



Avaya Solution & Interoperability Test Lab

Application Notes for dvsAnalytics Encore with Avaya IP Office 9.0 Using VoIP Recording – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for dvsAnalytics Encore to interoperate with Avaya IP Office 9.0 using VoIP recording. dvsAnalytics Encore is a call recording solution.

In the compliance testing, dvsAnalytics Encore used the DevLink interface from Avaya IP Office to monitor contact center agents on Avaya IP Office, and used the port mirroring method to capture the media associated with the monitored agents 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 IP Office 9.0 using VoIP recording. dvsAnalytics Encore is a call recording solution.

In the compliance testing, dvsAnalytics Encore used the DevLink interface from Avaya IP Office to monitor contact center agents on Avaya IP Office, and used the port mirroring method to capture the media associated with the monitored agents for call recording.

The DevLink interface is used by dvsAnalytics Encore to monitor the agents to be recorded. When there is an active call on the monitored agent with an Avaya IP Deskphone, dvsAnalytics Encore is informed of the call via event reports from the DevLink interface and starts the call recording with media captured from the port mirroring method.

2. General Test Approach and Test Results

The feature test cases were performed manually. Each call was placed and handled manually from the agent telephone with generation of unique audio content for the recordings. Necessary user actions such as hold and reconnect were performed from the agent telephones to test the different call scenarios.

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

The verification of tests included using the Encore logs for proper message exchanges, and using the Encore web interface for proper logging and playback of the calls.

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

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on Encore:

- Handling of real-time DevLink events.
- Proper recording, logging, and playback of calls for scenarios involving inbound, outbound, internal, external, hunt group, non-hunt group, non-hot desking, hold, reconnect, multiple calls, multiple agents, conference, and transfer.

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

2.2. Test Results

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

- Agent Hot Desking is not supported in this Encore release.
- For blind conference scenarios involving two agents, one of the recording entries will report “Conference” for DNIS.
- The audio for an active call dropped during an Ethernet disruption were combined with the audio from the first call post recovery, and this behavior is configurable via the RecRestartMode parameter.

2.3. Support

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

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

3. Reference Configuration

The Encore server contained two NICs, with one dedicated for recording purposes and is not routable by the network.

In the compliance testing, the RTP stream for contact center agents with Avaya IP Deskphones were mirrored from the layer 2 switch, and replicated over to the recording NIC on the Encore server.

The detailed administration of contact center devices is not the focus of these Application Notes and will not be described. In addition, the port mirroring of the layer 2 switch is also outside the scope of these Application Notes and will not be described.

In the compliance testing, Encore monitored the agent user extensions shown in the table below.

Device Type	Extension
Hunt Group	29000, 29002
Agent User	20031, 20032
Supervisor	20033

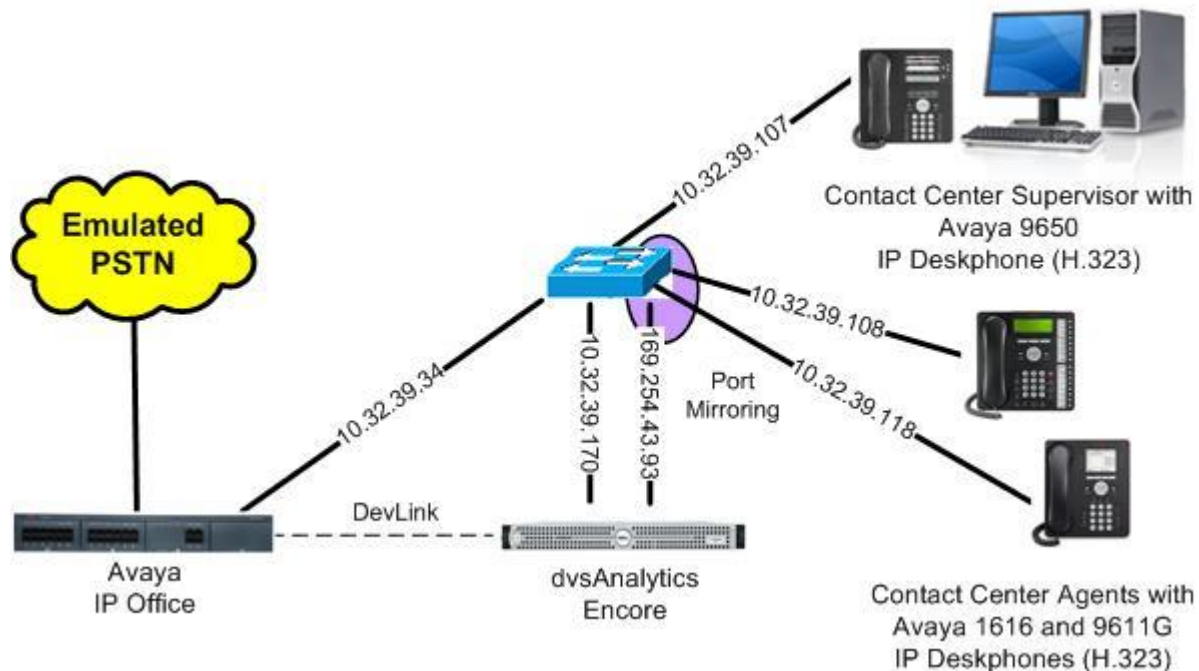


Figure 1: Compliance Testing Configuration

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office on IP500V2	9.0 (829)
Avaya 1608 IP Deskphone (H.323)	1.330D
Avaya 9611G IP Deskphone (H.323)	6.3037
Avaya 9650 IP Deskphone (H.323)	3.200
dvsAnalytics Encore on Windows 2008 Server R2 Standard <ul style="list-style-type: none">• Encore Web Interface• Avaya DevLink (devlink.dll)	2.3.5 SP1 3.0.8.5685 1.0.0.5

Testing was performed with IP Office 500 V2 R9.0, but it also applies to IP Office Server Edition R9.0. Note that IP Office Server Edition requires an Expansion IP Office 500 V2 R9.0 to support analog or digital endpoints or trunks. IP Office Server Edition does not support TAPI Wave or Group Voicemail.

5. Configure Avaya IP Office

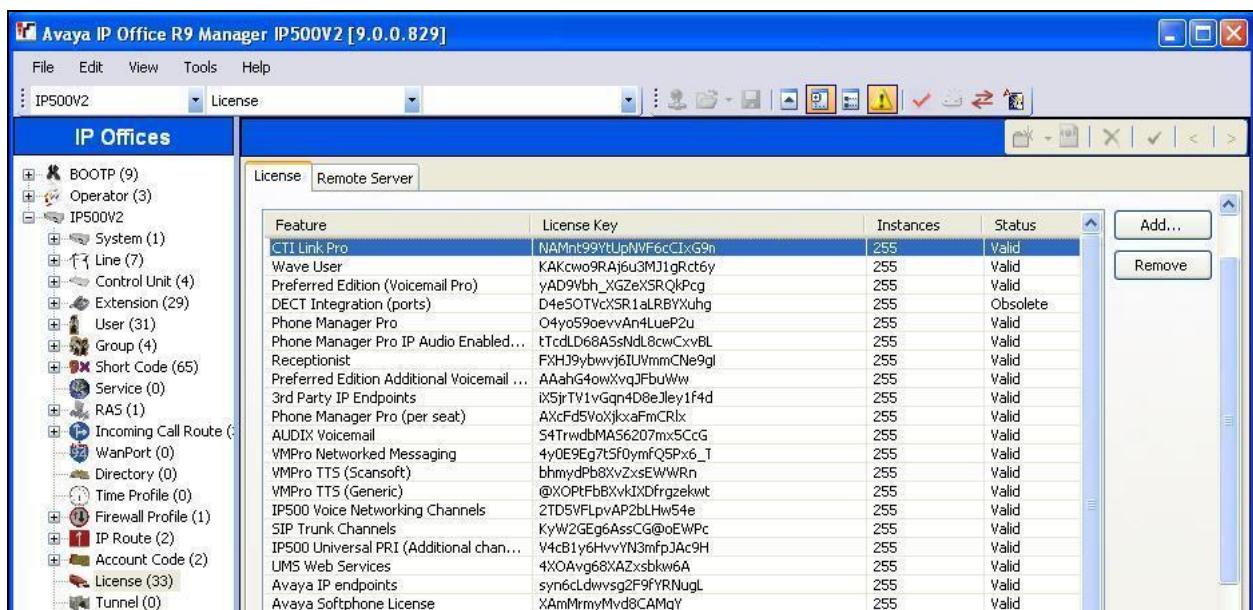
This section provides the procedures for configuring IP Office. The procedures include the following areas:

- Verify license
- Obtain phone IP address

5.1. Verify License

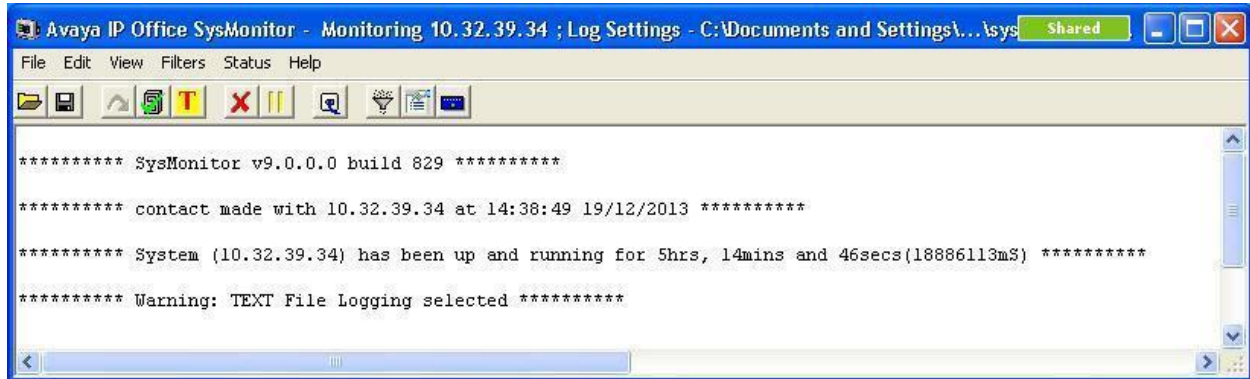
From a PC running the IP Office Manager application, select **Start → All Programs → IP Office → Manager** to launch the application. Select the proper IP Office system, and log in using the appropriate credentials.

The **Avaya IP Office R9 Manager** screen is displayed. From the configuration tree in the left pane, select **License** to display a list of licenses in the right pane. Verify that there is a license for **CTI Link Pro** and that the **Status** is “Valid”, as shown below.

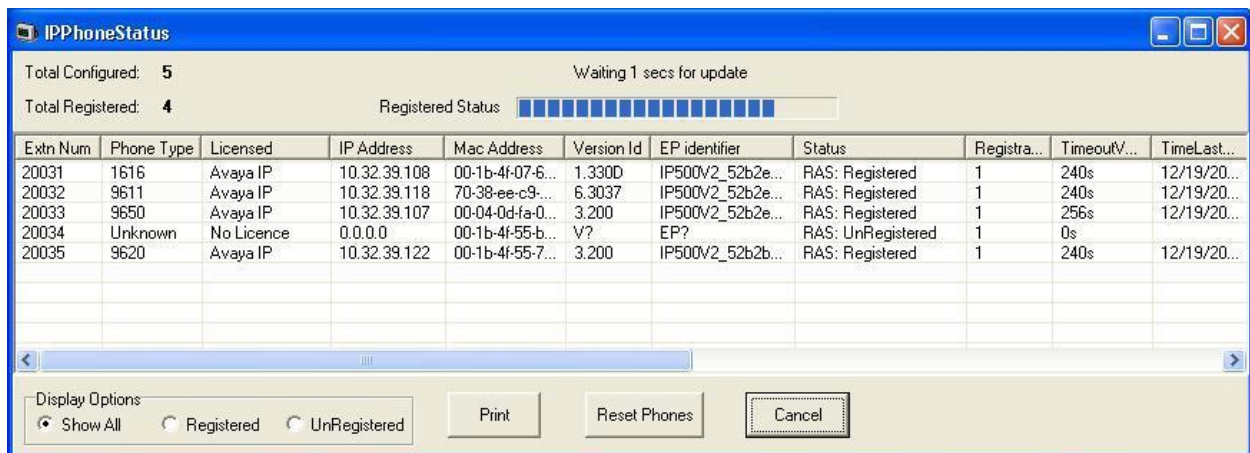


5.2. Obtain Phone IP Address

From a PC running the IP Office Monitor application, select **Start → Programs → IP Office → Monitor** to launch the application. The **Avaya IP Office SysMonitor** screen is displayed, as shown below. Select **Status → H323 Phone Status** from the top menu.



The **IPPhoneStatus** screen is displayed. Make a note of the IP address associated with each agent user extension from **Section 3**.



6. Configure dvsAnalytics Encore

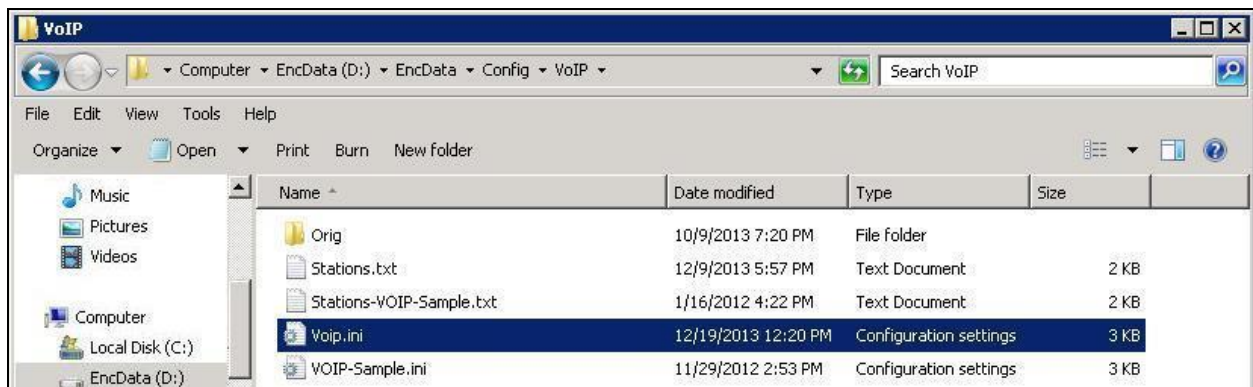
This section provides the procedures for configuring Encore. The procedures include the following areas:

- Administer agent stations
- Administer CTISetup
- Administer CT Gateway

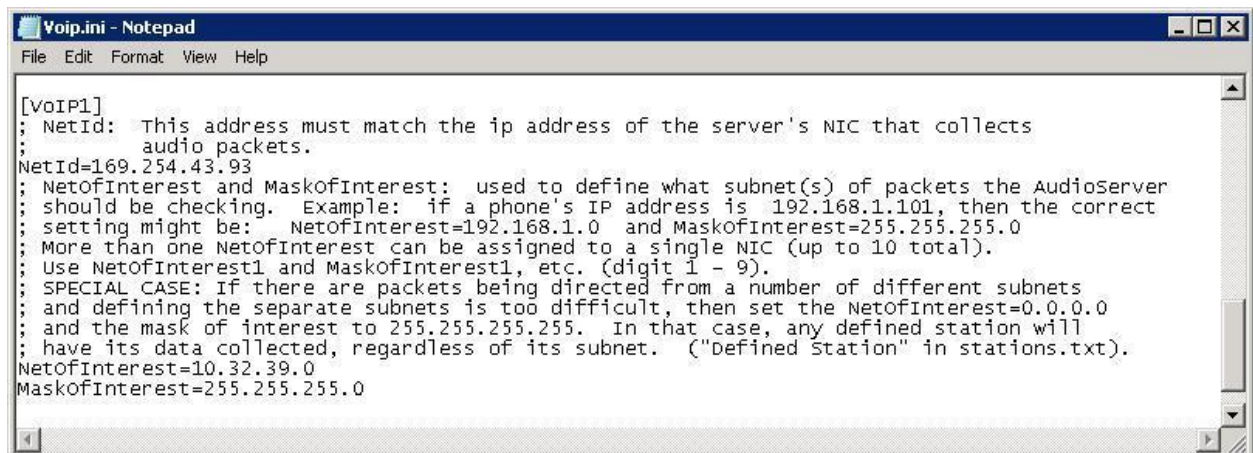
The configuration of Encore is performed by dvsAnalytics installers and dealers. The procedural steps are presented in these Application Notes for informational purposes.

6.1. Administer Agent Stations

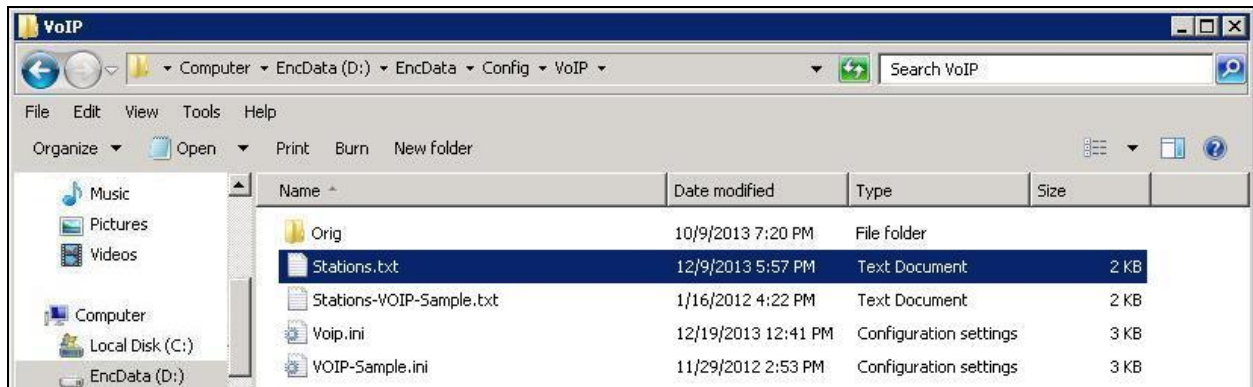
From the Encore server, navigate to the **D:\EncData\Config\VoIP** directory to edit the **Voip.ini** file shown below.



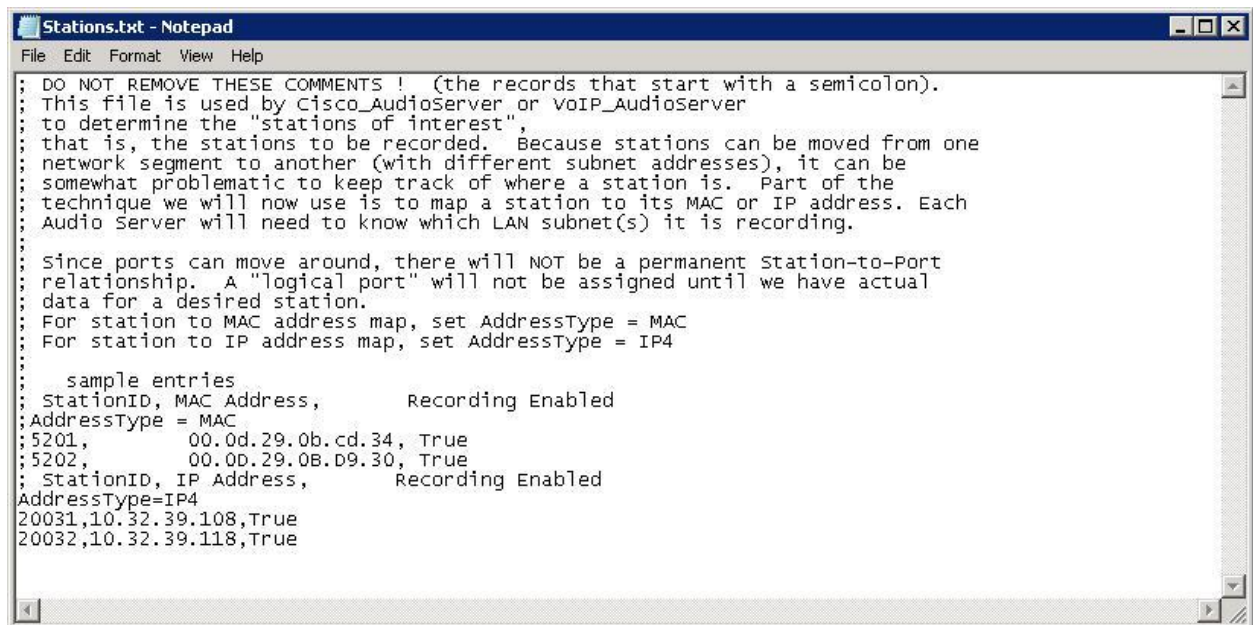
Scroll down to the **VoIP1** sub-section. For **NetId**, enter the IP address of the private NIC dedicated for recording, in this case "169.254.43.93". For **NetOfInterest** and **MaskOfInterest**, enter the applicable subnet used by the agent telephones.



From the same directory, edit the **Stations.txt** file shown below.

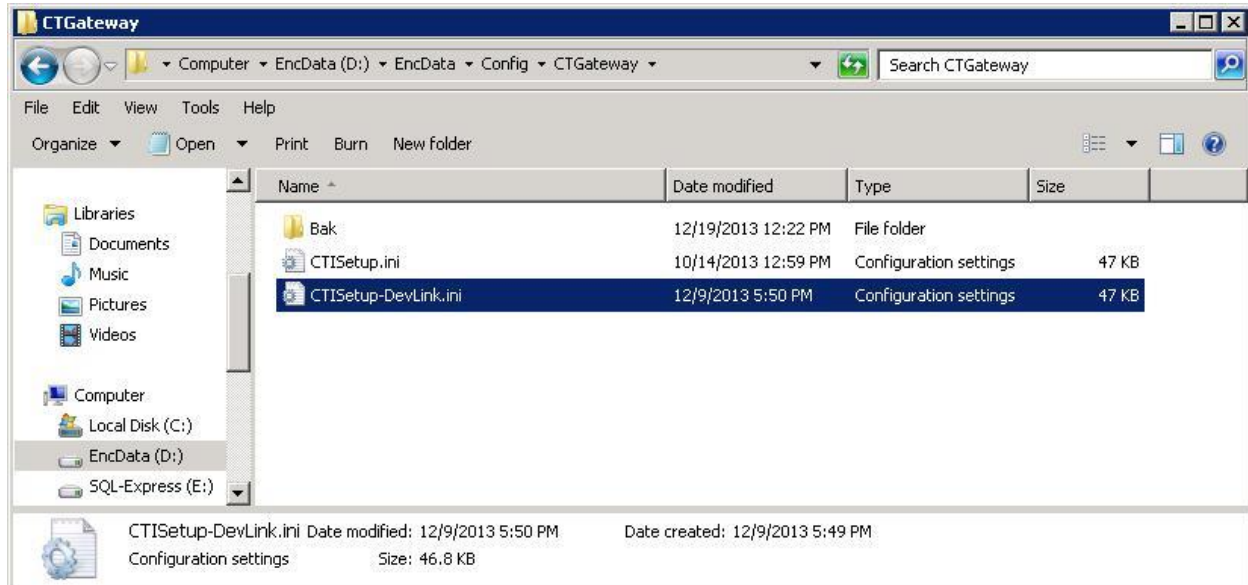


Enter a line for each monitored agent from **Section 5.2**. Use the format "x,y,z", where "x" is the agent user extension, "y" is the agent telephone IP address, and "z" is "True".

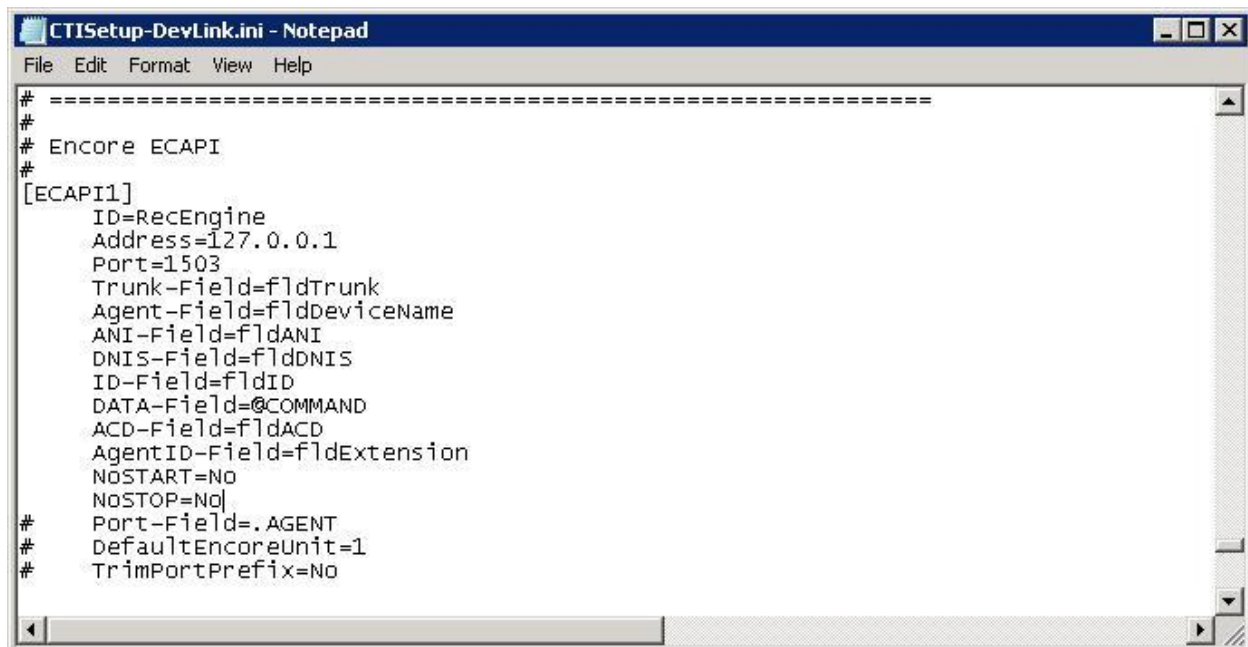


6.2. Administer CTISetup

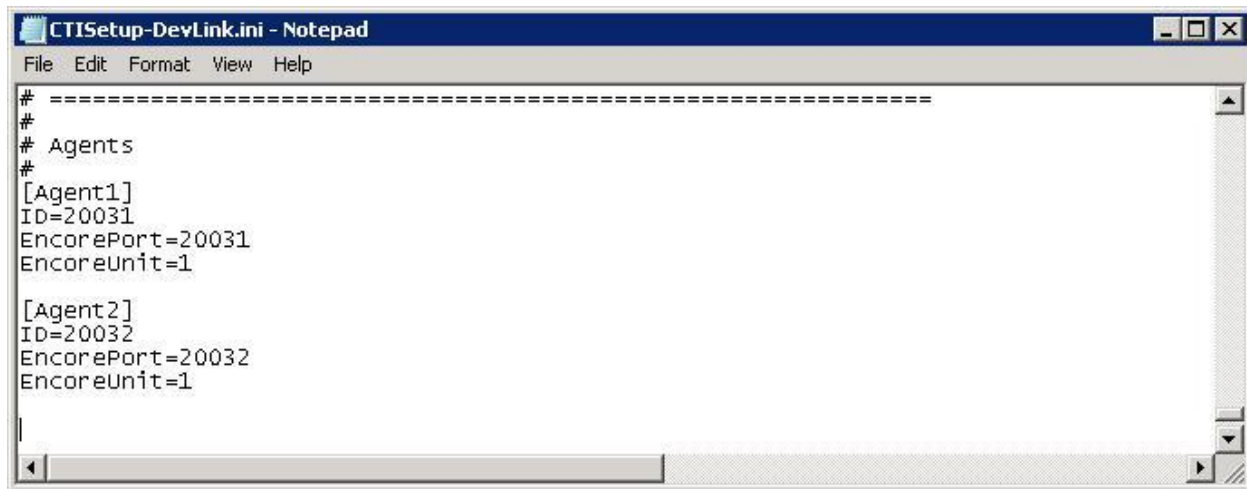
Navigate to the **D:\EncData\Config\CTGateway** directory to edit the **CTISetup-DevLink.ini** file.



Scroll down to the **Encore ECAPI** sub-section. Under **ECAPI1**, make sure all parameters are set to the default values shown below.



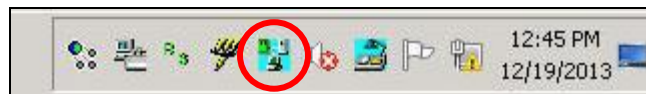
Scroll to the **Agents** sub-section. Under **Agent1**, set **ID** and **EncorePort** to the first agent user extension from **Section 3**. Create additional agent entries as necessary when more than one agent is being monitored.



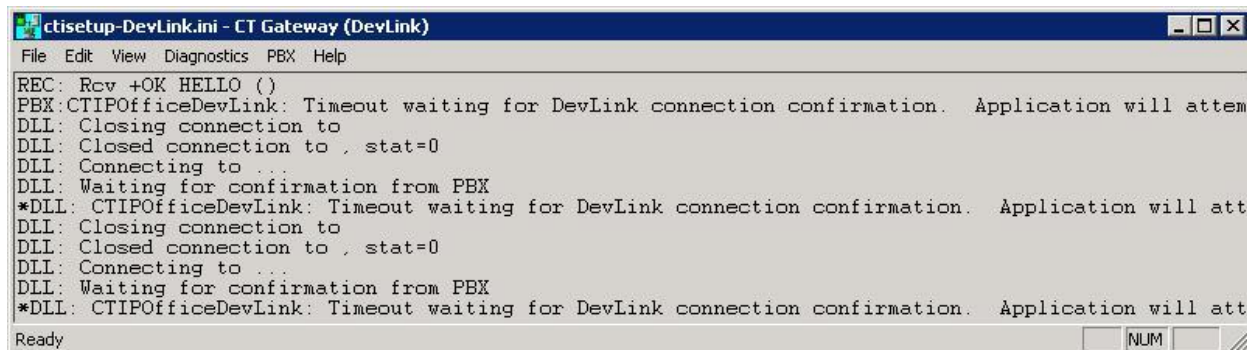
```
# =====  
#  
# Agents  
#  
[Agent1]  
ID=20031  
EncorePort=20031  
EncoreUnit=1  
  
[Agent2]  
ID=20032  
EncorePort=20032  
EncoreUnit=1
```

6.3. Administer CT Gateway

Click on the **CT Gateway** icon from the system tray, as shown below.



The **ctisetup-DevLink.ini** screen is displayed. Select **PBX → Configure** from the top menu.



```
ctisetup-DevLink.ini - CT Gateway (DevLink)  
File Edit View Diagnostics PBX Help  
REC: Rcv +OK HELLO ()  
PBX: CTIPOfficeDevLink: Timeout waiting for DevLink connection confirmation. Application will attempt  
DLL: Closing connection to  
DLL: Closed connection to , stat=0  
DLL: Connecting to ...  
DLL: Waiting for confirmation from PBX  
*DLL: CTIPOfficeDevLink: Timeout waiting for DevLink connection confirmation. Application will attempt  
DLL: Closing connection to  
DLL: Closed connection to , stat=0  
DLL: Connecting to ...  
DLL: Waiting for confirmation from PBX  
*DLL: CTIPOfficeDevLink: Timeout waiting for DevLink connection confirmation. Application will attempt  
Ready NUM
```

The **PBX interface setup** screen is displayed. For **Switch IP addr** and **Switch password**, enter the IP address and credentials for IP Office. Retain the default values in the remaining fields, as shown below.



The image shows a Windows-style dialog box titled "PBX interface setup". It contains several input fields and buttons. The "Switch IP addr" field is set to "10.32.39.34". The "Switch password" field is masked with "xxxxxxxxxx". The "Debug logging level" is set to "9". Below these is a section titled "Encore database fields for additional call data" with three fields: "Call ID field" (fldCallID), "Other call ID field" (fldOtherCallID), and "User name field" (fldAgentLoginID). At the bottom, there are two buttons: "Add memo to log file..." and "Dump slot to name list on next event". A note at the bottom states "* Requires restart of CT Gateway". The "OK" and "Cancel" buttons are at the very bottom.

*Switch IP addr:	10.32.39.34
*Switch password:	xxxxxxxxxx
Debug logging level:	9
Encore database fields for additional call data	
*Call ID field:	fldCallID
*Other call ID field:	fldOtherCallID
*User name field:	fldAgentLoginID
Add memo to log file... Dump slot to name list on next event	
* Requires restart of CT Gateway	
OK Cancel	

7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of IP Office and Encore.

Log an agent in to handle and complete a hunt group call. Access the Encore web interface by using the URL “http://ip-address/encore” in an Internet browser window, where “ip-address” is the IP address of the Encore server. The **encore** screen is displayed. Click **Login** and log in using the appropriate credentials.



The **encore** screen is updated with a list of call recordings. Verify that there is an entry in the right pane reflecting the last call, with proper values in the relevant fields.

The screenshot shows the Encore web interface. The top header includes the Encore logo, navigation icons, and a welcome message 'Welcome A Administrator | 12/19/2013'. The left sidebar contains a 'Libraries' section with options like System Library, Public Library, Group Library, My Library, All Shared Libraries, and All Member Libraries. Below it is a 'Shared Playlists' section with Date, Most Recent, and Today. The main content area shows a table of call recordings. The table has columns: Date, Duration, Port, Extension, ANI, DNIS, Agent Login, Trunk, and Call Index. A single row of data is visible, representing a call from 12/19/2013 1:22:06 PM.

Date	Duration	Port	Extension	ANI	DNIS	Agent Login	Trunk	Call Index
12/19/2013 1:22:06 PM	00:01:16	20031	20031	19088485601	7328529000	Extn20031	164	429497.4008

Right click on the entry and select **Play** to listen to the playback. Verify that the screen is updated and that the call recording is played back.

The screenshot displays the Encore web interface. At the top, the 'encore' logo is on the left, and the user 'Welcome A Administrator' is logged in on 12/19/2013. The main area is divided into a left sidebar and a central content area. The sidebar contains 'Libraries' (System Library, Public Library, Group Library) and 'Shared Playlists' (Date, Most Recent, Today). The central area shows a table of call recordings with columns: Date, Duration, Port, Extension, ANI, DNIS, Agent Login, Trunk, and Call Index. A single call recording is listed with the date 12/19/2013 1:22:06 PM, duration 00:01:16, and other details. Below the table is a 'Streaming Player' section for file 01Z1475K.vx8, showing a position of 0:00:19.768 and a recording length of 0:01:16.802. The player includes a waveform and a set of playback controls (play, pause, stop, previous, next, full screen, volume, and a timer).

Date	Duration	Port	Extension	ANI	DNIS	Agent Login	Trunk	Call Index
12/19/2013 1:22:06 PM	00:01:16	20031	20031	19088485601	7328529000	Extn20031	164	429497.4008

8. Conclusion

These Application Notes describe the configuration steps required for dvsAnalytics Encore to successfully interoperate with Avaya IP Office 9.0. All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

9. Additional References

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

1. *Avaya IP Office Manager*, Release 9.0, Issue 9.01, September 2013, Document Number 15-601011, available at <http://support.avaya.com>.
2. *Avaya IP Office with DevLink Pro Integration Guide*, Release 2.3.5, November 13, 2013, available from dvsAnalytics Support.
3. *Avaya IP Office with DevLink Pro Installation Addendum*, Release 2.3.5, November 13, 2013, available from dvsAnalytics Support.

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