



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

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# **Application Notes for TelStrat Engage 4.2.1 with Avaya IP Office 9.1 Using VoIP Recording – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required for TelStrat Engage 4.2.1 to interoperate with Avaya IP Office 9.1 using VoIP recording. TelStrat Engage is a call recording solution.

In the compliance testing, TelStrat Engage used the TAPI interface from Avaya IP Office to monitor hunt group users on Avaya IP Office, and the port mirroring method to capture media associated with the monitored users for recording.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

Information in these Application Notes has been obtained through 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 TelStrat Engage 4.2.1 to interoperate with Avaya IP Office 9.1 using VoIP recording. TelStrat Engage is a call recording solution.

In the compliance testing, TelStrat Engage used TAPI 2 in third party mode from Avaya IP Office to monitor hunt group users on Avaya IP Office. The port mirroring method was used to capture media from the Avaya IP Deskphones that were associated with the monitored users for call recordings.

## 2. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon start of the Engage application, the application established TAPI connectivity to IP Office for monitoring of extensions that can be used by the monitored users.

For the manual part of the testing, each call was handled manually on the agent 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 Engage.

The verification of tests included use of Engage logs for proper message exchanges, and use of Engage web interface for proper logging and playback of 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 Engage:

- Handling of TAPI events.
- Proper recording, logging, and playback of calls for scenarios involving inbound, outbound, internal, external, hunt group, personal, hot desking, non-hot desking, hold/reconnect, transfer, conference, multiple calls, multiple agents, long duration, G.711, G.729, call park, forwarding, music on hold, mute/unmute, media shuffling and non-shuffling.

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

## 2.2. Test Results

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

- In the attended conference scenarios, the first recording for the conference-from user included silence for the period that the conference-from user was conversing with the conference-to user, and the second recording for the conference-from user contained the conversation with the conference-to user.
- In the unattended conference scenarios, two recording entries were produced for the conference-from user. One of the recording entries contained zero length, and the other contained all conversations involving the conference-from user.

## 2.3. Support

Technical support on Engage can be obtained through the following:

- **Phone:** (972) 633-4548
- **Email:** [support@telstrat.com](mailto:support@telstrat.com)

### 3. Reference Configuration

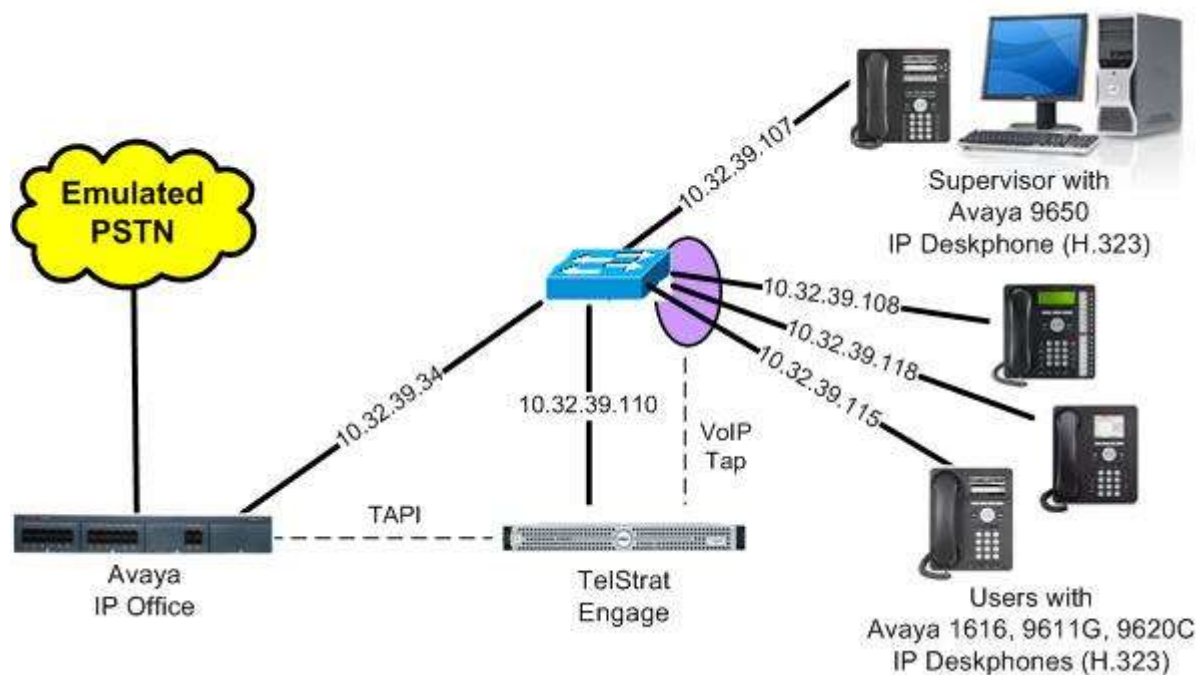
The configuration used for the compliance testing is shown in **Figure 1**.

The detailed administration of IP Office resources 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.

The IP Office resources used in the compliance testing is shown in the table below. In the testing, Engage monitored all activities from three extensions that can be used by two users. User 20031 did not use hot desking, whereas user 20032 used hot desking and can login from either extension 20051 or 20052.

The RTP stream from the Avaya IP Deskphones associated with all three extensions below were mirrored from the layer 2 switch and replicated over to Engage.

Contact Center Devices	Values
Hunt Groups	29000, 29001
Supervisor	20035
Extensions	20031, 20051, 20052
Users	20031, 20032



**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 IP500 V2	9.1.0.437
Avaya 1616 IP Deskphone (H.323)	1.350B
Avaya 9611G IP Deskphone (H.323)	6.4014
Avaya 9620C IP Deskphone (H.323)	3.230A
Avaya 9650 IP Deskphone (H.323)	3.230A
TelStrat Engage on Windows Server 2012 <ul style="list-style-type: none"><li>• Avaya TAPI (tspi2w.tsp)</li></ul>	4.2.1 R2 Standard 1.0.0.41

*Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office 500 V2 only.*

## 5. Configure Avaya IP Office

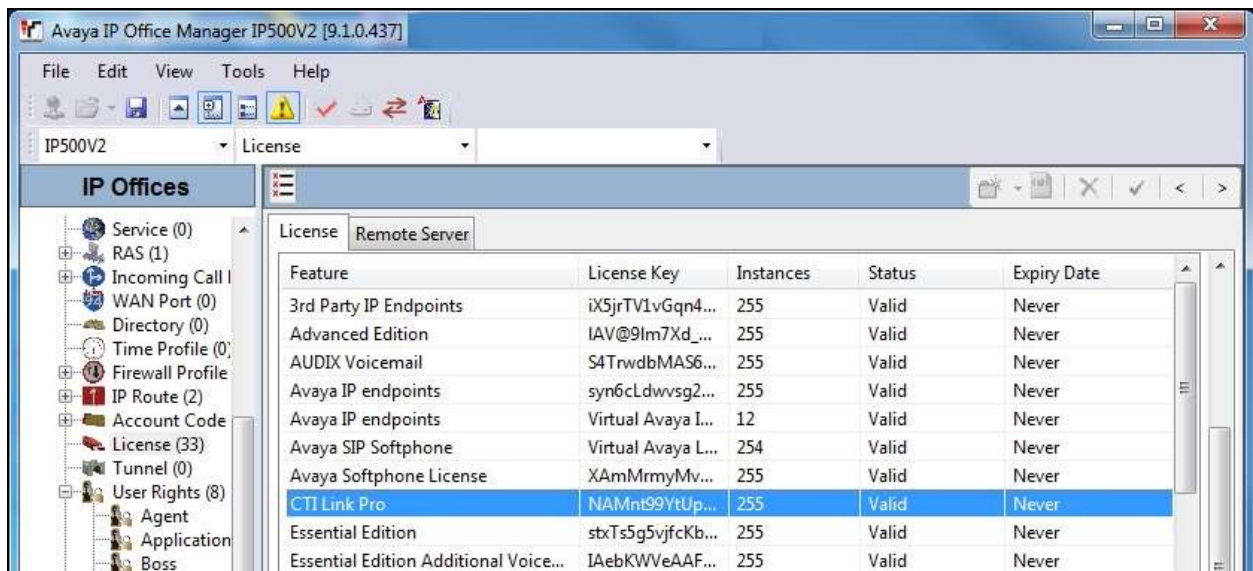
This section provides the procedures for configuring IP Office. The procedures include the following areas:

- Verify license
- Obtain telephone IP addresses

### 5.1. Verify License

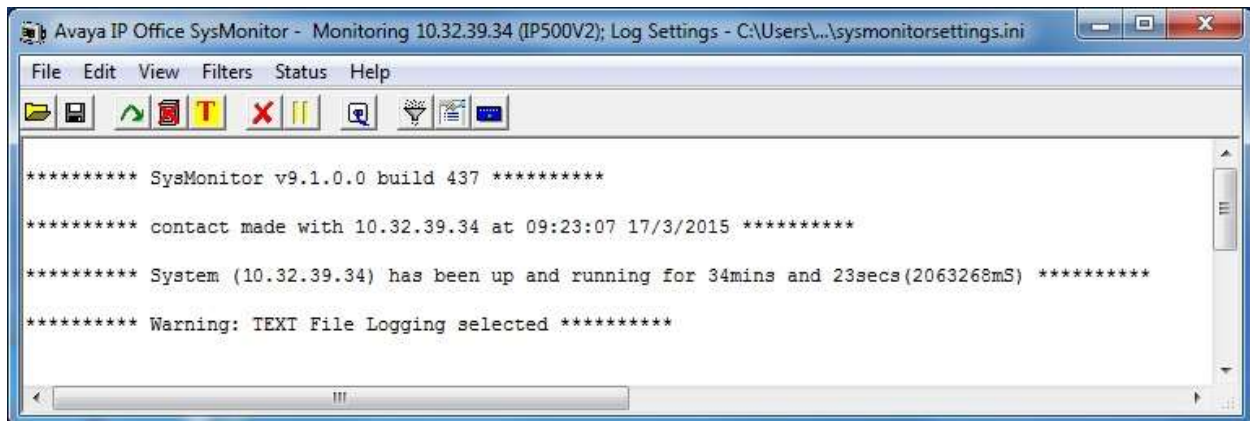
From a PC running the IP Office Manager application, select **Start → Programs → IP Office → Manager** to launch the application. Select the proper IP Office system, and log in using the appropriate credentials.

The **Avaya IP Office 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.

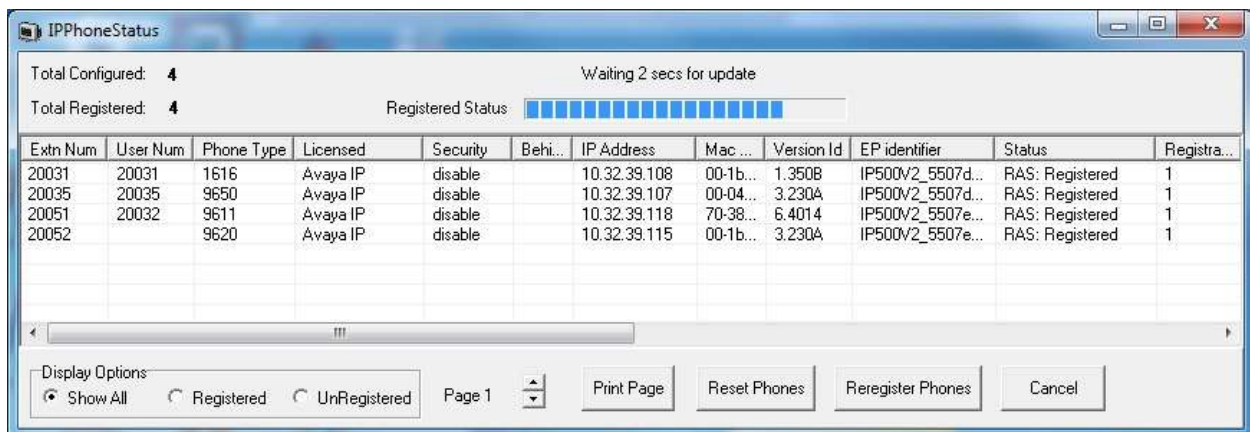


## 5.2. Obtain Telephone IP Address

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 **Extn Num** that the users may be using from **Section 3**.



## 6. Configure TelStrat Engage

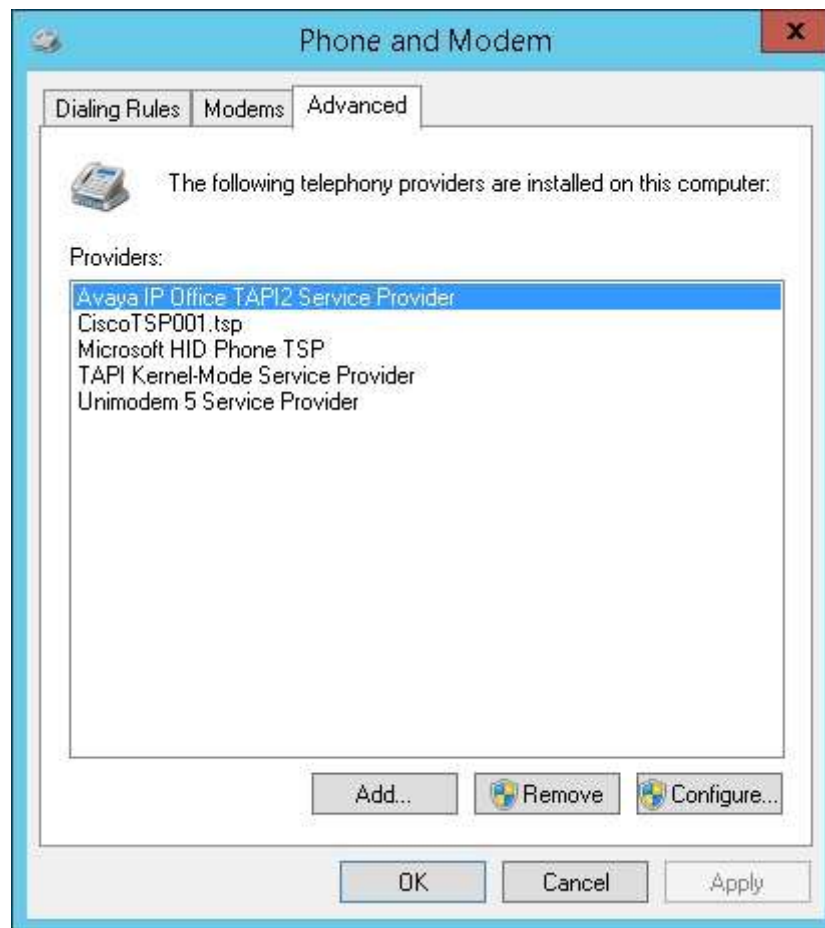
This section provides the procedures for configuring Engage. The procedures include the following areas:

- Administer TAPI driver
- Launch VoIP Engine Configuration
- Administer SPAN configuration
- Administer port mapping

The configuration of Engage is typically performed by TelStrat installation personnel or resellers. The procedural steps are presented in these Application Notes for informational purposes. The Avaya TAPI 2 driver is assumed to be pre-installed on the Engage server.

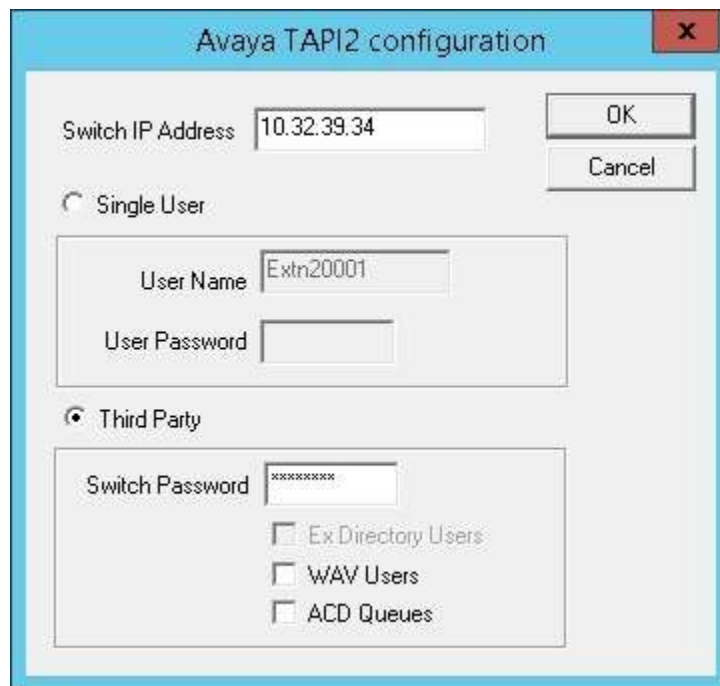
### 6.1. Administer TAPI Driver

From the Engage server, select **Start → Control Panel**, and click on the **Phone and Modem** icon (not shown below). In the displayed **Phone and Modem Options** screen, select the **Advanced** tab. Select the **Avaya IP Office TAPI2 Service Provider** entry, and click **Configure**.





The **Avaya TAPI2 configuration** screen is displayed. For **Switch IP Address**, enter the IP address of IP Office. Select the radio button for **Third Party**, and enter the IP Office password into the **Switch Password** field. Reboot the Engage server.

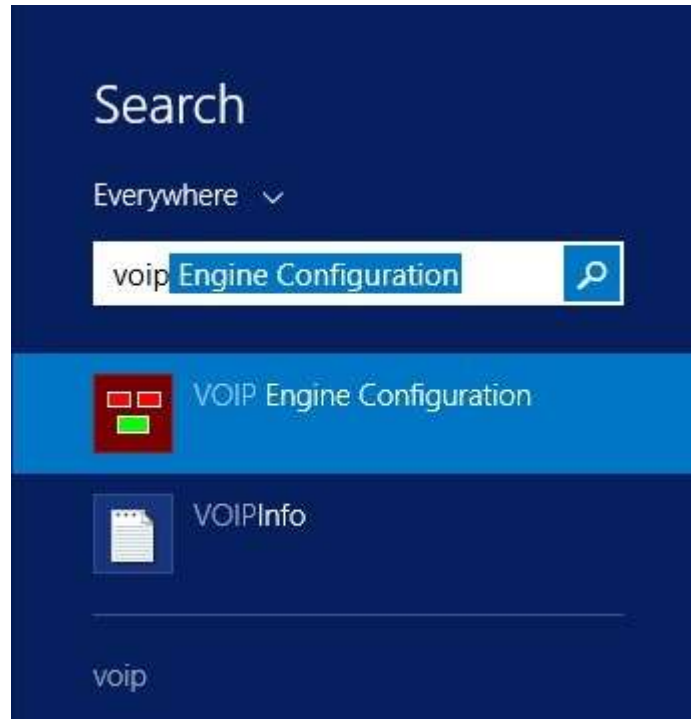


The image shows a Windows-style dialog box titled "Avaya TAPI2 configuration". It has a blue title bar with a red close button (X) in the top right corner. The dialog contains the following fields and controls:

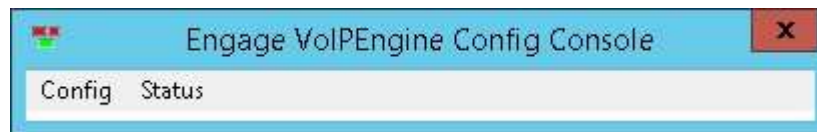
- Switch IP Address:** A text field containing the value "10.32.39.34".
- Buttons:** "OK" and "Cancel" buttons are located to the right of the IP address field.
- Single User:** A radio button option, currently unselected.
- User Name:** A text field containing the value "Extn20001", located below the "Single User" option.
- User Password:** An empty text field located below the "User Name" field.
- Third Party:** A radio button option, currently selected.
- Switch Password:** A text field containing a masked password (represented by asterisks), located below the "Third Party" option.
- Checkboxes:** Below the "Switch Password" field, there are three unchecked checkboxes:
  - ☐ Ex Directory Users
  - ☐ WAV Users
  - ☐ ACD Queues

## 6.2. Launch VoIP Engine Configuration

From the Engage server, enter “voip” anywhere on the desktop to locate **VOIP Engine Configuration**. Click on the pertinent entry from the result to launch the application.

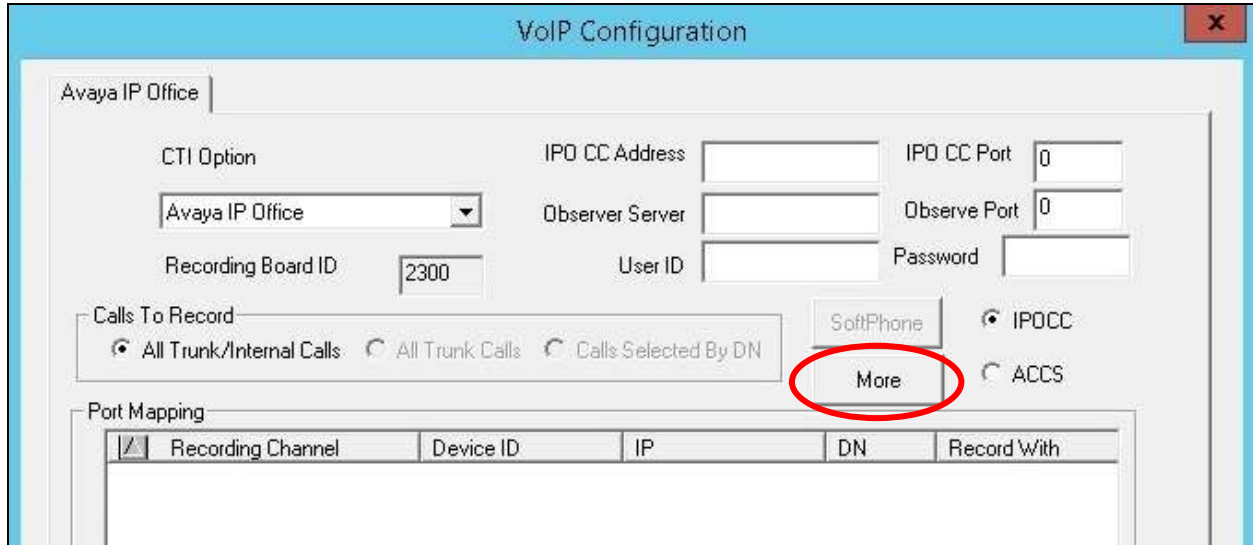


The **Engage VoIP Engine Config Console** screen below is displayed. Click **Config**.



### 6.3. Administer SPAN Configuration

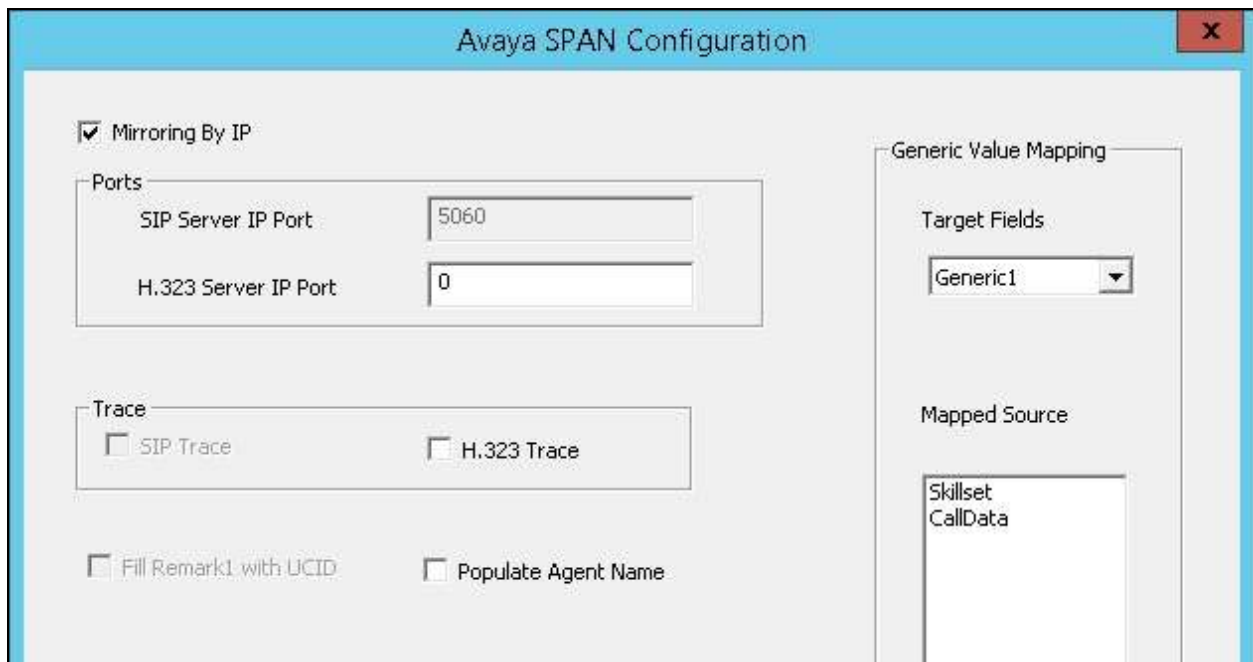
The **VoIP Configuration** screen is displayed. For **CTI Option**, select **Avaya IP Office** from the drop-down list. Click **More**.



The screenshot shows the 'VoIP Configuration' window. The 'CTI Option' dropdown is set to 'Avaya IP Office'. The 'Recording Board ID' is '2300'. Under 'Calls To Record', 'All Trunk/Internal Calls' is selected. The 'More' button is circled in red. Other fields include 'IPO CC Address', 'IPO CC Port', 'Observer Server', 'Observe Port', 'User ID', and 'Password'. There are also buttons for 'SoftPhone', 'IPOCC', and 'ACCS'.

Recording Channel	Device ID	IP	DN	Record With
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The **Avaya SPAN Configuration** screen is displayed next. Check **Mirroring By IP** to enable device mapping by IP addresses, and make certain **Populate Agent Name** is unchecked.



The screenshot shows the 'Avaya SPAN Configuration' window. The 'Mirroring By IP' checkbox is checked. Under 'Ports', 'SIP Server IP Port' is '5060' and 'H.323 Server IP Port' is '0'. Under 'Trace', 'SIP Trace' and 'H.323 Trace' are unchecked. At the bottom, 'Fill Remark1 with UCID' and 'Populate Agent Name' are unchecked. On the right, 'Generic Value Mapping' shows 'Target Fields' set to 'Generic1' and 'Mapped Source' with a list containing 'Skillset' and 'CallData'.

## 6.4. Administer Port Mapping

The **VoIP Configuration** screen is displayed again. Right click in the empty screen and select **ADD**.

The screenshot shows the 'VoIP Configuration' window. The 'Avaya IP Office' tab is selected. The 'Calls To Record' section has three radio buttons: 'All Trunk/Internal Calls' (selected), 'All Trunk Calls', and 'Calls Selected By DN'. The 'Port Mapping' section contains a table with columns: Recording Channel, Device ID, IP, DN, and Record With. A context menu is open over the table, showing options: ADD, Delete, Modify, Import file, Export File, and Acquire via TAPI. The 'ADD' option is highlighted. At the bottom, there are fields for 'No. of Log Files' (set to 10), 'Config File Location', 'Other Parameters', and buttons for 'OK' and 'Cancel'.

VoIP Configuration

Avaya IP Office

CTI Option: Avaya IP Office

IPO CC Address: [ ] IPO CC Port: 0

Observer Server: [ ] Observe Port: 0

Recording Board ID: 2300 User ID: [ ] Password: [ ]

Calls To Record:

- ☒ All Trunk/Internal Calls
- ☐ All Trunk Calls
- ☐ Calls Selected By DN

SoftPhone IPOCC

More ACCS

Port Mapping

Recording Channel	Device ID	IP	DN	Record With
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ADD

Delete

Modify

Import file

Export File

Acquire via TAPI

No. of Log Files: 10 Config File Location: [ ] Other Parameters: [ ] OK Cancel

The **Device And CommSrv Port Mapping** screen is displayed. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Device ID:** The first extension from **Section 3**.
- **IP:** The IP address associated with the extension from **Section 5.2**.
- **DN:** "\*" as wild card to allow use of device by any user.
- **Recording Channel:** An available port.

Device And CommSrv Port Mapping

Device ID: 20031

IP: 10.32.39.108

DN: \*

Recording Channel: 101

Calls To Record

☒ Trunk/Internal Calls ☐ Trunk Calls

Recording Stream

☒ Mirroring

Beep Tone: No

☐ HotDesk DN

Add Cancel

Repeat this section to create a port mapping for each extension from **Section 3**.

In the compliance testing, three entries were created, as shown below.

The image shows a 'VoIP Configuration' dialog box with a tab labeled 'Avaya IP Office'. The configuration includes fields for CTI Option (set to 'Avaya IP Office'), ACCS Address, ACCS Port (0), Domain, Recording Board ID (2300), User ID, and Password. Under 'Calls To Record', 'All Trunk/Internal Calls' is selected. There are buttons for 'SoftPhone', 'More', 'IPOCC', and 'ACCS'. A 'Port Mapping' section contains a table with three entries. At the bottom, there are fields for 'No. of Log Files' (10), 'Config File Location', 'Other Parameters', and 'OK'/'Cancel' buttons.

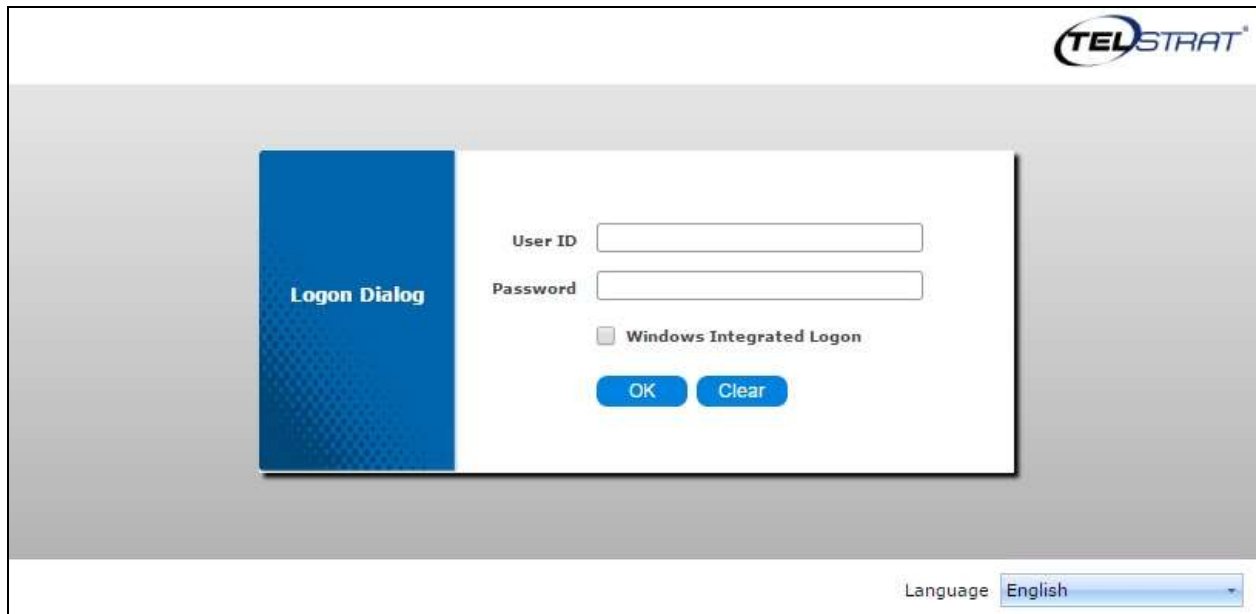
	Recording Channel	Device ID	Mac Address	DN	Record With
	101	20031	10.32.39.108	*	Mirroring
	102	20051	10.32.39.118	*	Mirroring
	103	20052	10.32.39.115	*	Mirroring

## 7. Verification Steps

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

Log a user in to handle and complete a hunt group call. Access the Engage web-based interface by using the URL “http://ip-address/engage” in an Internet browser window, where “ip-address” is the IP address of the Engage server.

The **Logon Dialog** screen below is displayed. Log in using the appropriate credentials.



TELSTRAT®

**Logon Dialog**

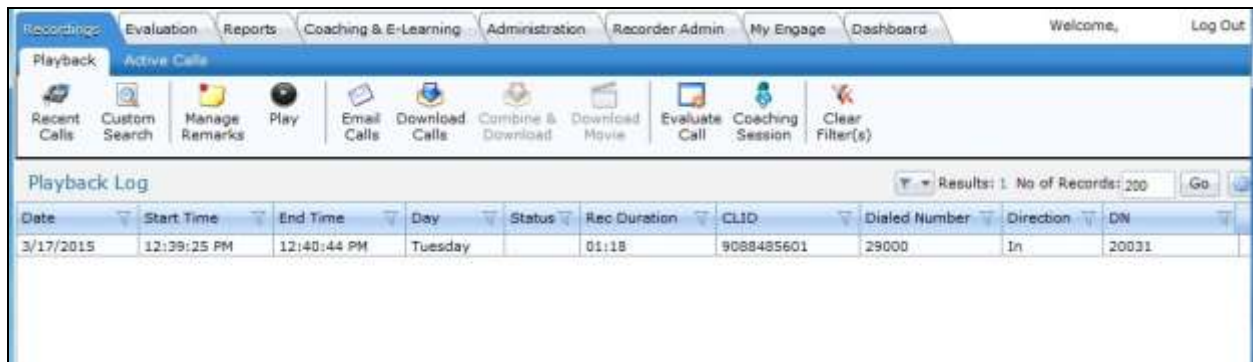
User ID

Password

☐ Windows Integrated Logon

Language English

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



The screenshot shows the TelStrat interface with the 'Playback Log' table. The table has columns for Date, Start Time, End Time, Day, Status, Rec Duration, CLID, Dialed Number, Direction, and DN. A single record is displayed for 3/17/2015 at 12:39:25 PM to 12:40:44 PM.

Date	Start Time	End Time	Day	Status	Rec Duration	CLID	Dialed Number	Direction	DN
3/17/2015	12:39:25 PM	12:40:44 PM	Tuesday		01:18	9088485601	29000	In	20031

Double click on the entry and verify that the call recording can be played back.



The screenshot shows the TelStrat interface with the call recording playback player. The player displays a waveform and a progress bar. The call ID is visible as http://10.32.39.110/Engage/PlaybackURL/PlayURL?UID=150317123925230010.

Call ID: <http://10.32.39.110/Engage/PlaybackURL/PlayURL?UID=150317123925230010>

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## 8. Conclusion

These Application Notes describe the configuration steps required for TelStrat Engage 4.2.1 to successfully interoperate with Avaya IP Office 9.1 using VoIP recording. 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. *Administering Avaya IP Office™ Platform with Manager*, Release 9.1.0, Issue 10.03, February 2015, available at <http://support.avaya.com>.
2. *Server Installation Guide Engage Voice Recorder*, Product Release 4.2, Issue 1.5, available on the installation CD.
3. *Configuration Requirements for Avaya IP Office (PBX only)*, Release 4.2, Issue 1.2, available on the installation CD.

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