



Application Notes to Integrate Avaya Contact Recorder 12.0 with Avaya Proactive Outreach Manager 3.0 using Avaya Aura® Application Enablement Services 6.3 – Issue 1.1

Abstract

These Application Notes describe the configuration steps required for Avaya Contact Recorder 12.0 to successfully integrate with Avaya Proactive Outreach Manager 3.0 using Computer Telephony Integration and Avaya Aura® Application Enablement Services 6.3. Avaya Contact Recorder is a call recording solution capable of capturing audio from Avaya Aura® Communication Manager. Avaya Proactive Outreach Manager integrates with Avaya Contact Recorder using a switch side recording approach and records calls to meet compliance needs and for bulk recordings.

Information in these Application Notes has been obtained through interoperability test conducted at the Avaya Solution and Interoperability Test Lab.

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1 Introduction

These Application Notes describe the configuration steps required for Avaya Contact Recorder 12.0 to successfully integrate with Avaya Proactive Outreach Manager 3.0 using Computer Telephony Integration and Avaya Aura® Application Enablement Services. Avaya Contact Recorder is a component of the Avaya Aura® Workforce Optimization solution. It provides call recording functions and is capable of capturing audio from Avaya Aura® Communication Manager.

Call recording is an integral feature of any outbound offering and is a critical feature to have as Avaya Proactive Outreach Manager 3.0 supports agent based campaigns. To meet this requirement Avaya Proactive Outreach Manager integrates with Avaya Contact Recorder for call recording capabilities. Avaya Proactive Outreach Manager integrates with Avaya Contact Recorder using a switch side recording approach and records calls to meet compliance needs and for bulk recordings. While integrating and extending the recording capabilities, Avaya Contact Recorder controls the way the calls are recorded. The recordings are driven by Avaya Contact Recorder, and Avaya Proactive Outreach Manager does not drive the recordings. Avaya Proactive Outreach Manager integrates with Avaya Contact Recorder with the help of socket-based messages sent from Avaya Proactive Outreach Manager to Avaya Contact Recorder.

In the test configuration agents are configured to support both outbound calls and inbound calls in a Preview Agent Blending environment. Based upon the load of inbound calls Avaya Proactive Outreach Manager acquires agents to handle outbound calls and releases agents for handling inbound calls on a continuous basis. Both outbound calls and inbound calls directed to the agent stations are recorded by Avaya Contact Recorder.

To implement the call recording solution, a number of Device, Media and Call Control (DMCC) virtual IP softphones are configured within Avaya Contact Recorder. At the time when Avaya Contact Recorder is launched, Avaya Contact Recorder registers the virtual IP softphones with Avaya Aura® Communication Manager. When outbound calls are received by those target stations, Avaya Contact Recorder will receive Avaya Proactive Outreach Manager events and TSAPI events to trigger recording of the calls. It will send a Single Step Conference request via TSAPI to conference in one of its virtual IP softphones for capturing the media. When inbound calls are received by the target stations, Avaya Contact Recorder will use TSAPI events to trigger the Single Step Conference request for capturing the media.

2 Interoperability Testing

The interoperability test included feature and serviceability testing.

2.1 Test Description and Coverage

The feature testing focused on verifying the following on Avaya Contact Recorder:

- Handling of real-time agent states and call events from Avaya Proactive Outreach Manager
- Use of Application Enablement Services DMCC registration services to register and un-register the virtual IP softphones
- Use of Single Step Conference to connect virtual IP softphones to calls participated by target stations
- Use of Application Enablement Services DMCC monitoring services and media control events to obtain the media from the virtual IP softphones
- Proper recording, logging, and playback of calls for scenarios involving inbound, outbound, agent drop, customer drop, hold, reconnect, transfer, conference, simultaneous calls, agent blending, and managed jobs

The serviceability testing focused on verifying the ability of Avaya Contact Recorder to recover from adverse conditions, such as network outage and server reboot.

Feature and serviceability test cases were executed manually. During the test, outbound calls were placed by Avaya Proactive Outreach Manager and routed to an available agent. The agent accepted the call and the conversation between the customer and the agent was recorded. The recordings were reviewed using Avaya Contact Recorder Replay function. Inbound calls were placed manually to an Automatic Call Distribution (ACD) queue during the test. The agent was released by Avaya Proactive Outreach Manager to handle the inbound call which was also recorded by Avaya Contact Recorder.

An important focus of the test was to make sure that calls were recorded from the beginning to the end. In addition, for calls that have multiple segments (e.g. transfer and conference calls) attention was paid on whether all the segments were recorded. Because the Avaya Proactive Outreach Manager SynTelate Agent Desktop provides in-built hold, transfer, conference and consult capabilities.

2.2 Test Results and Observations

All the following scenarios were tested successfully with Avaya Proactive Outreach Manager 3.0 and Avaya Contact Recorder 12.0

- Audio and Screen Recordings for Outbound jobs
- Audio and Screen Recordings for hold, transfer, consult and conferences with other outbound and inbound agents
- Data associated with outbound jobs for recording to be aligned with Avaya Proactive Outreach Manager reports
- Audio and Screen Recording for blended agents handling inbound and outbound jobs

Failover and Negative scenarios were carried out in order to verify the functionality under rainy day conditions as mentioned below. Few issues observed related to Avaya Contact Recorder 12.0

- Impact of Avaya Contact Recorder/Avaya Proactive Outreach Manager restart on call recording of the ongoing and subsequent outbound jobs
- Impact of AES restart on call recording of the ongoing and subsequent outbound jobs
- Impact of Avaya Proactive Outreach Manager failover to Aux Avaya Proactive Outreach Manager on the call recordings of outbound jobs

Limitations:

- Outbound Agent's ID and parties (the caller and called station details along with DMCC stations) are not associated with the call recordings in case of hold, transfer and conference call scenarios
- If multiple Avaya Proactive Outreach Manager Servers are integrated with Avaya Contact Recorder then in case of failovers, Avaya Proactive Outreach Manager needs to be restarted manually in order to have job information associated with outbound call recordings
- For Avaya Proactive Outreach Manager SynTelate agent desktops installed on Windows XP, registry entry for screen capture module (CaptureLayeredWindows to be set to 1) needs to be modified to have all the portions of screen to be captured properly

3 Reference Configuration

Avaya Contact Recorder is a software only solution and runs on an industry standard server. It uses a web browser for administration and recording review and playback.

The administration of basic connectivity among Communication Manager, Avaya Proactive Outreach Manager, and Application Enablement Services is not the focus of these Application Notes, and will not be described. In addition, it is assumed that the administration of contact center entities (e.g. agents, skills, vectors, and VDN's) is already in place.

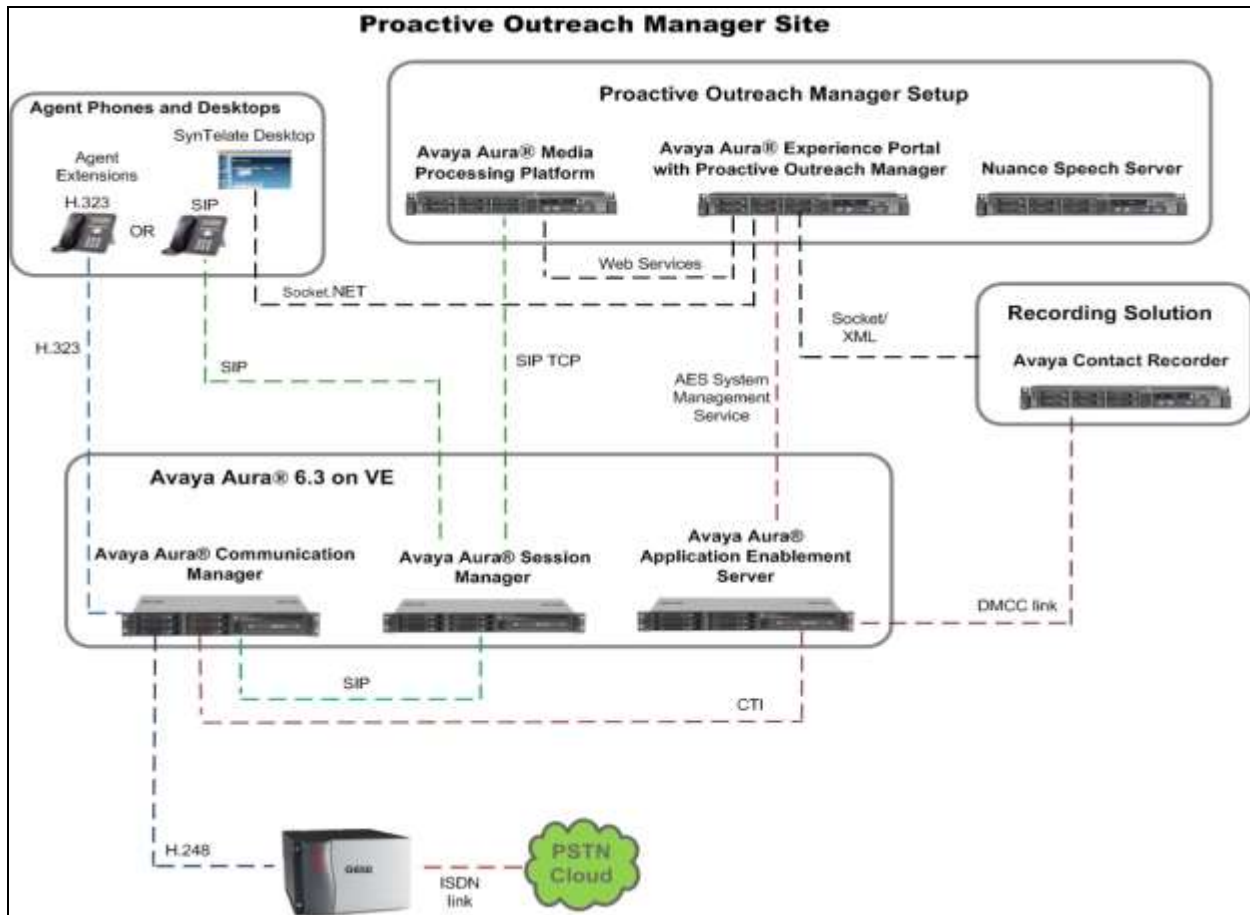


Figure 1: Avaya Proactive Outreach Manager with Avaya Contact Recorder and Avaya Aura® Application Enablement Services

4 Equipment and Software Validated

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

Equipment/Software	Release/Version
VMWare ESXi 5.0.1 with vCenter 5.1 OVA	Avaya Aura® System Manager 6.3 (Build No 6.3.3.5.1829)
	Avaya Aura® Session Manager 6.3.2.0.632023
	Avaya Aura® Communication Manager (Evolution Server) R016x.03.0.124.0
	Avaya Aura® Application Enablement Services R6.3.0.0.212-0
Avaya Contact Recorder	12.0
Avaya Aura® Experience Portal	7.0
Avaya Proactive Outreach Manager	3.0
Avaya Proactive Outreach Manager SynTelate Agent Desktop	4.4.0
Avaya 96x1 Series H.323 IP Deskphones	6.3
Avaya 96x1 Series SIP IP Deskphones	6.3

5 Configure Avaya Aura® Communication Manager

This section provides the procedures for configuring Communication Manager as follows:

- Verify Avaya Aura® Communication Manager License
- Administer CTI link for TSAPI
- Administer System Parameters Features
- Administer Class of Restriction
- Administer Agent Stations
- Administer Codec Set
- Administer Network Region
- Administer Virtual IP Softphones
- Assign Virtual IP Softphones to Network Region

5.1 Verify Avaya Aura® Communication Manager License

Log in to the System Access Terminal (SAT) to verify that the Communication Manager license has proper permissions for features illustrated in these Application Notes. Use the **display system-parameters customer-options** command to verify that the **Computer Telephony Adjunct Links** customer option is set to **y** on **Page 3**.

```
display system-parameters customer-options                               Page 3 of 11
                                OPTIONAL FEATURES

Abbreviated Dialing Enhanced List? y      Audible Message Waiting? y
Access Security Gateway (ASG)? y           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? y            DCS Call Coverage? y
ASAI Link Plus Capabilities? y            DCS with Rerouting? y
Async. Transfer Mode (ATM) PNC? n         Digital Loss Plan Modification? y
Async. Transfer Mode (ATM) Trunking? n    DS1 MSP? y
ATM WAN Spare Processor? n                DS1 Echo Cancellation? y
ATMS? y
Attendant Vectoring? y
```


Navigate to **Page 4**. Verify that the **Enhanced Conferencing** customer option is set to **y** on **Page 4**.

display system-parameters customer-options		Page	4 of	11
OPTIONAL FEATURES				
Emergency Access to Attendant? y	IP Stations? y			
Enable 'dadmin' Login? y				
Enhanced Conferencing? y	ISDN Feature Plus? n			
Enhanced EC500? y	ISDN/SIP Network Call Redirection? y			
Enterprise Survivable Server? n	ISDN-BRI Trunks? y			
Enterprise Wide Licensing? n	ISDN-PRI? y			
ESS Administration? y	Local Survivable Processor? n			
Extended Cvg/Fwd Admin? y	Malicious Call Trace? y			
External Device Alarm Admin? y	Media Encryption Over IP? y			
Five Port Networks Max Per MCC? n	Mode Code for Centralized Voice Mail? n			
Flexible Billing? n				
Forced Entry of Account Codes? y	Multifrequency Signaling? y			
Global Call Classification? y	Multimedia Call Handling (Basic)? y			
Hospitality (Basic)? y	Multimedia Call Handling (Enhanced)? y			
Hospitality (G3V3 Enhancements)? y	Multimedia IP SIP Trunking? y			
IP Trunks? y				
IP Attendant Consoles? y				

If any option specified in this section does not have a proper value, contact the Avaya sales team or business partner for a proper license file.

5.2 Administer CTI Link for TSAPI

Add a CTI link using the **add cti-link n** command, where **n** is an available CTI link number. Enter an available extension number in the **Extension** field. Note that the CTI link number and extension number may vary. Enter **ADJ-IP** in the **Type** field, and a descriptive name in the **Name** field. Default values may be used in the remaining fields.

add cti-link 1		Page	1 of	3
CTI LINK				
CTI Link: 26				
Extension: 301-1000				
Type: ADJ-IP				
Name: EMCAES				
COR: 1				

5.3 Administer System Parameters Features

Use the **change system-parameters features** command to enable **Create Universal Call ID (UCID)** and enter an available node ID in the **UCID Network ID** field on **Page 5**. This node ID will be prepended to all the UCID's generated by Communication Manager.

change system-parameters features	Page 5 of 20
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? y IGAR Over IP Trunks: skip	
Enable Dial Plan Transparency in Survivable Mode? y	
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	

Navigate to **Page 13**, and enable **Send UCID to ASAI**. This parameter allows for the universal call ID to be sent to Avaya Contact Recorder.

change system-parameters features	Page 13 of 20
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 UII During Conference/Transfer? y	
Call Classification After Answer Supervision? y	
Send UCID to ASAI? y	
For ASAI Send DTMF Tone to Call Originator? y	
Send Connect Event to ASAI For Announcement Answer? y	

5.4 Administer Class of Restriction

Use the **change cor n** command, where **n** is the class of restriction (COR) number to be assigned to the target stations and virtual IP softphones. Set the **Calling Party Restriction** field to **none**, as shown below.

change cor 1		Page	1 of 23
CLASS OF RESTRICTION			
COR Number: 1			
COR Description:			
FRL: 0		APLT? y	
Can Be Service Observed? y		Calling Party Restriction: none	
Can Be A Service Observer? y		Called Party Restriction: none	
Time of Day Chart: 1		Forced Entry of Account Codes? n	
Priority Queuing? n		Direct Agent Calling? y	
Restriction Override: none		Facility Access Trunk Test? n	
Restricted Call List? n		Can Change Coverage? n	
Access to MCT? y		Fully Restricted Service? n	
Group II Category For MFC: 7		Hear VDN of Origin Annc.? n	
Send ANI for MFE? n		Add/Remove Agent Skills? n	
MF ANI Prefix:		Automatic Charge Display? n	
Hear System Music on Hold? y		PASTE (Display PBX Data on Phone)? n	
		Can Be Picked Up By Directed Call Pickup? n	
		Can Use Directed Call Pickup? n	
		Group Controlled Restriction: inactive	

5.5 Administer Agent Stations

Modify each physical station used by the Avaya Proactive Outreach Manager agents to allow the station to be involved in an outbound call by using the COR defined in **Section 5.4**. Use the **change station n** command, where **n** is the station extension, to change the **COR** field to **1**. Make sure that the **Name** field is populated with the name of the station; otherwise Avaya Contact Recorder will report an error and no recording will be done.

change station 3011441		Page	1 of 5
STATION			
Extension: 301-1441		Lock Messages? n	BCC: 0
Type: 9641		Security Code: 123456	TN: 1
Port: S00001		Coverage Path 1:	COR: 1
Name: Station 3011441		Coverage Path 2:	COS: 1
		Hunt-to Station:	Tests? y
STATION OPTIONS			
Location:		Time of Day Lock Table:	
Loss Group: 19		Personalized Ringing Pattern: 1	
		Message Lamp Ext: 301-1441	
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	

5.6 Administer Codec Set

Enter the **change ip-codec-set n** command where **n** is the codec set for the virtual IP softphones. Enter **G.711MU** and **G.729A** to the **Audio Codec** field and **6** to the **Frames Per Pkt** field. The entry of G.729A is needed because Avaya Contact Recorder uses G.729A recording format in the test configuration (see **Section 8.3**). Retain the values of other fields.

change ip-codec-set 1		Page	1 of	2
IP Codec Set				
Codec Set: 1				
Audio Codec	Silence Suppression	Frames Per Pkt	Packet Size(ms)	
1: G.729A	n	6	20	
2: G.711MU	n	6	20	
3: G.711A	n	6	20	
4:				
5:				
6:				
7:				
Media Encryption				
1: none				
2:				
3:				

5.7 Administer Network Region

Enter the **change ip-network-region n** command where **n** is the network region the virtual IP softphones will belong to. Set the **Codec Set** field to the codec set value administered in **Section 5.6**.

change ip-network-region 1		Page	1 of	20
IP NETWORK REGION				
Region: 1				
Location: 1	Authoritative Domain: sol002.fst.silpunelab.com			
Name: CM1A	Stub Network Region: n			
MEDIA PARAMETERS	Intra-region IP-IP Direct Audio: yes			
Codec Set: 1	Inter-region IP-IP Direct Audio: yes			
UDP Port Min: 2048	IP Audio Hairpinning? n			
UDP Port Max: 3329				
DIFFSERV/TOS PARAMETERS				
Call Control PHB Value: 46				
Audio PHB Value: 46				
Video PHB Value: 26				
802.1P/Q PARAMETERS				
Call Control 802.1p Priority: 6				
Audio 802.1p Priority: 6				
Video 802.1p Priority: 5				
H.323 IP ENDPOINTS		AUDIO RESOURCE RESERVATION PARAMETERS		
H.323 Link Bounce Recovery? y		RSVP Enabled? n		
Idle Traffic Interval (sec): 20				
Keep-Alive Interval (sec): 5				
Keep-Alive Count: 5				

5.8 Administer Virtual IP Softphones

Virtual IP Softphones are used by Avaya Contact Recorder to conference into calls involving target stations and to capture media. Add a virtual IP softphone 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.

- **Type:** Set as **4624**
- **Name:** Enter a descriptive name
- **Security Code:** Enter a desired value
- **COR** Set as **1** which is defined in **Section 5.4**
- **IP SoftPhone:** **y**

add station 3011450		Page 1 of 6	
STATION			
Extension: 301-1450	Lock Messages? n	BCC: 0	
Type: 4624	Security Code: 123456	TN: 1	
Port: S00009	Coverage Path 1:	COR: 1	
Name: Avaya Contact Recorder Test 1	Coverage Path 2:		
COS: 1	Hunt-to Station:	Tests? y	
STATION OPTIONS			
Location:	Time of Day Lock Table:		
Loss Group: 19	Personalized Ringing Pattern: 1		
	Message Lamp Ext: 301-1450		
Speakerphone: 2-way	Mute Button Enabled? y		
Display Language: english			
Survivable GK Node Name:	Media Complex Ext:		
Survivable COR: internal	IP SoftPhone? y		
Survivable Trunk Dest? y			
	IP Video Softphone? n		
	Short/Prefixed Registration Allowed: default		

Navigate to **Page 4**. Enter button type **conf-dsp** to the Button 4 field. Empty the value in the Button 3 field.

change station 3011450		Page 4 of 6	
STATION			
SITE DATA			
Room:		Headset?	n
Jack:		Speaker?	n
Cable:		Mounting:	d
Floor:		Cord Length:	0
Building:		Set Color:	
ABBREVIATED DIALING			
List1:	List2:	List3:	
BUTTON ASSIGNMENTS			
1: call-appr	7:		
2: call-appr	8:		
3:	9:		
4: conf-dsp	10:		
5:	11:		
6:	12:		

Repeat this section to administer the desired number of virtual IP softphones, using sequential extension numbers and the same security code for all virtual IP softphones.

list station 3011450 count 5									
STATIONS									
Ext/ Hunt-to	Port/ Type	Name/ Surv GK NN	Move	Room/ Data Ext	Cv1/ Cv2	COR/ COS	Cable/ TN Jack		
301-1450 1	S00009	Avaya Contact Recorder Test 1							
	4624		no			1	1		
301-1451 1	S00012	Avaya Contact Recorder Test 2							
	4624		no			1	1		
301-1452 1	S00015	Avaya Contact Recorder Test 3							
	4624		no			1	1		
301-1453 1	S00018	Avaya Contact Recorder Test 4							
	4624		no			1	1		
301-1454 1	S00021	Avaya Contact Recorder Test 5							
	4624		no			1	1		

5.9 Assign Virtual IP Softphones to Network Region

Use the **change ip-network-map** command to add the IP address of the Application Enablement Services server to network region **1** administered in **Section 5.7**. As all the virtual IP softphones register through the Application Enablement Services server, they will automatically be assigned to that network region.

change ip-network-map			Page 1 of 63		
IP ADDRESS MAPPING					
IP Address	Subnet	Network	Emergency		
	Bits	Region	VLAN	Location	Ext

FROM: x.x.x.x	/	1	1		
TO: x.x.x.x					

Configuration of Communication Manager is complete. Use the **save translation** command to save these changes.

6 Configure Avaya Aura® Application Enablement Services

This section provides the procedures for configuring Application Enablement Services as follows:

- Launch Avaya Aura® Application Enablement Services Console
- Verify DMCC and TSAPI Licenses
- Administer TSAPI Link
- Obtain Tlink Name
- Obtain H.323 Gatekeeper IP Address
- Disable Security Database
- Restart TSAPI service
- Administer Avaya Contact Recorder User for DMCC
- Administer Avaya Contact Recorder User for TSAPI

6.1 Launch Avaya Aura® Application Enablement Services Console

Access Application Enablement Services web-based interface by using the URL **http://<ip-address>** in an Internet browser window, where **ip-address** is the IP address of the Application Enablement Services server.

The **Welcome to Avaya Application Enablement Services** screen is displayed (not shown). Click **Continue to Login**. Log in using the appropriate credentials in **Please login here:** screen.



The screenshot shows the Avaya Application Enablement Services Management Console login interface. At the top left is the Avaya logo. To its right, the text "Application Enablement Services" is displayed above "Management Console". A thick red horizontal bar spans the width of the page below the header. In the center of the page is a login box with the text "Please login here:" followed by two input fields labeled "Username" and "Password", and a "Login" button. Another thick red horizontal bar is at the bottom of the page. At the very bottom, a small copyright notice reads: "© Copyright © 2009-2012 Avaya Inc. All Rights Reserved."

The **Welcome to OAM** screen is displayed.

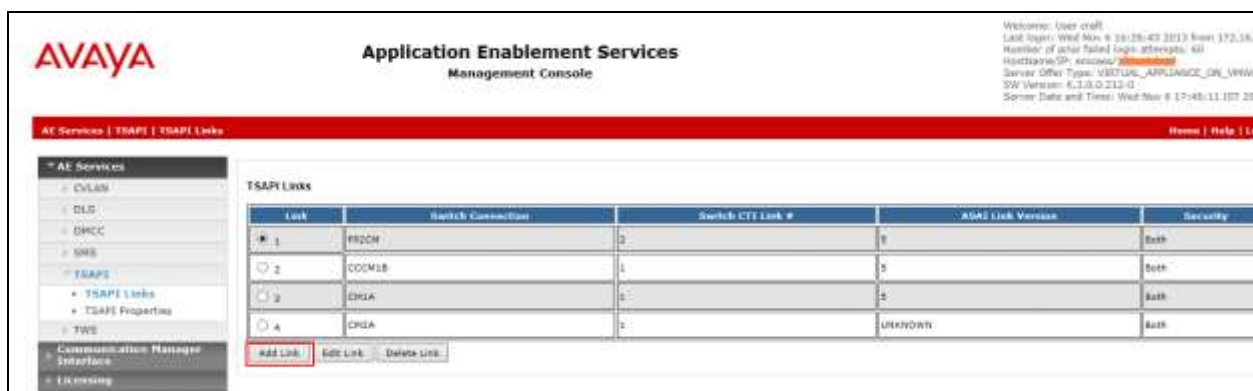


6.2 Verify DMCC and TSAPI Licenses

As an Avaya product Avaya Contact Recorder is always granted unrestricted access to the DMCC and TSAPI interfaces. No additional **Device Media and Call Control** and **TSAPI Simultaneous Users** licenses are required for DMCC and TSAPI access.

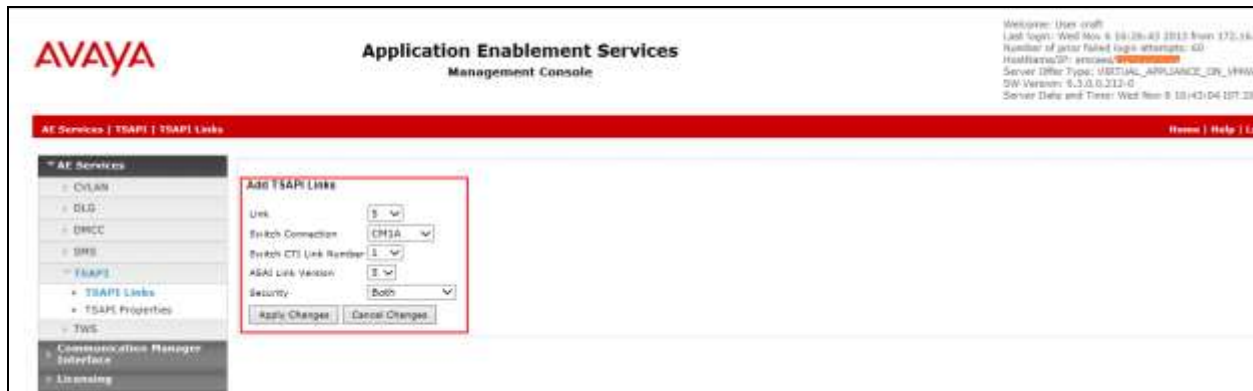
6.3 Administer TSAPI Link

To administer a TSAPI link, select **AE Services** → **TSAPI** → **TSAPI Links** from the left pane. The **TSAPI Links** screen is displayed, as shown below. Click **Add Link**. Note that the TSAPI link used for this test is CM1A which is already configured. The screen below is for illustration purpose only.



The **Add TSAPI Links** screen is displayed next.

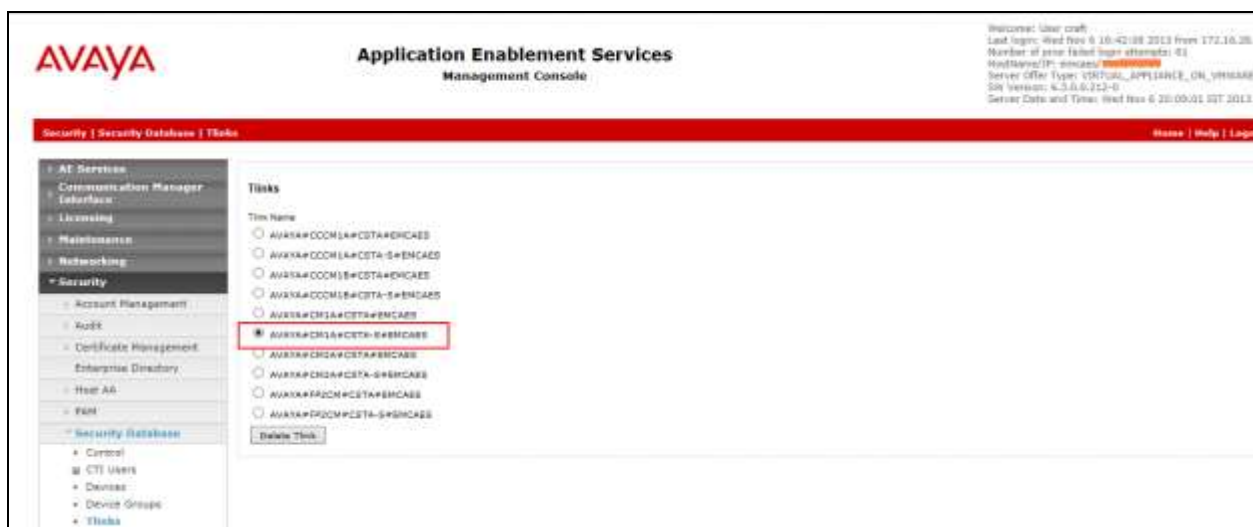
The **Link** field is only local to the Application Enablement Services server, and may be set to any available number. For **Switch Connection**, select the relevant switch connection from the drop-down list. In this case, the existing switch connection **CM1A** is selected. For **Switch CTI Link Number**, select the CTI link number configured in **Section 5.2**. Retain the default values in the remaining fields, and click **Apply Changes**. Note that the TSAPI link used for this test is Link 1 and is already configured. The screen below is for illustration purpose only.



6.4 Obtain Tlink Name

Select **Security** → **Security Database** → **Tlinks** from the left pane. The **Tlinks** screen shows a listing of the Tlink names. A new Tlink name is automatically generated for the TSAPI service. Locate the Tlink name associated with the relevant switch connection, which would use the name of the switch connection as part of the Tlink name. Make a note of the associated Tlink name, to be used later for configuring Avaya Contact Recorder.

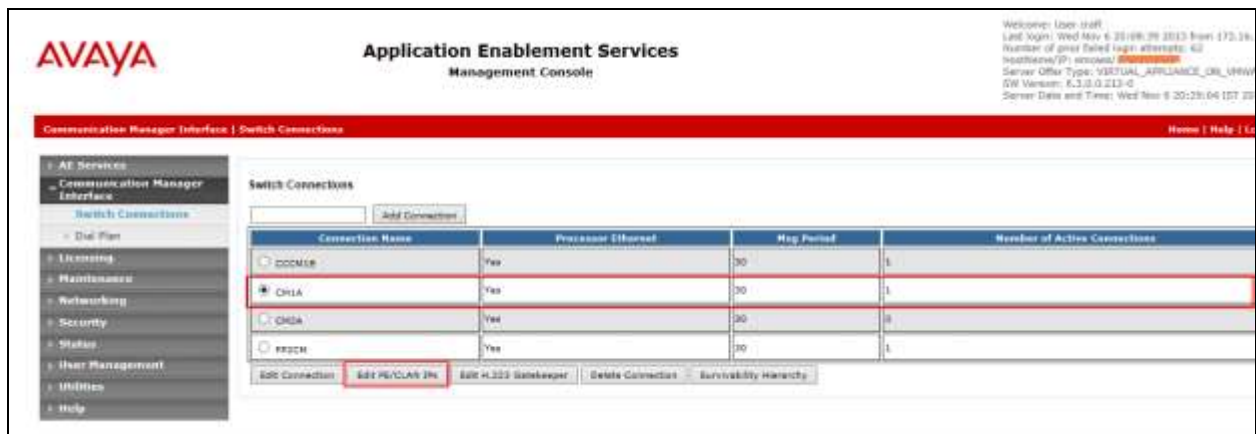
In this case, the associated Tlink name is **AVAYA#CM1A#CSTA-S#EMCAES** where the switch connection **CM1A** from **Section 6.3** is used as part of the Tlink name.



6.5 Obtain H.323 Gatekeeper IP Address

Select **Communication Manager Interface** → **Switch Connections** from the left pane. The **Switch Connections** screen shows a listing of the existing switch connections.

Locate the Connection Name associated with the relevant Communication Manager, in this case **CC1A**, and select the corresponding radio button. Click **Edit PE/CLAN IPs**.



The **Edit PE/CLAN IPs** screen is displayed. Note the IP address as this value will be used later to configure Avaya Contact Recorder.

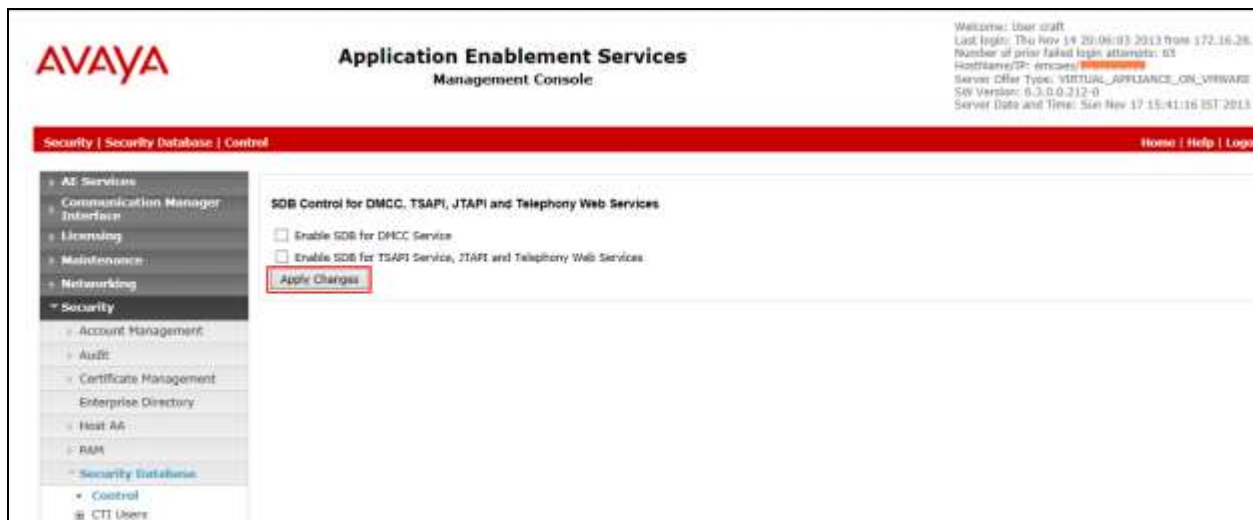


6.6 Disable Security Database

In the test configuration, the Security Database is disabled as follows:

Select **Security** → **Security Database** → **Control** from the left pane, to display the **SDB Control for DMCC, TSAPI, JTAPI and Telephony Web Services** screen in the right pane. Uncheck **Enable SDB for DMCC Service** field and **Enable SDB TSAPI Service, JTAPI and Telephony Service** field. Click **Apply Changes**.

In a customer environment, the customer will typically only allow selected users to access the AES services. The procedure for doing so is not described here.



6.7 Restart TSAPI Service

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 Service**.



6.8 Administer Avaya Contact Recorder User for DMCC

Select **User Management** → **User Admin** → **Add User** from the left pane, to display the **Add User** screen in the right pane.

Enter desired values for **User Id**, **Common Name**, **Surname**, **User Password**, and **Confirm Password**. For **CT User**, select **Yes** from the drop-down list. Retain the default value in the remaining fields. Click **Apply** at the bottom of the screen.

The screenshot displays the 'Add User' form within the Avaya Contact Recorder interface. The left-hand navigation pane shows the 'User Management' section expanded, with 'User Admin' selected. The main area on the right contains the 'Add User' form. A red box highlights the top section of the form, which includes fields for 'User Id', 'Common Name', 'Surname', 'User Password', and 'Confirm Password'. Another red box highlights the 'CT User' dropdown menu, which is currently set to 'Yes'. At the bottom of the form, the 'Apply' button is also highlighted with a red box. The form includes various other fields such as 'Avaya Role', 'Business Category', 'Car License', 'CH Home', 'Cas Home', 'Department Number', 'Display Name', 'Employee Number', 'Employee Type', 'Enterprise Handle', 'Given Name', 'Home Phone', 'Home Postal Address', 'Initials', 'Labeled URI', 'Mail', 'MR Home', 'Mobile', 'Organization', 'Pager', 'Preferred Language', 'Room Number', and 'Telephone Number'.

6.9 Administer Avaya Contact Recorder User for TSAPI

Use the same procedure specified in **Section 6.8** to configure a user for TSAPI service access.

Although different users can be used by Avaya Contact Recorder to log in to the DMCC and TSAPI services, the same user also can be used to achieve the same result as done on this test effort.

7 Configure Avaya Proactive Outreach Manager

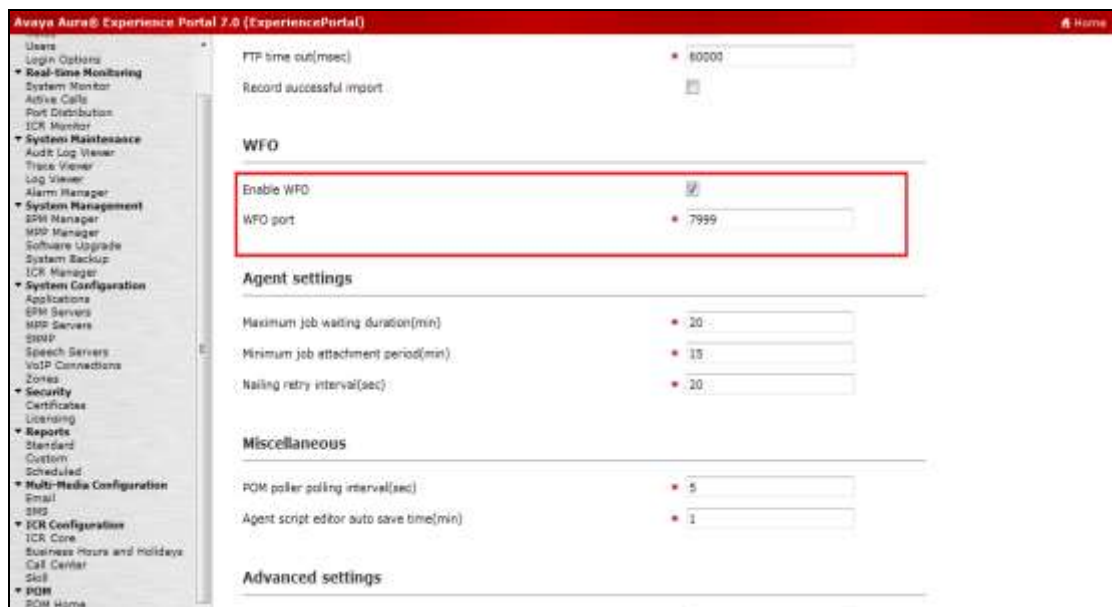
This section provides the procedure for configuring Avaya Proactive Outreach Manager so as to integrate with Avaya Contact Recorder.

7.1 Enable WFO Integration

Enable the Avaya Contact Recorder port on Avaya Proactive Outreach Manager server. From the Avaya Proactive Outreach Manager Home page, go to **Global Configurations** on the **Configurations** drop-down button.

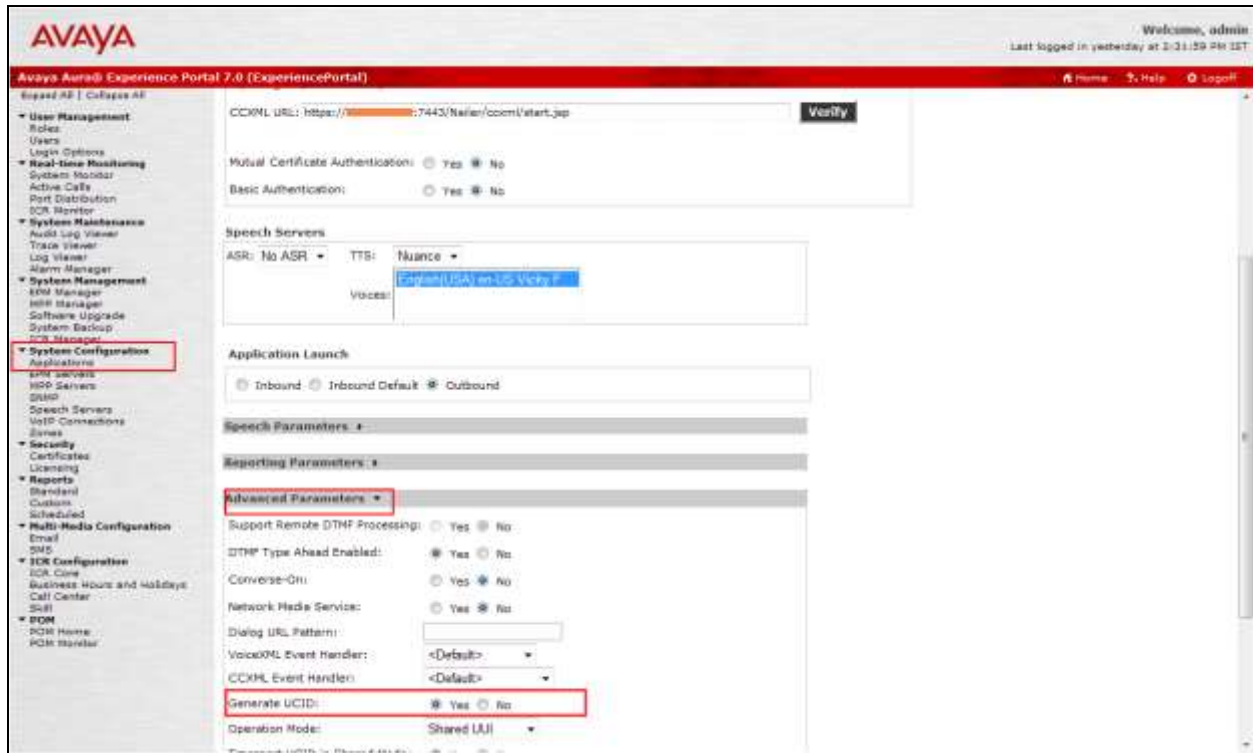


Scroll down to **WFO** Field and then click on **Enable WFO** check box as shown in screenshot below.



7.2 Configure Avaya Proactive Outreach Manager Applications

Go to System Configuration → Applications. Edit Avaya Proactive Outreach ManagerDriverApp and Nailer applications so as to enable **Generate UCID** under **Advanced Parameters**.



Once these changes are done, restart Avaya Proactive Outreach Manager service by logging into Avaya Proactive Outreach Manager server with root credentials and issuing the command:
/sbin/service Avaya Proactive Outreach Manager restart.

8 Configure Avaya Contact Recorder

This section provides the procedures for configuring Avaya Contact Recorder as follows:

- Launch Avaya Contact Recorder
- Administer Recorder Information
- Administer Contact Center Information
- Administer Conferenced Mode
- Administer Avaya Proactive Outreach Manager Interface

8.1 Launch Avaya Aura® Contact Recorder

Launch a web browser, enter **http://<IP address of Avaya Contact Recorder>:8080** in the URL field. Log in using proper credentials.



The following screen is displayed.



8.2 Administer Recorder Information

Navigate to **General Setup** → **Recorder** tab and set the following field:

IP Address on this server to use for recordings (RTP, screen content etc.): Enter IP address of Avaya Contact Recorder.

Specify the **Call Storage Path** by giving a location in Avaya Contact Recorder server for call storage, if Avaya Contact Recorder is configured on Windows OS.

AVAYA Contact Recorder

Recorder Status Operations Alarms General Setup System Tools

Recorder Contact Center Interface Avaya Aura Contact Center Interface

General Setup | Recorder

Serial # 020672 at 11/07/14 05:00

These settings determine how and where this recorder stores your recordings and the details about them. Any shown in red are invalid and must be changed.

Call storage path:	F:\CallStorage
Days to retain calls (if space permits, 0 = as long as possible):	0
IP address on this server to use for recordings (RTP, screen content etc.):	192.168.1.100
Maximum total call duration (hours):	10
Maximum recording segment duration (mins):	120
Retain call details for (months):	60
SNMP Read Community:	Not defined
SNMP Notification Destination:	Not defined
SNMP Version:	V3
Replay server(s) (defaults to Master and Standby):	Not defined
Allow full database vacuum on startup if required:	Yes
Key Management Server:	Not defined
URL(s) of external control port(s) to connect to:	Not defined

8.3 Administer Contact Center Information

Navigate to **General Setup → Contact Center Interface** tab and set the following fields:

- **Switch Type:** Select **Communication Manager** from the dropdown list
- **Audio format:** Use default value **G.729A (8kbps)**
- **Avaya Communication Manager Name:** Enter **H.323 Gatekeeper IP** address obtained in **Section 6.4**
- **AE Server Address(es):** Enter IP address of the Avaya AES server
- **DMCC Username:** Enter **User Id** configured in **Section 6.8**
- **DMCC Password:** Enter **User Password** configured in **Section 6.8**
- **IP Station Security Code:** Enter **Security Code** configured in **Section 5.8**
- **AES TSAPI Server(s):** Enter IP address of the Avaya AES server
- **AES TSAPI Service Identifier(s):** Enter **Tlink Name** configured in **Section 6.3**
- **AES TSAPI Service Login ID:** Enter **User Id** configured in **Section 6.9**
- **AES TSAPI Service password:** Enter **User Password** configured in **Section 6.9**
- **Extensions assigned to recorder:** Use **Add Port(s)** to add the virtual IP softphone extensions configured in **Section 5.8**

AVAYA Contact Recorder

Recorder Status | Operations | Alarms | General Setup | System | Setup

Recorder | Contact Center Interface | Avaya Aura Contact Center Interface

General Setup - Contact Center Interface

These settings determine how this recorder contacts and interacts with your Avaya Contact Center.

Switch Type	Communication Manager
Minutes after which call information entered by Call ID is discarded	180
Apply Sleep Tone	No
Time between tests (secs)	5
Audio format	G729A
Avaya Communication Manager Name	CHSA
AE Server Address(es)	10.10.10.10
DMCC Username	root
DMCC Password	*****
Encrypt Media Streams	No
IP Station Security Code	*****
AES TSAPI Server(s)	172.16.2.10
AES TSAPI Switch Name(s)	CHSA
AES TSAPI Service Login ID	root
AES TSAPI Service password	*****
Non-recorded Stations/VR ports to Observe	Not defined
Agent Skill Group(s) to Observe via TSAPI	3011750
VDN(s) to Observe	3011710
Tag calls with which VDN?	Field
Add VDN number as additional "owner" of call	No
Address of the Communication Manager	10.10.10.10
Username for Switch Administration	root
Password for Switch Administration	*****

Extensions assigned to recorder(s)

Select	Port(s)	No.	Detail
<input type="checkbox"/>	3011450-3011470	31	

8.4 Administer Bulk Recording

Navigate to **Operations** → **Bulk Recording** tab and set the following fields:

- **Record calls to or from:** Use **Add address(s)** to add the target stations

Retain the default values for other fields.

The screenshot shows the Avaya Contact Recorder Bulk Recording configuration page. The page has a top navigation bar with tabs: Recorder Status, Operations, Alarms, General Setup, Settings, Apply, and TDR Tag Points. The 'Operations' tab is selected, and the 'Bulk Recording' sub-tab is active. The main content area is titled 'Operations : Bulk Recording' and contains a list of settings. A table titled 'Record calls to or from' is visible, showing a list of addresses with checkboxes, addresses, and details. The 'Add address(es)' button is highlighted in red.

Select	Address(es)	No. of	Detail
<input type="checkbox"/>	3011440	1	
<input type="checkbox"/>	3011441	1	Recording screen(s) Unlabeled
<input type="checkbox"/>	3011532	1	Recording screen(s) Unlabeled
<input type="checkbox"/>	3011990	1	
<input type="checkbox"/>	5010902	1	

8.5 Administer Avaya Proactive Outreach Manager Interface

Access Avaya Contact Recorder system and login in using user having administrative rights. Edit the Avaya Contact Recorder.properties file to include all the following lines:

```
acr.dialerlist=POM1
POM1.class=com.swhh.cti.pomdialer.POMDialer
POM1.dialer=x.x.x.x
POM1.port=7999
POM1.username=wfo
POM1.password=Avaya135
POM1.tracing=true
POM1.blockagentids=true
```

Please note that the **dialer** field must be set to the IP address of the Avaya Proactive Outreach Manager as obtained in **Section 7**. The **username** and **password** fields must be set to the user name and password that have the access permission to the Avaya Proactive Outreach Manager admin page.

In case there are multiple dialers that needs to be associated, provide the dialer list separated by “,” delimiter and provide the required information for other dialers as below:

```
acr.dialerlist=POM1, POM2
POM1.class=com.swhh.cti.pomdialer.POMDialer
POM1.dialer=x.x.x.x
POM1.port=7999
POM1.username=wfo
POM1.password=Avaya135
POM1.tracing=true
POM1.blockagentids=true
POM2.class=com.swhh.cti.pomdialer.POMDialer
POM2.dialer=y.y.y.y
POM2.port=7999
POM2.username=wfo
POM2.password=Avaya135
POM2.tracing=true
POM2.blockagentids=true
```

Save and close the file.

Restart **Avaya Contact Recorder** service (For **Windows** go to Services and select the **Avaya Contact Recorder** service and restart it, for Linux issue the command **/sbin/service cscm restart**).

9 Verification Steps

This section provides the steps that can be performed to verify proper configuration of Communication Manager, Avaya Proactive Outreach Manager, Avaya Contact Recorder, and Application Enablement Services.

9.1 Verify Avaya Aura® Communication Manager

On Communication Manager, verify the status of the administered CTI link by using the **status aesvcs cti-link** command. Verify that the **Service State** is **established** for the CTI link number administered in **Section 5.2**, as shown below.

```
status aesvcs cti-link
```

AE SERVICES CTI LINK STATUS						
CTI Link	Version	Mnt Busy	AE Services Server	Service State	Msgs Sent	Msgs Rcvd
1	5	no	emcaes	established	11873	5989

Verify the registration status of the virtual IP softphones by using the **list registered-ip-stations** command. Verify that extensions used by this test from **Section 5.8** are displayed, as shown below.

```
list registered-ip-stations
```

Page 2

REGISTERED IP STATIONS						
Station Ext or Orig Port	Set Type/ Net Rgn	Prod ID/ Release	TCP Skt	Station IP Address/ Gatekeeper IP Address		
301-1451	4624	IP_API_A	y	x.x.x.x		
	1	3.2040		y.y.y.y		
301-1452	4624	IP_API_A	y	x.x.x.x		
	1	3.2040		y.y.y.y		

9.2 Verify Avaya Proactive Outreach Manager

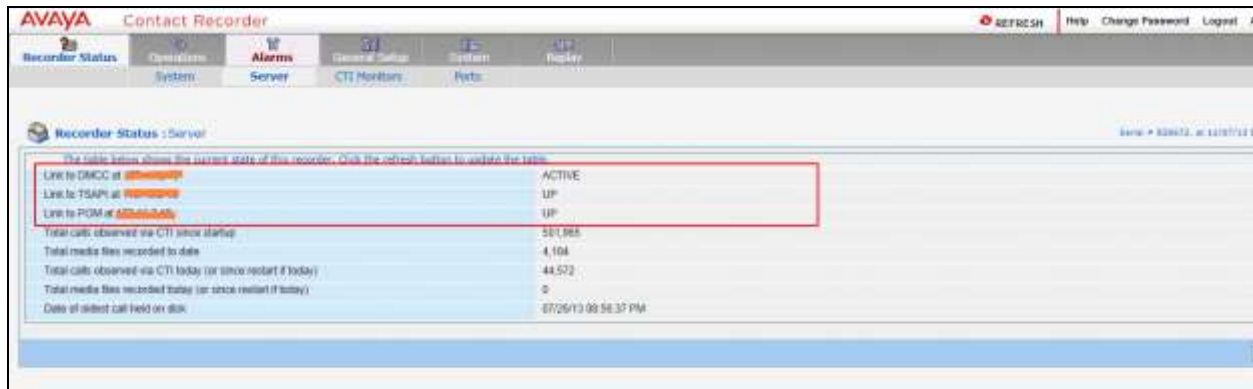
Log in to the Linux shell of the Avaya Proactive Outreach Manager server, and issue the **netstat | grep 7999** command. Verify that there is an entry showing an **ESTABLISHED** connection between the Avaya Proactive Outreach Manager (using port 7999) and Avaya Contact Recorder, as shown below.

```
[root@ep-primary logs]# netstat -na | grep 7999
```

tcp	0	0	:::7999	:::*	LISTEN
tcp	0	0	::ffff:x.x.x.x:7999	::ffff:y.y.y.y:57849	ESTABLISHED

9.3 Verify Avaya Aura® Contact Recorder

From Avaya Contact Recorder screen, navigate to **Recorder Status** → **Server**. The following screen is displayed. Verify that the **Link to DMCC at x.x.x.x** field shows **ACTIVE**, the **Link to TSAPI at x.x.x.x** field shows **UP**, and the **Link to Avaya Proactive Outreach Manager at x.x.x.x** field shows **UP**.



Recorder Status : Server	
Link to DMCC at x.x.x.x	ACTIVE
Link to TSAPI at x.x.x.x	UP
Link to POM at x.x.x.x	UP
Total calls observed via CTI since startup	58,188
Total media files recorded to date	4,104
Total calls observed via CTI today (or since restart if today)	44,572
Total media files recorded today (or since restart if today)	0
Date of oldest call held on disk	07/26/13 09:58:37 PM

Navigate to **Recorder Status** → **Ports**. The following screen is displayed. Verify that the DMCC ports that are allocated under recorder ports column with reference to virtual soft phone configured in **Section 5.8**. Also verify that those ports are in either **Idle** or **Active** State. **Idle** means that the port has been assigned call is currently active on the target station. **Active** means that the port has been assigned and a call on the target station is being recorded.



Recorder Status : Ports			
Port Status	Assigned to	Recording	State
0396723011450 (DMCC 3011450)		No	Idle
0396723011451 (DMCC 3011451)		No	Idle
0396723011452 (DMCC 3011452)		No	Idle
0396723011453 (DMCC 3011453)		No	Idle
0396723011454 (DMCC 3011454)		No	Idle
0396723011455 (DMCC 3011455)		No	Idle
0396723011456 (DMCC 3011456)		No	Idle

9.4 Verify Avaya Aura® Application Enablement Services

Verify the status of the DMCC link by selecting **Status → Status and Control → DMCC Service Summary** from the left pane. The **DMCC Service Summary – Session Summary** screen is displayed. In the lower portion of the screen, verify that an active session with the user name configured in **Section 6.8** exists, and that the **# of Associated Devices** column reflects the number of virtual IP softphones being used by Avaya Contact Recorder.

Avaya Application Enablement Services Management Console

DMCC Service Summary - Session Summary

Session Summary **Device Summary**
Generated on Wed Nov 06 21:26:27 IST 2013

Service Uptime: 18 days, 8 hours 47 minutes

Number of Active Sessions: 1

Number of Sessions Created Since Service Start: 18

Number of Existing Sessions: 21

Number of Sessions Created Since Service Start: 18

Session ID	User	Application	Ter and Identifier	Connection Type	# of Associated Devices
8932803F3455A482C93BC49E945878CA-18	act	ContactStore		XML Encrypted	21

Terminate Sessions | Show Terminated Sessions

View 1-1 of 1

Verify the status of the TSAPI link by selecting **Status → Status and Control → TSAPI Service Summary** from the left pane. The **TSAPI Link Details** screen is displayed. Verify the **Status** is **Talking** for the TSAPI link administered in **Section 6.3**, as shown below.

TSAPI Link Details

Link

Link	Switch Name	Switch CTS Link ID	Status	Since	State	Switch Version	Associations	Plugs to Switch	Plugs from Switch	Plugs Persec
1	PRCH	1	Talking	Wed Oct 30 15:33:19 2013	Online	1.8	8	21	21	30
2	CCDR18	1	Talking	Mon Oct 21 09:13:19 2013	Online	1.8	17	139	139	30
3	CHIA	1	Talking	Wed Oct 22 14:08:45 2013	Online	1.8	38	6362	11976	10
4	CHGA	1	Switch Down	Mon Oct 21 09:13:19 2013	Online	1.8	8	8	0	30

Online | Offline

For per-second information, choose one of the following:
TSAPI Service Status | Task Status | User Status

9.5 Verify Avaya Contact Recorder Recording Playback

Select **Replay** from Avaya Contact Recorder menu bar (not shown). The following screen is displayed.

The screenshot shows the Avaya Contact Recorder web interface. The top header includes the Avaya logo, 'Contact Recorder', and navigation links: REFRESH, System Admin, Help, Change Password, and Logout. The left pane contains 'Search Filters' with fields for Call Start Range (11/07/13 to 11/07/13), Length, Agents, Parties, Service, Skills, Call ID, UCPs, and Call Set. A 'SEARCH' button is at the bottom. The right pane shows a table with columns: Call Start, Len, Agents, Parties, Service, Skills, Call ID, and UCPs. The table is currently empty.

Specify the search criteria in the left pane. Click **SEARCH** to update the screen with call recordings. Verify that the recording entries reflect the calls supposed to be recorded and displayed. Click the radio button to select an entry and click the play button (green triangle) to listen to the playback. Verify that the content of the recording matches the content of the call.

The screenshot shows the Avaya Contact Recorder web interface with search results. The top header includes the Avaya logo, 'Contact Recorder', and navigation links: REFRESH, System Admin, Help, Change Password, Logout, and About. A waveform visualization is shown at the top with a time range from 14:28:40 to 14:29:00. The left pane contains 'Search Filters' with fields for Call Start Range (08/21/11 to 08/21/11), Length, Parties, Agent, Service, Universal Call ID, and Call Set. A 'SEARCH' button is at the bottom. The right pane shows a table with columns: Call Start, Len, Agents, Parties, Service, Call ID, and UCPs. The table contains 10 rows of call recording data.

Call Start	Len	Agents	Parties	Service	Call ID	UCPs
08/21/11 02:18:55 PM	01:15	106 (agent02)	22722 (P-22722), 912035551111	252 (outbound)	9233612682652226	
08/21/11 02:20:25 PM	01:06	106 (agent02)	22722 (P-22722), 912035551111	252 (outbound)	9233612682652227	
08/21/11 02:26:31 PM	00:39	106 (agent02)	22722 (P-22722), 912035551111	252 (outbound)	923355251147845	
08/21/11 02:29:47 PM	00:24	106 (agent02)	22722 (P-22722), 912035551111	252 (outbound)	923355251147845	
08/21/11 02:37:42 PM	00:15	106 (agent02)	22722 (P-22722), 912035551111	252 (outbound)	923355251147846	
08/21/11 02:58:19 PM	02:46	106 (agent02)	22722 (P-22722), 912035551111	252 (outbound)	9234043898404420	
08/21/11 03:01:14 PM	00:12	N/A	22723 (station 22723), 22722 (P-22722)	N/A	27026781313960879	
08/21/11 03:14:55 PM	01:22	106 (agent02)	22722 (P-22722), 912035551111	252 (outbound)	923428626185323	
08/21/11 03:16:44 PM	00:05	N/A	22722 (P-22722), 912035551111	N/A	27028441313961694	
08/21/11 03:18:49 PM	00:18	N/A	22722 (P-22722), 912035551111, 22723 (station 22723)	N/A	27026441313961694	

10 Conclusion

These Application Notes describe the configuration steps required for Avaya Contact Recorder 12.0 to successfully interoperate with Avaya Proactive Outreach Manager 3.0 and Avaya Aura® Application Enablement Services 6.3. All feature and serviceability test cases were executed. All observations were noted in **Section 2.2**.

11 Additional References

This section references the product documentation relevant to these Application Notes. They are available at <http://support.avaya.com>.

1. *Using Avaya Proactive Outreach Manager*
2. *Avaya Contact Recorder Release 12.0 Planning, Installation and Administration Guide*

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