



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for dvsAnalytics Encore with Avaya Aura™ Communication Manager Using Avaya Aura™ Application Enablement Services – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required for dvsAnalytics Encore to interoperate with Avaya Aura™ Communication Manager using Avaya Aura™ Application Enablement Services. dvsAnalytics Encore is a call recording solution. In the compliance testing, dvsAnalytics Encore used the Telephony Services Application Programming Interface from Avaya Aura™ Application Enablement Services to monitor stations on Avaya Aura™ Communication Manager, and used the Service Observing feature via the Avaya Aura™ Application Enablement Services Device, Media, and Call Control interface to capture the media associated with the monitored stations for call recording.

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

These Application Notes describe the configuration steps required for dvsAnalytics Encore to interoperate with Avaya Aura™ Communication Manager using Avaya Aura™ Application Enablement Services. dvsAnalytics Encore is a call recording solution. In the compliance testing, dvsAnalytics Encore used the Telephony Services Application Programming Interface (TSAPI) from Avaya Aura™ Application Enablement Services to monitor stations on Avaya Aura™ Communication Manager, and used the Service Observing feature via the Avaya Aura™ Application Enablement Services Device, Media, and Call Control (DMCC) interface to capture the media associated with the monitored stations for call recording.

The TSAPI interface is used by dvsAnalytics Encore to monitor the agent stations to be recorded. When there is an active call on the monitored station, dvsAnalytics Encore is informed of the call via event reports from the TSAPI interface. dvsAnalytics Encore starts the call recording by sending a Service Observing button press from a virtual IP softphone via the DMCC interface to observe the active call, and uses the Media Control Events from the DMCC interface to obtain the media from the virtual IP softphone. The TSAPI event reports are used to determine when to stop the call recordings.

## 1.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on dvsAnalytics Encore:

- Handling of TSAPI messages in the areas of event notification and value queries.
- Use of DMCC registration services to register and un-register the virtual IP softphones.
- Use of DMCC physical device services to activate Service Observing for the virtual IP softphones.
- Use of 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, internal, external, ACD, non-ACD, hold, reconnect, simultaneous, conference, and transfer.

The serviceability testing focused on verifying the ability of dvsAnalytics Encore to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet cable to dvsAnalytics Encore.

## 1.2. Support

Technical support on dvsAnalytics Encore can be obtained through the following:

- **Phone:** (800) 910-4564
- **Email:** [Support@dvsAnalytics.com](mailto:Support@dvsAnalytics.com)

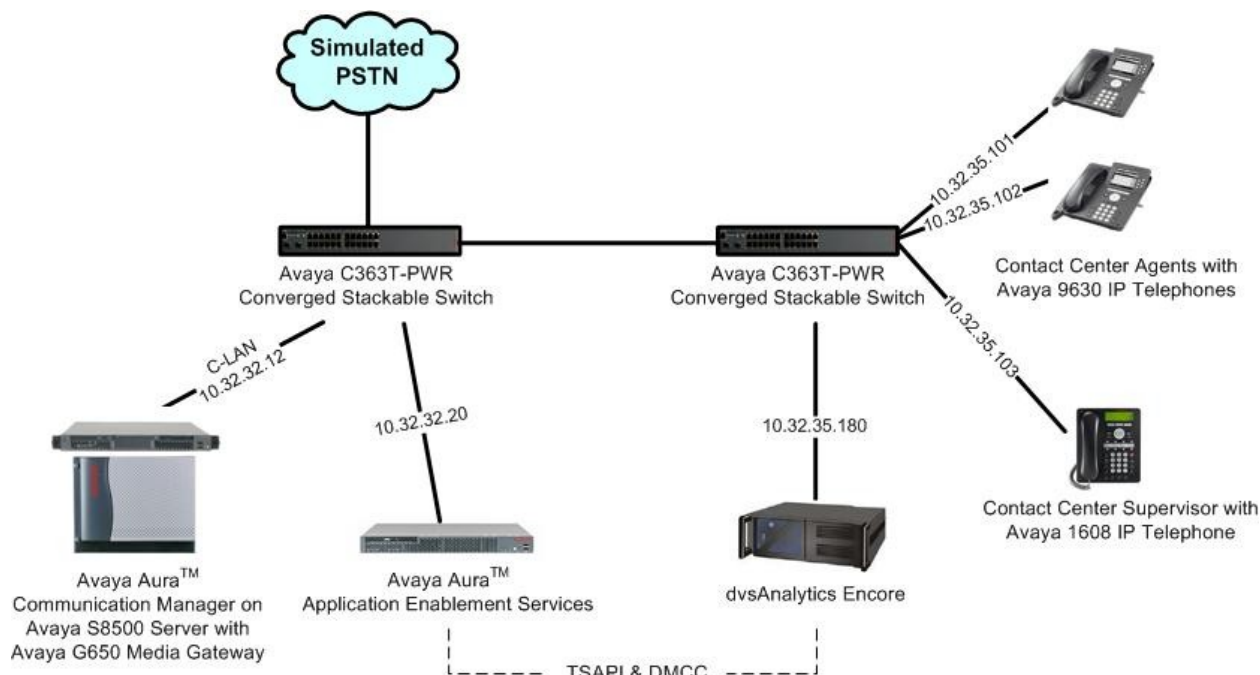
## 2. Reference Configuration

dvsAnalytics Encore has an Encore Explorer 2 application that can be used to review and playback the call recordings. In the compliance testing, the Encore Explorer 2 application was installed on the dvsAnalytics Encore server.

The detailed administration of basic connectivity between Avaya Aura™ Communication Manager and Avaya Aura™ Application Enablement Services, and of contact center devices are not the focus of these Application Notes and will not be described.

In the compliance testing, dvsAnalytics Encore monitored the skill group and agent station extensions shown in the table below.

Contact Center Device Type	Extension
Skill Group	65555
Agent Station	65001, 65002
Agent ID	65881, 65882



### 3. Equipment and Software Validated

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

Equipment	Software
Avaya Aura™ Communication Manager on Avaya S8500 Servers	R015x.02.0.947.3
Avaya G650 Media Gateway <ul style="list-style-type: none"><li>• TN799DP C-LAN Circuit Pack</li><li>• TN2302AP IP Media Processor</li></ul>	HW01 FW032 HW20 FW120
Avaya Aura™ Application Enablement Services	4.2.3
Avaya 1600 Series IP Telephones (H.323)	1.21
Avaya 9600 Series IP Telephones (H.323)	3.1
dvsAnalytics Encore <ul style="list-style-type: none"><li>• CT Gateway</li><li>• CenterPlus Server</li><li>• CenterPlus Client</li><li>• Encore Explorer 2</li><li>• Avaya TSAPI Windows Client</li></ul>	2.2.7 with Patch SP_CMAPI.dll 1.3.1000 6.23 2.05.100 2.05.100 1.58 3.1.1.0

## 4. Configure Avaya Aura™ Communication Manager

This section provides the procedures for configuring Avaya Aura™ Communication Manager. The procedures include the following areas:

- Verify Communication Manager License
- Administer system parameters features
- Administer CTI link
- Administer IP codec set
- Administer class of restriction
- Administer virtual IP softphones

### 4.1. Verify 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**. If this option is not set to “y”, then contact the Avaya sales team or business partner for a proper license file.

display system-parameters customer-options	Page 3 of 11
OPTIONAL FEATURES	
Abbreviated Dialing Enhanced List? y	Audible Message Waiting? n
Access Security Gateway (ASG)? n	Authorization Codes? n
Analog Trunk Incoming Call ID? y	CAS Branch? n
A/D Grp/Sys List Dialing Start at 01? n	CAS Main? n
Answer Supervision by Call Classifier? n	Change COR by FAC? y
ARS? y	<b>Computer Telephony Adjunct Links? y</b>

Navigate to **Page 6**, and verify that the **Service Observing (Basic)** customer option is set to “y”.

display system-parameters customer-options	Page 6 of 11
CALL CENTER OPTIONAL FEATURES	
Call Center Release: 5.0	
ACD? y	Reason Codes? y
BCMS (Basic)? y	Service Level Maximizer? n
BCMS/VuStats Service Level? n	<b>Service Observing (Basic)? y</b>
BSR Local Treatment for IP & ISDN? n	Service Observing (Remote/By FAC)? y

Navigate to **Page 10**, and verify that there are sufficient **IP\_API\_A** licenses. Note that dvsAnalytics Encore can only work with the IP\_API\_A license.

display system-parameters customer-options			Page 10 of 11
MAXIMUM IP REGISTRATIONS BY PRODUCT ID			
Product ID	Rel. Limit	Used	
AgentSC	: 0	0	
IP API A	: 50	0	

## 4.2. Administer System Parameters Features

Use the “change system-parameters features” command to enable **Allow Two Observers in Same Call**, which is located on **Page 11**.

```
change system-parameters features                                     Page 11 of 18
                                FEATURE-RELATED SYSTEM PARAMETERS
CALL CENTER SYSTEM PARAMETERS
  EAS
    Expert Agent Selection (EAS) Enabled? y
    Minimum Agent-LoginID Password Length: 5
    Direct Agent Announcement Extension:          Delay:
    Message Waiting Lamp Indicates Status For: station

  VECTORING
    Converse First Data Delay: 0          Second Data Delay: 2
    Converse Signaling Tone (msec): 100    Pause (msec): 70
    Prompting Timeout (secs): 10

    Reverse Star/Pound Digit For Collect Step? n
    Available Agent Adjustments for BSR? n
    BSR Tie Strategy: 1st-found
    Store VDN Name in Station's Local Call Log? n
  SERVICE OBSERVING
    Service Observing: Warning Tone? n      or Conference Tone? n
    Service Observing Allowed with Exclusion? n
    Allow Two Observers in Same Call? y
```

## 4.3. Administer CTI Link

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: 1
Extension: 60100
  Type: ADJ-IP
                                COR: 1
  Name: Encore CTI Link
```

## 4.4. Administer IP Codec Set

Use the “change ip-codec-set n” command, where “n” is an existing codec set number used for integration with dvsAnalytics Encore. Enter the desired audio codec types in the **Audio Codec** fields. For the compliance testing, this IP codec set was assigned to the agents and to the virtual IP softphones used by dvsAnalytics Encore.

Note that dvsAnalytics Encore only supports the G.711MU, G.711A, and G.729 codec types.

change ip-codec-set 7

Page 1 of 2

IP Codec Set

Codec Set: 7

Audio	Silence	Frames	Packet
Codec	Suppression	Per Pkt	Size(ms)
1: G.711MU	n	2	20
2:			

## 4.5. Administer Class of Restriction

Enter the “change cor n” command, where “n” is the class of restriction (COR) number used for integration with dvsAnalytics Encore. Set the **Can Be Service Observed** and **Can Be A Service Observer** fields to “y”, as shown below. For the compliance testing, this COR was assigned to the agents and to the virtual IP softphones used by dvsAnalytics Encore.

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	
Partitioned Group Number: 1		Forced Entry of Account Codes? n	
Priority Queuing? n		Direct Agent Calling? n	
Restriction Override: none		Facility Access Trunk Test? n	
Restricted Call List? n		Can Change Coverage? n	

## 4.6. Administer Virtual IP Softphones

Add a virtual 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:** “4610”
- **Name:** A descriptive name.
- **Security Code:** A desired value.
- **COR:** The class of restriction number from **Section 4.5**.
- **IP SoftPhone:** “y”

add station 65991		Page 1 of 5
STATION		
Extension: 65991	Lock Messages? n	BCC: 0
<b>Type: 4610</b>	<b>Security Code: 65990</b>	TN: 1
Port: IP	Coverage Path 1:	<b>COR: 1</b>
<b>Name: Encore Virtual #1</b>	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: 65991	
Speakerphone: 2-way	Mute Button Enabled? y	
Display Language: english	Expansion Module? n	
Survivable GK Node Name:		
Survivable COR: internal	Media Complex Ext:	
Survivable Trunk Dest? y	<b>IP SoftPhone? y</b>	
	IP Video Softphone? n	
	Customizable Labels? y	

Navigate to **Page 4**, and add a “serv-obsrv” button as shown below.

add station 65991		Page 4 of 5
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	5:	
2: call-appr	6:	
3: call-appr	7:	
4: <b>serv-obsrv</b>	8:	



Repeat this section to administer the desired number of virtual softphones, using sequential extension numbers and the same security code for all virtual softphones. In the compliance testing, three virtual softphones were administered as shown below, to allow for two simultaneous call recordings. Note that the number of virtual softphones needs to be the desired number of simultaneous call recordings plus one.

```
list station 65991 count 3
```

STATIONS									
Ext/ Hunt-to	Port/ Type	Name/ Surv GK NN	Move	Room/ Data	Ext	Cv1/ Cv2	COR/ COS	Cable/ Jack	
<b>65991</b>	<b>S00002</b>	<b>Encore Virtual #1</b>					<b>1</b>		
	<b>4610</b>		<b>no</b>				<b>1</b>		
<b>65992</b>	<b>S00005</b>	<b>Encore Virtual #2</b>					<b>1</b>		
	<b>4610</b>		<b>no</b>				<b>1</b>		
<b>65993</b>	<b>S00005</b>	<b>Encore Virtual #3</b>					<b>1</b>		
	<b>4610</b>		<b>no</b>				<b>1</b>		

## 5. Configure Avaya Aura™ Application Enablement Services

This section provides the procedures for configuring Avaya Aura™ Application Enablement Services. The procedures include the following areas:

- Verify TSAPI license
- Launch OAM interface
- Administer TSAPI link
- Obtain Tlink name
- Administer H.323 gatekeeper
- Administer Encore user
- Restart TSAPI service

### 5.1. Verify TSAPI License

Access the Web License Manager interface by using the URL “https://ip-address/WebLM/index.jsp” in an Internet browser window, where “ip-address” is the IP address of the Application Enablement Services server.

The **Web License Manager** screen is displayed. Log in using the appropriate credentials.

The image shows the Avaya Web License Manager (WebLM v4.5.5) login interface. At the top, the Avaya logo is displayed in red. Below it, a red banner contains the text "Web License Manager (WebLM v4.5.5)". The main heading is "Logon" in bold black text. Below the heading, there are two input fields: "User Name:" and "Password:". To the right of the "Password:" field is a dark gray button with a white right-pointing arrow.

The **Web License Manager** screen below is displayed next. Select **Application\_Enablement** in the left pane, to display the **Licensed Features**.

Feature (Keyword)	Expiration Date	Licensed	Acquired
Application Enablement Connections (VALUE_AEC_CONNECTIONS)	permanent	16	1
CVLAN ASAI (VALUE_CVLAN_ASAI)	permanent	50	0
CVLAN Proprietary Links (VALUE_PROPRIETARY_LINKS)	permanent	8	0
TSAPI Version (VALUE_TSAPI_VERSION)	permanent	4.2	Not counted
DMCC DMC (VALUE_DMCC_DMC)	permanent	50	0

Scroll down the screen, and verify that there is sufficient license for **TSAPI Simultaneous Users**, as shown below.

TSAPI Simultaneous Users (VALUE_TSAPI_USERS)	permanent	1000	0
Unified CC API Desktop Edition (VALUE_AEC_UNIFIED_CC_DESKTOP)	permanent	1000	0
AES ADVANCED MEDIUM SWITCH (VALUE_AEC_MEDIUM_ADVANCED)	permanent	3	0
CVLAN (VALUE_CVLAN)	permanent	1	0

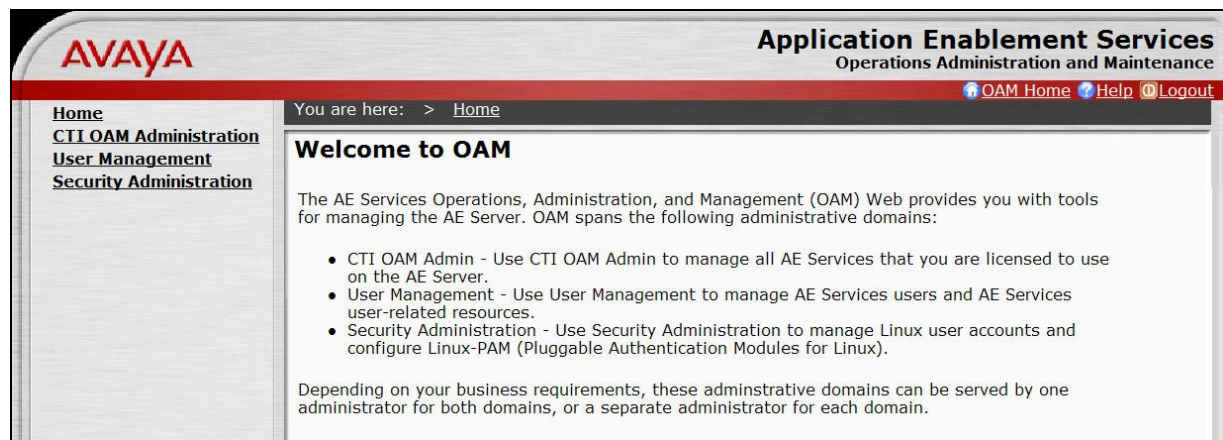
## 5.2. Launch OAM Interface

Access the OAM web-based interface by using the URL “https://ip-address/MVAP/ index.jsp” in an Internet browser window, where “ip-address” is the IP address of the Application Enablement Services server.

The **Please log on** screen is displayed next. Log in using the appropriate credentials.

The image shows a login screen for Avaya Application Enablement Services. At the top, the Avaya logo is displayed in red. Below it, a red banner contains the text "Application Enablement Services" and a "Help" link with a question mark icon. The main content area has a light gray background with a metallic texture. It features the text "Please log on." followed by two input fields: "Logon:" and "Password:". Below these fields is a blue "Login" button.

The **Welcome to OAM** screen is displayed. Select **CTI OAM Administration** from the left pane.

The image shows the "Welcome to OAM" screen. At the top, the Avaya logo is on the left, and "Application Enablement Services" and "Operations Administration and Maintenance" are on the right. Below the header, there is a navigation bar with links for "OAM Home", "Help", and "Logout". On the left side, there is a vertical menu with links for "Home", "CTI OAM Administration", "User Management", and "Security Administration". The main content area has a heading "Welcome to OAM" and a paragraph explaining the purpose of the OAM web interface. Below this, there is a bulleted list of administrative domains: "CTI OAM Admin", "User Management", and "Security Administration". At the bottom, there is a paragraph stating that these domains can be served by one administrator or separate administrators.

The **Welcome to CTI OAM Screens** is displayed next.

**AVAYA** **Application Enablement Services**  
Operations Administration and Maintenance

[OAM Home](#) [Help](#) [Logout](#)

You are here: > [CTI OAM Home](#)

**Welcome to CTI OAM Screens**

[craft] Last login: Wed Mar 10 14:14:56 2010 from 10.32.35.10

IMPORTANT: AE Services must be restarted for administrative changes to fully take effect.  
Changes to the Security Database do not require a restart.

Service	Status	State	Licenses Purchased
<b>ASAI Link Manager</b>	Running	N/A	N/A
<b>DMCC Service</b>	Running	ONLINE	Yes
<b>CVLAN Service</b>	Running	ONLINE	Yes
<b>DLG Service</b>	Running	OFFLINE	Yes
<b>Transport Layer Service</b>	Running	N/A	N/A
<b>TSAPI Service</b>	Running	ONLINE	Yes
<b>SMS</b>	N/A	N/A	Yes

For status on actual services, please use [Status and Control](#).

**License Information**

You are licensed to run Application Enablement (CTI) version 4.2.

**Navigation Menu:**

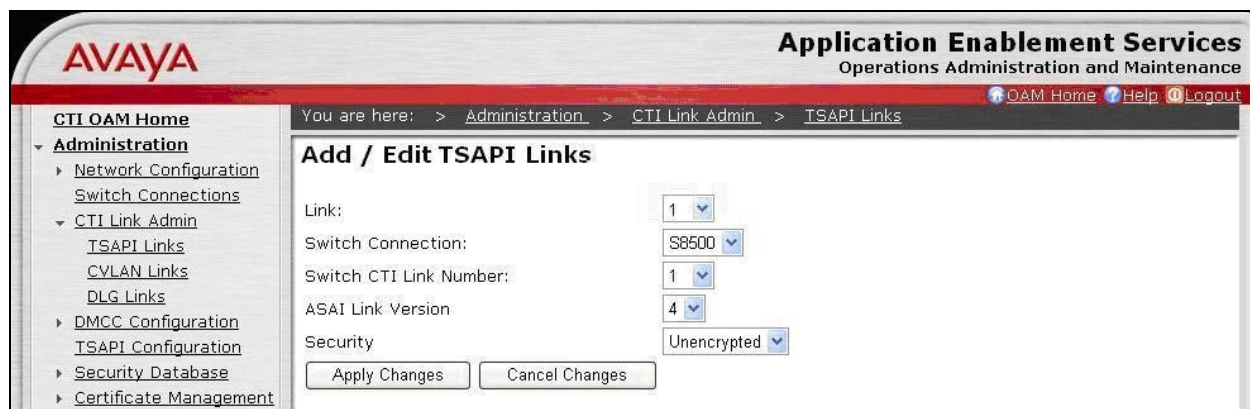
- [CTI OAM Home](#)
- [Administration](#)
- [Status and Control](#)
- [Maintenance](#)
- [Alarms](#)
- [Logs](#)
- [Utilities](#)
- [Help](#)

### 5.3. Administer TSAPI Link

To administer a TSAPI link, select **Administration > CTI Link Admin > TSAPI Links** from the left pane. The **TSAPI Links** screen is displayed, as shown below. Click **Add Link**.



The **Add / Edit 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 "S8500" is selected. For **Switch CTI Link Number**, select the CTI link number from **Section 4.3**. Retain the default values in the remaining fields, and click **Apply Changes**.

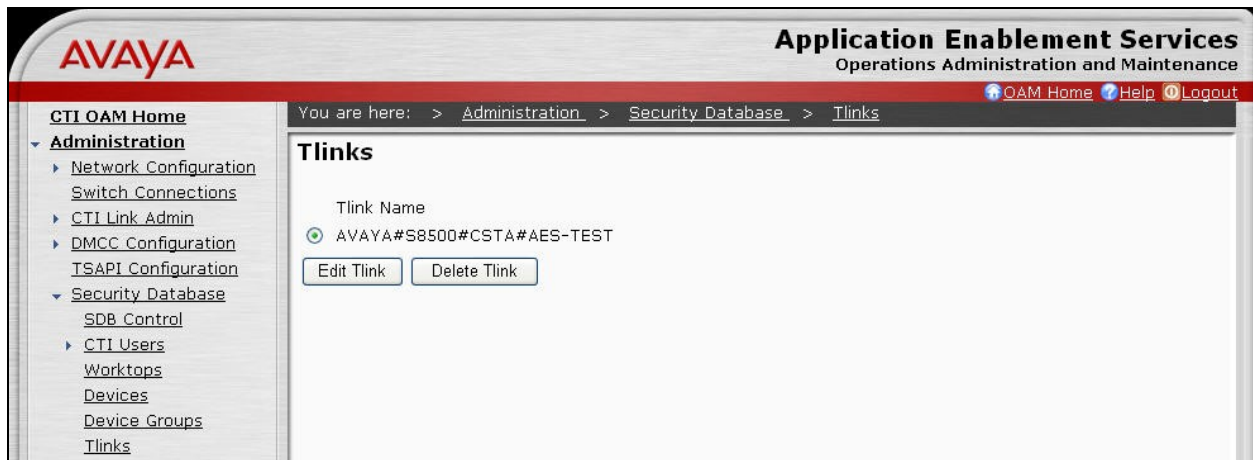




## 5.4. Obtain Tlink Name

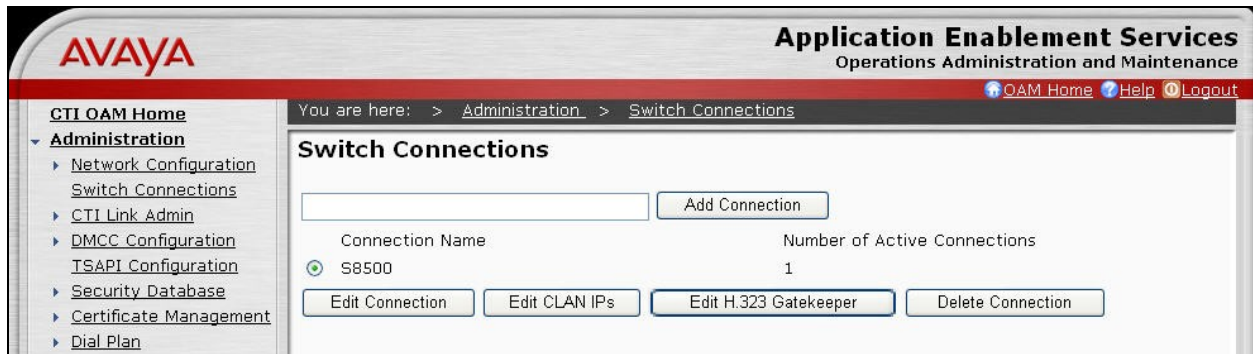
Select **Administration > Security Database > Tlinks** from the left pane. The **Tlinks** screen shows a listing of the Tlink names. A new Tlink name is automatically generated for the TSAPI service. Locate the Tlink name associated with the relevant switch connection, which would use the name of the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

In this case, the associated Tlink name is “AVAYA#S8500#CSTA#AES-TEST”. Note the use of the switch connection “S8500” from **Section 5.3** as part of the Tlink name.

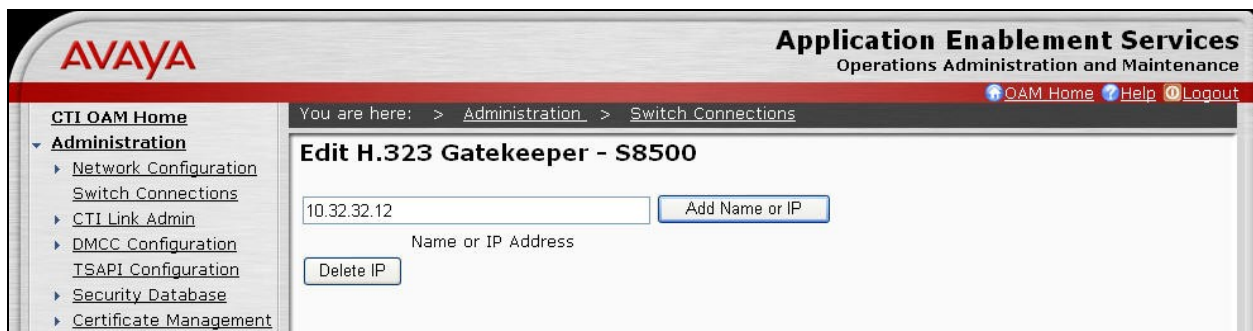


## 5.5. Administer H.323 Gatekeeper

Select **Administration > 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 “S8500”, and select the corresponding radio button. Click **Edit H.323 Gatekeeper**.



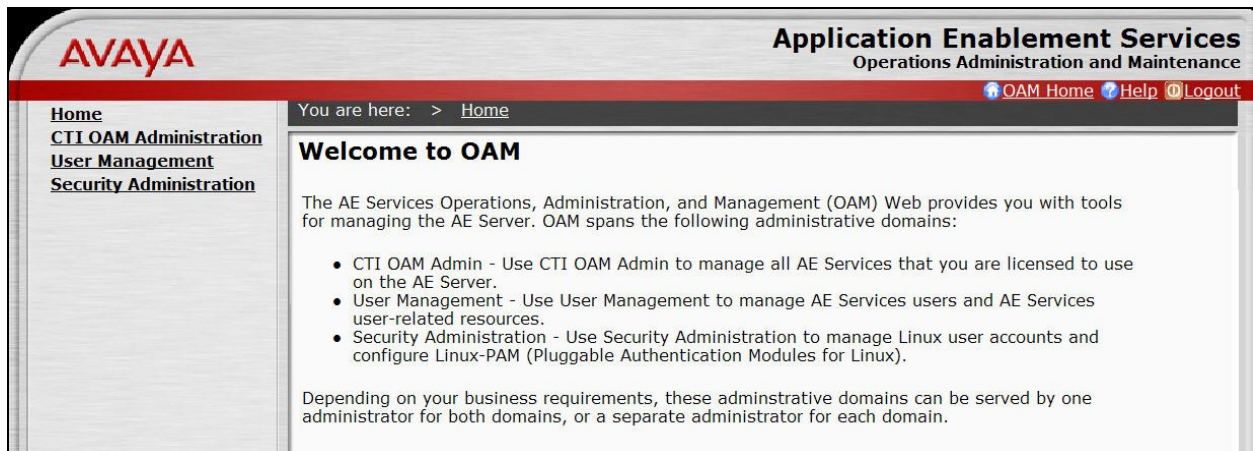
The **Edit H.323 Gatekeeper** screen is displayed. Enter the IP address of a C-LAN circuit pack or the Processor C-LAN on Communication Manager to be used as H.323 gatekeeper, in this case “10.32.32.12” as shown below. Click **Add Name or IP**.





## 5.6. Administer Encore User

Administer a new user account for dvsAnalytics Encore, which is created from the User Management web pages. Select **OAM Home**, located at the upper right corner of the screen, to display the **Welcome to OAM** screen below. Select **User Management** from the left pane.



The **Welcome to the User Management home page** screen is displayed, as shown below.



Select **User Management > Add User** from the left pane. In the **Add User** screen shown below, enter desired values for the **User Id**, **Common Name**, **Surname**, **User Password**, and **Confirm Password** fields. For the **CT User** field, select “Yes” from the drop-down list. Retain the default value in the remaining fields. Click **Apply** at the bottom of the screen (not shown below).

**AVAYA** **Application Enablement Services**  
Operations Administration and Maintenance

[QAM Home](#) [Help](#) [Logout](#)

You are here: > [User Management](#) > [Add User](#)

**Add User**

Fields marked with \* can not be empty.

\* User Id

\* Common Name

\* Surname

\* User Password

\* Confirm Password

Admin Note

Avaya Role

Business Category

Car License

CM Home

Ciss Home

CT User

Department Number

## 5.7. Restart TSAPI Service

Return to the CTI OAM Administration web pages by selecting **OAM Home**, located at the upper right corner of the screen, to display the **Welcome to OAM** screen (shown in [Section 5.6](#)), and selecting **CTI OAM Administration** from the left pane to display the **Welcome to CTI OAM Screens** (shown in [Section 5.2](#)).

Select **Maintenance > Service Controller** from the left pane. The **Service Controller** screen is displayed, and shows a listing of the services and associated status. Check the **TSAPI Service**, and click **Restart Service**.

**AVAYA** **Application Enablement Services**  
Operations Administration and Maintenance

[OAM Home](#) [Help](#) [Logout](#)

You are here: > [Maintenance](#) > [Service Controller](#)

**Service Controller**

Service	Controller Status
<input type="checkbox"/> ASAI Link Manager	Running
<input type="checkbox"/> DMCC Service	Running
<input type="checkbox"/> CVLAN Service	Running
<input type="checkbox"/> DLG Service	Running
<input type="checkbox"/> Transport Layer Service	Running
<input checked="" type="checkbox"/> TSAPI Service	Running

For status on actual services, please use [Status and Control](#).

[Start](#) [Stop](#) [Restart Service](#) [Restart AE Server](#) [Restart Linux](#)

## 6. Configure dvsAnalytics Encore

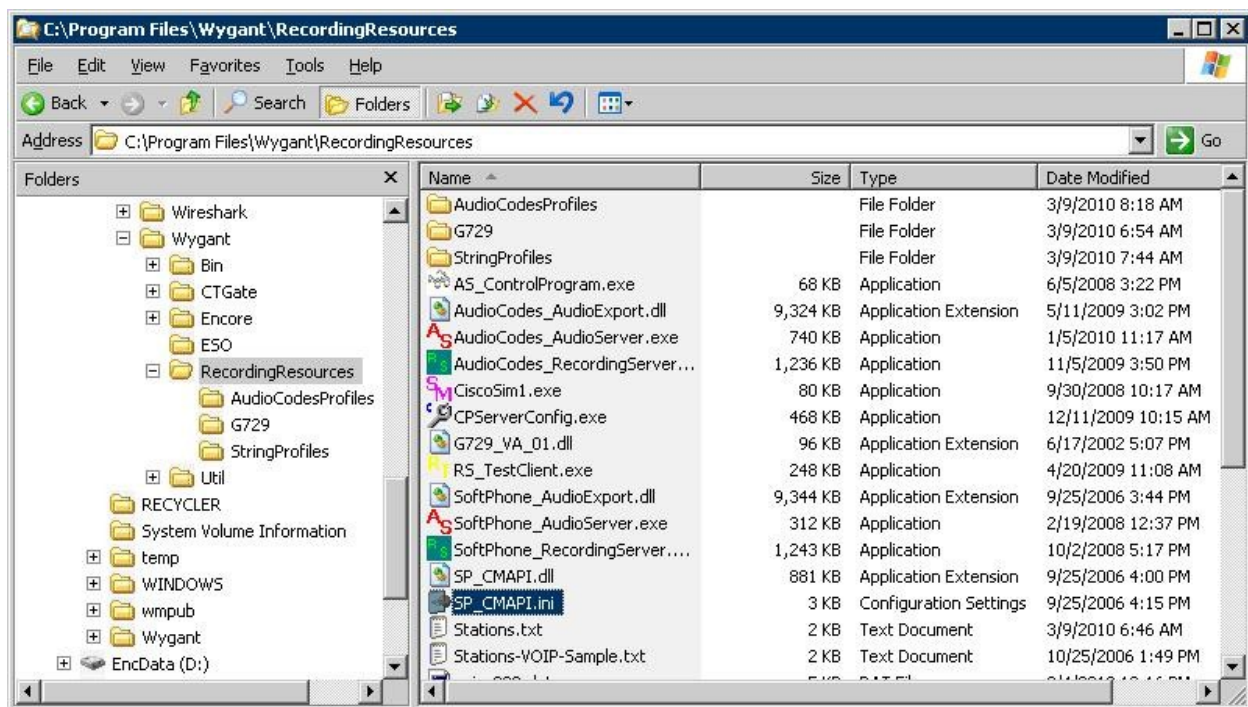
This section provides the procedures for configuring dvsAnalytics Encore. The procedures include the following areas:

- Administer softphones
- Administer CTISetup
- Administer CT Gateway
- Administer audio server
- Administer agents
- Administer schedule

The configuration of dvsAnalytics Encore is performed by dvsAnalytics installers and dealers. The procedural steps are presented in these Application Notes for informational purposes.

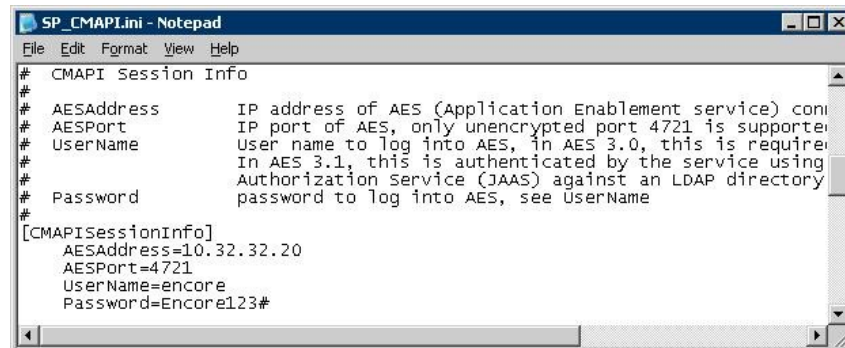
### 6.1. Administer Softphones

From the Encore server, navigate to the **RecordingResources** directory to edit the **SP\_CMAPI.ini** file.





Navigate to the **CMAPI Session Info** section. Under **CMAPISessionInfo**, set **AESAddress** to the IP address of the Application Enablement Services server. Set **UserName** and **Password** to the Encore user credentials from **Section 5.6**. Retain the default value for **AESPort**.

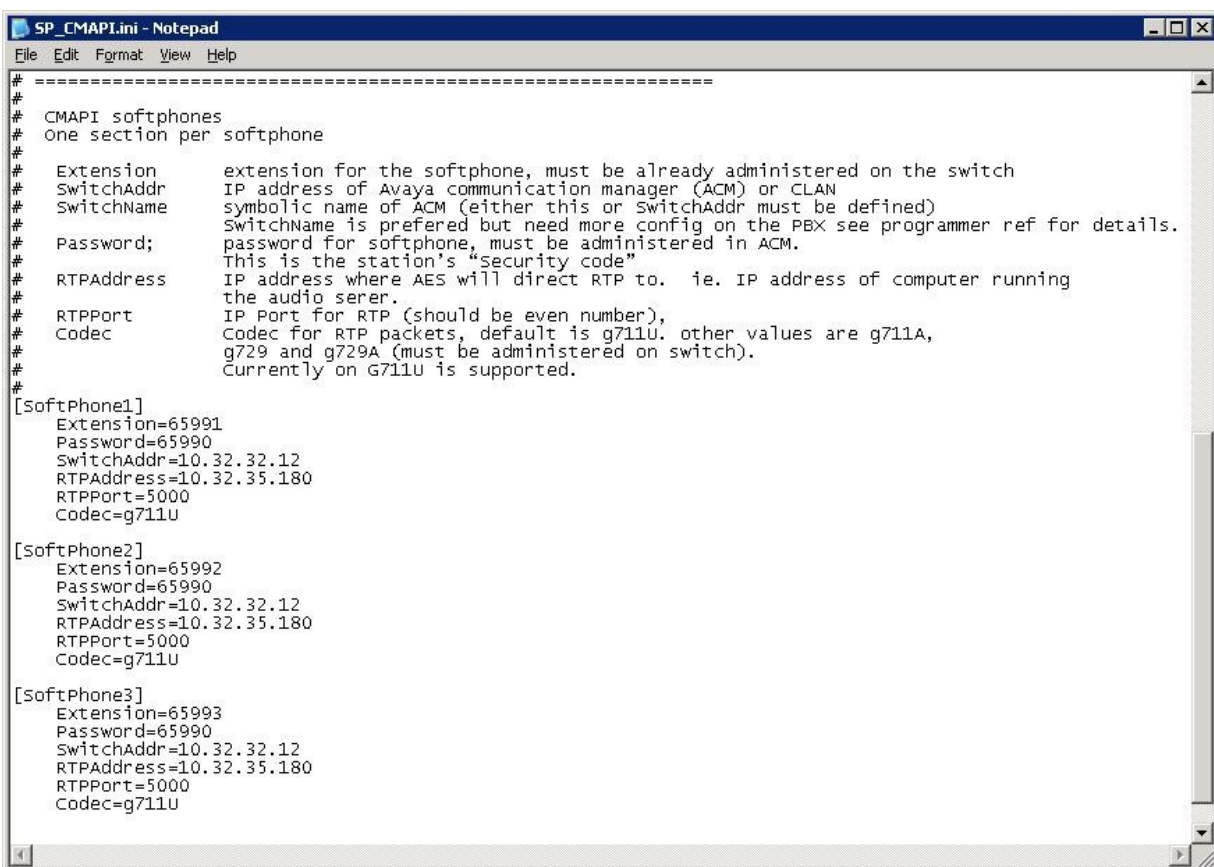


```

SP_CMAPI.ini - Notepad
File Edit Format View Help
# CMAPI Session Info
#
# AESAddress      IP address of AES (Application Enablement service) con
# AESPort         IP port of AES, only unencrypted port 4721 is supporte
# UserName        User name to log into AES, in AES 3.0, this is require
#                In AES 3.1, this is authenticated by the service using
#                Authorization Service (JAAS) against an LDAP directory
#                password to log into AES, see UserName
#
# Password
#
[CMAPISessionInfo]
AESAddress=10.32.32.20
AESPort=4721
UserName=encore
Password=Encore123#
  
```

Scroll down to the **CMAPI softphones** section. Under **Softphone1**, set **Extension** to the first virtual IP softphone extension from **Section 4.6**. Set **Password** to the virtual IP softphone security code from **Section 4.6**. Set **SwitchAddr** to the IP address of the H.323 Gatekeeper from **Section 5.5**. Retain the default values in the remaining fields.

Create additional agent parameter lines as necessary. In the compliance testing, three CMAPI softphones were configured to correspond to the three virtual IP softphones from **Section 4.6**.

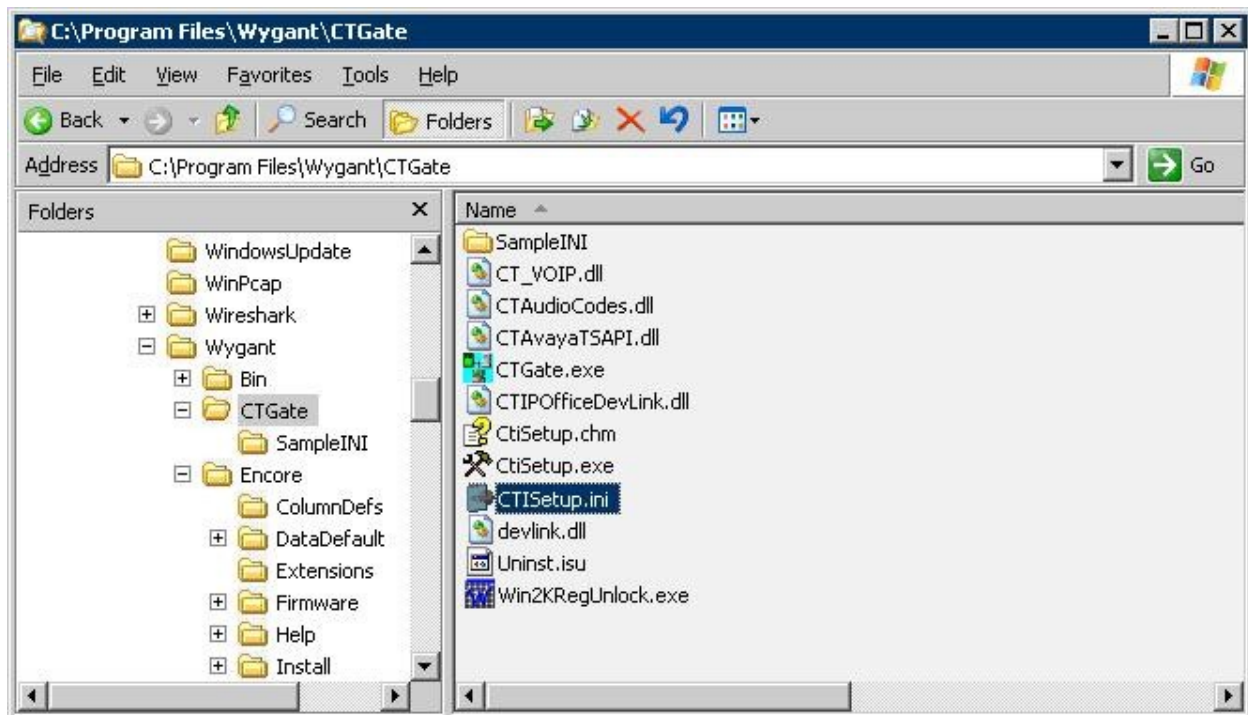


```

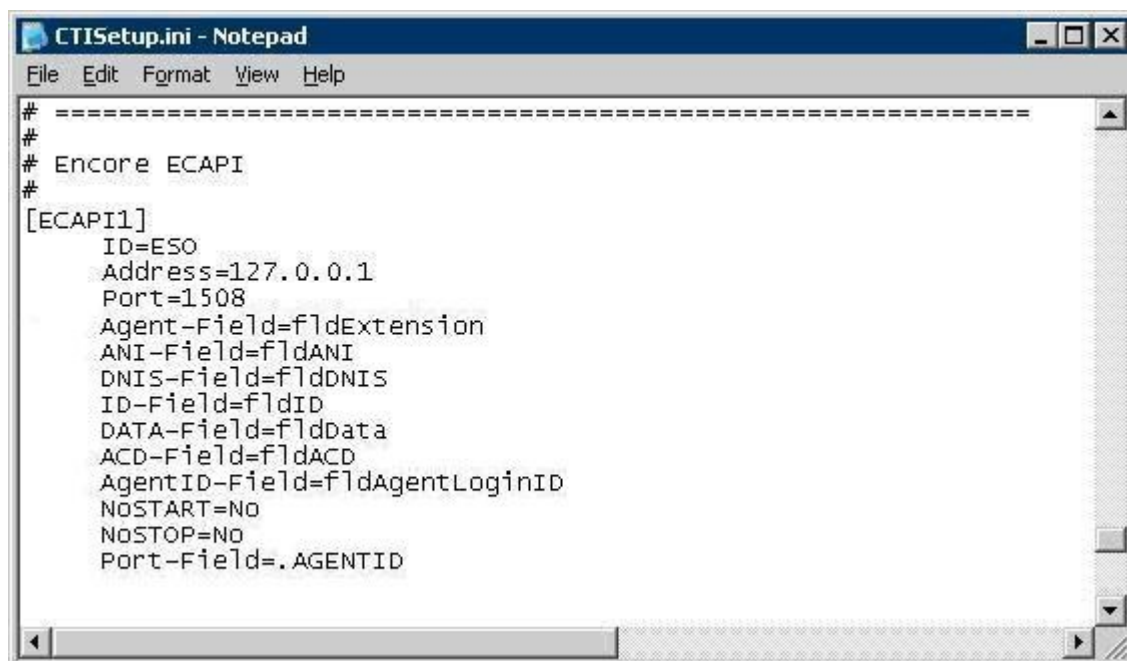
SP_CMAPI.ini - Notepad
File Edit Format View Help
# =====
#
# CMAPI softphones
# One section per softphone
#
# Extension      extension for the softphone, must be already administered on the switch
# SwitchAddr     IP address of Avaya communication manager (ACM) or CLAN
# SwitchName     symbolic name of ACM (either this or SwitchAddr must be defined)
#               SwitchName is preferred but need more config on the PBX see programmer ref for details.
# Password;      password for softphone, must be administered in ACM.
#               This is the station's "security code"
# RTPAddress     IP address where AES will direct RTP to. ie. IP address of computer running
#               the audio server.
# RTPPort        IP Port for RTP (should be even number),
# Codec          Codec for RTP packets, default is g711u. other values are g711A,
#               g729 and g729A (must be administered on switch).
#               currently on G711U is supported.
#
# [SoftPhone1]
#   Extension=65991
#   Password=65990
#   SwitchAddr=10.32.32.12
#   RTPAddress=10.32.35.180
#   RTPPort=5000
#   Codec=g711u
#
# [SoftPhone2]
#   Extension=65992
#   Password=65990
#   SwitchAddr=10.32.32.12
#   RTPAddress=10.32.35.180
#   RTPPort=5000
#   Codec=g711u
#
# [SoftPhone3]
#   Extension=65993
#   Password=65990
#   SwitchAddr=10.32.32.12
#   RTPAddress=10.32.35.180
#   RTPPort=5000
#   Codec=g711u
  
```

## 6.2. Administer CTISetup

From the Encore server, navigate to the **CTGate** directory to edit the **CTISetup.ini** file.

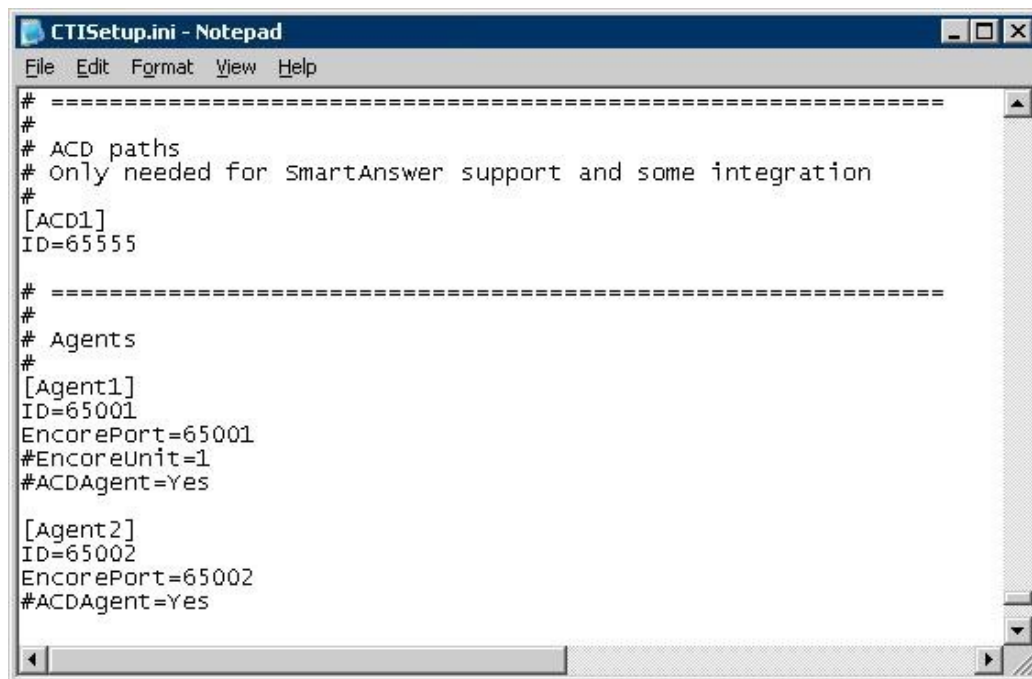


Navigate to the **Encore ECAPI** section. Under **ECAPI1**, set all parameters as shown below.



Navigate to the **ACD paths** section. Under **ACD1**, set **ID** to the first skill group extension from **Section 2**. Create additional ACD parameter lines as necessary when more than one skill group is being monitored.

Navigate to the **Agents** section. Under **Agent1**, set both **ID** and **EncorePort** to the first agent station extension from **Section 2**. Create additional agent parameter lines as necessary when more than one agent is being monitored.



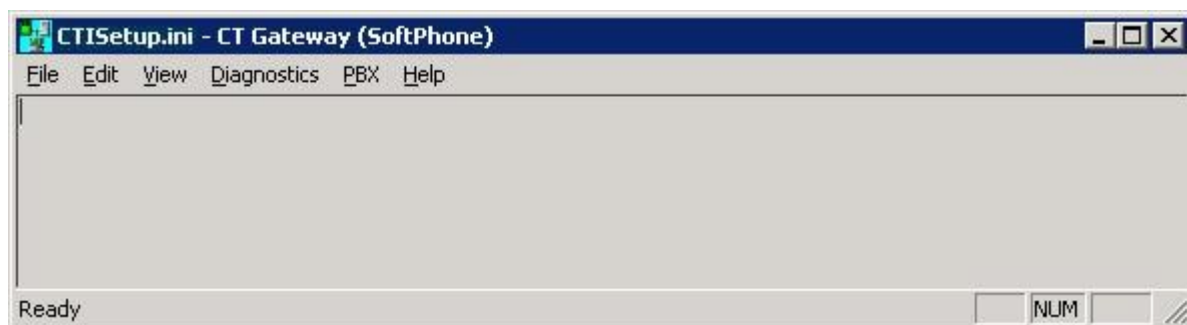
```
# =====  
#  
# ACD paths  
# Only needed for SmartAnswer support and some integration  
#  
[ACD1]  
ID=65555  
  
# =====  
#  
# Agents  
#  
[Agent1]  
ID=65001  
EncorePort=65001  
#EncoreUnit=1  
#ACDAgent=Yes  
  
[Agent2]  
ID=65002  
EncorePort=65002  
#ACDAgent=Yes
```

### 6.3. Administer CT Gateway

From the Encore server, click the **CT Gateway** icon from the system tray, as shown below.



The **CTISetup.ini – CT Gateway (SoftPhone)** screen is displayed. Select **PBX > Configure** from the top menu.



The **PBX interface setup** screen is displayed. In **Choose Tserver**, select the Tlink name from **Section 5.4**, and the **Tserver** field will be populated automatically. For **Login ID** and **Password**, enter the Encore user credentials from **Section 5.6**.

Make certain that the **Merge recording for consultation call** field is unchecked, and set the remaining fields as desired. The setting used in the compliance testing is shown in the screen shot below.

The screenshot shows a dialog box titled "PBX interface setup". It contains the following fields and options:

- \*Tserver:** AVAYA#S8500#CSTA#AES-TEST
- \*Login ID:** encore
- \*Password:** [masked]
- Choose Tserver:** AVAYA#S8500#CSTA#AES-TEST (dropdown menu)
- Checkboxes:**
  - ☒ Send ACD info
  - ☒ Ignore Hold event
  - ☒ Use extension as default agent id
  - ☐ Use call id as trunk
  - ☐ Ignore answer event
  - ☐ Answer on ring ever
  - ☒ Alarm on Monitor-ended event
  - ☒ Alarm on device monitor failure
- \*Merge recording for consultation call:** (unchecked)
- Merge recording:** 180 Mins
- Debug logging:** 1
- Tell AES/TSAPI server not to send the following events to CT Gateway:**
  - ☐ \*Service initiated event (Not used by CT Gateway)
  - ☐ \*Failed event (Not used by CT Gateway)
  - ☐ \*Originated event (Could be used by CT Gateway to obtain Agent ID on outbound call if agent status events is not available)
  - ☐ \*Network reached event (Some PBX might only send this event instead of Established event for outbound call, check log file before enable filtering)
- \* Requires restart of CT Gateway**
- Buttons:** OK, Cancel



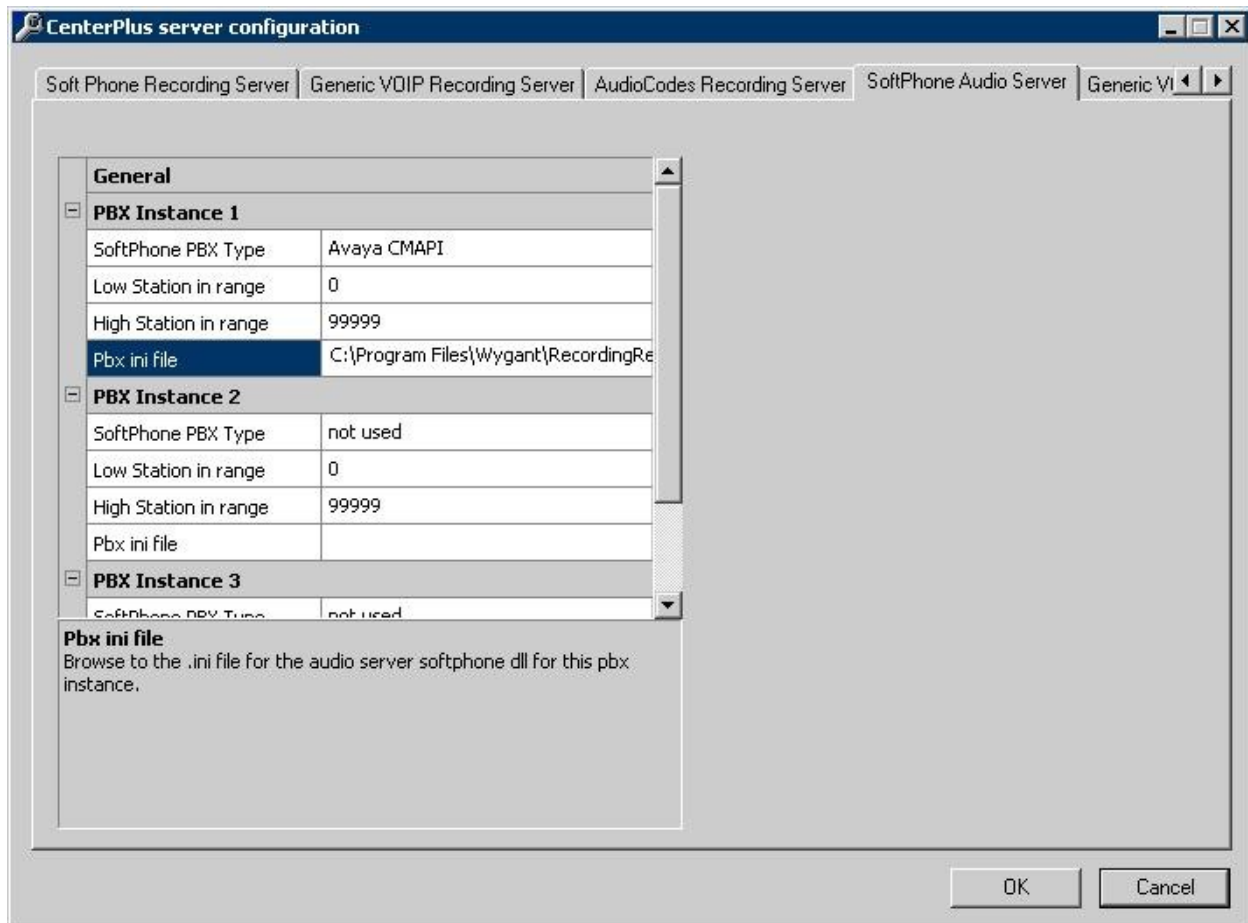
## 6.4. Administer Audio Server

From the Encore server, double-click on the **CenterPlus Server Configuration** icon shown below, which is created as part of installation.



The **CenterPlus server configuration** screen is displayed. Select the **SoftPhone Audio Server** tab.

Under **PBX Instance 1**, select “Avaya CMAPI” from the drop-down list for **SoftPhone PBX Type**. Select **Pbx ini file**, and open the **C:\Program Files\Wygant\RecordingResources\SP\_CMAPI.ini** file in the pop-up window (not shown).

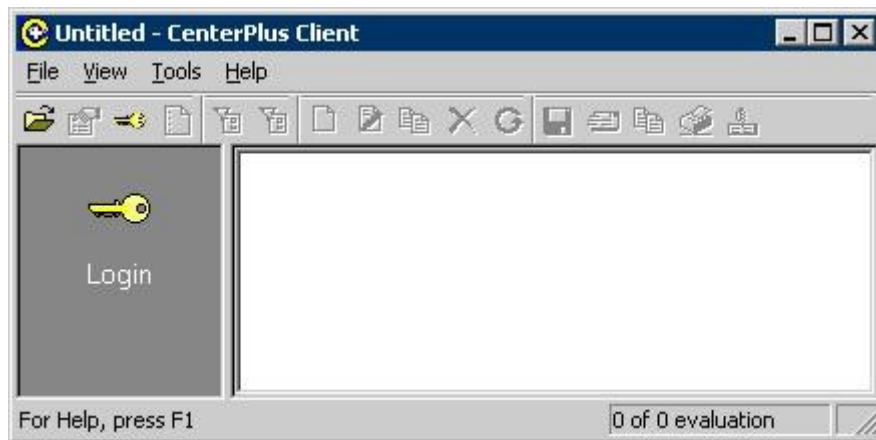


## 6.5. Administer Agents

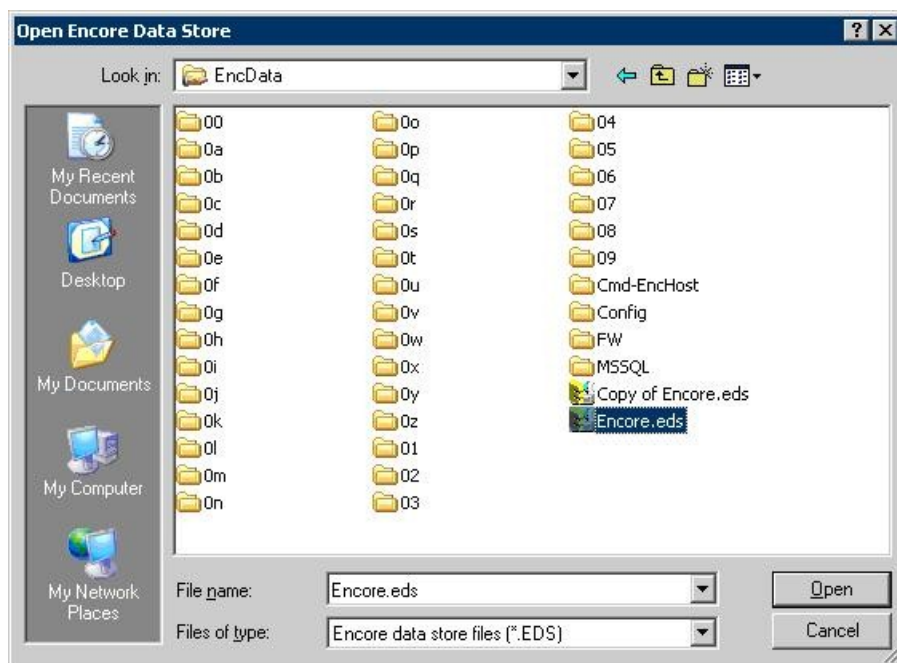
From the Encore server, double-click on the **CenterPlus Client** icon shown below, which is created as part of installation.



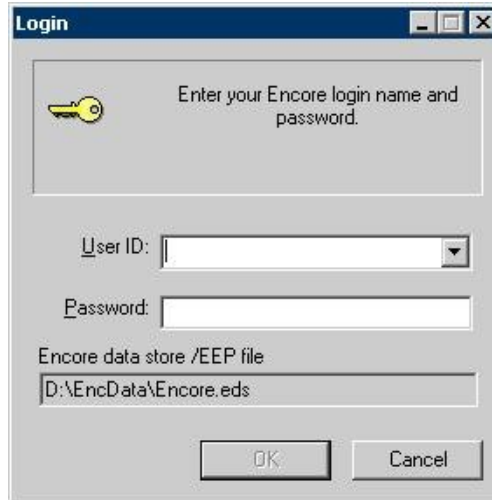
The **Untitled – CenterPlus Client** screen is displayed. Select **Login** from the left pane.



Upon initial log in, the **Open Encore Data Store** pop-up window is displayed. Open the **Encore.eds** file as shown below.

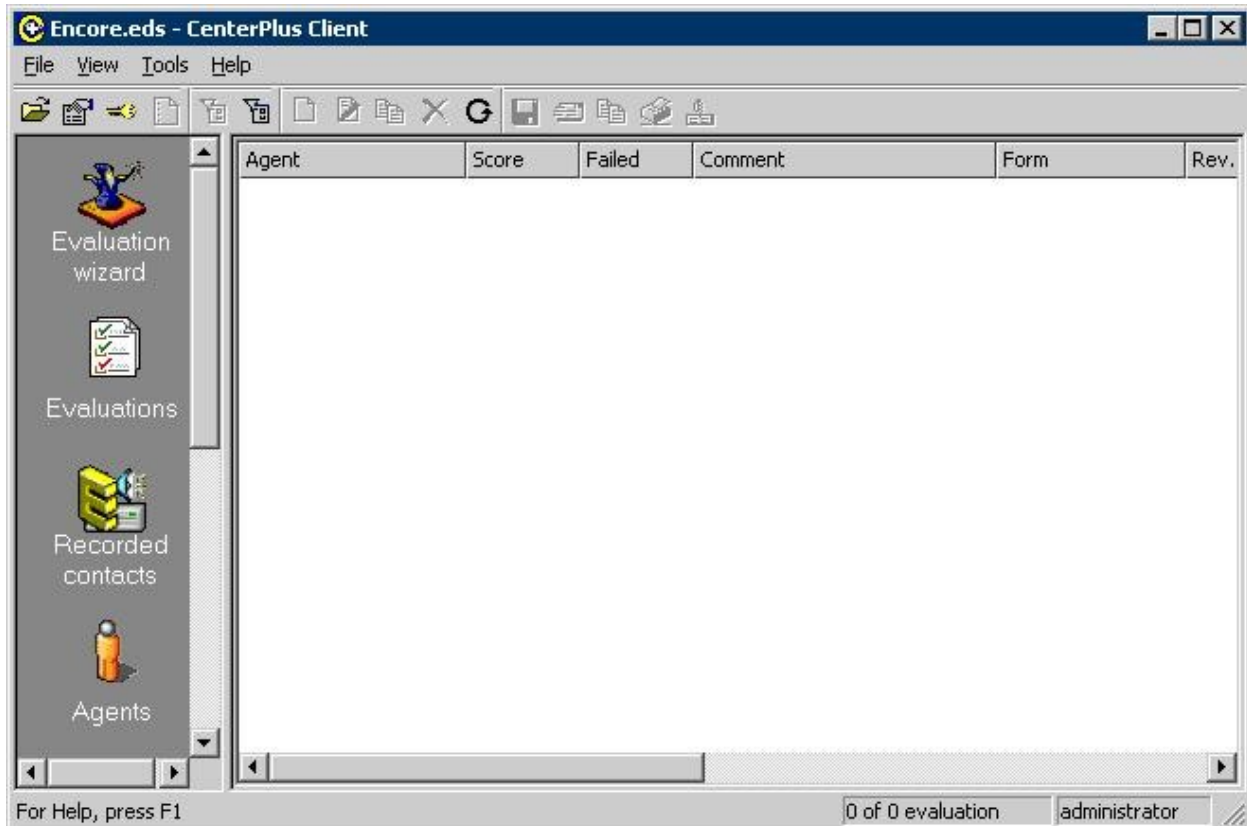


The **Login** window is displayed. Enter the appropriate credentials.



A small dialog box titled "Login" with a key icon. It contains a text prompt "Enter your Encore login name and password." Below this are two input fields: "User ID:" and "Password:". At the bottom, there is a text field for "Encore data store /EEP file" containing the path "D:\EncData\Encore.eds". At the very bottom are "OK" and "Cancel" buttons.

The **Encore.eds – CenterPlus Client** window is displayed next. Select **Agents** from the left pane.



The main application window titled "Encore.eds - CenterPlus Client". It has a menu bar (File, View, Tools, Help) and a toolbar with various icons. On the left is a vertical pane with four icons and labels: "Evaluation wizard", "Evaluations", "Recorded contacts", and "Agents". The "Agents" option is selected. The main area is a table with the following headers: "Agent", "Score", "Failed", "Comment", "Form", and "Rev.". The table is currently empty. At the bottom, there is a status bar with the text "For Help, press F1", "0 of 0 evaluation", and "administrator".

In the **Agent filters** pop-up window, retain all default values and click **OK**.

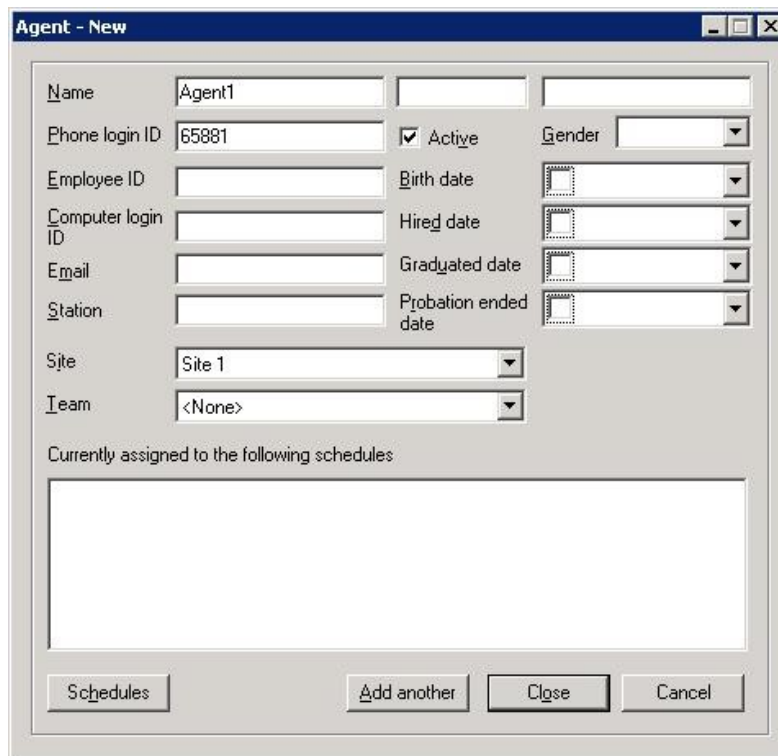


The **Agent filters** dialog box contains the following fields and options:

- Site:** <All> (dropdown)
- Team:** <All> (dropdown)
- Phone login ID:** (text field)
- Computer login ID:** (text field)
- Active:** Radio buttons for **Active only**, **Inactive only**, and **Both** (selected).
- Scheduled:** Radio buttons for **Ignore schedule** (selected), **Active schedule**, **Any schedule**, and **Unscheduled**.
- ☒ **Show this dialog when Agents button is clicked**
- Clear all**, **OK**, and **Cancel** buttons.

The **Encore.eds – CenterPlus Client** window is displayed again (not shown below). Right click in the empty right pane and select **Add**, to display the **Agent - New** screen below.

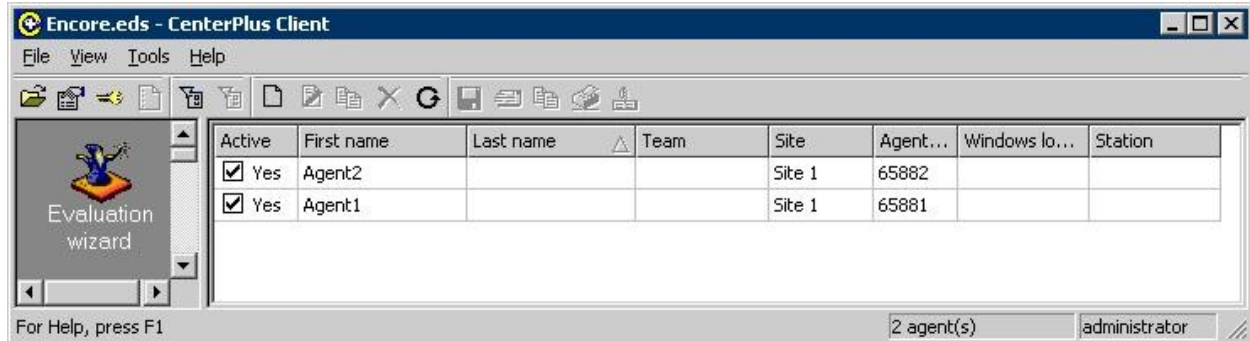
Enter a descriptive **Name**. For **Phone login ID**, enter the first agent ID from **Section 2**. Retain the default values in the remaining fields. Click **Add another** to add the next agent, and repeat this step to create all agents.



The **Agent - New** dialog box contains the following fields and options:

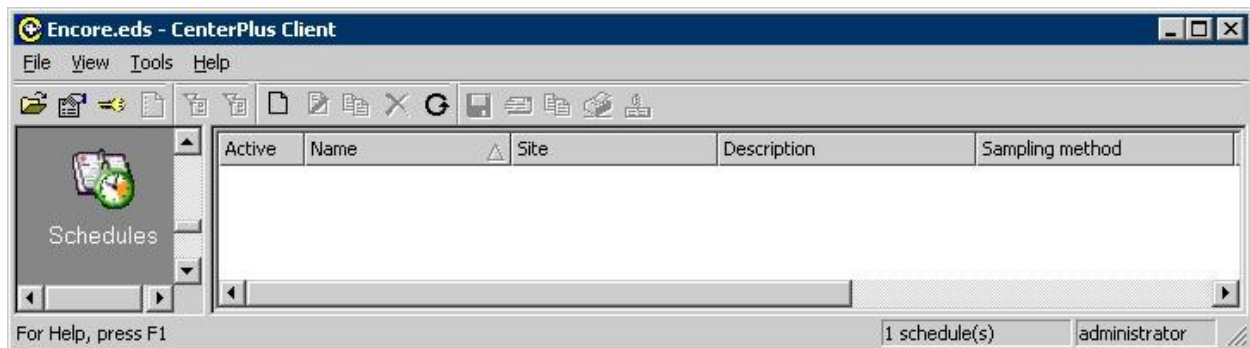
- Name:** Agent1 (text field)
- Phone login ID:** 65881 (text field)
- ☒ **Active** (checkbox)
- Gender:** (dropdown)
- Employee ID:** (text field)
- Birth date:** (calendar icon)
- Computer login ID:** (text field)
- Hired date:** (calendar icon)
- Email:** (text field)
- Graduated date:** (calendar icon)
- Station:** (text field)
- Probation ended date:** (calendar icon)
- Site:** Site 1 (dropdown)
- Team:** <None> (dropdown)
- Currently assigned to the following schedules:** (empty list box)
- Schedules**, **Add another**, **Close**, and **Cancel** buttons.

In the compliance testing, two agents were created, as shown below.



## 6.6. Administer Schedule

Scroll down the left pane of the **Encore.eds – CenterPlus Client** screen as necessary, and select **Schedules**. Right click in the empty right pane and select **Add**.



The **Schedule – New** screen is displayed. In the **Properties** tab, enter a descriptive **Name**. Enter a desired percentage value for recording. In the compliance testing, 100% of calls were recorded. Retain the default values in the remaining fields.

**Schedule - New**

Properties Agents Teams Conditions

Name: Full Time

Supervisor:

Description:

Site: Site 1 ☒ Active

Sampling:

☐ Record 1 interactions per Day

☒ Record 100 % of interactions

Screen recording %: 0

Time frame:

Sunday: 12:00 AM - 12:00 AM

Monday: 08:00 AM - 05:00 PM

Tuesday: 08:00 AM - 05:00 PM

Wednesday: 08:00 AM - 05:00 PM

Thursday: 08:00 AM - 05:00 PM

Friday: 08:00 AM - 05:00 PM

Saturday: 12:00 AM - 12:00 AM

OK Cancel

Select the **Agents** tab, and click the double-arrow icon to apply the schedule to all selected agents.

**Schedule - Full Time**

Properties Agents Teams Conditions

Available agents:

- ☒ Agent1
- ☒ Agent2

Agents in schedules:

Team members in schedule:

Agent	Team

OK Cancel

## 7. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon start of the dvsAnalytics Encore application, the application automatically registers the virtual IP softphones to Avaya Aura<sup>TM</sup> Communication Manager using Avaya Aura<sup>TM</sup> Application Enablement Services DMCC, and requests monitoring on the agent stations to be recorded using Avaya Aura<sup>TM</sup> Application Enablement Services TSAPI.

For the manual part of the testing, each call was handled manually on the station user with generation of unique audio content for the recordings. Necessary user actions such as hold and reconnect were performed from the user telephones to test the different call scenarios.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet cable to dvsAnalytics Encore.

The verification of tests included using the dvsAnalytics Encore logs for proper message exchanges, and using the Encore Explorer 2 application for proper logging and playback of the calls.

All test cases were executed. The following were the observations on dvsAnalytics Encore from the compliance testing.

- Encore can only work with the IP\_API\_A license from Communication Manager, and not the new DMCC license from Application Enablement Services, due to the registration method used for registering softphones.
- All recordings included the confirmation tone for the Service Observing activation, and missed the first one to two seconds of the user conversation.
- Recording port #1 cannot record without manual intervention, and a workaround is to always configure for one more port than the required maximum. This impacts the number of IP\_API\_A licenses and virtual IP softphones on Communication Manager, and the number of CMAPI softphones on Encore.
- In the simultaneous calls scenario for the same agent, where the agent placed an inbound call on hold and started a separate outbound call to a non-monitored supervisor without using transfer/conference, there were two recording entries generated for the agent. The first recording included the audio from the beginning of the inbound call up to the held point, plus the entire audio from the outbound call. The second recording included the audio for the inbound call after the call was taken off hold, to the end of the inbound call.

## 8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Aura™ Communication Manager, Avaya Aura™ Application Enablement Services, and dvsAnalytics Encore.

### 8.1. 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 4.3**, 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
<b>1</b>	<b>4</b>	<b>no</b>	<b>AES-Test</b>	<b>established</b>	<b>15</b>	<b>15</b>

Verify the registration status of the virtual softphones by using the “list registered-ip-stations” command. Verify that all extensions from **Section 4.6** are displayed, as shown below.

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

REGISTERED IP STATIONS						
Station Ext or Orig Port	Set Type/ Net Rgn	Prod ID/ Release	TCP Skt	Station IP Address/ Gatekeeper IP Address		
65000	1608	IP_Phone	y	10.32.35.105		
	1	3.1000		10.32.32.12		
65001	9630	IP_Phone	y	10.32.35.101		
	1	3.1000		10.32.32.12		
65002	9630	IP_Phone	y	10.32.35.106		
	1	3.1000		10.32.32.12		
<b>65991</b>	<b>4610</b>	<b>IP_API_A</b>	<b>y</b>	<b>10.32.32.20</b>		
	<b>1</b>	<b>3.2040</b>		<b>10.32.32.12</b>		
<b>65992</b>	<b>4610</b>	<b>IP_API_A</b>	<b>y</b>	<b>10.32.32.20</b>		
	<b>1</b>	<b>3.2040</b>		<b>10.32.32.12</b>		
<b>65993</b>	<b>4610</b>	<b>IP_API_A</b>	<b>y</b>	<b>10.32.32.20</b>		
	<b>1</b>	<b>3.2040</b>		<b>10.32.32.12</b>		



## 8.2. Verify Avaya Aura™ Application Enablement Services

On Application Enablement Services, verify the status of the TSAPI link by selecting **Status and Control > Services Summary** from the left pane. Click on **TSAPI Service**, followed by **Details** (not shown below). The **TSAPI Link Details** screen is displayed. Verify the **Conn Status** is “Talking” for the TSAPI link administered in **Section 5.3**, as shown below.

The screenshot shows the Avaya Application Enablement Services interface. The left pane contains a navigation menu with the following items: CTI OAM Home, Administration, Status and Control (expanded), Switch Conn Summary, Services Summary, Maintenance, Alarms, Logs, Utilities, and Help. The main content area displays the 'TSAPI Link Details' for a single link. The breadcrumb trail is 'You are here: > Status and Control > Services Summary'. The table below shows the details for the selected link.

Link	Switch Conn Name	Switch CTI Link Number	Conn Status	Since	Service State	Switch Version	Number of Associations	ASAI Message Rate
1	S8500	1	Talking	2010-02-26 14:17:17.0	Online	15	3	21

Verify the status of the DMCC link by selecting **Status and Control > Services Summary** from the left pane. Click on **DMCC Service**, followed by **Details** (not shown below). The **DMCC Service Summary – Session Summary** screen is displayed. In the lower portion of the screen, verify that the **User** column shows an active session with the Encore user name from **Section 5.6**, and that the **# of Associated Devices** column reflects the number of virtual softphones from **Section 4.6**.

The screenshot shows the Avaya Application Enablement Services interface. The left pane contains the same navigation menu as the previous screenshot. The main content area displays the 'DMCC Service Summary - Session Summary' for a single service. The breadcrumb trail is 'You are here: > Status and Control > Services Summary'. The table below shows the details for the selected service.

Session ID	User	Application	Far-end Identifier	Connection Type	# of Associated Devices
588935914EC03B75A 18E7872145C090D-28	encore	SPAS1	10.32.35.180	XML Unencrypted	3

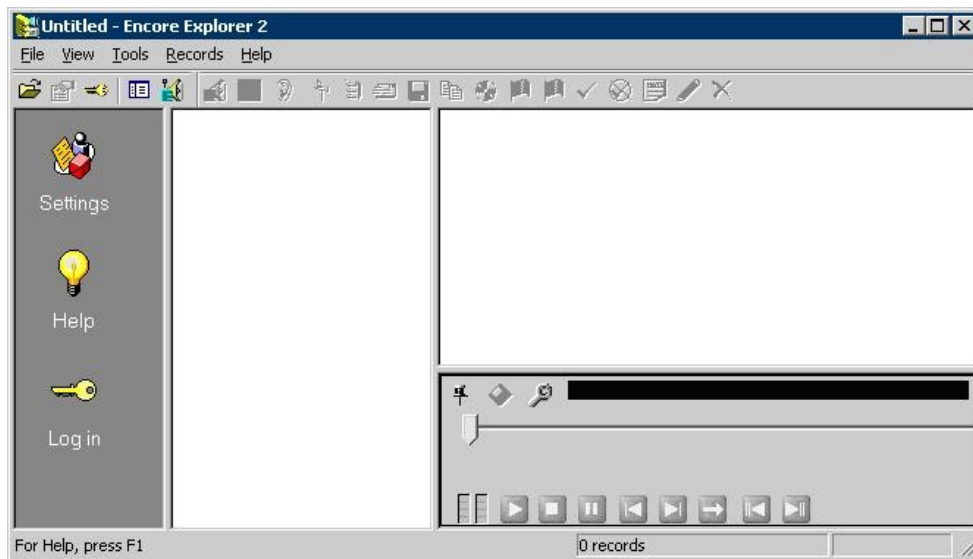
Buttons: Terminate Sessions, Show Terminated Sessions

### 8.3. Verify dvsAnalytics Encore

Log an agent into the Skill group to handle and complete an ACD call. From the PC running the Encore Explorer 2 application, double-click on the **Encore Explorer 2** icon shown below, which is created as part of installation.



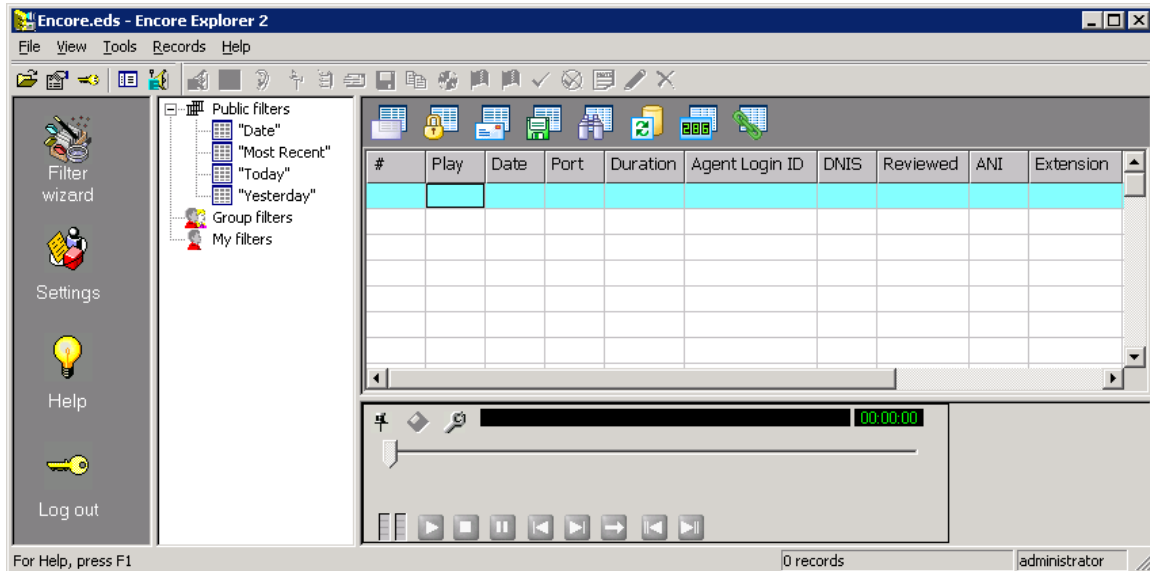
The **Untitled – Encore Explorer 2** screen is displayed. Click **Log in** from the left pane.



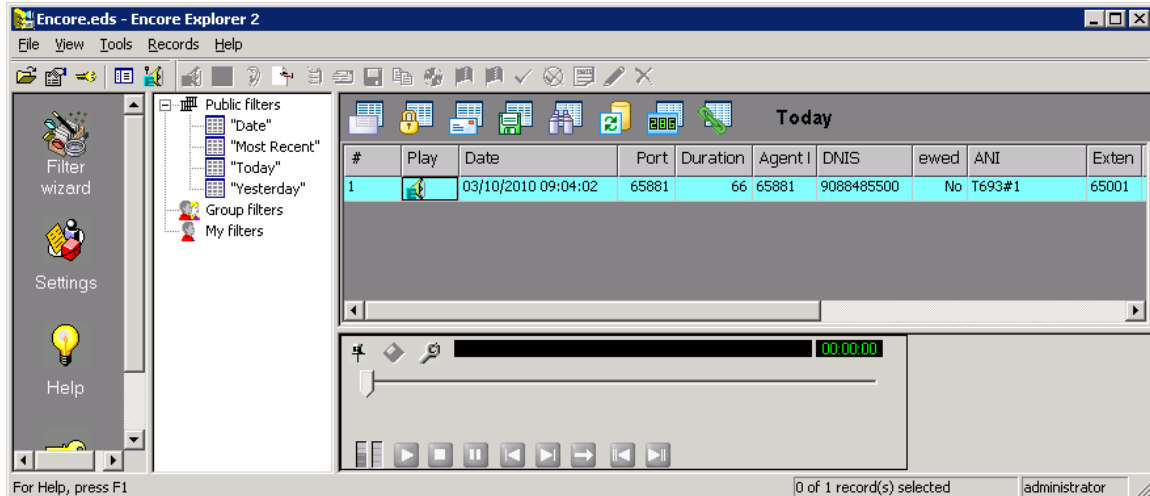
The **Login** screen is displayed next. Enter the appropriate credentials.



The **Encore.eds – Encore Explorer 2** screen is displayed. Select the **“Today”** filter from the middle pane.



The **Encore.eds – Encore Explorer 2** screen is updated with a listing of recordings. Verify that there is an entry reflecting the last call, with proper values in the relevant fields. Double click on the entry, and verify that the call recording can be played back.



## 9. Conclusion

These Application Notes describe the configuration steps required for dvsAnalytics Encore to successfully interoperate with Avaya Aura<sup>TM</sup> Communication Manager using Avaya Aura<sup>TM</sup> Application Enablement Services. All feature and serviceability test cases were completed with observations noted in **Section 7**.

## 10. Additional References

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

1. *Administrator Guide for Avaya Aura<sup>TM</sup> Communication Manager*, Document 03-300509, Issue 5.0, Release 5.2, May 2009, available at <http://support.avaya.com>.
2. *Avaya MultiVantage Application Enablement Services Administration and Maintenance Guide*, Release 4.2, Document ID 02-300357, Issue 10, May 2008, available at <http://support.avaya.com>.
3. *Encore Administrator's Guide*, Release 2.2.7, February 26, 2010, available from dvsAnalytics Support.
4. *Avaya using TSAPI Switch Integration Guide*, Release 2.2.6, October 16, 2009, available from dvsAnalytics Support.
5. *Avaya DMCC Switch Integration Guide*, Release 2.2.6, October 2, 2009, available from dvsAnalytics Support.

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