



Avaya Solution & Interoperability Test Lab

Application Notes for Calabrio Call Recording and Quality Management with Avaya Aura® Communication Manager R6.2 and Avaya Aura® Application Enablement Services R6.2 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for the Calabrio Call Recording and Quality Management solution to interoperate with Avaya Aura® Communication Manager R6.2 and Avaya Aura® Application Enablement Services R6.2.

Calabrio Call Recording and Quality Management (CRQM) uses the Avaya Aura® Application Enablement Services JTAPI and Device, Media and Call Control (DMCC) services to capture real-time CTI data and RTP streams from Avaya Aura® Communication Manager to produce recordings of phone activity for agents and knowledge workers.

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 Call Recording and Quality Management (CRQM) is a contact center and knowledge worker oriented recording solution. Using the Avaya Aura® Application Enablement Services System Management Services (SMS), Device, Media and Call Control (DMCC), and JTAPI, the recorder is able to register with Avaya Aura® Communication Manager as an IP softphone and use various methods to capture audio from targeted agent's phone, with JTAPI providing call tagging data.

Before CRQM can start recording, it registers with Avaya Aura® Application Enablement Services, performs a SMS service query to obtain the list of agents and stations configured in Avaya Aura® Communication Manager. The administrator then associates this data with devices to be recorded by the recording application. The recording application uses a static assignment of Call Center agents, and Knowledge Workers, to the station to which they work with.

CRQM supports two types of recording methods. For stations that are administered with IP Softphone enabled in Avaya Aura® Communication Manager, CRQM registers with Avaya Aura® Communication Manager using the Independent Registration mode of the DMCC Multiple Registration service. Once DMCC registration is successfully completed, Avaya Aura® Communication Manager will send audio for all calls that originate or terminate on the registered stations to both the phone, and the recorder.

For stations that do not have IP Softphone enabled in Avaya Aura® Communication Manager, including all station types such as SIP, IP, Digital or analog, CRQM uses dedicated, virtual stations in Avaya Aura® Communication Manager to add to calls via the Single Step Conference JTAPI method.

To ensure call records stored in the database are as rich as possible, the application uses the JTAPI capabilities of Avaya Aura® Application Enablement Services to monitor the station activity. This occurs following successful DMCC registrations. If DMCC registration fails, the JTAPI associations are not requested by the application.

2. General Test Approach and Test Results

The compliance test focused on the ability for calls to be recorded. Calls were manually placed from the public switched telephone network (PSTN) directly to and from recorded devices, and to Agent IDs. For each recorded station in a call, there is one recording generated. Once a call is completed, the recordings are reviewed for their quality, completeness (number of recordings beginning to end, etc.), and accuracy of tagging information (owner, calling party, called party, etc).

2.1. Interoperability Compliance Testing

The compliance test validated the ability of CRQM to successfully record calls routed to and from Analog, Digital, and IP endpoints as well as softphone clients. Common call scenarios including hold/resume, mute/unmute, transfer, and conference as well as four types of codecs (G.711 μ , G.711A, G.729, G.729A) at Calabrio side were exercised during the test. Additional tests included the ability to monitor live calls and to record screen activity associated with a recorded station.

Additionally, serviceability testing was performed to confirm the ability for CRQM to recover from common outages such as network outages and server reboots.

2.2. Test Results

All test cases passed with two observations which are described below.

- For some transfer and conferencing tests, though all call legs were recorded, information for originating calling party (calling party number) was not recorded correctly.
- After Communication Manager was rebooted, some DMCC Multiple Registration endpoints were unregistered from Communication Manager. As a result, no subsequent recording could be done for those endpoints. Calabrio has provided a patch which re-registers such endpoints once they have handled a new call. The call that triggers the re-registration will not get recorded though.
- CRQM supports four types of codecs. However, only one is active at a time and a database command is required for a codec change. In addition, the codec used by CRQM needs to be included in the codec set configured at the Communication Manager side. Otherwise, no recording will be generated.

2.3. Support

Technical support on Calabrio CRQM can be obtained through the following:

- Phone: +1 (763) 592-4680 or +1 (800) 303-1248
- Web: <http://calabrio.com/about-calabrio/services/>
- Email: calabriosupport@calabrio.com

3. Reference Configuration

Figure 1 illustrates the compliance test configuration consisting of:

- Avaya Aura® Communication Manager R6.2
- Avaya Aura® Application Enablement Services R6.2
- Various IP, Digital, and analog endpoints
- Avaya one-X® Communicator and Avaya one-X® Agent softphones
- Calabrio CRQM server installed on a VMWare virtual machine

Calls routed to and from Communication Manager used PRI trunks to connect to the PSTN.

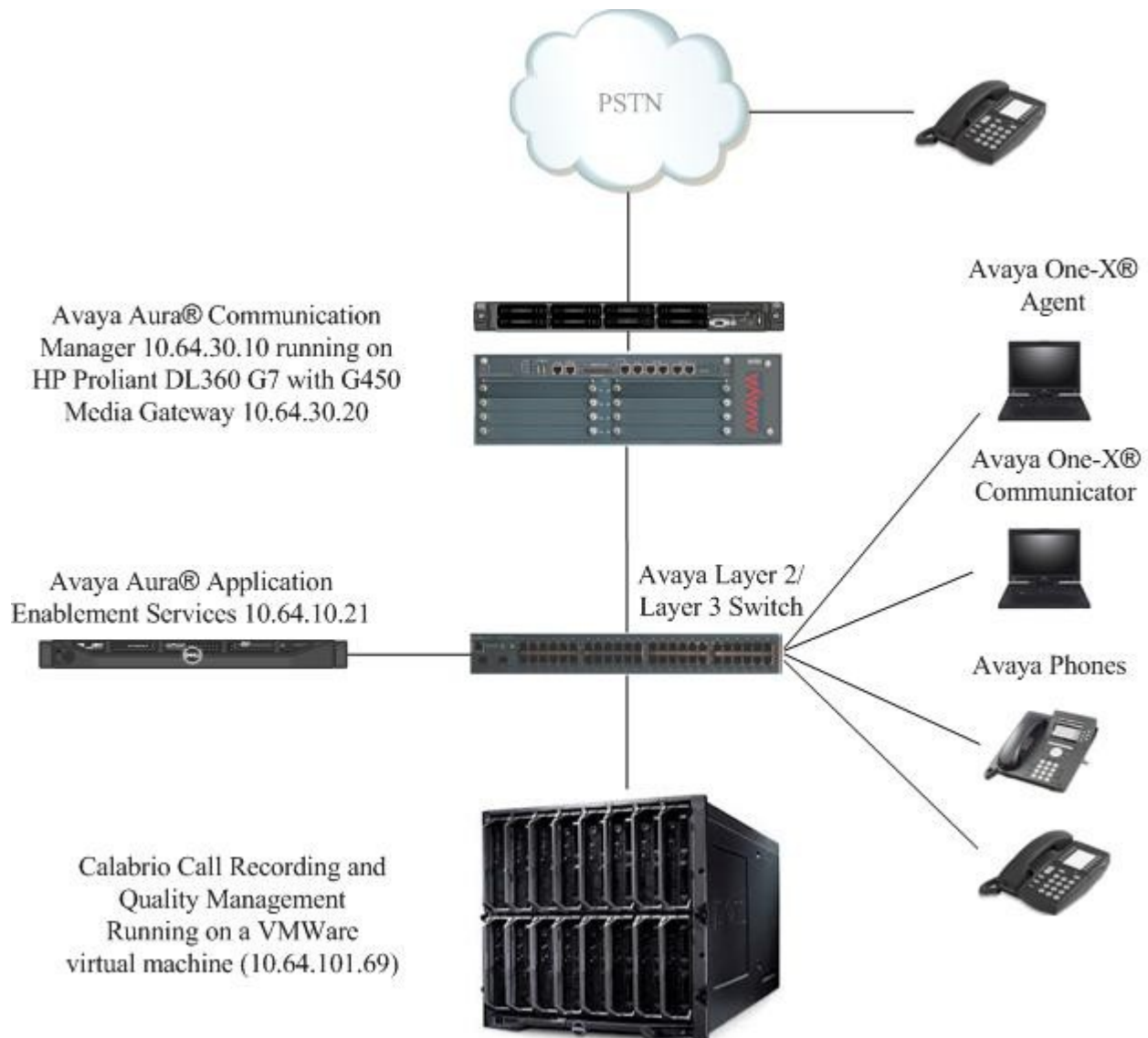


Figure 1 – Calabrio CRQM Compliance Test Configuration

4. Equipment and Software Validated

The following equipment and version were used in the reference configuration described above:

Equipment/Software	Version
HP Proliant DL360 G7 Server (w/ G450) running Avaya Aura® Communication Manager	6.2 (0.2.0.823.0) SP5 (patch 20396)
Avaya G450 Media Gateway <ul style="list-style-type: none">• MGP• MM710AP (DS1)• MM712AP (DCP)• MM711AP (ANA)	HW 1 FW 31.20.0 HW 04 FW 018 HW 07, FW 011 HW 27, FW 073
Dell R610 Server running Avaya Aura® Application Enablement Services	6.2 (r6-2-0-18-0) Patch 1
Avaya 9600 Series IP Telephone <ul style="list-style-type: none">• 9640 (H.323)	3.1.5
Avaya 96x1 Series IP Telephone <ul style="list-style-type: none">• 9641 (H.323)	6.2.2
Avaya 2420 Digital Telephones	-
2500 analog phone	-
Desktop PC running Avaya One-X® Communicator	6.1.7
Desktop PC running Avaya One-X® Agent	2.5
Calabrio Recording and Quality Management running under Windows 2008 R2 Server on a VMWare virtual machine	9.1 SP1 ES1
JTAPI/DMCC SDK	6.2

5. Configure Avaya Aura® Communication Manager

This section provides the procedures for configuring Communication Manager. The procedures fall into the following areas:

- Verify Feature and License for the integration
- Administer Communication Manager System Features
- Administer IP Services for Application Enablement Services
- Administer Computer Telephony Integration (CTI) Link
- Add SMS User Account
- Verify Recorded Extensions
- Add Virtual Stations

All the configuration changes in this section for Communication Manager are performed through the System Access Terminal (SAT) interface. For more details on configuring Communication Manager, refer to the Avaya product documentation in **Section 10**.

Step	Description
1.	<p>Verify Feature and License for the integration</p> <p>Enter the display system-parameters customer-options command and ensure that Computer Telephony Adjunct Links is set to y. Applications that use Application Enablement Services JTAPI/TSAPI must have Computer Telephony Adjunct Links enabled on Communication Manager. This Communication Manager feature entitlement is provided with each JTPAI/TSAPI license. JTAPI/TSAPI entitlements must be activated in both the Communication Manager and Application Enablement Services licenses. If this option is not set to y, contact the Avaya sales team or business partner for a proper license file.</p> <pre> display system-parameters customer-options Page 3 of 11 OPTIONAL FEATURES Abbreviated Dialing Enhanced List? y Audible Message Waiting? y Access Security Gateway (ASG)? n Authorization Codes? y Analog Trunk Incoming Call ID? y CAS Branch? n A/D Grp/Sys List Dialing Start at 01? y CAS Main? n Answer Supervision by Call Classifier? y Change COR by FAC? n ARS? y Computer Telephony Adjunct Links? y ARS/AAR Partitioning? y Cvg Of Calls Redirected Off-net? y ARS/AAR Dialing without FAC? y DCS (Basic)? y ASAI Link Core Capabilities? n DCS Call Coverage? y ASAI Link Plus Capabilities? n DCS with Rerouting? y Async. Transfer Mode (ATM) PNC? n Async. Transfer Mode (ATM) Trunking? n Digital Loss Plan Modification? y ATM WAN Spare Processor? n DS1 MSP? y ATMS? y DS1 Echo Cancellation? y Attendant Vectoring? Y </pre> <p>Each recording port or virtual station extension the recorder will use to record agent phones will require an IP_API_A license if not licensed on Application Enablement Services.</p> <pre> diaplay system-parameters customer-options Page 10 of 11 MAXIMUM IP REGISTRATIONS BY PRODUCT ID Product ID Rel. Limit Used AgentSC * : 10000 0 IP_API_A * : 18000 0 </pre>

Step	Description
2.	<p>Administer Communication Manager System Features</p> <p>Enter the change system-parameters features command and ensure that on page 5 Create Universal Call ID (UCID) is enabled and a relevant UCID Network Node ID (1 was used in the test) is defined. Also ensure that on page 13 that Send UCID to ASAI is set to y. CRQM relies on UCID to track complex calls (Transfers and Conferences).</p> <pre> change system-parameters features Page 5 of 19 FEATURE-RELATED SYSTEM PARAMETERS SYSTEM PRINTER PARAMETERS Endpoint: Lines Per Page: 60 SYSTEM-WIDE PARAMETERS Switch Name: Emergency Extension Forwarding (min): 10 Enable Inter-Gateway Alternate Routing? n Enable Dial Plan Transparency in Survivable Mode? n COR to Use for DPT: station EC500 Routing in Survivable Mode: dpt-then-ec500 MALICIOUS CALL TRACE PARAMETERS Apply MCT Warning Tone? n MCT Voice Recorder Trunk Group: Delay Sending RElease (seconds): 0 SEND ALL CALLS OPTIONS Send All Calls Applies to: station Auto Inspect on Send All Calls? n Preserve previous AUX Work button states after deactivation? n UNIVERSAL CALL ID Create Universal Call ID (UCID)? y UCID Network Node ID: 1 </pre> <pre> change system-parameters features Page 13 of 19 FEATURE-RELATED SYSTEM PARAMETERS CALL CENTER MISCELLANEOUS Callr-info Display Timer (sec): 10 Clear Callr-info: next-call Allow Ringer-off with Auto-Answer? n Reporting for PC Non-Predictive Calls? n Agent/Caller Disconnect Tones? n Interruptible Aux Notification Timer (sec): 3 Zip Tone Burst for Callmaster Endpoints: double ASAI Copy ASAI UUI During Conference/Transfer? n Call Classification After Answer Supervision? n Send UCID to ASAI? y For ASAI Send DTMF Tone to Call Originator? y Send Connect Event to ASAI For Announcement Answer? n </pre>

Step	Description
3.	<p>Administer IP-Services for Application Enablement Services</p> <p>Add an IP-Services entry for Application Enablement Services as described below:</p> <ul style="list-style-type: none">• Enter the change ip-services command.• In the Service Type field, type AESVCS.• In the Enabled field, type y.• In the Local Node field, type the Node name procr for the Processor Ethernet Interface.• In the Local Port field, use the default of 8765.• Note that in installations using CLAN connectivity, each CLAN interface would require similar configuration.

change ip-services

Page1 of4

IP SERVICES						
Service Type	Enabled	Local Node	Local Port	Remote Node	Remote Port	
AESVCS	y	procr	8765			

On Page 4 of the IP Services form, enter the following values:

- In the **AE Services Server** field, type the host name of the Application Enablement Services server.
- In the **Password** field, type the same password to be administered on the Application Enablement Services server in **Section 6, Step 1**.
- In the **Enabled** field, type **y**.

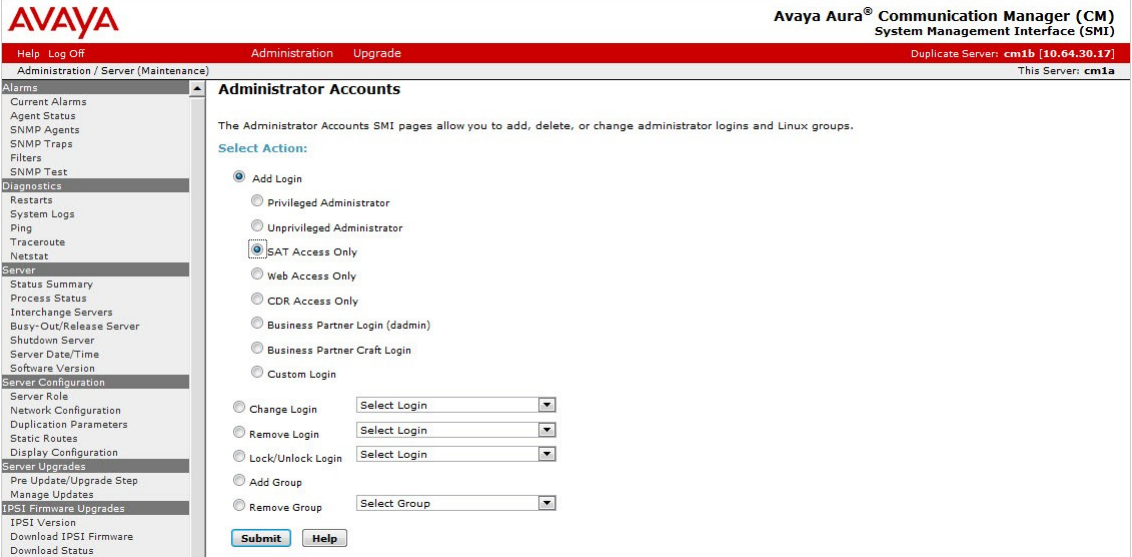
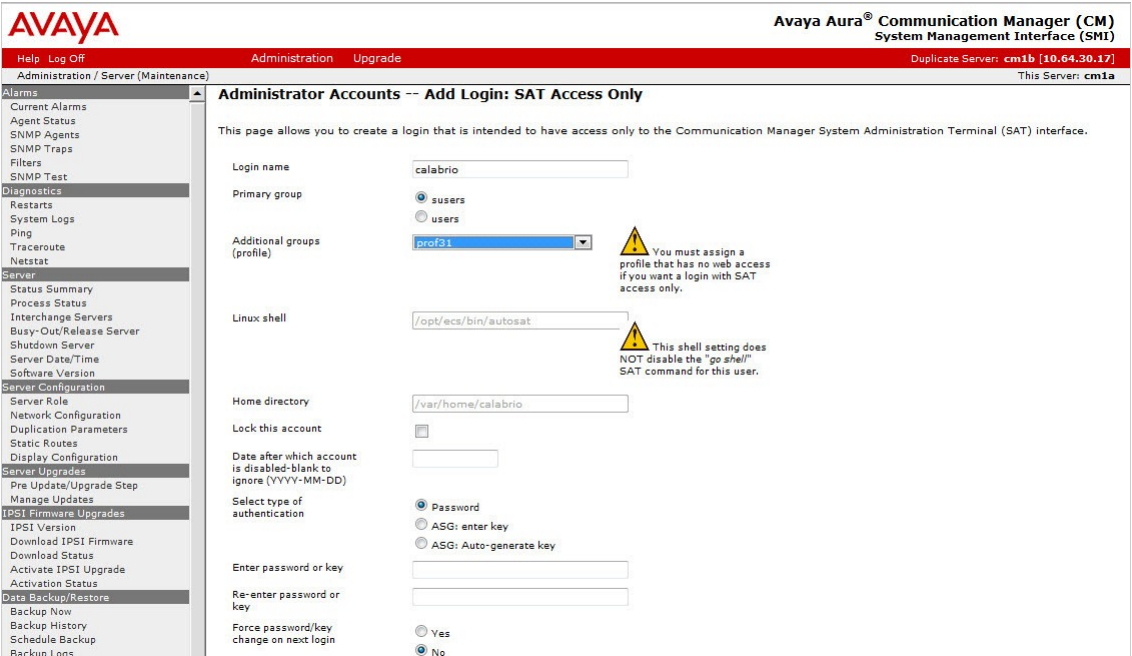
change ip-services

Page4 of4

AE Services Administration				
Server ID	AE Services Server	Password	Enabled	Status
1:	aes6_tr1	xxxxxxx	y	

Step	Description
4.	<p>Administer Computer Telephony Integration (CTI) Link</p> <p>Enter the add cti-link <link number> command, where <link number> is an available CTI link number.</p> <ul style="list-style-type: none"> In the Extension field, type a valid station extension. In the Type field, type ADJ-IP. In the Name field, type a descriptive name. <pre> add cti-link 1 Page 1 of 3 CTI LINK CTI Link: 1 Extension: 21900 Type: ADJ-IP COR: 1 Name: to AES_10_21 </pre>
5.	<p>Add SMS User Account</p> <p>CRQM uses the Application Enablement Services SMS interface to query for administered Stations and Agents for use in administering the application. A privileged user was used in this test; however, a local administrator would want to restrict the user account. This involves creating a user profile at the SAT, and then creating and assigning that user to the profile in the web admin pages. To illustrate, the add user-profile-by-category 31 command was used to create the profile used in the test as shown below. The Shell Access, Call Center B and Stations M fields were set to y.</p> <pre> add user-profile-by-category 31 Page 1 of 39 USER PROFILE 31 User Profile Name: Calabrio SMS This Profile is Disabled? n Shell Access? y Facility Test Call Notification? n Acknowledgement Required? n Grant Un-owned Permissions? n Extended Profile? n Name Cat Enbl Name Cat Enbl Adjuncts A n Routing and Dial Plan J n Call Center B y Security K n Features C n Servers L n Hardware D n Stations M y Hospitality E n System Parameters N n IP F n Translations O n Maintenance G n Trunking P n Measurements and Performance H n Usage Q n Remote Access I n User Access R n </pre>

Step	Description																																																																																																
	<p>Add SMS User Account (Continued)</p> <p>Read only access to Agents and Stations is required. Enter r- permissions for the B and M Categories on the Set Permissions for Category: entry on the change user-profile-by-category xx form. This requires two separate transactions, so repeat for each category.</p> <div><div>change user-profile-by-category 31Page 3 of 39</div><div>USER PROFILE BY CATEGORY 31</div><div><div>Set Permissions For Category: B To: r-</div><div>Set All Permissions To:</div><div>'-'=no access 'r'=list,display,status 'w'=add,change,remove+r 'm'=maintenance</div><table><thead><tr><th>Name</th><th>Cat</th><th>Perm</th></tr></thead><tbody><tr><td>agent</td><td>B</td><td>r-</td></tr><tr><td>agent-loginID</td><td>B</td><td>r-</td></tr><tr><td>announcements</td><td>B</td><td>r-</td></tr><tr><td>bcms agent</td><td>B</td><td>r-</td></tr><tr><td>bcms skill/split</td><td>B</td><td>r-</td></tr><tr><td>bcms summary agent</td><td>B</td><td>r-</td></tr><tr><td>bcms summary skill/split</td><td>B</td><td>r-</td></tr><tr><td>bcms summary trunk</td><td>B</td><td>r-</td></tr><tr><td>bcms summary vdn</td><td>B</td><td>r-</td></tr><tr><td>bcms system</td><td>B</td><td>r-</td></tr><tr><td>bcms trunk</td><td>B</td><td>r-</td></tr><tr><td>bcms vdn</td><td>B</td><td>r-</td></tr><tr><td>best-service-routing</td><td>B</td><td>r-</td></tr><tr><td>bcms-vustats loginIDs</td><td>B</td><td>r-</td></tr><tr><td>crm-features</td><td>B</td><td>r-</td></tr></tbody></table></div></div> <div><div>change user-profile-by-category 31Page 29 of 39</div><div>USER PROFILE BY CATEGORY 31</div><div><div>Set Permissions For Category: M To: r-</div><div>Set All Permissions To:</div><div>'-'=no access 'r'=list,display,status 'w'=add,change,remove+r 'm'=maintenance</div><table><thead><tr><th>Name</th><th>Cat</th><th>Perm</th></tr></thead><tbody><tr><td>ess</td><td>L</td><td>--</td></tr><tr><td>ess clusters</td><td>L</td><td>--</td></tr><tr><td>ess port-networks</td><td>L</td><td>--</td></tr><tr><td>lsp</td><td>L</td><td>--</td></tr><tr><td>remote-office</td><td>L</td><td>--</td></tr><tr><td>alias station</td><td>M</td><td>r-</td></tr><tr><td>attendant</td><td>M</td><td>r-</td></tr><tr><td>bridged-extensions</td><td>M</td><td>r-</td></tr><tr><td>coverage answer-group</td><td>M</td><td>r-</td></tr><tr><td>button-location-aca</td><td>M</td><td>r-</td></tr><tr><td>button-restriction</td><td>M</td><td>r-</td></tr><tr><td>call-forwarding</td><td>M</td><td>r-</td></tr><tr><td>console-parameters</td><td>M</td><td>r-</td></tr><tr><td>coverage answer-group</td><td>M</td><td>r-</td></tr><tr><td>coverage path</td><td>M</td><td>r-</td></tr></tbody></table></div></div>	Name	Cat	Perm	agent	B	r-	agent-loginID	B	r-	announcements	B	r-	bcms agent	B	r-	bcms skill/split	B	r-	bcms summary agent	B	r-	bcms summary skill/split	B	r-	bcms summary trunk	B	r-	bcms summary vdn	B	r-	bcms system	B	r-	bcms trunk	B	r-	bcms vdn	B	r-	best-service-routing	B	r-	bcms-vustats loginIDs	B	r-	crm-features	B	r-	Name	Cat	Perm	ess	L	--	ess clusters	L	--	ess port-networks	L	--	lsp	L	--	remote-office	L	--	alias station	M	r-	attendant	M	r-	bridged-extensions	M	r-	coverage answer-group	M	r-	button-location-aca	M	r-	button-restriction	M	r-	call-forwarding	M	r-	console-parameters	M	r-	coverage answer-group	M	r-	coverage path	M	r-
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Step	Description
	<p>Add SMS User Account (Continued)</p> <p>Create a user account on the Communication Manager System Management Interface web page by navigating to the Administer Accounts page and selecting the radio button Add Login and SAT Access Only. Click Submit to continue the process.</p>  <p>The Add Login screen is displayed. Enter a name to the Login name field and select the profile defined in Step 5 (prof31) in the Additional groups (profile) field. Select Password for the Select type of authentication field and enter a Password.</p> 

Step	Description
6.	<p>Verify Recorded Extensions</p> <p>All stations that will be recorded using the Multiple Registration method must have IP Softphone enabled, and the application needs to know the Security Code in order to successfully register. For stations that are unable to support Softphone, or which the administrator prefers to record using Single Step Conference, leave the IP Softphone setting disabled. Use the display station n command to verify information, or change station n to make changes if necessary.</p> <pre> display station 21949 Page 1 of 5 STATION Extension: 21949 Lock Messages? n BCC: 0 Type: 9640 Security Code: 123456 TN: 1 Port: S00009 Coverage Path 1: COR: 1 Name: King, John Coverage Path 2: COS: 1 Hunt-to Station: STATION OPTIONS Time of Day Lock Table: Loss Group: 19 Personalized Ringing Pattern: 1 Message Lamp Ext: 21949 Speakerphone: 2-way Mute Button Enabled? y Display Language: english Button Modules: 0 Survivable GK Node Name: Survivable COR: internal Media Complex Ext: Survivable Trunk Dest? y IP SoftPhone? y IP Video Softphone? n Short/Prefixed Registration Allowed: default Customizable Labels? Y </pre>

Step	Description
7.	<p>Add Virtual Stations</p> <p>Virtual stations are used by CRQM to do Single Step Conference based call recording for stations that are not capable of supporting IP Softphone or have the IP Softphone setting disabled. Add a virtual station using the add station <n> command, where <n> is an available extension number. Enter the following values for the specified fields, and retain the default values for the remaining fields.</p> <ul style="list-style-type: none"> • In the Type field, enter a station type such as 9640 • In the Name field, enter a name containing the DMCC string (e.g. DMCC station 2). CRQM uses the DMCC string to identify virtual stations. • In the Security Code field, enter a desired value. • Set the IP SoftPhone field to y <pre> add station 24001 Page 1 of 5 STATION Extension: 24001 Lock Messages? n BCC: 0 Type: 9640 Security Code: 123456 TN: 1 Port: S00021 Coverage Path 1: COR: 1 Name: DMCC station 2 Coverage Path 2: COS: 1 Hunt-to Station: STATION OPTIONS Time of Day Lock Table: Personalized Ringing Pattern: 1 Message Lamp Ext: 24001 Mute Button Enabled? y Button Modules: 0 Loss Group: 19 Speakerphone: 2-way Display Language: english Media Complex Ext: Survivable GK Node Name: IP SoftPhone? y Survivable COR: internal Survivable Trunk Dest? y IP Video Softphone? n Short/Prefixed Registration Allowed: default Customizable Labels? Y </pre>

6. Configure Avaya Aura® Application Enablement Services

All administration of Application Enablement Services is performed via a web browser. Enter <https://<ip-addr>> in the URL field of a web browser where <ip-addr> is the IP address of the Application Enablement Services server. After a login step, the **Welcome to OAM** page is displayed. Note that all navigation is performed by clicking links in the Navigation Panel on the left side of the screen, context panels will then appear on the right side of the screen.

The procedures fall into the following areas:

- Configure Communication Manager Switch Connections
- Add TSAPI Links
- Note the TLink Information
- Configure Calabrio User
- Enable Unrestricted Access for Calabrio User
- Confirm TSAPI and DMCC Licenses
- Restart TSAPI Service

AVAYA **Application Enablement Services**
Management Console

Welcome: User craft
Last login: Wed May 8 16:21:50 2013 from 10.64.30.200
Number of prior failed login attempts: 0
HostName/IP: aes6_tr1/10.64.10.21
Server Offer Type: VIRTUAL_APPLIANCE
SW Version: r6-2-0-18-0 Patch 1
Server Date and Time: Thu May 9 10:29:38 MDT 2013

Home | Help | Logout

Navigation Panel:

- AE Services
- Communication Manager Interface
- Licensing
- Maintenance
- Networking
- Security
- Status
- User Management
- Utilities
- Help

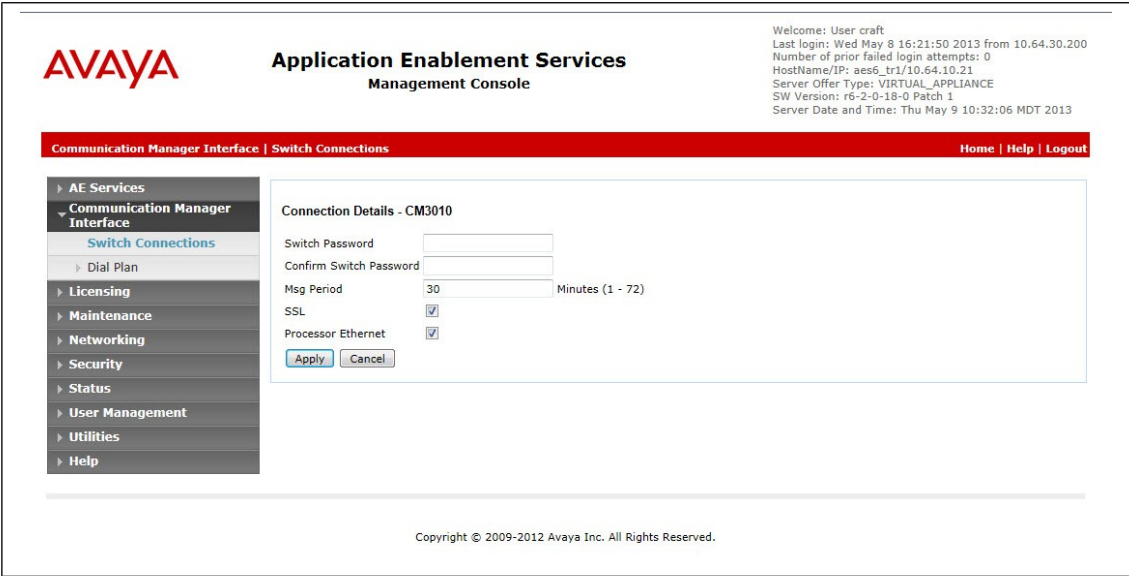
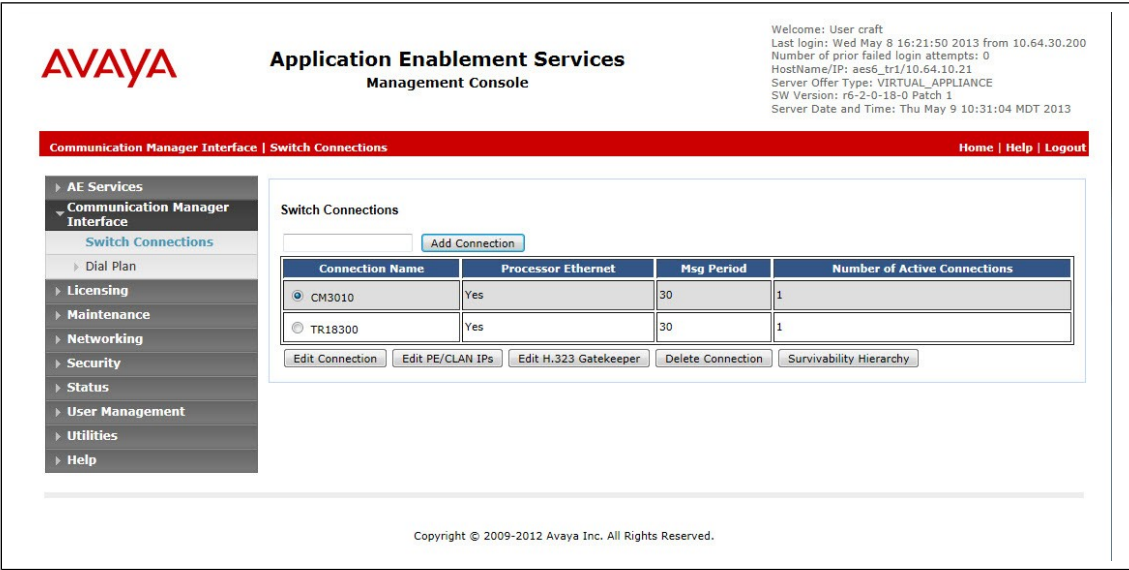
Welcome to OAM

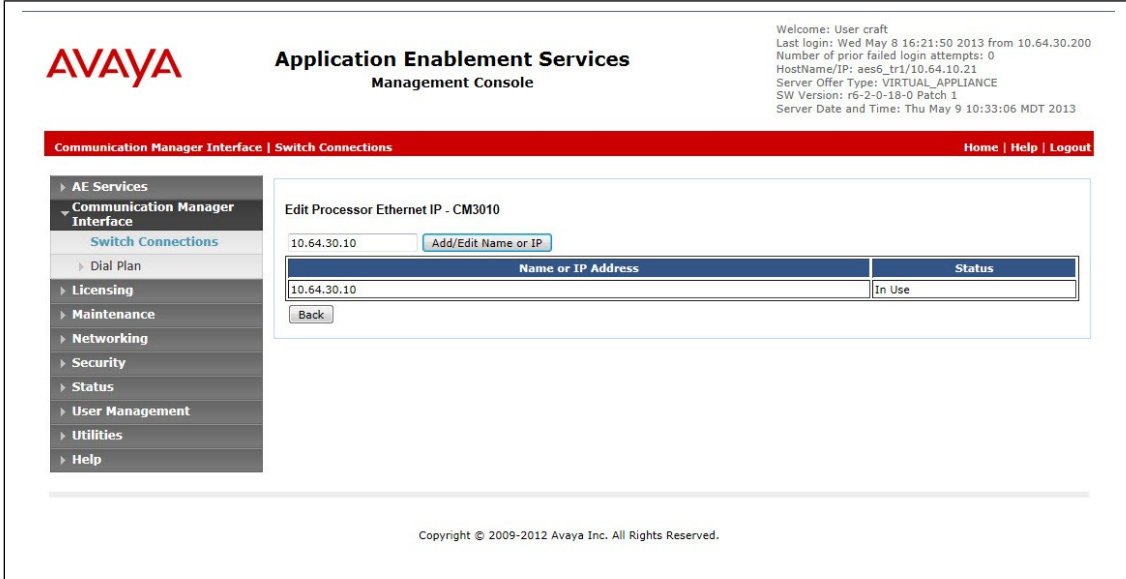
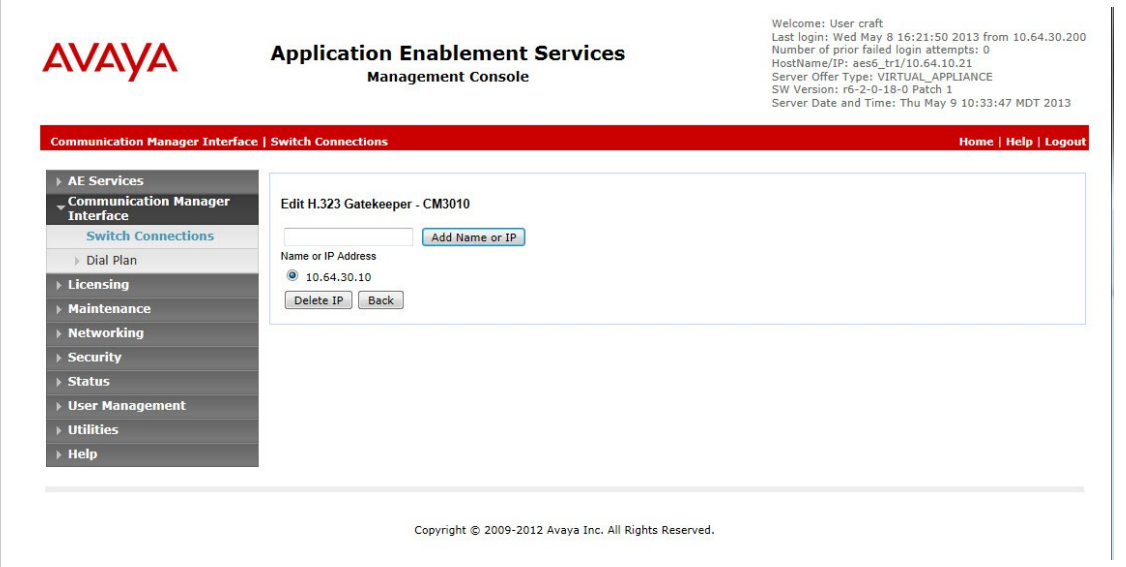
The AE Services Operations, Administration, and Management (OAM) Web provides you with tools for managing the AE Server. OAM spans the following administrative domains:

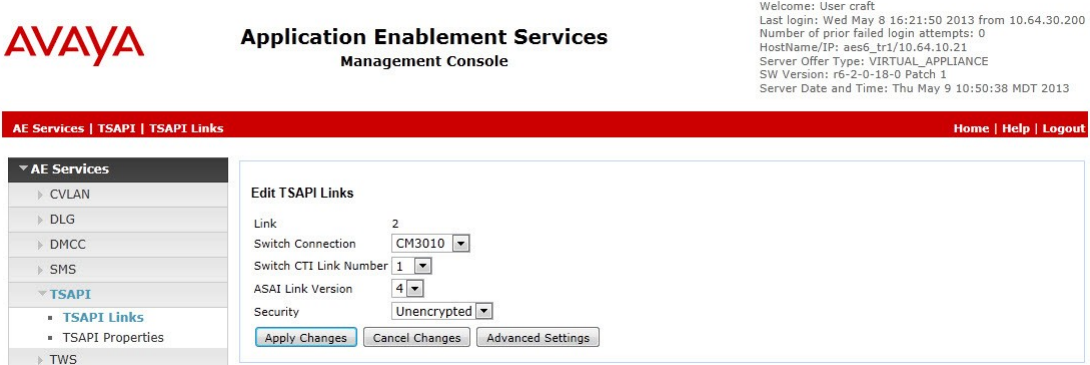
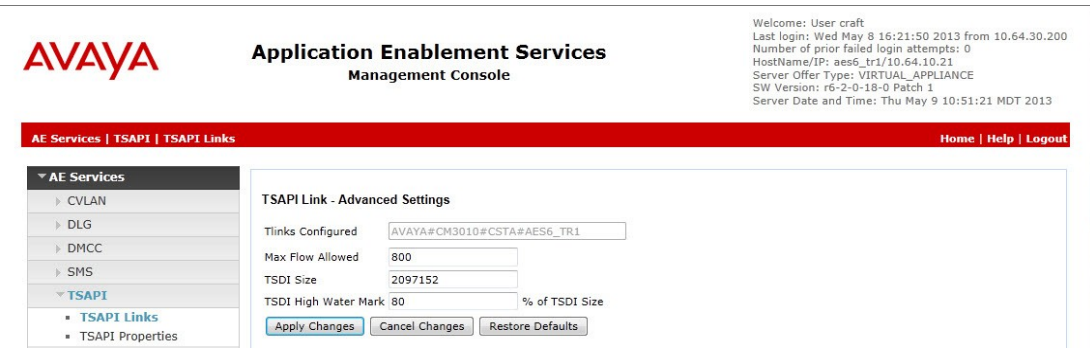
- AE Services - Use AE Services to manage all AE Services that you are licensed to use on the AE Server.
- Communication Manager Interface - Use Communication Manager Interface to manage switch connection and dialplan.
- Licensing - Use Licensing to manage the license server.
- Maintenance - Use Maintenance to manage the routine maintenance tasks.
- Networking - Use Networking to manage the network interfaces and ports.
- Security - Use Security to manage Linux user accounts, certificate, host authentication and authorization, configure Linux-PAM (Pluggable Authentication Modules for Linux) and so on.
- Status - Use Status to obtain server status information.
- User Management - Use User Management to manage AE Services users and AE Services user-related resources.
- Utilities - Use Utilities to carry out basic connectivity tests.
- Help - Use Help to obtain a few tips for using the OAM Help system

Depending on your business requirements, these administrative domains can be served by one administrator for all domains, or a separate administrator for each domain.

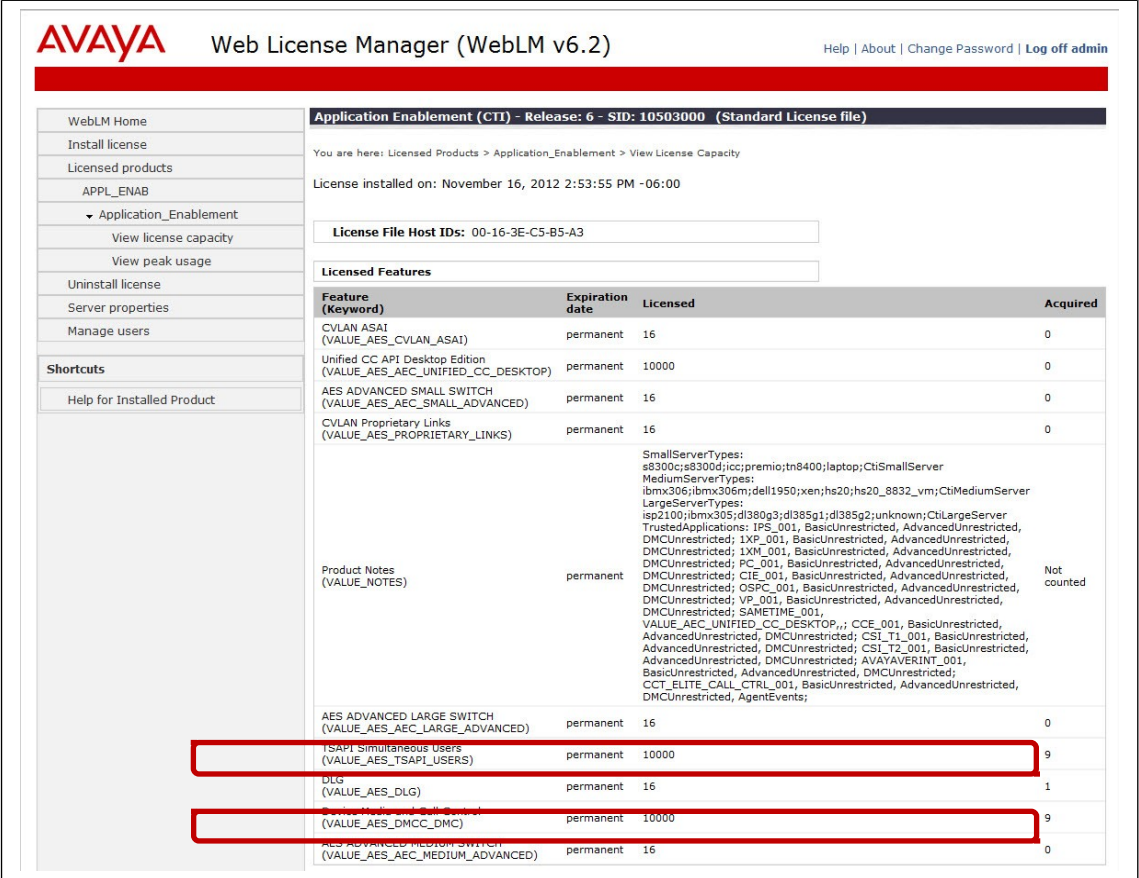
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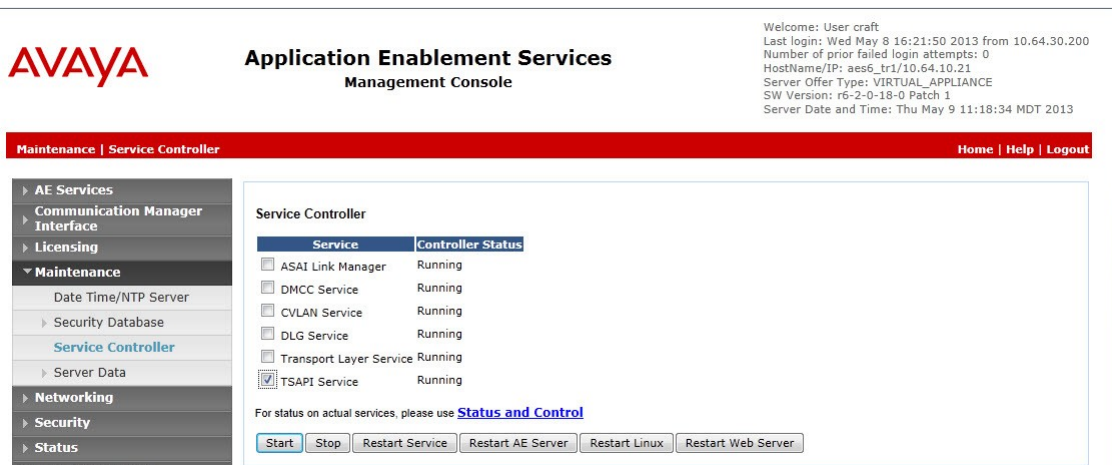
Step	Description
1.	<p>Configure Communication Manager Switch Connections</p> <p>To add links to Communication Manager, navigate to the Communication Manager Interface → Switch Connections page and enter a name for the new switch connection (e.g. CM3010) and click the Add Connection button (not shown). The Connection Details screen is shown. Enter the Switch Password configured in Section 5, Step 3 and check the Processor Ethernet box if using the procr interface. Click Apply.</p>  <p>The display returns to the Switch Connections screen which shows that the CM3010 switch connection has been added.</p> 

Step	Description				
	<p data-bbox="302 233 1421 411">Configure Communication Manager Switch Connections (Continued) Click the Edit PE/CLAN IPs button on the Switch Connections screen to configure the procr or CLAN IP Address(es) for TSAPI message traffic. The Edit Processor Ethernet IP screen is displayed. Enter the IP address of the procr interface and click the Add/Edit Name or IP button.</p> <div data-bbox="302 449 1421 1024">  <p data-bbox="347 495 480 533">AVAYA</p> <p data-bbox="574 495 928 541">Application Enablement Services Management Console</p> <p data-bbox="1071 474 1386 562">Welcome: User craft Last login: Wed May 8 16:21:50 2013 from 10.64.30.200 Number of prior failed login attempts: 0 HostName/IP: aes6_tr1/10.64.10.21 Server Offer Type: VIRTUAL_APPLIANCE SW Version: r6-2-0-18-0 Patch 1 Server Date and Time: Thu May 9 10:33:06 MDT 2013</p> <p data-bbox="347 583 691 604">Communication Manager Interface Switch Connections</p> <p data-bbox="1256 583 1386 604">Home Help Logout</p> <ul data-bbox="347 625 561 919" style="list-style-type: none"> AE Services Communication Manager Interface <ul style="list-style-type: none"> Switch Connections Dial Plan Licensing Maintenance Networking Security Status User Management Utilities Help <p data-bbox="581 646 799 667">Edit Processor Ethernet IP - CM3010</p> <p data-bbox="587 680 847 701">10.64.30.10 Add/Edit Name or IP</p> <table data-bbox="587 701 1373 747"> <thead> <tr> <th>Name or IP Address</th><th>Status</th></tr> </thead> <tbody> <tr> <td>10.64.30.10</td><td>In Use</td></tr> </tbody> </table> <p data-bbox="587 751 636 772">Back</p> <p data-bbox="717 974 1016 991">Copyright © 2009-2012 Avaya Inc. All Rights Reserved.</p> </div> <p data-bbox="302 1066 1421 1213">Click the Edit H.323 Gatekeeper button on the Switch Connections screen to configure the procr or CLAN IP Address(es) for DMCC registrations. The Edit H.323 Gatekeeper screen is displayed. Enter the IP address of the procr interface and click the Add Name or IP button.</p> <div data-bbox="302 1251 1421 1814">  <p data-bbox="347 1289 480 1327">AVAYA</p> <p data-bbox="574 1289 928 1335">Application Enablement Services Management Console</p> <p data-bbox="1071 1268 1386 1356">Welcome: User craft Last login: Wed May 8 16:21:50 2013 from 10.64.30.200 Number of prior failed login attempts: 0 HostName/IP: aes6_tr1/10.64.10.21 Server Offer Type: VIRTUAL_APPLIANCE SW Version: r6-2-0-18-0 Patch 1 Server Date and Time: Thu May 9 10:33:47 MDT 2013</p> <p data-bbox="347 1377 691 1398">Communication Manager Interface Switch Connections</p> <p data-bbox="1256 1377 1386 1398">Home Help Logout</p> <ul data-bbox="347 1419 561 1713" style="list-style-type: none"> AE Services Communication Manager Interface <ul style="list-style-type: none"> Switch Connections Dial Plan Licensing Maintenance Networking Security Status User Management Utilities Help <p data-bbox="581 1440 769 1461">Edit H.323 Gatekeeper - CM3010</p> <p data-bbox="587 1474 821 1495"><input type="text"/> Add Name or IP</p> <p data-bbox="581 1499 675 1520">Name or IP Address</p> <p data-bbox="587 1524 675 1545"><input checked="" type="radio"/> 10.64.30.10</p> <p data-bbox="587 1541 701 1562">Delete IP Back</p> <p data-bbox="717 1768 1016 1785">Copyright © 2009-2012 Avaya Inc. All Rights Reserved.</p> </div>	Name or IP Address	Status	10.64.30.10	In Use
Name or IP Address	Status				
10.64.30.10	In Use				

Step	Description
3.	<p>Note the TLink Information Select the CM3010 TSAPI Link and click Edit Link. The Edit TSAPI Links screen is displayed.</p>  <p>Click the Advanced Settings button. The TSAPI Link – Advanced Settings screen is displayed. Note the value in the Tlinks Configured field which will be used for CRQM configuration in Section 7.</p> 

Step	Description
<p>4.</p>	<p>Configure Calabrio user</p> <p>In the Navigation Panel, select User Management → User Admin → Add User. The Add User panel will display as shown below. Enter an appropriate User Id, Common Name, Surname, and User Password. Select Yes from the CT User dropdown list.</p> <p>Click Apply at the bottom of the pages to save the entries.</p> <div data-bbox="300 489 1432 1474"> </div>

Step	Description
6.	<p>Confirm TSAPI and DMCC Licenses</p> <p>CRQM uses a DMCC (VALUE_AES_DMCC_DMC) license for each recording port. Additionally, a TSAPI Basic (VALUE_AES_TSAPI_USERS) license is used for each agent station being monitored. If VALUE_AES_DMCC_DMC is licensed on Application Enablement Services, then an IP_API_A is generally not required on Communication Manager. Please consult product offer documentation for more details. If the licensed quantities are not sufficient for the implementation, contact the Avaya sales team or business partner for a proper license file.</p> <p>From the left pane menu on Application Enablement Services Management Console, click Licensing → WebLM Server Access. A Web License Manager login window is displayed. Enter proper credentials to log in. Click Licensed products → APPL_ENAB → Application_Enablement from the left pane. The Application Enablement Services license is displayed in the right pane. Ensure that there are enough VALUE_AES_DMCC_DMC and VALUE_AES_TSAPI_USERS licenses available.</p> 

Step	Description
7.	<p>Restart TSAPI Service</p> <p>Select Maintenance → Service Controller from the left pane, to display the Service Controller screen in the right pane. Check the TSAPI Service, and click Restart Services.</p>  <p>The screenshot displays the Avaya Application Enablement Services Management Console. The left-hand navigation pane is expanded to show the 'Maintenance' section, with 'Service Controller' highlighted. The main content area on the right is titled 'Service Controller' and contains a table with two columns: 'Service' and 'Controller Status'. The table lists several services, including ASAI Link Manager, DMCC Service, CVLAN Service, DLG Service, Transport Layer Service, and TSAPI Service. The 'TSAPI Service' row is selected, indicated by a checkmark in the 'Service' column. Below the table, there is a link for 'Status and Control' and a row of buttons: 'Start', 'Stop', 'Restart Service', 'Restart AE Server', 'Restart Linux', and 'Restart Web Server'.</p>

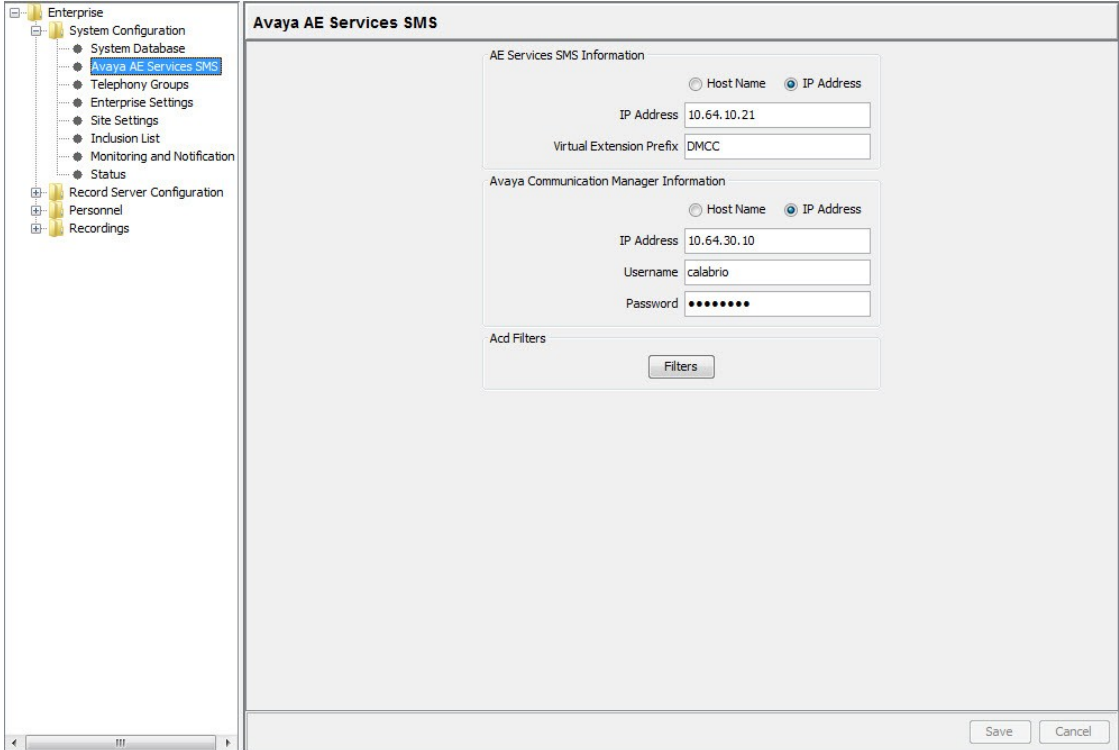
7. Configure Calabrio Call Recording and Quality Management

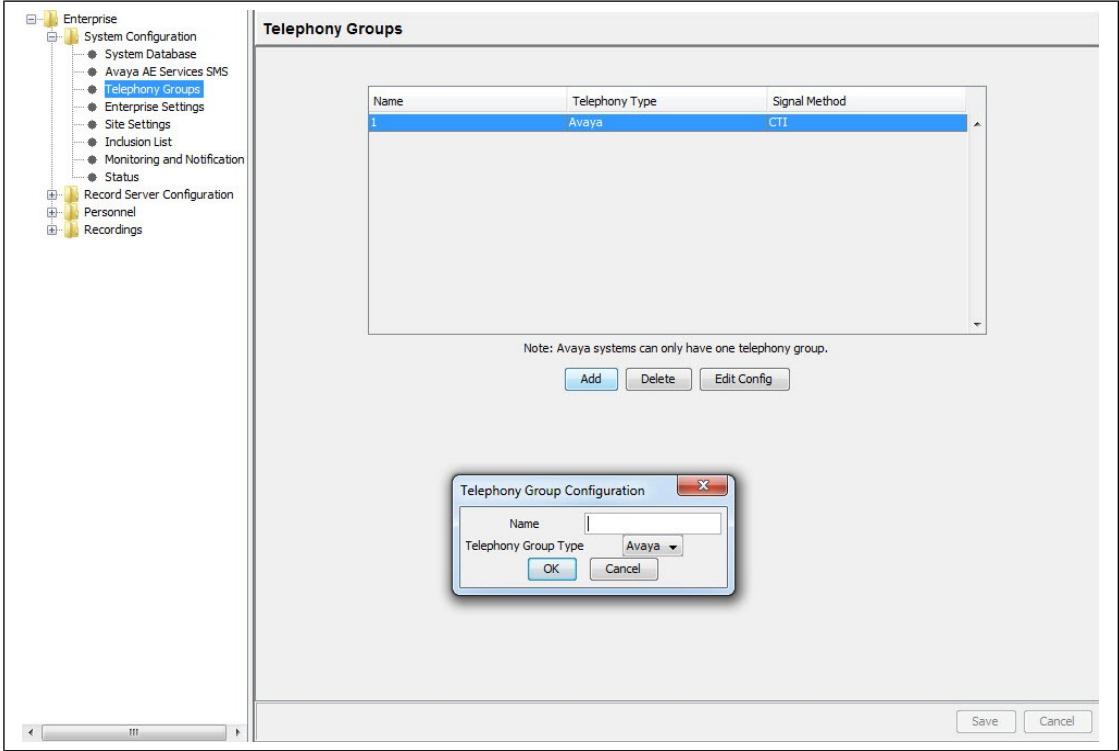
The initial configuration of the CRQM server is typically performed by Calabrio technicians or authorized installers. These Application Notes will only cover the steps necessary to configure the CRQM solution to interoperate with Communication Manager and Application Enablement Services.

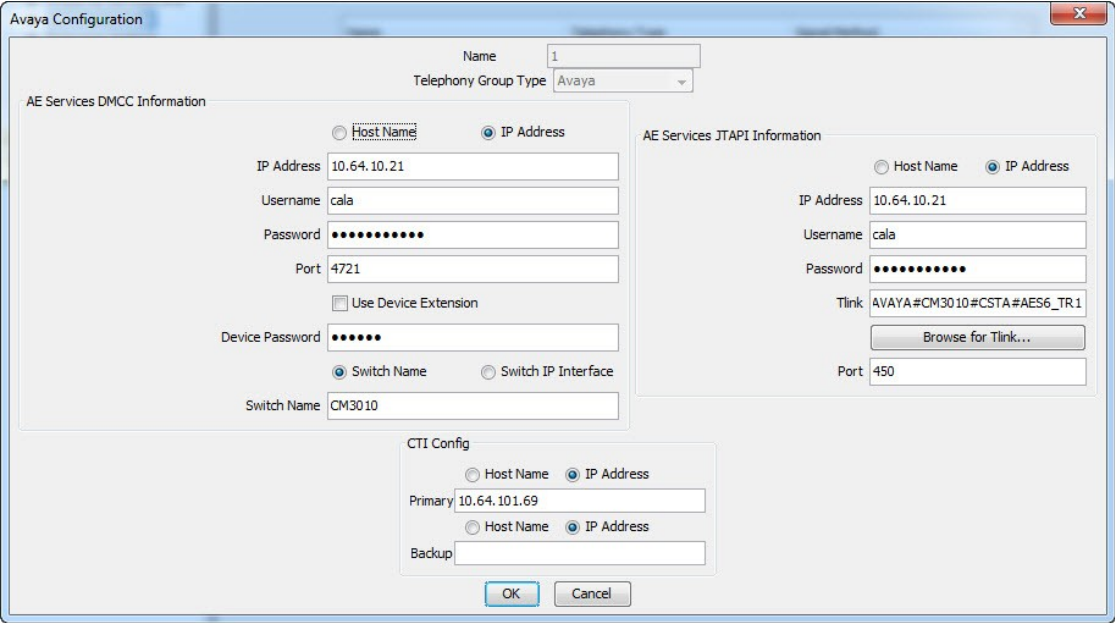
The steps include:

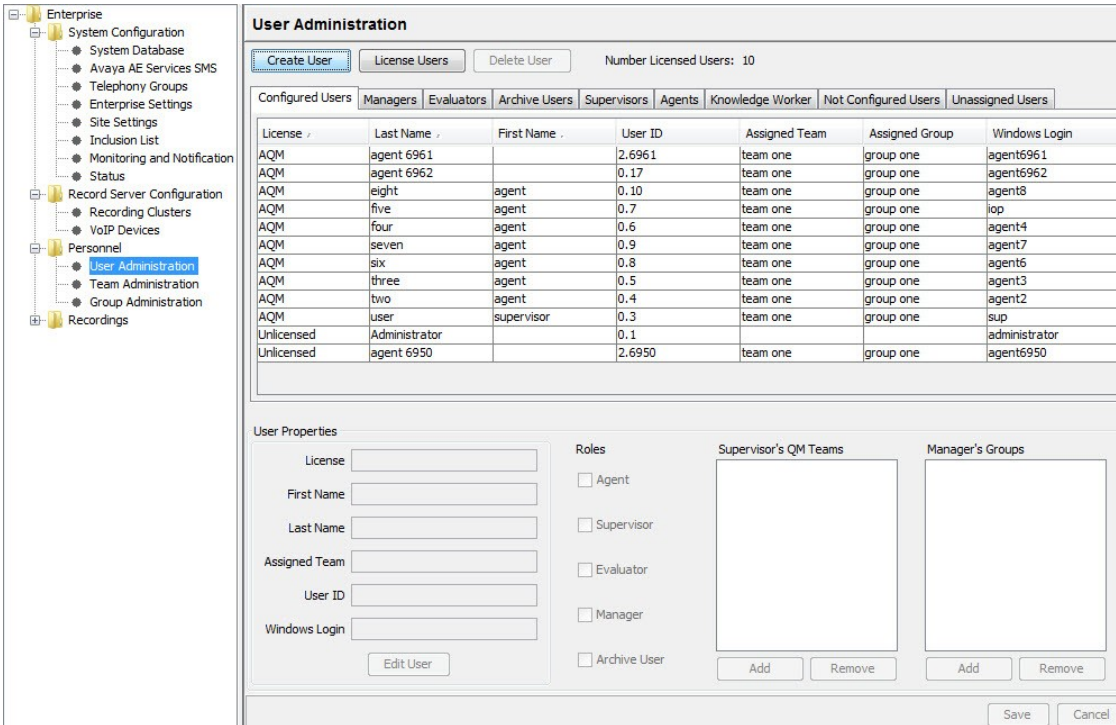
- Configuration of the Application Enablement Interfaces – SMS
- Configuration of the Application Enablement Interfaces – DMCC and JTAPI
- Configuration of Users
- Configuration of Devices
- Configuration of Recording Schedules (Workflows)

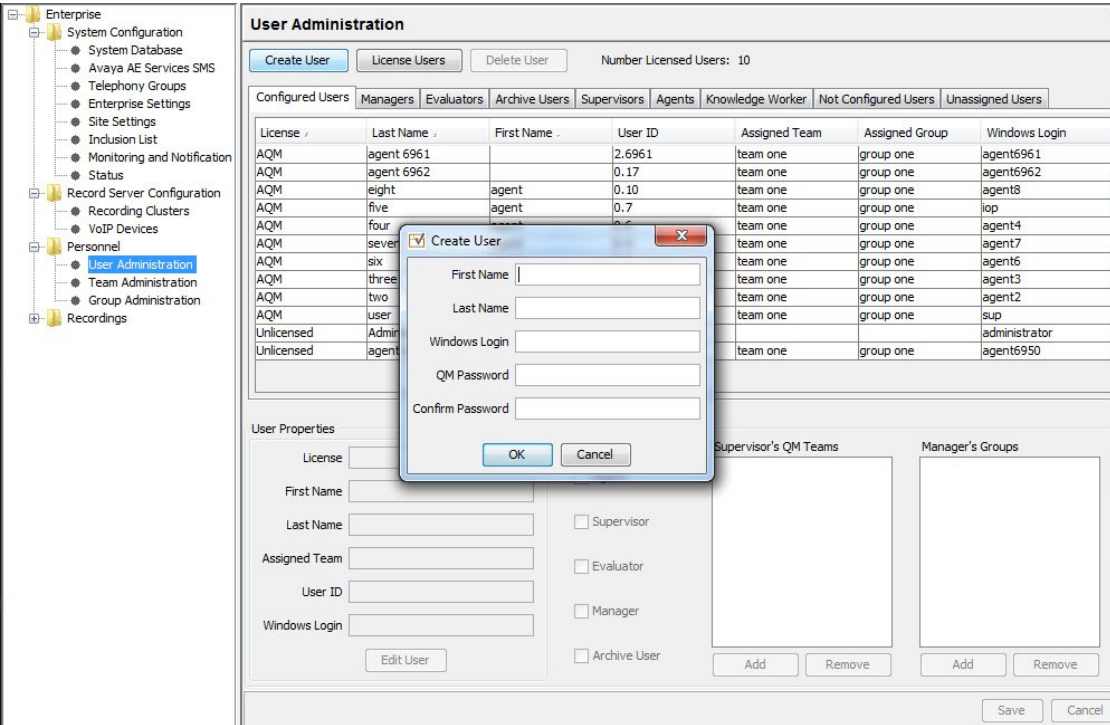
The configuration of the CRQM server is performed using the **Calabrio Monitoring and Recording Administrator** application, which can be launched by clicking **Start → All Programs → Calabrio → WFO → Monitoring and Recording Administrator**. Log in with proper credentials.

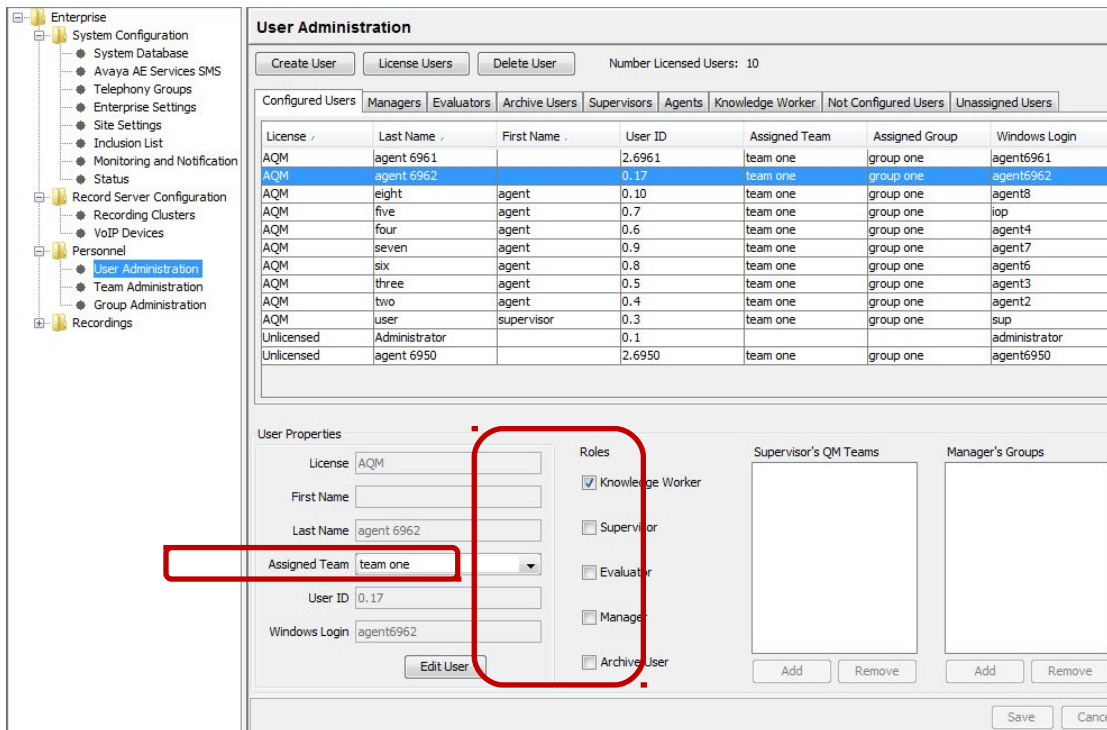
Step	Description
1.	<p data-bbox="370 233 1230 268">Configuration of the Application Enablement Interfaces – SMS</p> <p data-bbox="280 310 1364 380">From the left pane, navigate to Enterprise → System Configuration → Avaya AE Services SMS.</p> <p data-bbox="280 422 1385 600">Provide the IP Address or Host Name of the Application Enablement Services server in the AE Services SMS Information section. In the Avaya Communication Manager Information section, provide the IP Address of Communication Manager procr interface as well as the Username and Password configured in Section 5, Step 5.</p> 

Step	Description
2.	<p data-bbox="370 233 1321 300">Configuration of the Application Enablement Interfaces – DMCC and JTAPI</p> <p data-bbox="280 342 1365 485">From the left pane, navigate to Enterprise → System Configuration → Telephony Groups. The Telephony Groups screen is displayed. Click the Add button. In the Telephony Group Configuration window that pops up, enter a Name and select Avaya as the Telephony Group Type. Click OK.</p> 

Step	Description
	<p>Configuration of the Application Enablement Interfaces – DMCC and JTAPI (Continued)</p> <p>The Avaya Configuration screen is displayed. In the AE Services DMCC Information section, provide:</p> <ul style="list-style-type: none"> ● Host Name or IP Address of the Application Enablement Services server ● Username and Password (from Section 6, Step 4) ● 4721 as the port (the default DMCC listening port) ● Device Password for the recorded stations (from Section 5, Step 6). Note that all station passwords must be the same for this solution; however, check with Calabrio for alternatives if necessary. ● Switch Name or Switch IP Interface. This entry must match the configuration in Section 6, Step 1. Switch Name (CM3010) is preferred when multiple IP Interfaces are used for H.323 Gatekeepers as it allows Application Enablement Services to manage registrations in a pool. <p>In the AE Services JTAPI Information section, provide:</p> <ul style="list-style-type: none"> ● Host Name or IP Address of the Application Enablement Services server. ● Username and Password (from Section 6, Step 4) ● Tlink as configured in Section 6, Step 3. ● 450 as the port (the default TSAPI service listening port) <p>Click OK to complete this step.</p> 

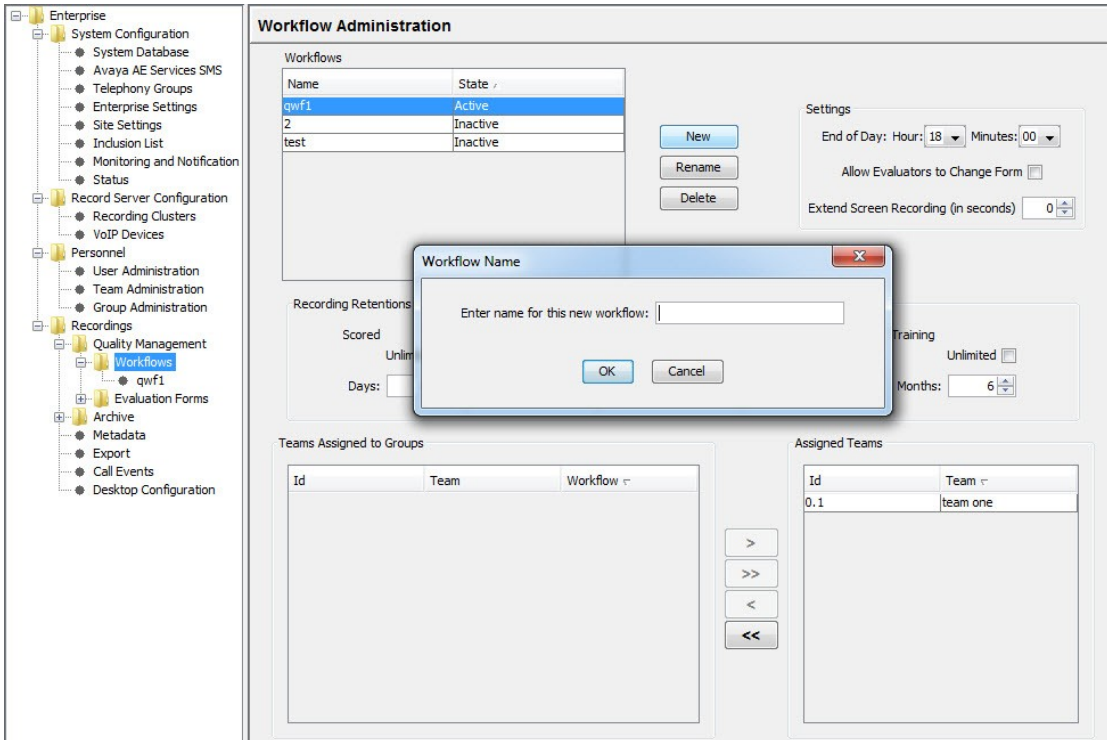
Step	Description
3.	<p>Configuration of Users</p> <p>Navigate to Enterprise → Personnel → User Administration page to configure users. Once created, users can be statically assigned to a VoIP Device as demonstrated in Step 4.</p> 

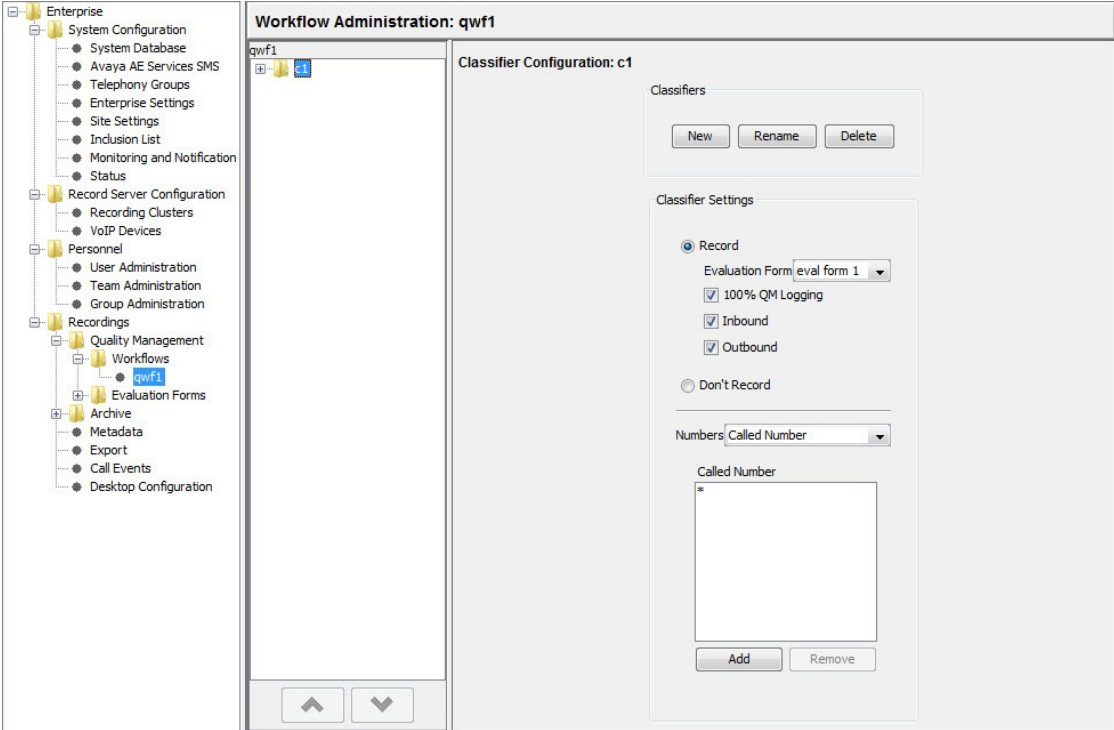
Step	Description
	<p>Configuration of Users (Continued)</p> <p>Clicking Create User to create a new user. A Create User window pops up. Enter the First Name, Last Name, Windows Login, and QM Password. Click OK.</p> <p>Note: CRQM also automatically populates the Agent list under the Agent tab based upon the agents configured in Communication Manager. The administrator can edit an agent using the Edit User button as an alternative way to create a user.</p> <p>If Screen Recording is required for a user, the Windows Login and QM Password configured for the user have to match the login and password of the PC that the user uses.</p>  <p>The screenshot displays the 'User Administration' window. On the left is a tree view with categories like Enterprise, System Configuration, Record Server Configuration, Personnel, and Recordings. 'Personnel' is expanded, showing 'User Administration' as the selected item. The main area contains a 'Create User' dialog box with the following fields: First Name, Last Name, Windows Login, QM Password, and Confirm Password. Below the dialog is the 'User Properties' section with fields for License, First Name, Last Name, Assigned Team, User ID, and Windows Login, along with checkboxes for Supervisor, Evaluator, Manager, and Archive User. To the right of the dialog is a table of 'Configured Users' with columns: License, Last Name, First Name, User ID, Assigned Team, Assigned Group, and Windows Login. The table lists several users, including 'agent 6961', 'agent 6962', 'agent 8', 'agent 10', 'agent 7', 'agent 6', 'agent 3', 'agent 2', 'sup', 'administrator', and 'agent 6950'. At the bottom right are 'Add' and 'Remove' buttons for 'Supervisor's QM Teams' and 'Manager's Groups'.</p>

Step	Description																																																																																											
	<h3>Configuration of Users (Continued)</h3> <p>The user appears in the list. Check one of the checkboxes (e.g. Knowledge Worker) under the Roles section and select a pre-configured team from the dropdown list of the Assigned Team field.</p>  <p>User Administration</p> <p>Create User License Users Delete User Number Licensed Users: 10</p> <p>Configured Users Managers Evaluators Archive Users Supervisors Agents Knowledge Worker Not Configured Users Unassigned Users</p> <table><tr><th>License</th><th>Last Name</th><th>First Name</th><th>User ID</th><th>Assigned Team</th><th>Assigned Group</th><th>Windows Login</th></tr><tr><td>AQM</td><td>agent 6961</td><td></td><td>2.6961</td><td>team one</td><td>group one</td><td>agent6961</td></tr><tr><td>AQM</td><td>agent 6962</td><td></td><td>0.17</td><td>team one</td><td>group one</td><td>agent6962</td></tr><tr><td>AQM</td><td>eight</td><td>agent</td><td>0.10</td><td>team one</td><td>group one</td><td>agent8</td></tr><tr><td>AQM</td><td>five</td><td>agent</td><td>0.7</td><td>team one</td><td>group one</td><td>lop</td></tr><tr><td>AQM</td><td>four</td><td>agent</td><td>0.6</td><td>team one</td><td>group one</td><td>agent4</td></tr><tr><td>AQM</td><td>seven</td><td>agent</td><td>0.9</td><td>team one</td><td>group one</td><td>agent7</td></tr><tr><td>AQM</td><td>six</td><td>agent</td><td>0.8</td><td>team one</td><td>group one</td><td>agent6</td></tr><tr><td>AQM</td><td>three</td><td>agent</td><td>0.5</td><td>team one</td><td>group one</td><td>agent3</td></tr><tr><td>AQM</td><td>two</td><td>agent</td><td>0.4</td><td>team one</td><td>group one</td><td>agent2</td></tr><tr><td>AQM</td><td>user</td><td>supervisor</td><td>0.3</td><td>team one</td><td>group one</td><td>sup</td></tr><tr><td>Unlicensed</td><td>Administrator</td><td></td><td>0.1</td><td></td><td></td><td>administrator</td></tr><tr><td>Unlicensed</td><td>agent 6950</td><td></td><td>2.6950</td><td>team one</td><td>group one</td><td>agent6950</td></tr></table> <p>User Properties</p> <p>License: AQM</p> <p>First Name: </p> <p>Last Name: agent 6962</p> <p>Assigned Team: team one</p> <p>User ID: 0.17</p> <p>Windows Login: agent6962</p> <p>Edit User</p> <p>Roles</p> <p><input checked="" type="checkbox"/> Knowledge Worker</p> <p><input type="checkbox"/> Supervisor</p> <p><input type="checkbox"/> Evaluator</p> <p><input type="checkbox"/> Manager</p> <p><input type="checkbox"/> Archive User</p> <p>Supervisor's QM Teams</p> <p>Manager's Groups</p> <p>Add Remove Add Remove</p> <p>Save Cancel</p>	License	Last Name	First Name	User ID	Assigned Team	Assigned Group	Windows Login	AQM	agent 6961		2.6961	team one	group one	agent6961	AQM	agent 6962		0.17	team one	group one	agent6962	AQM	eight	agent	0.10	team one	group one	agent8	AQM	five	agent	0.7	team one	group one	lop	AQM	four	agent	0.6	team one	group one	agent4	AQM	seven	agent	0.9	team one	group one	agent7	AQM	six	agent	0.8	team one	group one	agent6	AQM	three	agent	0.5	team one	group one	agent3	AQM	two	agent	0.4	team one	group one	agent2	AQM	user	supervisor	0.3	team one	group one	sup	Unlicensed	Administrator		0.1			administrator	Unlicensed	agent 6950		2.6950	team one	group one	agent6950
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	<p>Configuration of Users (Continued)</p> <p>Click the License Users button at the top to display the Licensed/Unlicense Users window. Use the AQM and Unlicensed buttons to set the license mode.</p> <div><div>License/Unlicense Users</div><table><tr><th>AQM</th><th>Unlicen...</th><th>Last Name</th><th>First Name</th><th>Team</th><th>Windows L...</th></tr><tr><td><input checked="" type="radio"/></td><td><input type="radio"/></td><td>agent 6961</td><td></td><td>team one</td><td>agent6961</td></tr><tr><td><input checked="" type="radio"/></td><td><input type="radio"/></td><td>agent 6962</td><td></td><td>team one</td><td>agent6962</td></tr><tr><td><input checked="" type="radio"/></td><td><input type="radio"/></td><td>eight</td><td>agent</td><td>team one</td><td>agent8</td></tr><tr><td><input checked="" type="radio"/></td><td><input type="radio"/></td><td>five</td><td>agent</td><td>team one</td><td>iop</td></tr><tr><td><input checked="" type="radio"/></td><td><input type="radio"/></td><td>four</td><td>agent</td><td>team one</td><td>agent4</td></tr><tr><td><input checked="" type="radio"/></td><td><input type="radio"/></td><td>seven</td><td>agent</td><td>team one</td><td>agent7</td></tr><tr><td><input checked="" type="radio"/></td><td><input type="radio"/></td><td>six</td><td>agent</td><td>team one</td><td>agent6</td></tr><tr><td><input checked="" type="radio"/></td><td><input type="radio"/></td><td>three</td><td>agent</td><td>team one</td><td>agent3</td></tr><tr><td><input checked="" type="radio"/></td><td><input type="radio"/></td><td>two</td><td>agent</td><td>team one</td><td>agent2</td></tr><tr><td><input checked="" type="radio"/></td><td><input type="radio"/></td><td>user</td><td>supervisor</td><td>team one</td><td>sup</td></tr><tr><td><input type="radio"/></td><td><input checked="" type="radio"/></td><td>Administrator</td><td></td><td></td><td>administrator</td></tr><tr><td><input type="radio"/></td><td><input checked="" type="radio"/></td><td>agent 6950</td><td></td><td>team one</td><td>agent6950</td></tr></table><div><div>AQM</div><div>Unlicensed</div></div><div><div>OK</div><div>Cancel</div></div></div>	AQM	Unlicen...	Last Name	First Name	Team	Windows L...	<input checked="" type="radio"/>	<input type="radio"/>	agent 6961		team one	agent6961	<input checked="" type="radio"/>	<input type="radio"/>	agent 6962		team one	agent6962	<input checked="" type="radio"/>	<input type="radio"/>	eight	agent	team one	agent8	<input checked="" type="radio"/>	<input type="radio"/>	five	agent	team one	iop	<input checked="" type="radio"/>	<input type="radio"/>	four	agent	team one	agent4	<input checked="" type="radio"/>	<input type="radio"/>	seven	agent	team one	agent7	<input checked="" type="radio"/>	<input type="radio"/>	six	agent	team one	agent6	<input checked="" type="radio"/>	<input type="radio"/>	three	agent	team one	agent3	<input checked="" type="radio"/>	<input type="radio"/>	two	agent	team one	agent2	<input checked="" type="radio"/>	<input type="radio"/>	user	supervisor	team one	sup	<input type="radio"/>	<input checked="" type="radio"/>	Administrator			administrator	<input type="radio"/>	<input checked="" type="radio"/>	agent 6950		team one	agent6950
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Step	Description																																																																								
4.	<h3>Configuration of Devices</h3> <p>Navigate to Enterprise → Record Server Configuration → VoIP Devices to configure devices.</p> <p>When the SMS query completes, all stations from Communication Manager are listed on the VoIP Devices page. A device is designated to be recorded by assigning a pre-configured Recording Cluster (e.g. rc1) on the VoIP Devices page, and then assigning an Agent to that device using dropdown lists in each column. The agent dropdown list includes the users configured on the User Administration page in Step 3 that have the AQM license assigned.</p> <p>Click Save to complete this step.</p> <div><div><ul style="list-style-type: none">Enterprise<ul style="list-style-type: none">System Configuration<ul style="list-style-type: none">System DatabaseAvaya AE Services SMSTelephony GroupsEnterprise SettingsSite SettingsInclusion ListMonitoring and NotificationStatusRecord Server Configuration<ul style="list-style-type: none">Recording ClustersVoIP DevicesPersonnel<ul style="list-style-type: none">User AdministrationTeam AdministrationGroup AdministrationRecordings</div><div><h4>VoIP Devices</h4><div>Agent List Filter: Users assigned to site: All Sites</div><div>Device Search: Find: All Devices of type: All Types where extension matches: *</div><table><thead><tr><th>Extension</th><th>Device Type</th><th>Agent</th><th>Recording Cluster</th></tr></thead><tbody><tr><td>21000</td><td>Avaya Phone</td><td>six, agent (agent6)</td><td>rc1</td></tr><tr><td>21001</td><td>Avaya Phone</td><td>four, agent (agent4)</td><td>rc1</td></tr><tr><td>21949</td><td>Avaya Phone</td><td>three, agent (agent3)</td><td>rc1</td></tr><tr><td>21950</td><td>Avaya Phone</td><td>User Login Required</td><td></td></tr><tr><td>21951</td><td>Avaya Phone</td><td>five, agent (iop)</td><td>rc1</td></tr><tr><td>21953</td><td>Avaya Phone</td><td>User Login Required</td><td></td></tr><tr><td>21959</td><td>Avaya Phone</td><td>User Login Required</td><td></td></tr><tr><td>21960</td><td>Avaya Phone</td><td>seven, agent (agent7)</td><td>rc1</td></tr><tr><td>21961</td><td>Avaya Phone</td><td>agent 6961, (agent6961)</td><td>rc1</td></tr><tr><td>21962</td><td>Avaya Phone</td><td>agent 6962, (agent6962)</td><td>rc1</td></tr><tr><td>3035383527</td><td>Avaya Phone</td><td>User Login Required</td><td></td></tr><tr><td>5383448</td><td>Avaya Phone</td><td>two, agent (agent2)</td><td>rc1</td></tr><tr><td>5383449</td><td>Avaya Phone</td><td>eight, agent (agent8)</td><td>rc1</td></tr><tr><td>5383450</td><td>Avaya Phone</td><td>User Login Required</td><td></td></tr><tr><td>5383534</td><td>Avaya Phone</td><td>User Login Required</td><td></td></tr><tr><td>6001</td><td>Avaya Phone</td><td>User Login Required</td><td></td></tr><tr><td>6002</td><td>Avaya Phone</td><td>User Login Required</td><td></td></tr></tbody></table></div></div>	Extension	Device Type	Agent	Recording Cluster	21000	Avaya Phone	six, agent (agent6)	rc1	21001	Avaya Phone	four, agent (agent4)	rc1	21949	Avaya Phone	three, agent (agent3)	rc1	21950	Avaya Phone	User Login Required		21951	Avaya Phone	five, agent (iop)	rc1	21953	Avaya Phone	User Login Required		21959	Avaya Phone	User Login Required		21960	Avaya Phone	seven, agent (agent7)	rc1	21961	Avaya Phone	agent 6961, (agent6961)	rc1	21962	Avaya Phone	agent 6962, (agent6962)	rc1	3035383527	Avaya Phone	User Login Required		5383448	Avaya Phone	two, agent (agent2)	rc1	5383449	Avaya Phone	eight, agent (agent8)	rc1	5383450	Avaya Phone	User Login Required		5383534	Avaya Phone	User Login Required		6001	Avaya Phone	User Login Required		6002	Avaya Phone	User Login Required	
Extension	Device Type	Agent	Recording Cluster																																																																						
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Step	Description
5.	<p>Configuration of Recording Schedules (Workflows)</p> <p>Navigate to the Recordings → Quality Management → Workflows page. Click the New button to create a Workflow. Enter a name for the new workflow and click OK. To assign the workflow to a team, select a team from the Teams Assigned to Groups list on the bottom left of the page, and click the > button to move that group into the Assigned Teams for the workflow.</p> <p>Click on Save (not shown) to complete this step.</p>  <p>The screenshot displays the 'Workflow Administration' page. On the left is a tree view with 'Enterprise' as the root, containing 'System Configuration', 'Record Server Configuration', 'Personnel', 'Recordings', 'Quality Management', 'Archive', and 'Desktop Configuration'. Under 'Quality Management', 'Workflows' is selected. The main area shows a 'Workflows' table with columns 'Name' and 'State'. It lists 'qwf1' (Active), '2' (Inactive), and 'test' (Inactive). Buttons for 'New', 'Rename', and 'Delete' are to the right. A 'Settings' panel on the right includes 'End of Day' (Hour: 18, Minutes: 00), 'Allow Evaluators to Change Form' (checkbox), and 'Extend Screen Recording (in seconds)' (0). A 'Workflow Name' dialog box is open in the center, prompting 'Enter name for this new workflow:'. Below the dialog are 'Recording Retentions' (Scored, Unlimited, Days) and 'Training' (Unlimited checkbox, Months: 6). At the bottom, there are two tables: 'Teams Assigned to Groups' (empty) and 'Assigned Teams' (containing one row: Id 0.1, Team team one). Navigation buttons (>, >>, <, <<) are between the tables.</p>

Step	Description
	<p>Configuration of Recording Schedules (Workflows) - Continued</p> <p>Click the newly created Workflow in the left pane to edit the details of the schedule. For the Compliance Test, the Inbound and Outbound checkboxes are checked to enable recording for inbound and outbound calls. In addition, the 100% QM Logging checkbox is checked to enable screen recording. If an Evaluation Form is to be used by users reviewing the recordings for this workflow, then select a previously configured Evaluation Form. Configuration of Evaluation Forms is beyond the scope of these Application Notes.</p> 

8. Verification Steps

The following steps may be used to verify the configuration:

- Verify that the interface on Communication Manager to Application Enablement Services is enabled and in **listening** status (use the **status aesvcs interface** command on the Communication Manager SAT).
- Verify that the link between Communication Manager and Application Enablement Services is transmitting and receiving messages (use the **status aesvcs link** command on the SAT).
- Verify that the **con state** of the Switch Connection is **talking** (on Application Enablement Services web page, navigate to **Status → Status and Control → Switch Conn Summary**).
- Verify that the **service state** of the CTI link is **established** (use the **status aesvcs cti-link** command on the SAT).
- Verify that CRQM lists all the stations configured in Communication in its VoIP Device table.
- Verify that the Calabrio recording ports are registered as **IP_API_A** stations in Communication Manager (use the **list registered-ip-stations** command on the SAT).
- Verify the Calabrio server has successfully monitored the agent stations using TSAPI (use the **list monitored-stations** command on the SAT).
- Verify that calls may be successfully completed to and from stations and agents. Verify that the call recordings are accurate and complete.

8.1. Verify Recording and Playback

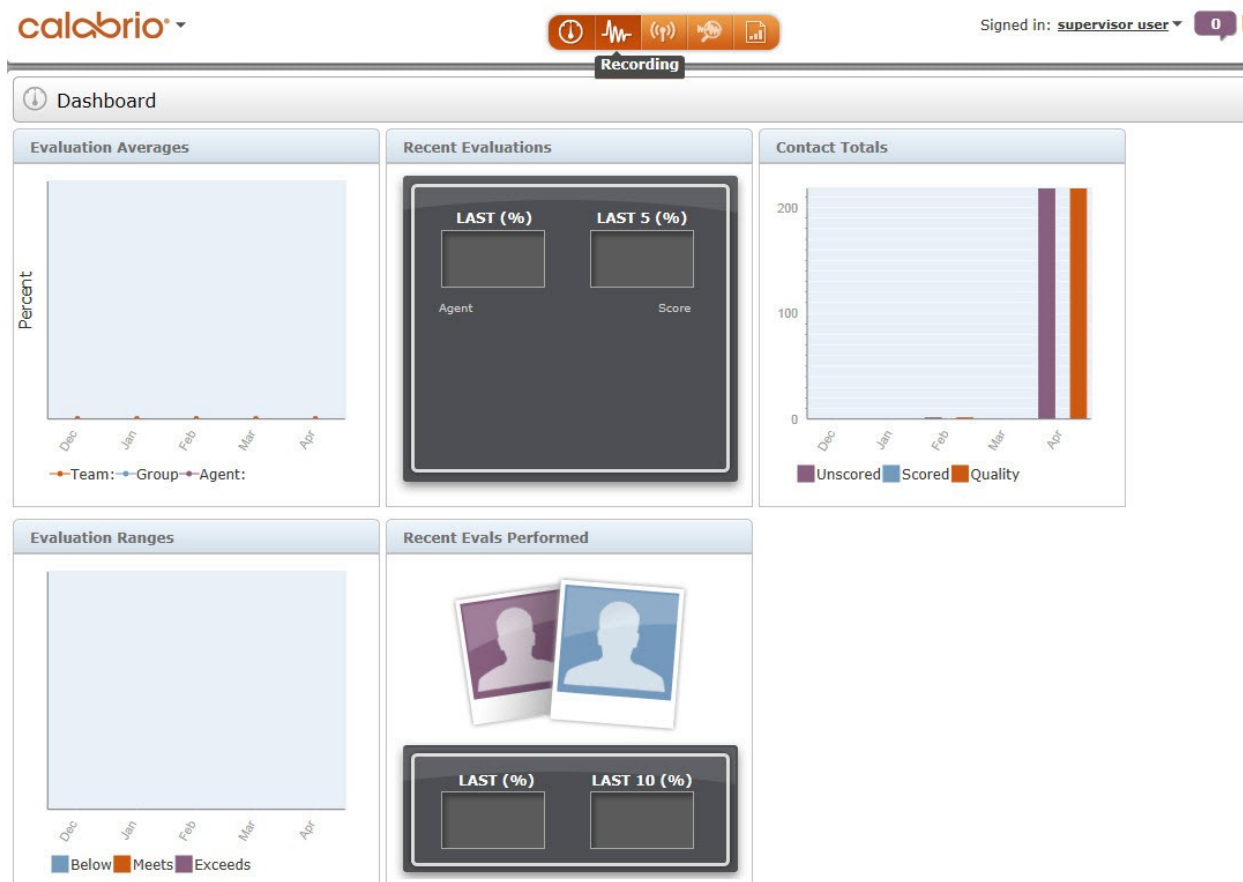
Access the Calabrio web-based user interface using the URL **http://<ip-address>** in a browser window, where **<ip-address>** is the address of the CRQM server. The **Log In** screen is displayed as shown below. Use appropriate credentials to log in.



The image shows the Calabrio login interface. At the top, the Calabrio logo is displayed with the tagline "There's no end to better." and a circular icon containing the number "1". Below the logo, there is a login form with the following elements:

- A "Username" label followed by a text input field.
- A "Password" label followed by a password input field.
- A "Language" label followed by a dropdown menu currently set to "English".
- Below the form, there is a link "Validate my PC configuration" with a right-pointing arrow, and a "Login" button.

Once logged in, launch the **Recording** interface from the Dashboard by clicking the **Recording** icon in the orange tool bar to reach the **Recordings** page.



On the **Recording** page, click **New or Refined Search**, create search criteria and click **Search** to find recordings.

The search interface allows users to filter recordings based on various criteria. The search results table displays the following data:

Last Name	First Name	Contact ID	Group Name	Team Name	Calling Number	Called Number	Date	Time	Time Zone	% Score
Five	Agent	637	Group One	Team One	21951	21953	5/9/13	01:16 PM	America/Denver	
Three	Agent	636	Group One	Team One	21951	21949	5/9/13	12:58 PM	America/Denver	
Five	Agent	635	Group One	Team One	21951	21949	5/9/13	12:58 PM	America/Denver	
Six	Agent	634	Group One	Team One	21951	21000	5/9/13	12:49 PM	America/Denver	
Five	Agent	633	Group One	Team One	21951	21000	5/9/13	12:49 PM	America/Denver	
Five	Agent	632	Group One	Team One	21949	21951	5/9/13	12:44 PM	America/Denver	
Three	Agent	631	Group One	Team One	21949	21951	5/9/13	12:44 PM	America/Denver	
Five	Agent	630	Group One	Team One	21949	21951	5/9/13	12:44 PM	America/Denver	
Three	Agent	629	Group One	Team One	21949	21951	5/9/13	12:44 PM	America/Denver	
Five	Agent	628	Group One	Team One	21949	21951	5/9/13	12:37 PM	America/Denver	
Three	Agent	627	Group One	Team One	21949	21951	5/9/13	12:37 PM	America/Denver	
Four	Agent	626	Group One	Team One	21961	21001	5/9/13	12:36 PM	America/Denver	
Agent 6961		625	Group One	Team One	21961	21001	5/9/13	12:36 PM	America/Denver	
Six	Agent	624	Group One	Team One	21951	21000	5/9/13	12:35 PM	America/Denver	
Five	Agent	623	Group One	Team One	21951	21000	5/9/13	12:35 PM	America/Denver	
Agent 6962		622	Group One	Team One	21953	21962	5/9/13	12:35 PM	America/Denver	
Five	Agent	621	Group One	Team One	21949	21951	5/9/13	12:35 PM	America/Denver	
Three	Agent	620	Group One	Team One	21949	21951	5/9/13	12:35 PM	America/Denver	

Select a call of interest and double click to launch a playback window as shown below.

The screenshot shows the Calabrio Recordings interface. At the top, the Calabrio logo is on the left, and a toolbar with icons for search, settings, and other functions is in the center. On the right, it says "Signed in: supervisor user" with a notification icon showing 0. Below the toolbar, there's a "Recordings" section with a search bar and filters for AQP:0% and ATT:13 secs. A table lists call records with columns: Last Name, First Name, Contact ID, Group Name, Team Name, Calling Number, Called Number, Date, Time, Time Zone, and % Score. The table contains 10 rows of data. Below the table, there's a copyright notice: "© 2008-2013 Calabrio Inc. All Rights Reserved." At the bottom, a playback window is open for "agent three - 627", showing a waveform and a timeline from 00:04 to 00:25. The playback window also has a search bar and a "Screen 1 to 1" indicator.

Last Name	First Name	Contact ID	Group Name	Team Name	Calling Number	Called Number	Date	Time	Time Zone	% Score
Five	Agent	628	Group One	Team One	21949	21951	5/9/13	12:37 PM	America/Denver	
Three	Agent	627	Group One	Team One	21949	21951	5/9/13	12:37 PM	America/Denver	
Four	Agent	626	Group One	Team One	21961	21001	5/9/13	12:36 PM	America/Denver	
Agent 6961		625	Group One	Team One	21961	21001	5/9/13	12:36 PM	America/Denver	
Six	Agent	624	Group One	Team One	21951	21000	5/9/13	12:35 PM	America/Denver	
Five	Agent	623	Group One	Team One	21951	21000	5/9/13	12:35 PM	America/Denver	
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Five	Agent	621	Group One	Team One	21949	21951	5/9/13	12:35 PM	America/Denver	
Three	Agent	620	Group One	Team One	21949	21951	5/9/13	12:35 PM	America/Denver	

8.2. Verify Live Monitoring

A supervisor can monitor and listen to calls to and from an agent in real-time. To activate the function, click the **Live Monitoring** icon in the orange tool bar.

The screenshot shows the Calabrio Recordings interface with the "Live Monitoring" icon highlighted in the orange toolbar. The interface is similar to the previous screenshot, but the "Live Monitoring" icon is now active, and the "Recordings" section is still visible. The "Live Monitoring" icon is located in the toolbar between the search and settings icons.

The **Live Monitoring** page is displayed. Click the **Live Monitoring** icon at the upper right corner. A **Live Monitoring Settings** window pops up. Enter the extension of the phone the supervisor will use to monitor calls and check the **Select All** checkbox in the **Find Users** section. Click **Submit**.

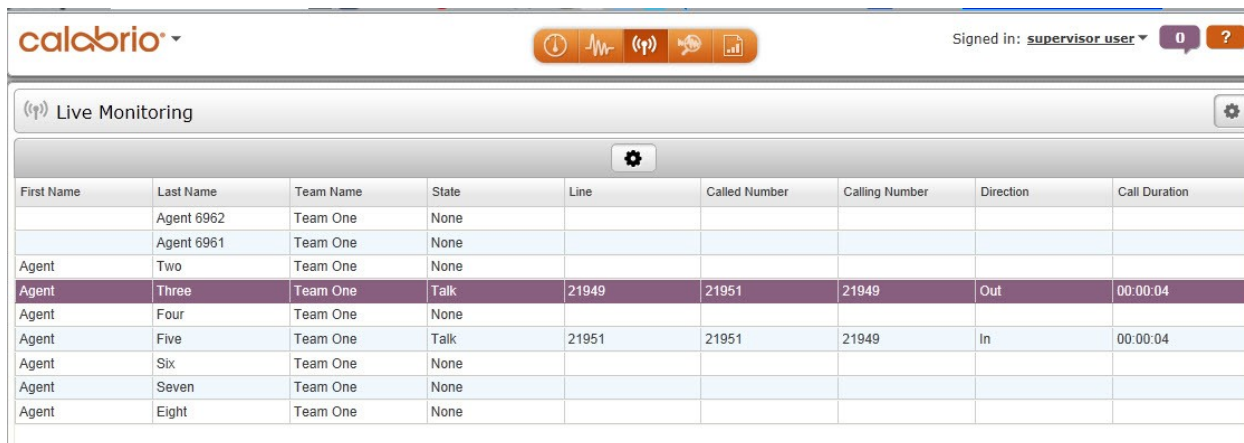
The screenshot shows the Calabrio Live Monitoring page. A modal dialog titled "Live Monitoring Settings" is open. It has two tabs: "Find Users" and "Remember my extension". In the "Find Users" tab, there are input fields for "First Name:" and "Last Name:", a "Group:" dropdown menu set to "All Assigned", and a "Team:" dropdown menu set to "team one". There is a "Select All" checkbox which is checked. A "Submit" button is at the bottom left of the dialog. In the "Remember my extension" tab, there is an input field with the value "21953" and a "Save" button. The background shows a table with columns: First Name, Last Name, Team Name, State, Line, Called Number, Calling Number, Direction, and Call Duration. The table lists agents 6962 through 6961 and Two through Eight, all associated with Team One and State None.

The list of users selected is displayed.

The screenshot shows the Calabrio Live Monitoring page with the "Live Monitoring Settings" dialog box closed. The table displays the list of selected users. The row for "Agent Three" is highlighted in purple, indicating it is the selected user.

First Name	Last Name	Team Name	State	Line	Called Number	Calling Number	Direction	Call Duration
	Agent 6962	Team One	None					
	Agent 6961	Team One	None					
Agent	Two	Team One	None					
Agent	Three	Team One	None					
Agent	Four	Team One	None					
Agent	Five	Team One	None					
Agent	Six	Team One	None					
Agent	Seven	Team One	None					
Agent	Eight	Team One	None					

When a user in the monitored list receives or originates a call, call related information is displayed. The supervisor can double click the user line to bridge his/her phone to the call with the phone speaker automatically turned on.



calabrio

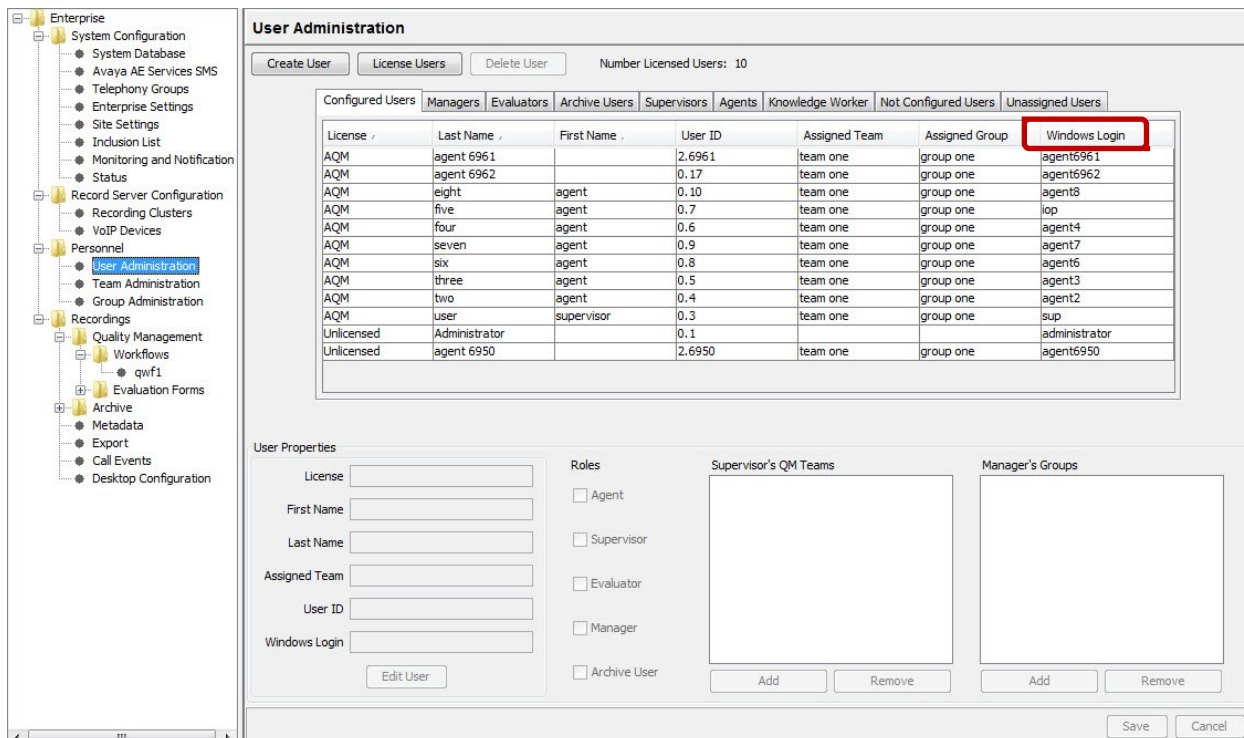
Signed in: supervisor user

Live Monitoring

First Name	Last Name	Team Name	State	Line	Called Number	Calling Number	Direction	Call Duration
	Agent 6962	Team One	None					
	Agent 6961	Team One	None					
Agent	Two	Team One	None					
Agent	Three	Team One	Talk	21949	21951	21949	Out	00:00:04
Agent	Four	Team One	None					
Agent	Five	Team One	Talk	21951	21951	21949	In	00:00:04
Agent	Six	Team One	None					
Agent	Seven	Team One	None					
Agent	Eight	Team One	None					

8.3. Verify Screen Recording

When properly configured, CRQM can perform screen recording at the same time when a call is being recorded. To activate screen recording on an agent's Windows PC, **Calabrio Desktop Recording Service** has to be downloaded and started on the PC. In addition, during User Administration (Section 7, Step 3) the **Windows Login** and **QM Password** of the user have to be configured to match the login and password of the PC.



Enterprise

- System Configuration
 - System Database
 - Avaya AE Services SMS
 - Telephony Groups
 - Enterprise Settings
 - Site Settings
 - Inclusion List
 - Monitoring and Notification
 - Status
- Record Server Configuration
 - Recording Clusters
 - VoIP Devices
- Personnel
 - User Administration**
 - Team Administration
 - Group Administration
- Recordings
 - Quality Management
 - Workflows
 - qwf1
 - Evaluation Forms
 - Archive
 - Metadata
 - Export
 - Call Events
 - Desktop Configuration

User Administration

Create User License Users Delete User Number Licensed Users: 10

Configured Users Managers Evaluators Archive Users Supervisors Agents Knowledge Worker Not Configured Users Unassigned Users

License	Last Name	First Name	User ID	Assigned Team	Assigned Group	Windows Login
AQM	agent 6961		2.6961	team one	group one	agent6961
AQM	agent 6962		0.17	team one	group one	agent6962
AQM	eight	agent	0.10	team one	group one	agent8
AQM	five	agent	0.7	team one	group one	iop
AQM	four	agent	0.6	team one	group one	agent4
AQM	seven	agent	0.9	team one	group one	agent7
AQM	six	agent	0.8	team one	group one	agent6
AQM	three	agent	0.5	team one	group one	agent3
AQM	two	agent	0.4	team one	group one	agent2
AQM	user	supervisor	0.3	team one	group one	sup
Unlicensed	Administrator		0.1			administrator
Unlicensed	agent 6950		2.6950	team one	group one	agent6950

User Properties

License

First Name

Last Name

Assigned Team

User ID

Windows Login

Edit User

Roles

☐ Agent

☐ Supervisor

☐ Evaluator

☐ Manager

☐ Archive User

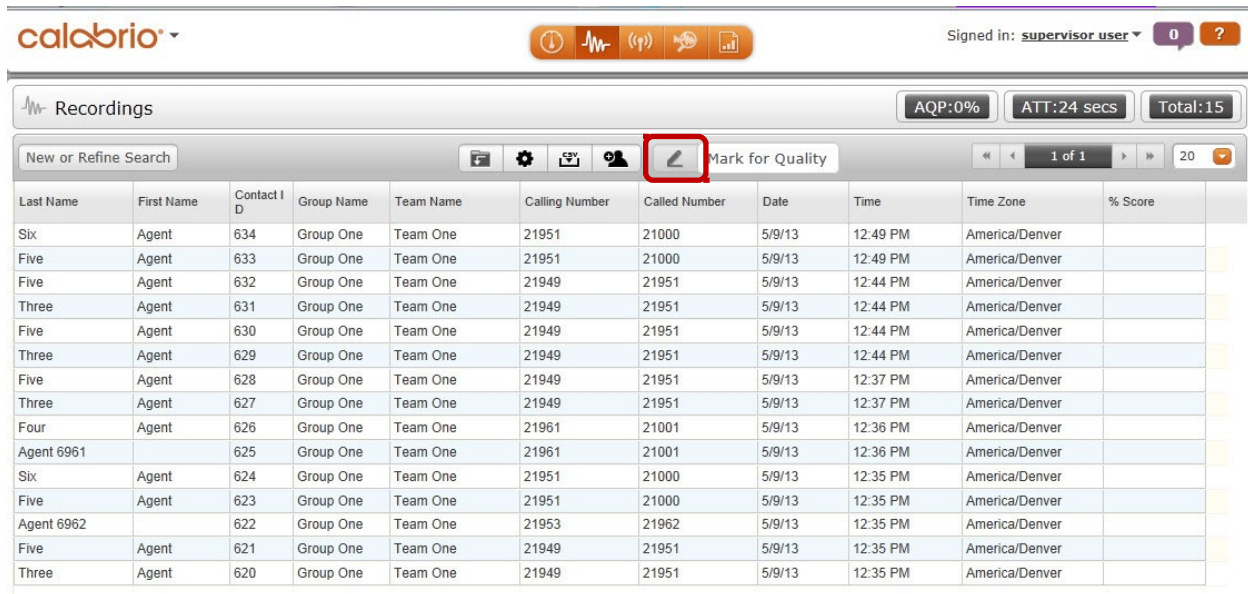
Supervisor's QM Teams

Manager's Groups

Add Remove Add Remove

Save Cancel

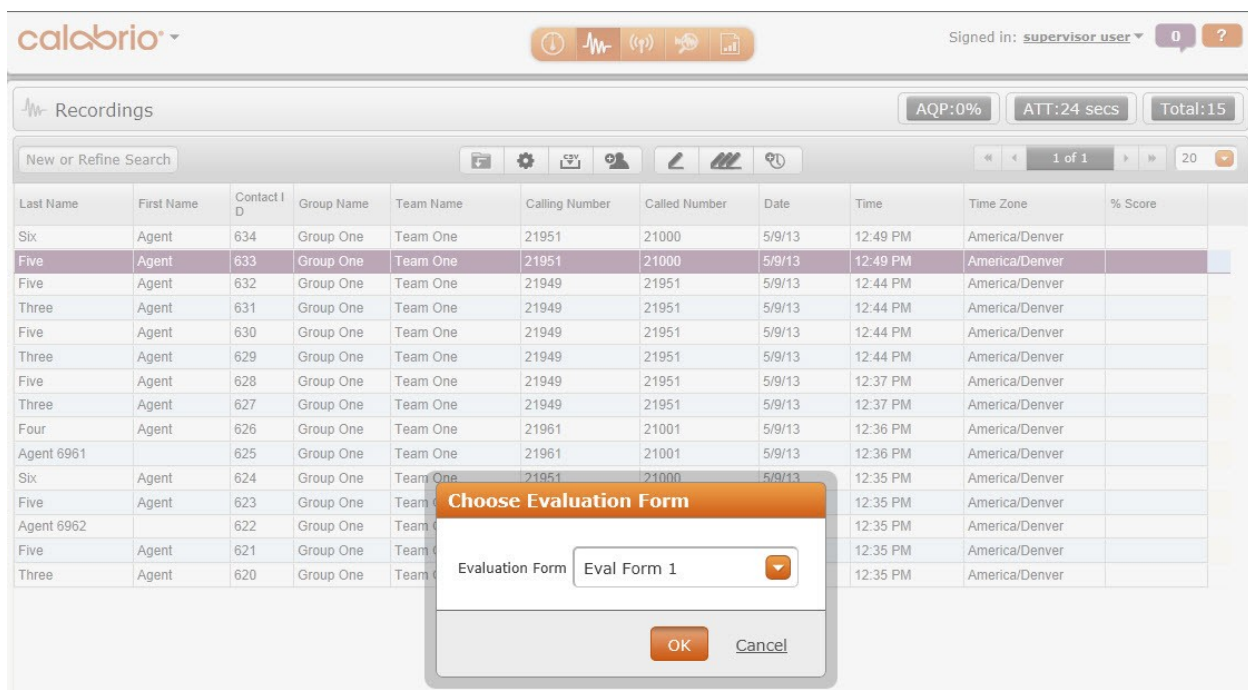
To activate screen recording playback, the supervisor has to download a Calabrio Screen Player plug-in for Internet Explorer. Screen recording will be available for playback after a scheduled upload time, usually end of the day. If an immediate upload is required, the supervisor can select the corresponding call recording and click the **Mark for Quality** button.



The screenshot shows the Calabrio interface with the 'Recordings' section active. The toolbar includes a 'Mark for Quality' button, which is highlighted with a red box. The interface also shows a search bar, a table of recordings, and summary statistics (AQP: 0%, ATT: 24 secs, Total: 15).

Last Name	First Name	Contact ID	Group Name	Team Name	Calling Number	Called Number	Date	Time	Time Zone	% Score
Six	Agent	634	Group One	Team One	21951	21000	5/9/13	12:49 PM	America/Denver	
Five	Agent	633	Group One	Team One	21951	21000	5/9/13	12:49 PM	America/Denver	
Five	Agent	632	Group One	Team One	21949	21951	5/9/13	12:44 PM	America/Denver	
Three	Agent	631	Group One	Team One	21949	21951	5/9/13	12:44 PM	America/Denver	
Five	Agent	630	Group One	Team One	21949	21951	5/9/13	12:44 PM	America/Denver	
Three	Agent	629	Group One	Team One	21949	21951	5/9/13	12:44 PM	America/Denver	
Five	Agent	628	Group One	Team One	21949	21951	5/9/13	12:37 PM	America/Denver	
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Agent 6962		622	Group One	Team One	21953	21962	5/9/13	12:35 PM	America/Denver	
Five	Agent	621	Group One	Team One	21949	21951	5/9/13	12:35 PM	America/Denver	
Three	Agent	620	Group One	Team One	21949	21951	5/9/13	12:35 PM	America/Denver	

The **Choose Evaluation Form** window is displayed. Select a pre-configured evaluation form and click **OK**.



The screenshot shows the Calabrio interface with the 'Recordings' section active. A 'Choose Evaluation Form' dialog box is displayed over the table. The dialog box contains a dropdown menu with 'Eval Form 1' selected and 'OK' and 'Cancel' buttons.

Last Name	First Name	Contact ID	Group Name	Team Name	Calling Number	Called Number	Date	Time	Time Zone	% Score
Six	Agent	634	Group One	Team One	21951	21000	5/9/13	12:49 PM	America/Denver	
Five	Agent	633	Group One	Team One	21951	21000	5/9/13	12:49 PM	America/Denver	
Five	Agent	632	Group One	Team One	21949	21951	5/9/13	12:44 PM	America/Denver	
Three	Agent	631	Group One	Team One	21949	21951	5/9/13	12:44 PM	America/Denver	
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Agent 6961		625	Group One	Team One	21961	21001	5/9/13	12:36 PM	America/Denver	
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Five	Agent	623	Group One	Team One	21951	21000	5/9/13	12:35 PM	America/Denver	
Agent 6962		622	Group One	Team One	21953	21962	5/9/13	12:35 PM	America/Denver	
Five	Agent	621	Group One	Team One	21949	21951	5/9/13	12:35 PM	America/Denver	
Three	Agent	620	Group One	Team One	21949	21951	5/9/13	12:35 PM	America/Denver	

Once the screen recording is uploaded, a screen recording will be played when the corresponding call recording is played.

The screenshot displays the CalabrioONE web application interface. At the top, the browser address bar shows the URL <http://10.64.101.69/cvfo/apps/Recordings>. The application header includes the Calabrio logo and a 'Recordings' tab. A sidebar on the left contains a navigation menu with options like 'Home', 'Reports', 'Settings', and 'Help'. The main content area features a table of recordings with columns for 'Called Number', 'Date', 'Time', 'Time Zone', and '% Score'. Below the table, a 'Screen' window is open, displaying an 'AVAYA' logo and a table of 'Application Enablement Services' data. At the bottom of the interface, a 'Screen 1 to 1' player is visible, showing a waveform and a progress bar.

Called Number	Date	Time	Time Zone	% Score
21951	5/1/13	03:46 PM	America/Denver	
21953	5/1/13	03:45 PM	America/Denver	
21001	5/1/13	03:32 PM	America/Denver	
21001	5/1/13	03:32 PM	America/Denver	
17209772877	5/1/13	03:32 PM	America/Denver	
21949	5/1/13	03:31 PM	America/Denver	
21949	5/1/13	03:19 PM	America/Denver	
21951	5/1/13	03:00 PM	America/Denver	
21949	5/1/13	02:54 PM	America/Denver	
21951	5/1/13	02:08 PM	America/Denver	
21951	5/1/13	01:52 PM	America/Denver	
21951	5/1/13	01:19 PM	America/Denver	
21000	5/1/13	01:01 PM	America/Denver	
21951	5/1/13	12:57 PM	America/Denver	
21951	5/1/13	12:42 PM	America/Denver	
21951	5/1/13	12:15 PM	America/Denver	
21949	5/1/13	11:55 AM	America/Denver	
21949	5/1/13	11:55 AM	America/Denver	
21949	5/1/13	11:53 AM	America/Denver	
21949	5/1/13	11:53 AM	America/Denver	

9. Conclusion

These Application Notes describe the procedures for configuring Calabrio CRQM to monitor and record calls placed to and from agents and phones on Avaya Aura® Communication Manager. In the configuration described in these Application Notes, Calabrio uses the Device and Media Control Services of Avaya Aura® Application Enablement Services to perform recording. During compliance testing, Calabrio successfully recorded calls placed to and from agents and station.

10. Additional References

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

- *Administering Avaya Aura® Communication Manager*, Release 6.2, Issue 7.0, July 2012, Document Number 03-300509.
- *Avaya Aura® Application Enablement Services Administration and Maintenance Guide*, Release 6.2, Issue 11, July 2012
- *Avaya Aura® Application Enablement Services Device, Media and Call Control API Java Programmers Guide Release 6.2*, Issue 1, June 2012, Document Number 02-300359

Product information for Calabrio products can be found at <http://calabrio.com/about-calabrio/services/>

- *Calabrio Call Recording and Quality Management Application User Guide*, Version 9.1, Last Modified January 25, 2013
- *Calabrio Monitoring and Recording Services Administrator User Guide for Avaya*, Version 9.1, Last Modified January 25, 2013

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