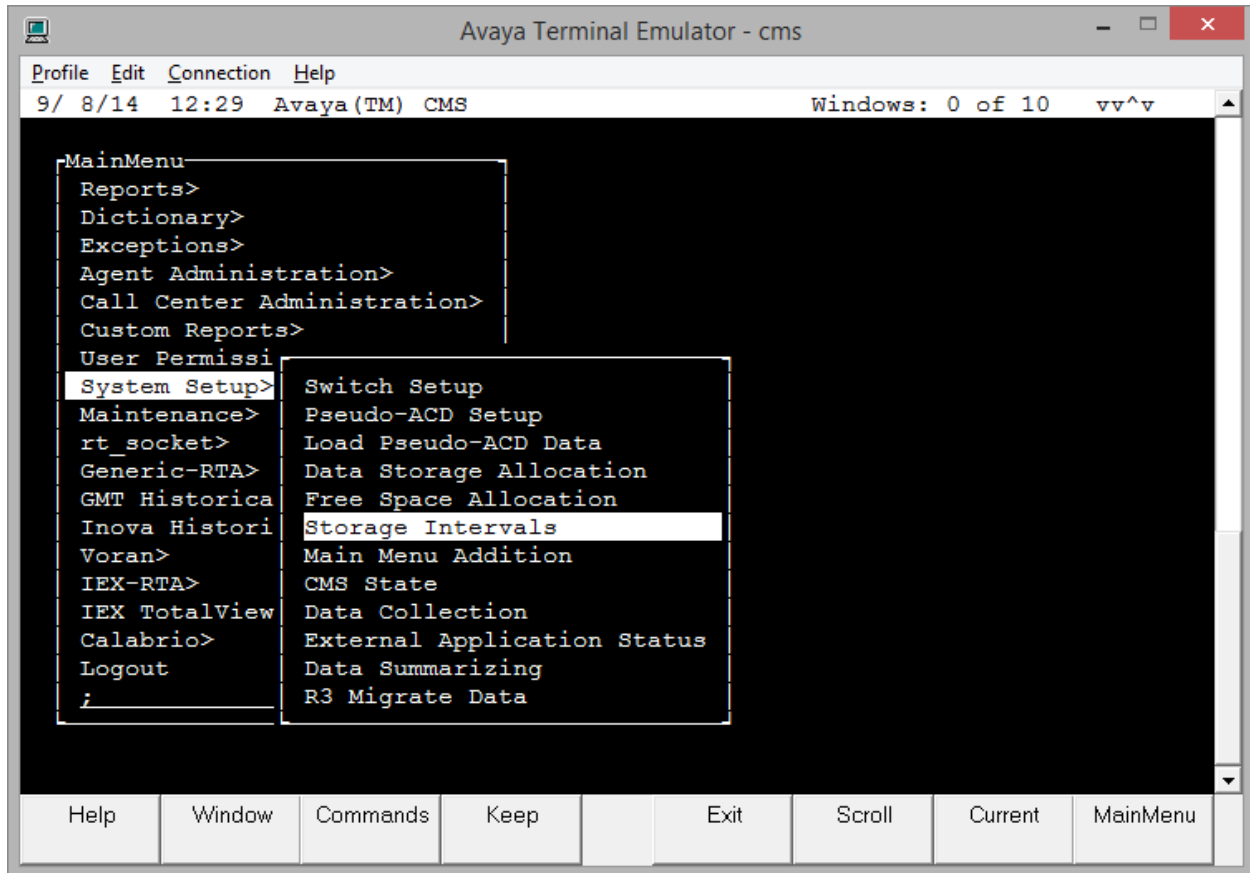
The system will prompt for the session number. Enter the session number selected in **Section 6.1** and the **Enter** key.



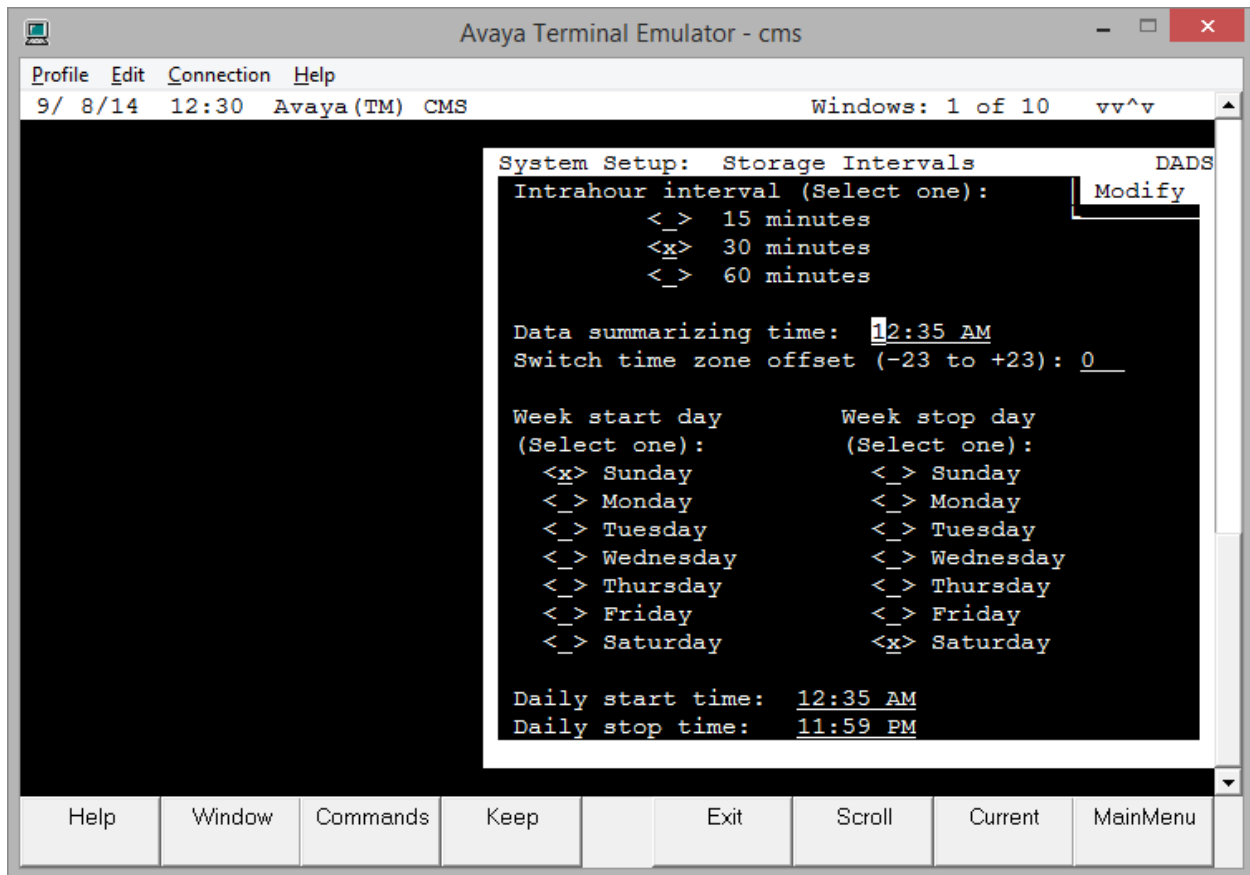
Press the **Enter** key followed by "0" to return to the CMS **MainMenu**.

6.3. Check Intra-Hour Interval

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



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.



7. Configure Calabrio Workforce Management

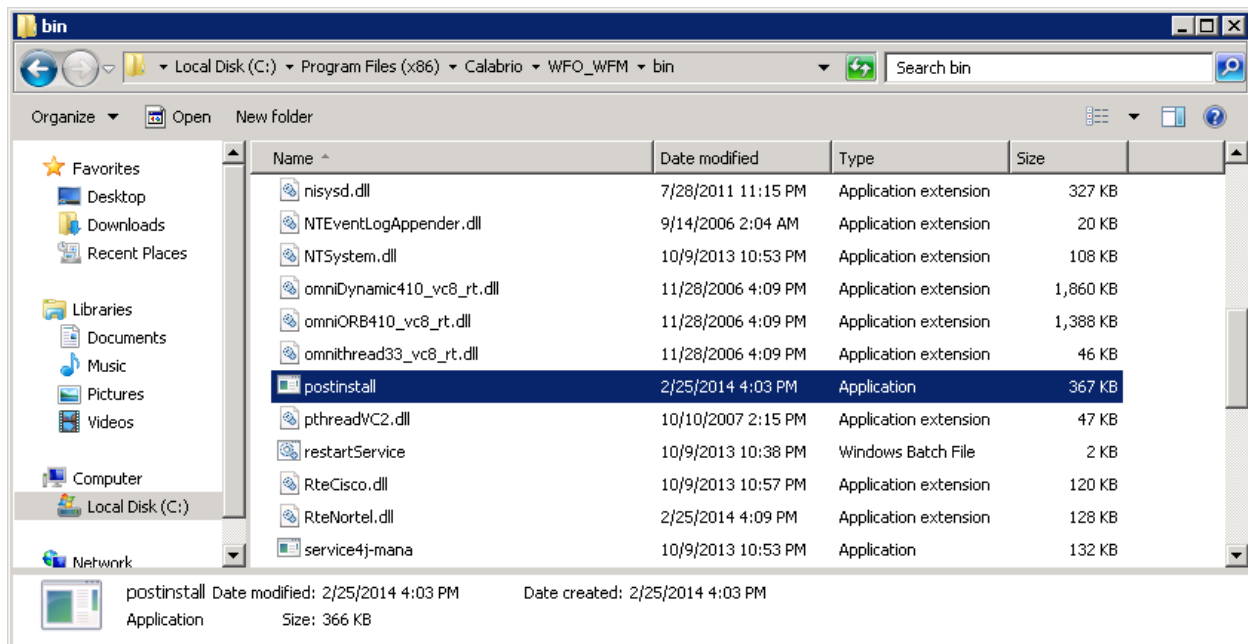
This section provides the procedures for configuring Calabrio Workforce Management. The procedures include the following areas:

- Administer real-time interface port
- Administer historical report directory
- Administer services
- Administer skills
- 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

From the Calabrio Workforce Management server, open a Windows Explorer window, and navigate to the directory **C:\Program Files (x86)\Calabrio\WFO_WFM\bin**. Double click the **postinstall.exe** file.



The following screen is displayed.

The screenshot shows the 'Workforce Management - Configuration Setup' window with the 'WFM Database' tab selected in the left pane. The main area is titled 'WFM Database' and contains the following fields:

- ☐ Host Name ☒ IP Address
- Host Name or IP: 10.64.101.68
- DB Instance Name: SQLEXPRESS
- User Name: sa
- Password: *****

At the bottom of the main area are two buttons: 'PREVIOUS' and 'NEXT'.

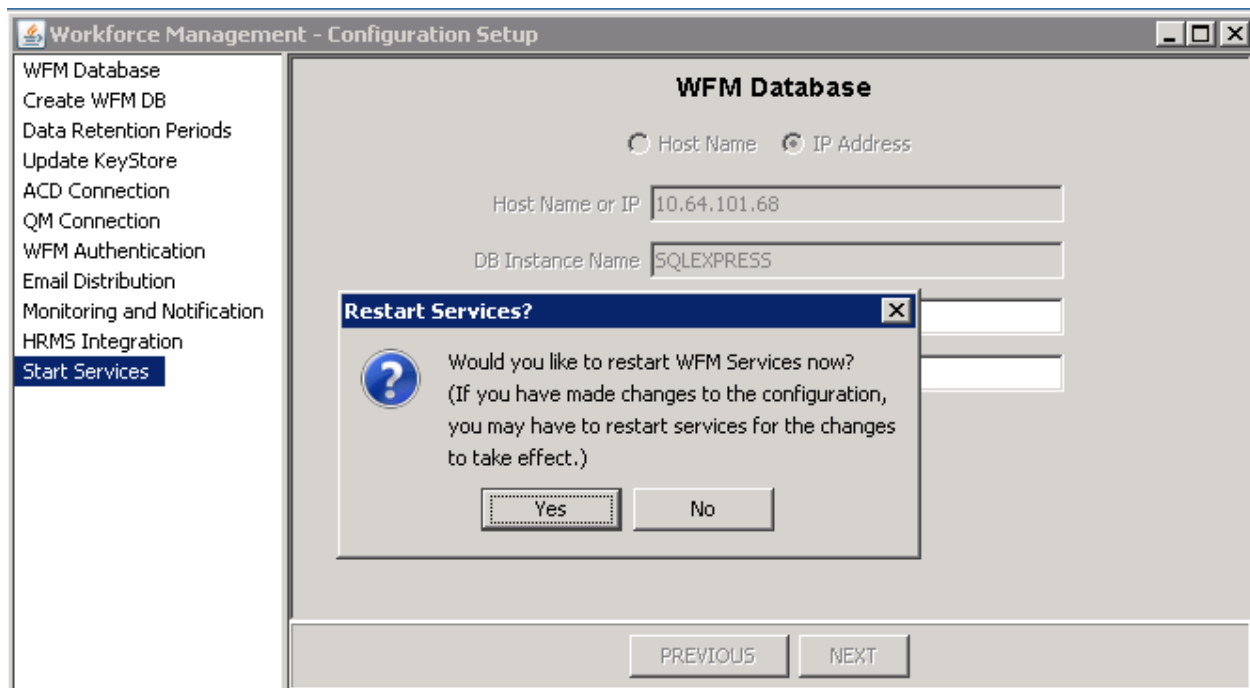
Click **ACD Connection** in the left pane. Select **Avaya** in the **Select ACD** field and enter “5000” as configured in **Section 6.1** in the **RTA Port** field.

The screenshot shows the 'Workforce Management - Configuration Setup' window with the 'ACD Connection' tab selected in the left pane. The main area is titled 'ACD Connection' and contains the following fields:

- Select ACD: Avaya CMS
- Select Language: English
- RTA Port: 5000

At the bottom of the main area are two buttons: 'PREVIOUS' and 'NEXT'.

Click **Start Services** in the left pane and answer “Yes” when a **Restart Services?** window pops up to start the Calabrio Workforce Management services.



7.2. Administer Historical Report Directory

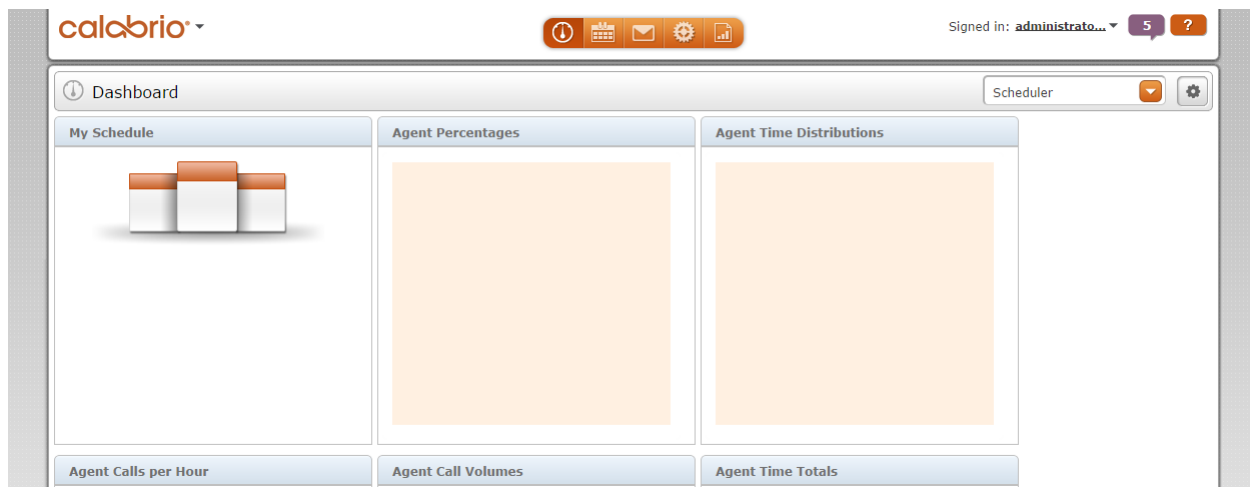
A third party FTP server is co-located with the Calabrio Workforce Management application in the Calabrio server. The Historical Report Directory is fixed at the **Program Files (x86) → Calabrio → WFO_WFM → reports** directory in the Calabrio Workforce Management application and has to be configured in the FTP server along with other FTP attributes. The FTP server configuration is beyond the scope of these application notes and is not specified here.

Access the Calabrio Workforce Management web-based administration interface by using the URL “http://ip-address/” in an Internet browser window, where “ip-address” is the IP address of the Calabrio Workforce Management server. Log in using a valid user name and password with administrative privileges.

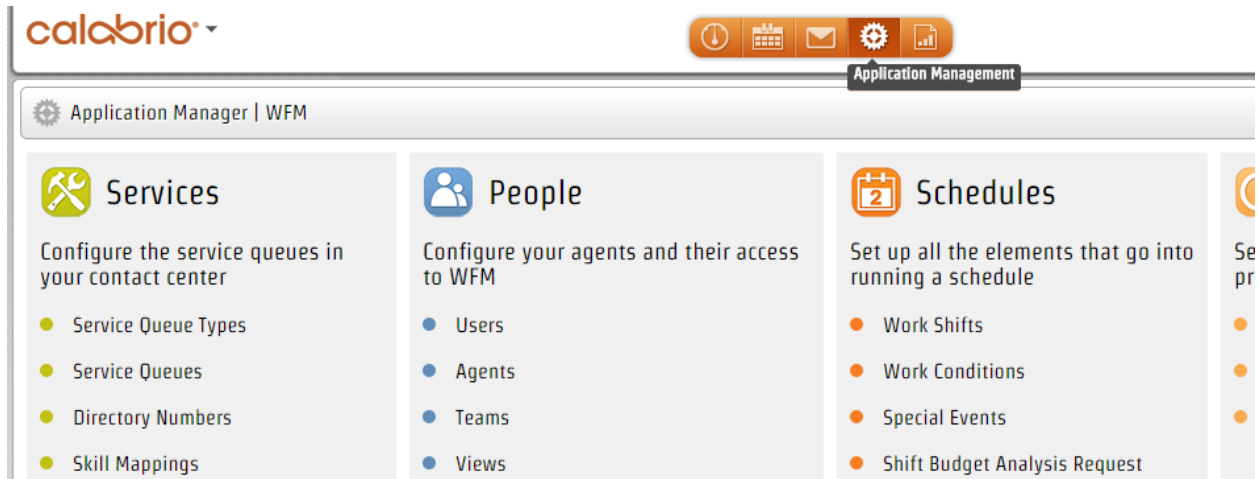


The login screen for Calabrio 1 features the company logo at the top, which includes the word "calabrio" in a stylized orange font and a large orange sphere with the number "1". Below the logo is the tagline "There's no end to better." The login form consists of two input fields: "Username" with the text "administrator" and "Password" with a single dot. Below these fields is a "Language" dropdown menu set to "English". At the bottom of the form are two buttons: "Validate my PC configuration" with a play icon and a "Login" button.

The **Dashboard** screen is displayed, as shown below.



To configure, Skills, VDNs , and Agents, select **Application Management**, as shown below.



7.3. Administer Skills

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

Service Queues

[Save](#)[Delete](#)[Cancel](#)

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

What Do You Want To Do?

- ☐ Edit or delete an existing service queue
- ☒ Create a new service queue

- Type in the **SERVICE QUEUE ID** as configured in Avaya CMS. In this case **31, 3** is the ACD number and **1** is the Skill number; as configured in **Section 6.1**.
- Type in a descriptive name for **SERVICE QUEUE NAME**
- Set the **Service Queue Type** to **Voice**. Note that the Service Queue Type of Voice was preconfigured.

Click **Save** once done.

Service Queue Information

SERVICE QUEUE ID
Identifies the service queue in the ACD

SERVICE QUEUE NAME
The name that identifies the service queue in WFM

- ☐ Do not generate forecasts or schedules for this service queue
- ☐ This service queue allows multi-skill agent queuing (MSAQ)

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.



7.4. Administer Team

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

- Type in a name for the team in **Team Name**.

Click **Save** once done.

Teams

Save

Delete

Cancel

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 or delete an existing team

☒ Create a new team

Team Name

Avaya

7.5. Administer Agents

To add a new agent, select **Agents** under **People**, and select **Create a new agent**.

Agents

Save

Delete

Cancel

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

What Do You Want To Do?

☐ Edit or delete an existing agent

☒ Create a new agent

- Type in values for **FIRST NAME**, **LAST NAME** and **EMPLOYEE ID**.
- Type in the **ACD ID** as configured in Avaya CMS. In this case **32501**, **3** is the ACD number and **2501** is the Agent ID; as configured in **Section 5.2** and **Section 6.1**.
- Check box for **Activate this Agent**.

Agent Information

FIRST NAME

Agent

LAST NAME

1

EMPLOYEE ID

Enter an alphanumeric ID to identify the agent in WFM.

Agent2501

USER NAME

The agent's WFM login name. This is set up and maintained in the user record linked to this agent.

ACD ID

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

2501

Seniority

WFM uses these dates and rank to determine the service queue's scheduling order.

COMPANY START DATE

The agent's date of hire.

2014-09-08

COMPANY END DATE

The agent will not be scheduled after this date (optional).

DEPARTMENT START DATE

The agent's start date in the contact center.

2014-09-08

RANK

The agent's ranking in the contact center based on expertise (optional).

Activate

Agents cannot be scheduled until they are activated.

☒ Activate this agent

- Assign the agent to a **Team** by selecting an **Available** team and clicking >. In this case, team **Avaya** was added. Note that the team is as configured in **Section 7.4**.
- Assign skills to the agent by selecting **Available** skills and clicking >. In this case, **Skill 1** and **Skill 2**. Note that these skills are as configured in **Section 7.3**.
- Assign work shift to the agent by selecting **Available** work shift and clicking >. In this case, **Avaya Work Shift**. This work shift was preconfigured and is not shown in this document.

Click **Save** once done.

Agents

Save Delete Cancel

Teams

Assign the agent to one or more teams, and designate one team as the agent's main team. The main team determines which team statistics and messages the agent sees on the dashboard.

Filter

Available	Assigned	Main Team
NewAgents	Avaya	

Skill Mappings

The skill mappings assigned to an agent determine which service queues the agent can be scheduled for.

Filter

Available	Assigned
Skill 1	Skill 1 Skill 2

Work Shifts

Assign one or more work shifts to the agent. Use the up and down arrows to set up a rotation order if desired. Each click moves the selected work shift up or down by a half step to change the order and to enable the creation of split shifts. Consult your documentation for more details.

Filter

Available	Assigned		
Avaya Work Shift	<table border="1"> <thead> <tr> <th>Date</th> </tr> </thead> <tbody> <tr> <td>Avaya Work Shift 2014-09-07</td> </tr> </tbody> </table>	Date	Avaya Work Shift 2014-09-07
Date			
Avaya Work Shift 2014-09-07			

7.6. Administer DNs

To add a new Directory Number (VDN), select **Directory Numbers** under **Services**, and select **Create a new DN**.

- Type in the **DIRECTORY NUMBER** as configured in Avaya CMS. In this case **310001**, **3** is the ACD number and **10001** is the VDN; as configured in **Section 5.1** and **Section 6.1**.
- Assign skills to the DN by selecting **Available** skills and clicking **>**. In this case, **Skill 1** and **Skill 2**. Note that these skills are as configured in **Section 7.3**.

Click **Save** once done.

Directory Numbers

Save Delete Cancel

Use this page to associate directory numbers (DNs) with service queues on specific days and times. The DN data is compiled with the service queue's data for more accurate statistics.

What Do You Want To Do?

- ☐ Edit or delete an existing DN
- ☒ Create a new DN

DN Information

DIRECTORY NUMBER

310001

DESCRIPTION

VDN 1

Service Queues

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

Filter

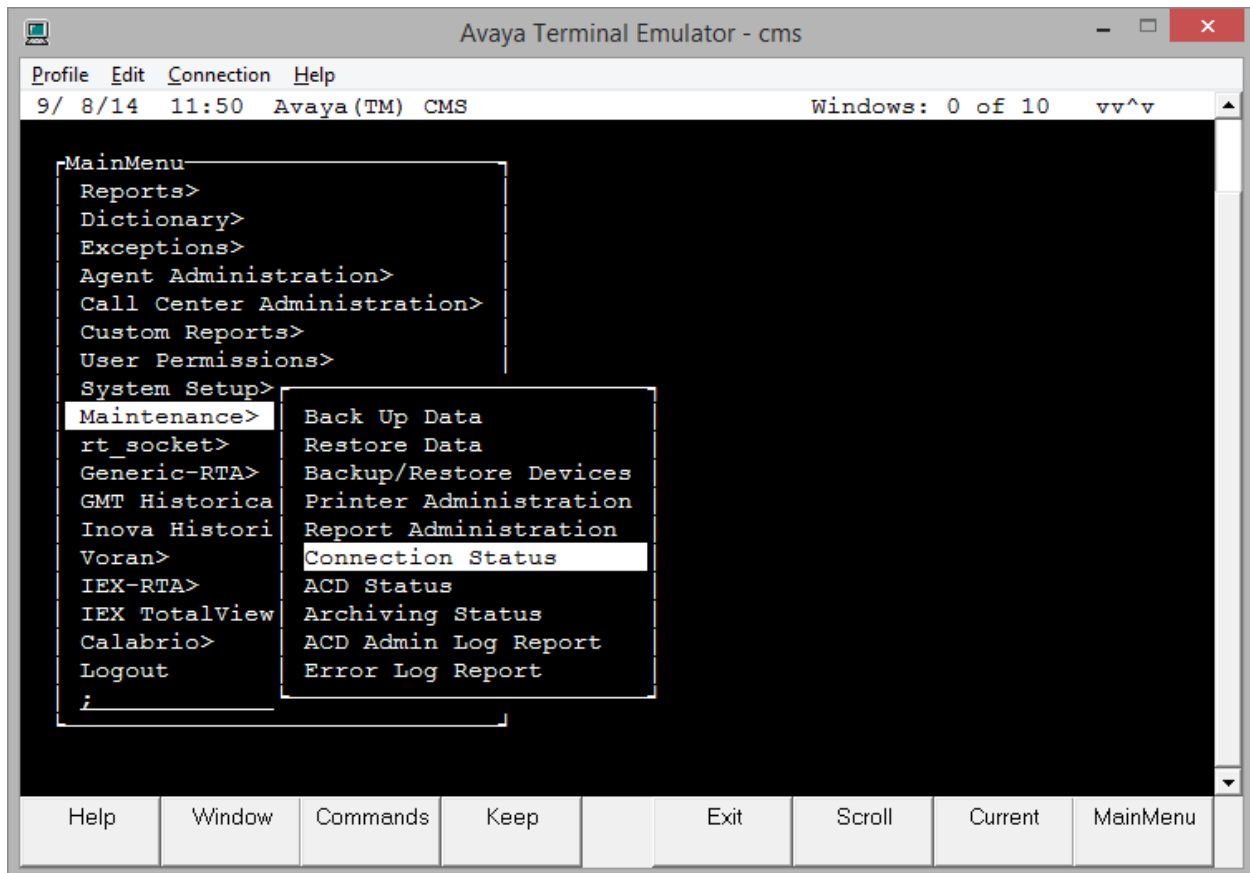
Available		Assigned	Start Time	End Time	Sun	Mon	Tue	Wed	Thur	Fri	Sat
Skill 1		Skill 1	00:00	23:59	✓	✓	✓	✓	✓	✓	✓
Skill 2		Skill 2	00:00	23:59	✓	✓	✓	✓	✓	✓	✓
Skill 3											

8. Verification Steps

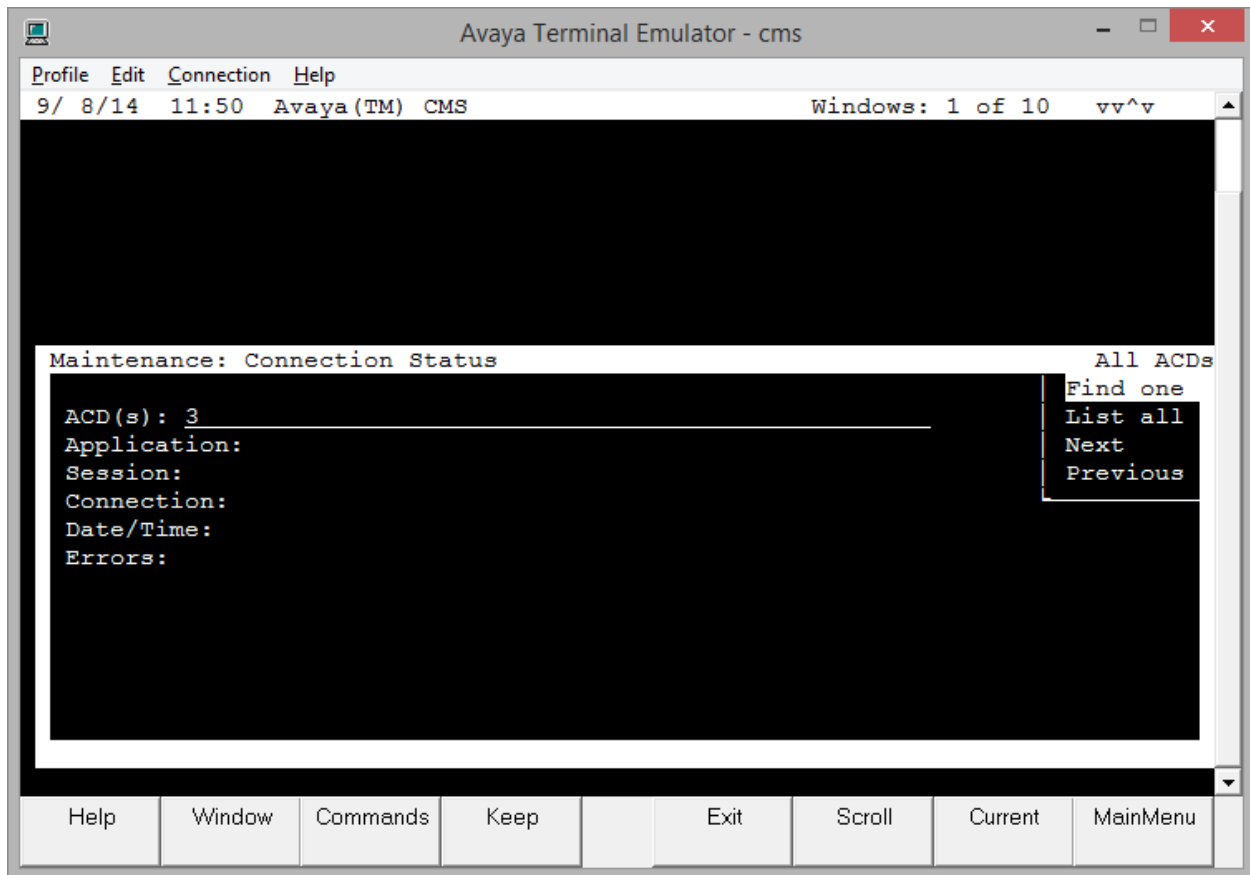
This section provides the tests that can be performed to verify proper configuration of CMS and Calabrio Workforce Management.

8.1. Verify Avaya Call Management System

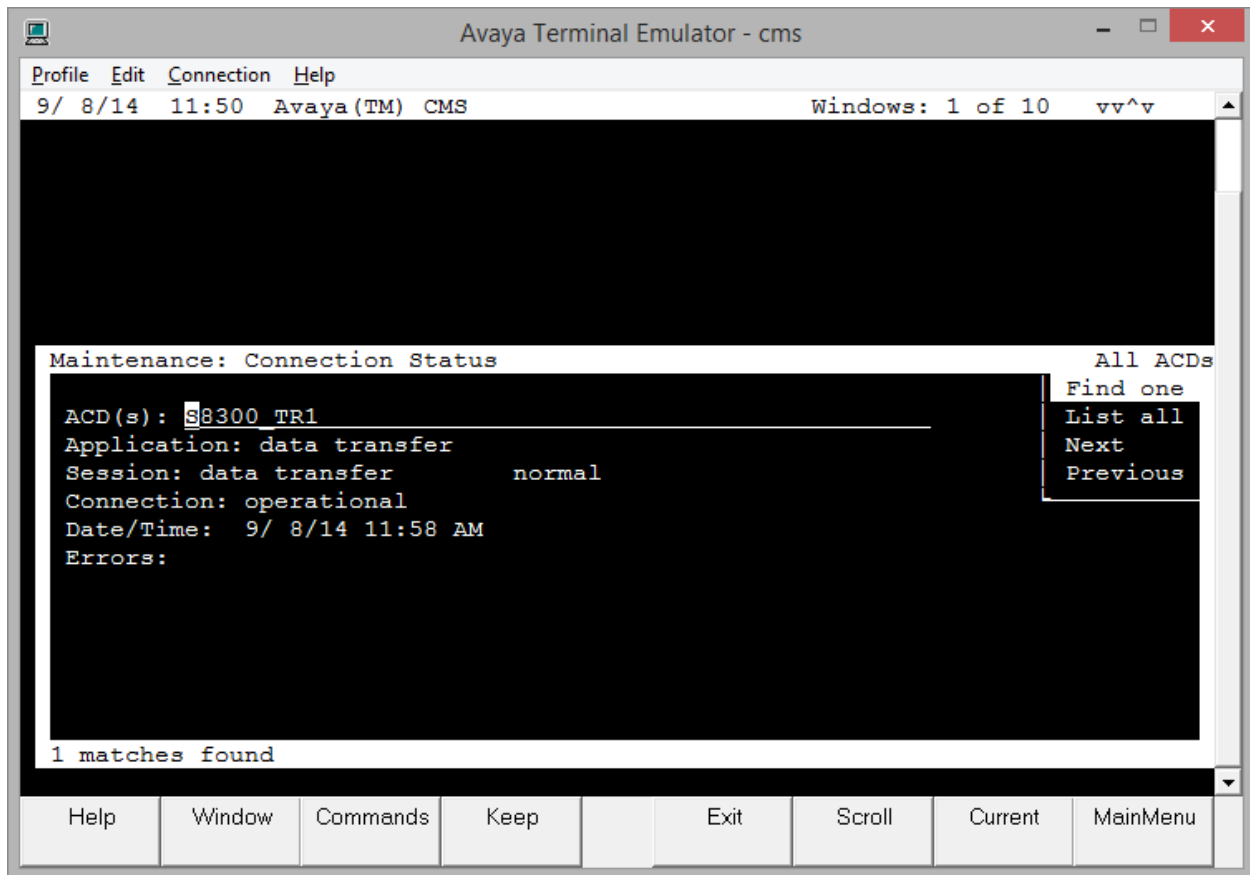
From the CMS server, follow the procedures in **Section 6.2** to display the **MainMenu**. Verify the status of the connection to Communication Manager by selecting **Maintenance** → **Connection Status**, and press the **Enter** key.



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 “3”. Select **Find one** in the right window and press **Enter**.

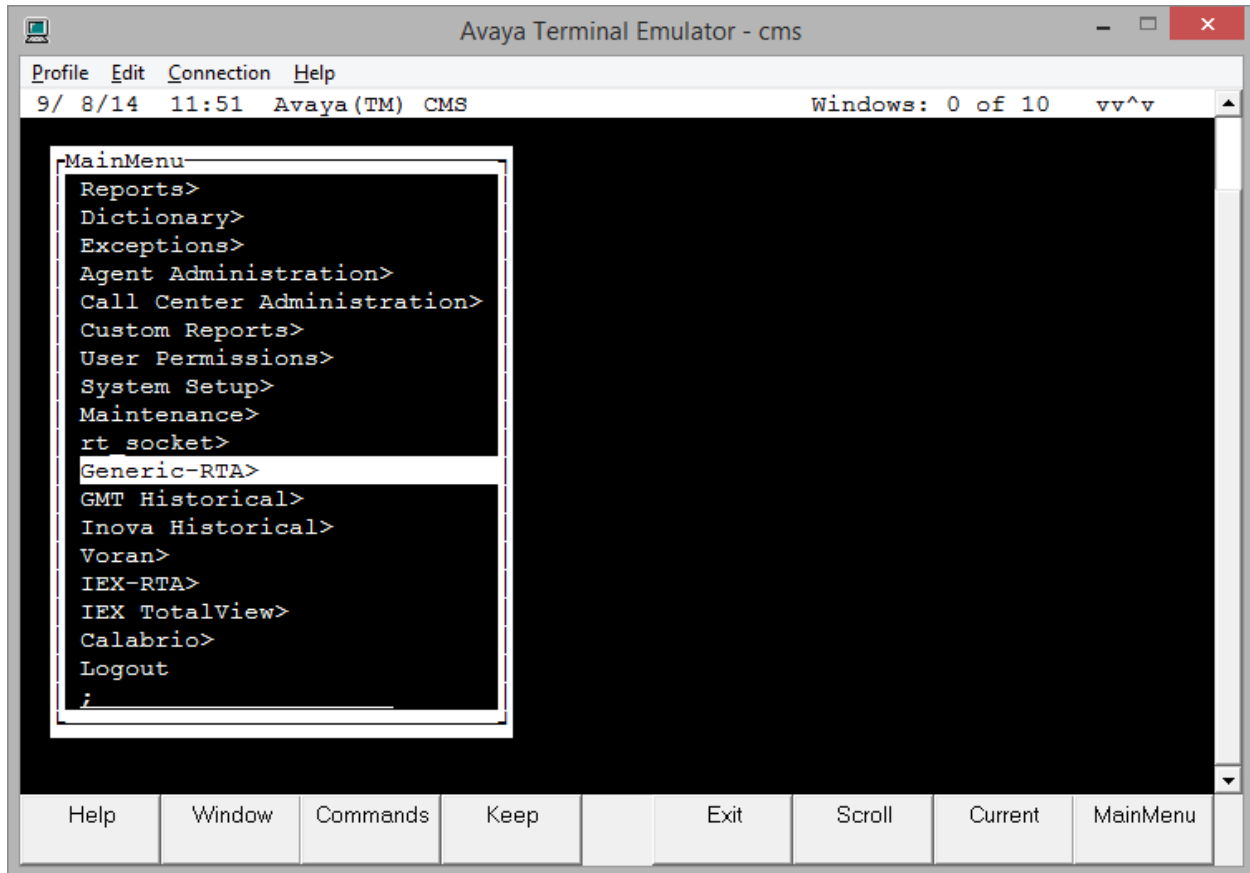


The **Maintenance: Connection Status** dialog box is updated with status information. Verify that the **Session** status is “data transfer” and “normal”, and that the **Connection** status is “operational”, as shown below. Please note that **S8300_TR1** is associated with ACD 3.

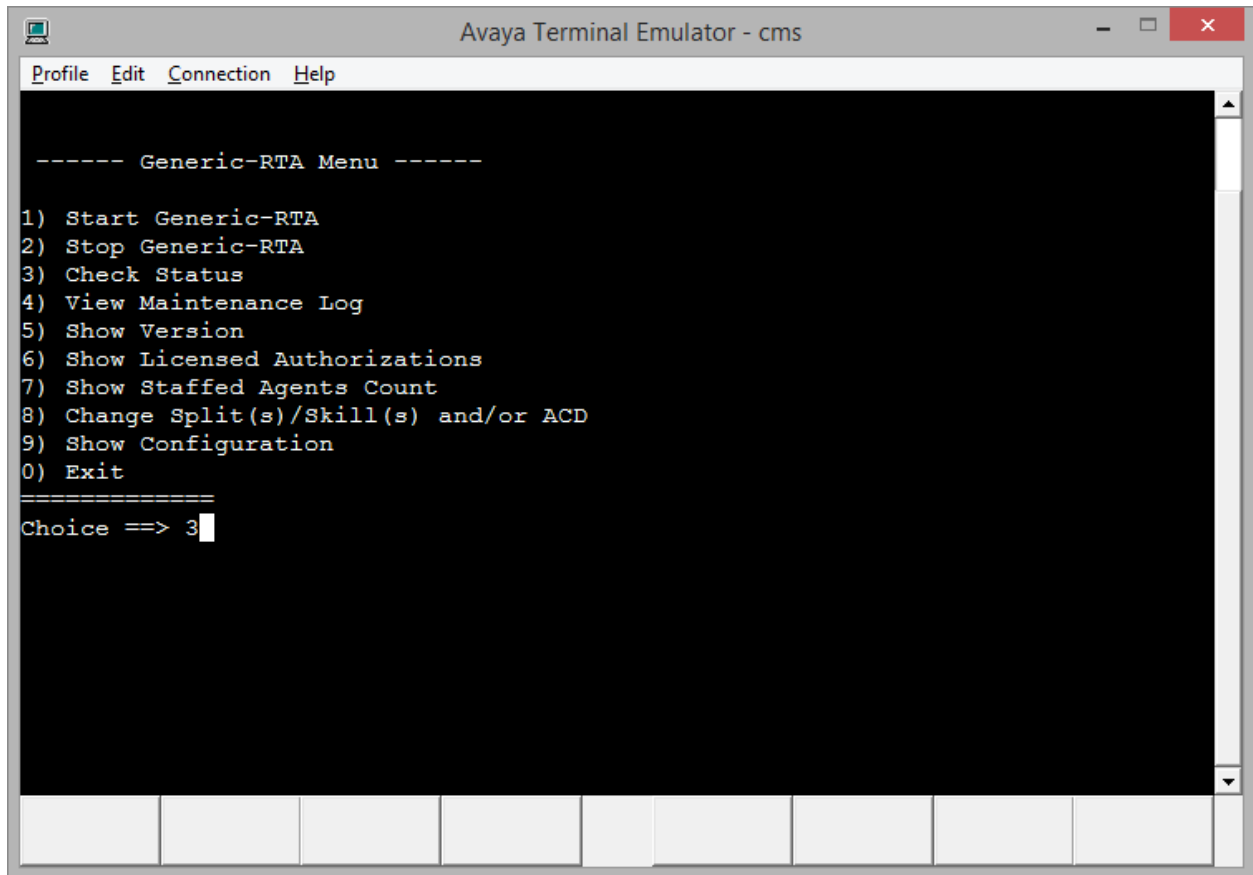


8.2. Verify Avaya Call Management System Real-Time Adapter

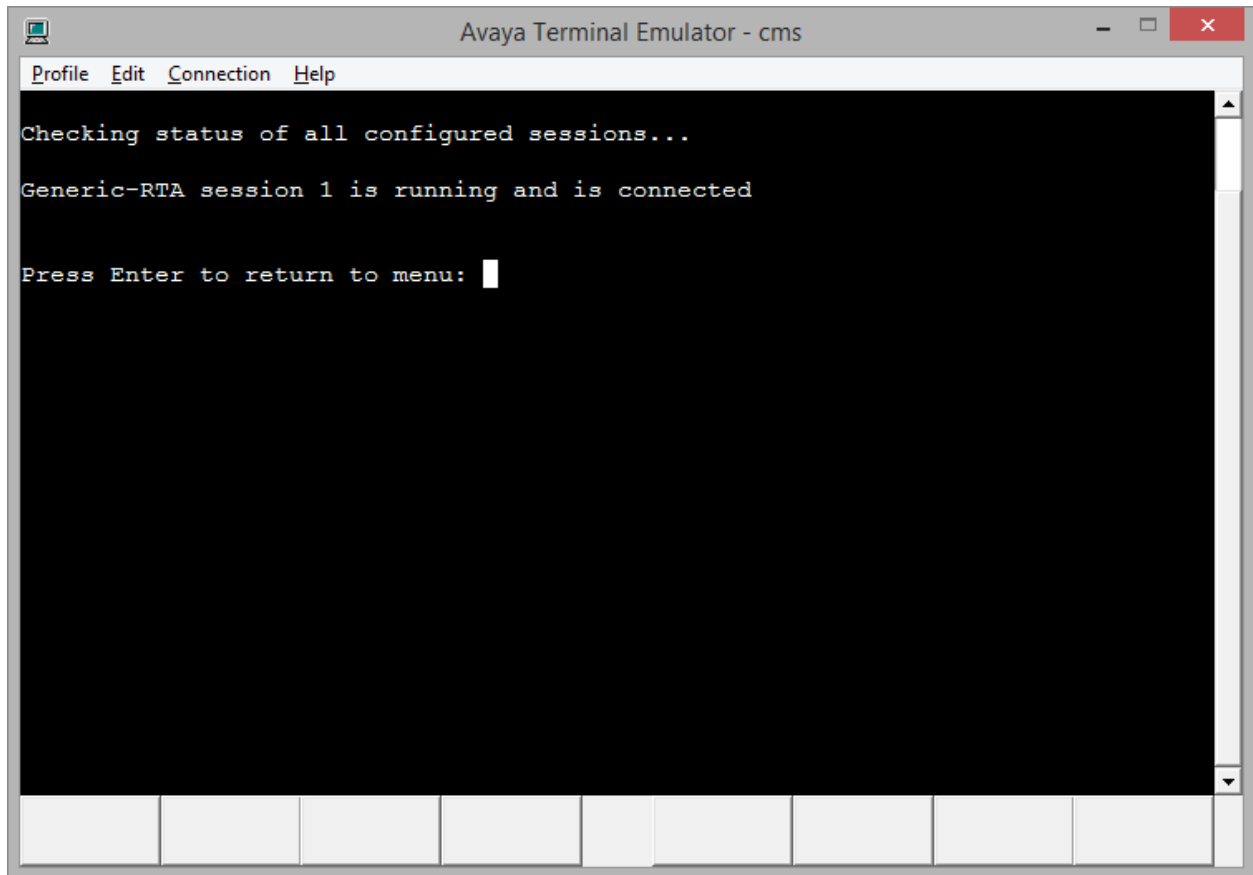
From the **MainMenu** screen, select the **Generic-RTA** option and press **Enter**.



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

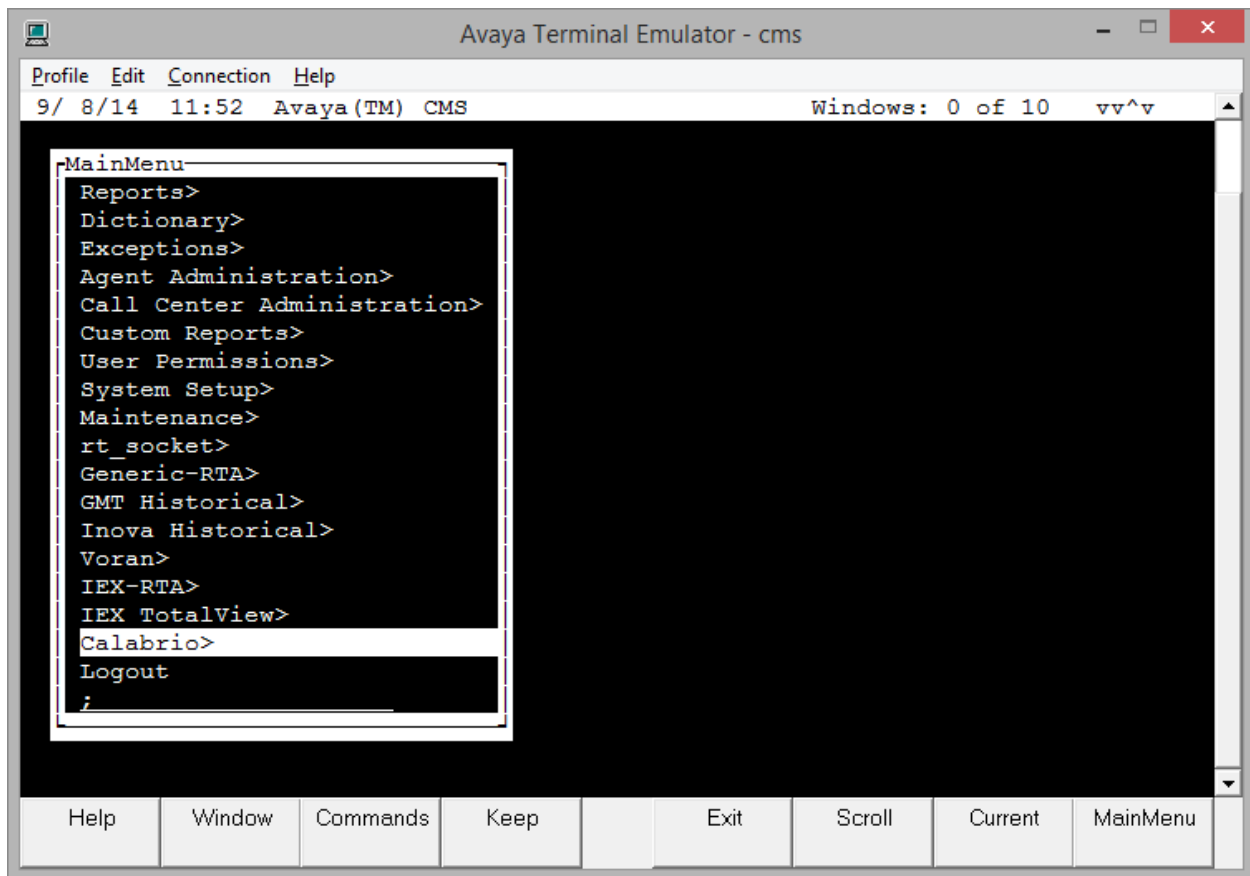


Verify that the session is running and is connected.

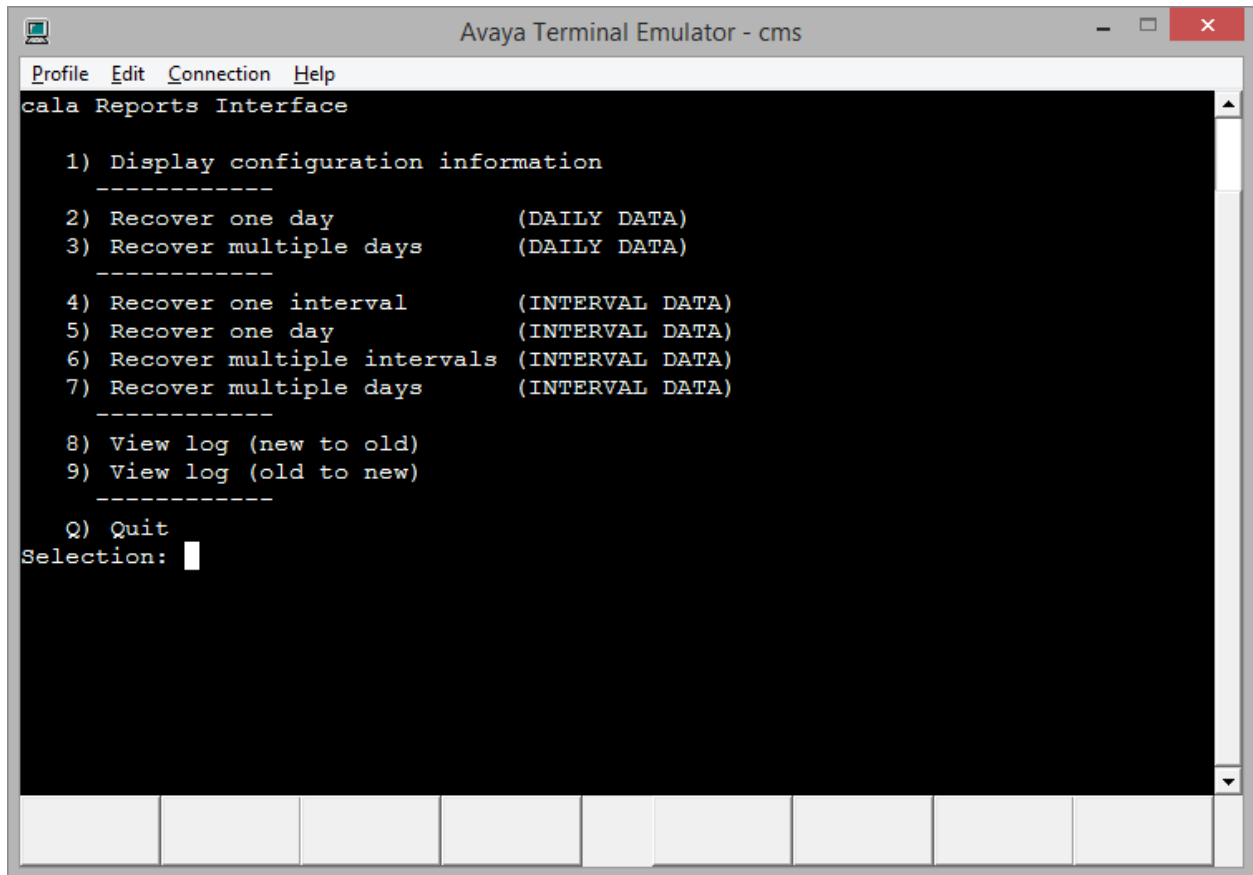


8.3. Verify Avaya Call Management System Historical Adapters

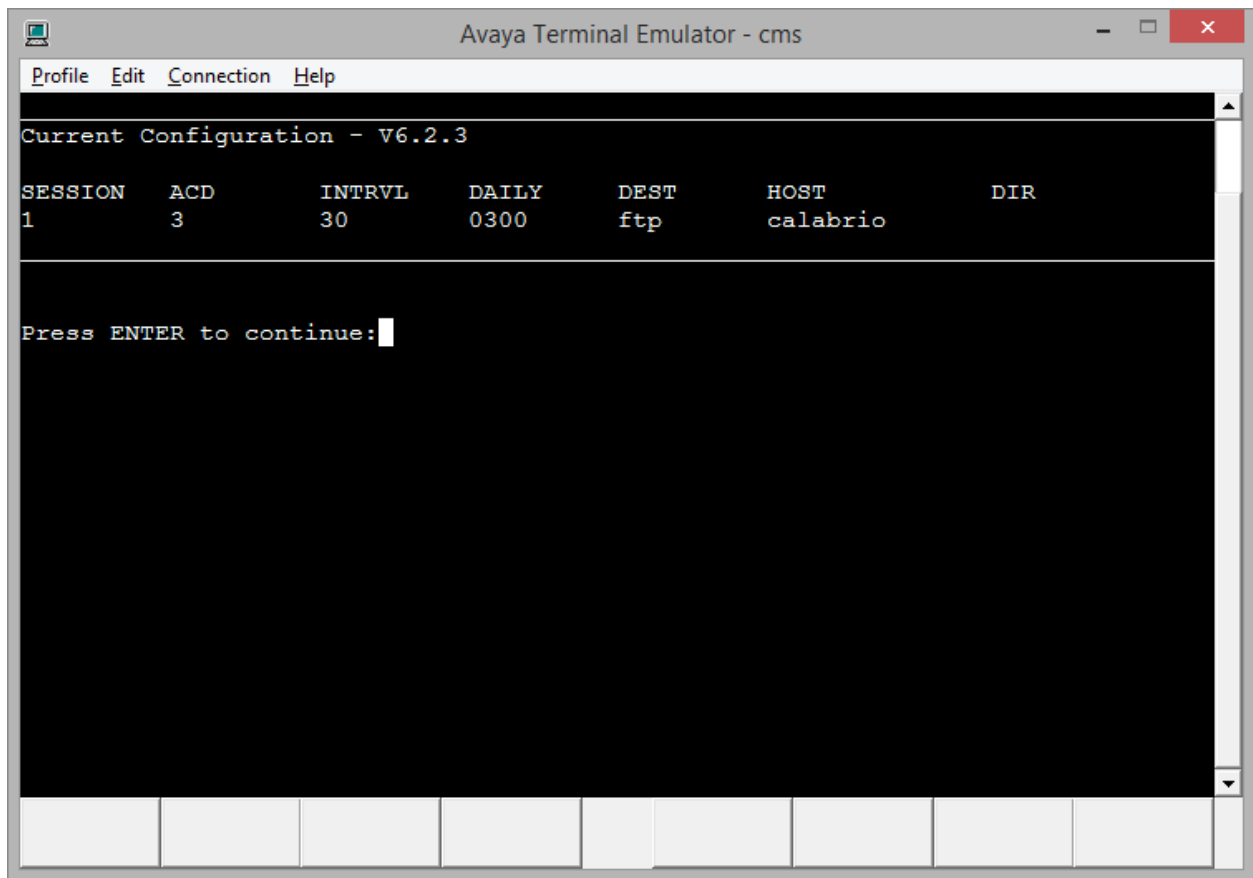
From the **MainMenu** screen, select the **Calabrio** option and press **Enter**.



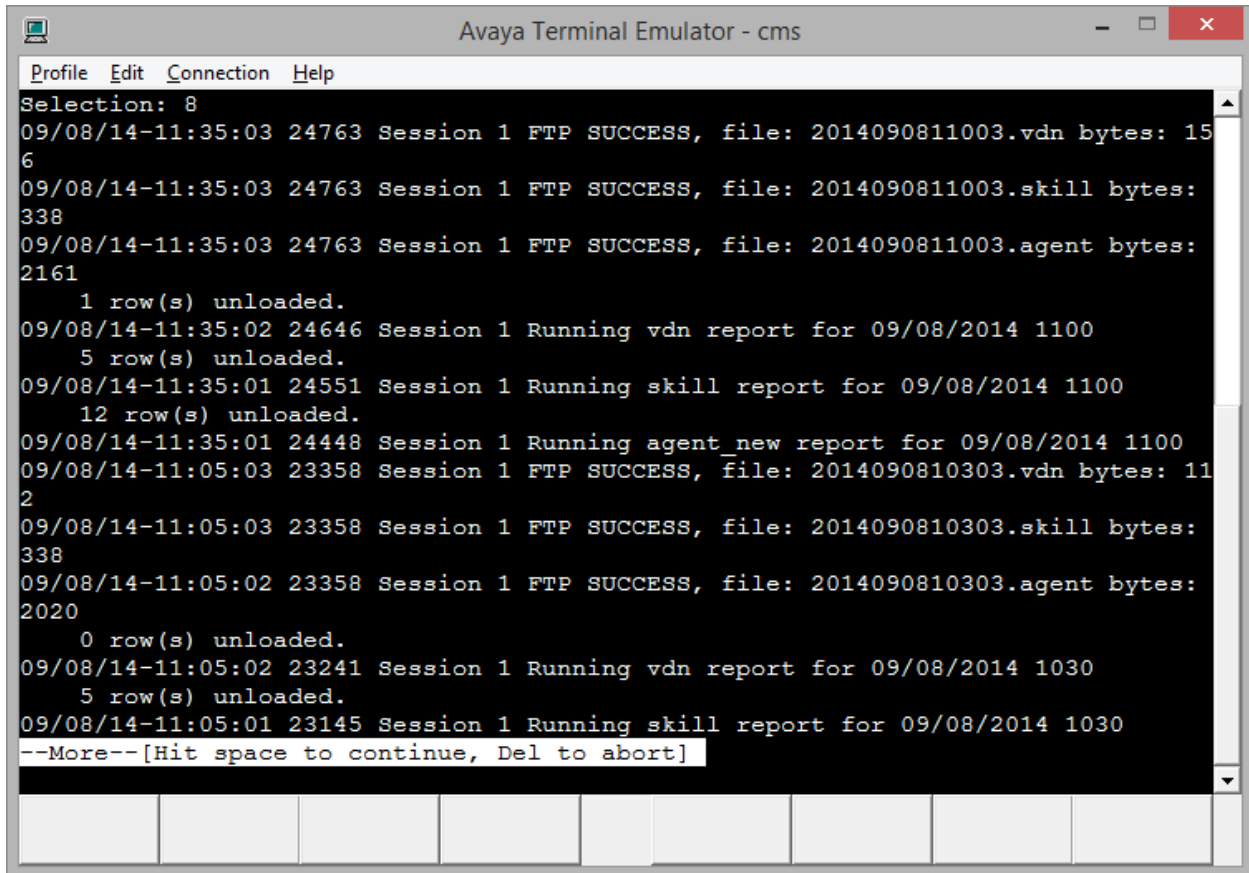
The **cala Reports Interface** menu is displayed.



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**.



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.



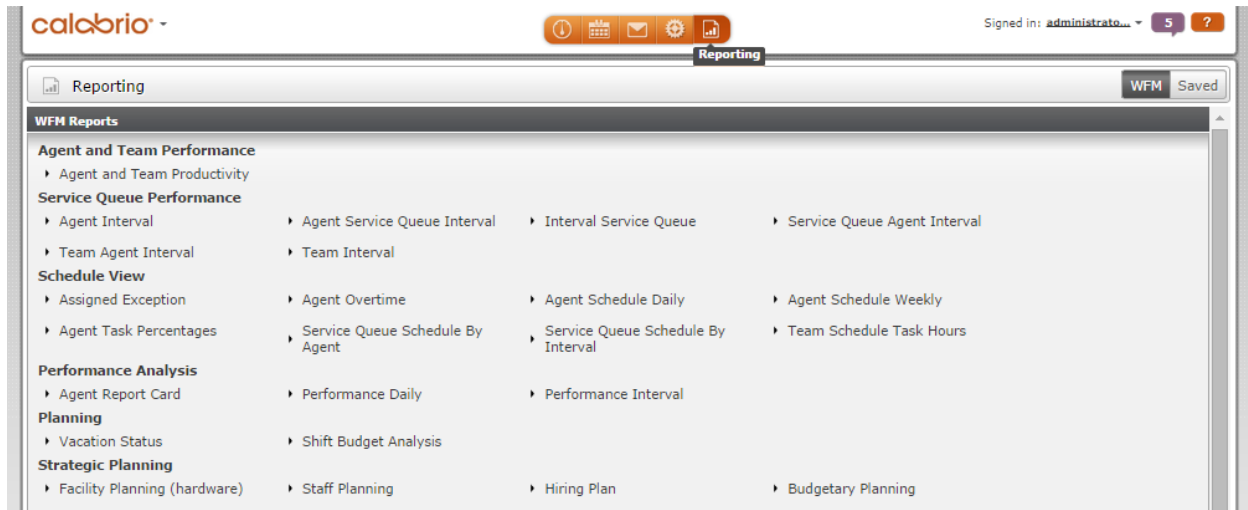
```
Avaya Terminal Emulator - cms
Profile Edit Connection Help
Selection: 8
09/08/14-11:35:03 24763 Session 1 FTP SUCCESS, file: 2014090811003.vdn bytes: 156
09/08/14-11:35:03 24763 Session 1 FTP SUCCESS, file: 2014090811003.skill bytes: 338
09/08/14-11:35:03 24763 Session 1 FTP SUCCESS, file: 2014090811003.agent bytes: 2161
    1 row(s) unloaded.
09/08/14-11:35:02 24646 Session 1 Running vdn report for 09/08/2014 1100
    5 row(s) unloaded.
09/08/14-11:35:01 24551 Session 1 Running skill report for 09/08/2014 1100
    12 row(s) unloaded.
09/08/14-11:35:01 24448 Session 1 Running agent_new report for 09/08/2014 1100
09/08/14-11:05:03 23358 Session 1 FTP SUCCESS, file: 2014090810303.vdn bytes: 112
09/08/14-11:05:03 23358 Session 1 FTP SUCCESS, file: 2014090810303.skill bytes: 338
09/08/14-11:05:02 23358 Session 1 FTP SUCCESS, file: 2014090810303.agent bytes: 2020
    0 row(s) unloaded.
09/08/14-11:05:02 23241 Session 1 Running vdn report for 09/08/2014 1030
    5 row(s) unloaded.
09/08/14-11:05:01 23145 Session 1 Running skill report for 09/08/2014 1030
--More--[Hit space to continue, Del to abort]
```


8.4. Verify Calabrio Workforce Management

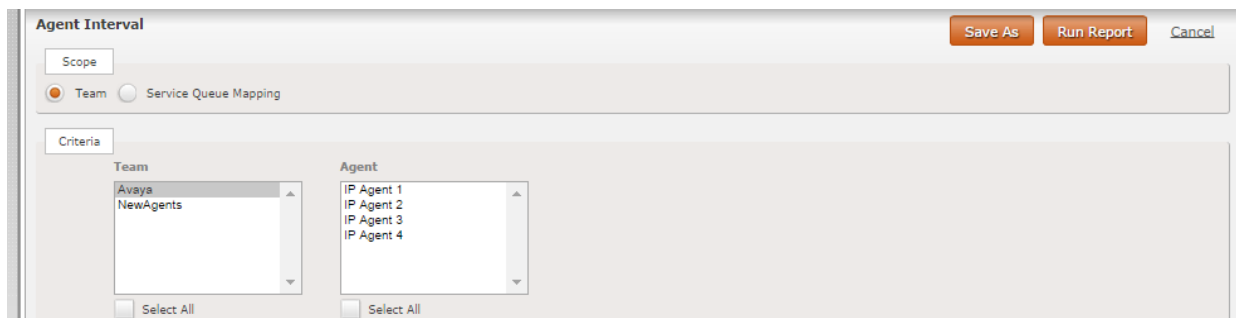
Prior to verifying Calabrio Workforce Management, make calls to the measured resources on Communication Manager, to enable measurement data to be sent to CMS.

8.4.1. Verify Historical Report

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



- Select the team that was configured in this document 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 2** in this case.

Run By: administrator administrator

Agent	Agent Number	Interval	Date	Calls Answered	Calls Handled	Average Talk Time	Average Work Time	Average Handle Time	In Service Time	Ready State Time	Busy State Time	Other Occupancy %	Utilization %
IP Agent 2	Agent2502	00:00	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	00:30	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	01:00	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	01:30	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	02:00	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	02:30	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	03:00	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	03:30	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	04:00	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	04:30	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	05:00	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	05:30	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	06:00	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	06:30	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	07:00	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	07:30	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	08:00	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	08:30	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	09:00	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	09:30	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	10:00	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	10:30	2014-09-08	0	0	--	--	--	0:18:00	0:18:00	0:00:00	0.0	--
IP Agent 2	Agent2502	11:00	2014-09-08	0	0	--	--	--	0:18:20	0:17:12	0:00:06	0.0	--
IP Agent 2	Agent2502	11:30	2014-09-08	1	1	0:00:03	0:01:40	0:01:43	0:18:15	0:17:39	0:00:00	9.4	9.0
IP Agent 2	Agent2502	Total		1	1	0:00:03	0:01:40	0:01:43	7:12:35	7:10:51	0:00:06	0.4	9.0

Run Date:2014-09-08 12:16:32

9. Conclusion

These Application Notes describe the configuration steps required for Calabrio Workforce Management to interoperate with Avaya Call Management System, via the customized real-time and historical call measurement data adapters provided by Avaya Professional Services. All feature and serviceability test cases were completed with one observation noted in **Section 2.2**.

10. Additional References

This section references the product documentation relevant to these Application Notes.

- *Avaya Call Management System Database Items and Calculations*, Release 17.x, June 2014
- *Avaya Call Management System Administration*, Release 17, June 2014
- *Calabrio Workforce Management Installation Guide, Version 9.2 November 2013*
- *Calabrio Workforce Management Application User Guide, Version 9.3 September 2013*

©2014 Avaya Inc. All Rights Reserved.

Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.