Avaya Solution & Interoperability Test Lab

Application Notes for TelStrat Engage 4.2.1 with Avaya IP Office Server Edition 9.1 – Issue 1.0

Abstract

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

The Avaya IP Office Server Edition configuration consisted of two Avaya IP Office nodes, a primary Linux server at the Main site and an expansion IP500V2 at the Remote site that were connected via Small Community Network trunks. In the compliance testing, two TelStrat Engage servers used the TAPI interface from the local Avaya IP Office node to monitor hunt group users with Avaya IP Deskphones on the local node, and used the port mirroring method to capture media associated with the monitored users for call 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 Server Edition 9.1. TelStrat Engage is a call recording solution.

The Avaya IP Office Server Edition configuration consisted of two Avaya IP Office nodes, a primary Linux server at the Main site and an expansion IP500V2 at the Remote site that were connected via Small Community Network (SCN) trunks. In the compliance testing, two TelStrat Engage servers used TAPI 2 in third party mode from the local Avaya IP Office node to monitor hunt group users with Avaya IP Deskphones on the local node, and used the port mirroring method to capture media associated with the monitored users for call recording.

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 the local IP Office node for monitoring of extensions that can be used by the users to be recorded.

For the manual part of the testing, each call was handled manually on the user telephone with generation of unique audio content for the recording. 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 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 local node scenarios involving inbound, outbound, internal, external, hunt group, personal, hot desking, non-hot desking, hold/reconnect, transfer, conference, multiple calls, multiple users, long duration, G.711, G.729, call park, forwarding, music on hold, mute/unmute, media shuffling and non-shuffling.

- Proper recording, logging, and playback of calls for cross nodes scenarios involving distributed hunt groups, PSTN, hot desking, transfer, conference, internal, call park, forwarding, follow me, overflow, fallback, and resiliency.

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.

- In the local node hot desking scenarios, the Agent ID parameter in the recording entries reported blank when the user hot desked into an extension **after** start of Engage. If the user was already hot desked into the extension **before** start of Engage, then the Agent ID parameter contained the user number.

- In the cross node hot desking scenarios, calls associated with the hot desking user were not recorded regardless of when the hot desking took place.

- For cross node call scenarios, each Engage server recorded the portion of the conversation associated with the local monitored user by design.

- For cross node resiliency scenarios, where IP phones on IP500V2 failed over and registered with the primary Linux server, calls associated with the failed over IP phones were not recorded.

2.3. Support

Technical support on Engage can be obtained through the following:

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

3. Reference Configuration

The IP Office Server Edition configuration used in compliance testing consisted of a primary Linux server at the Main site, and an expansion IP500V2 at the Remote site, with SCN trunks connectivity between the two nodes. Each IP Office node had connectivity to the PSTN, for testing cross-nodes PSTN scenarios.

As shown in **Figure 1** below, each site has an Engage server monitoring activities from two local extensions that can be used by the hunt group users. The RTP stream from the monitored extensions with Avaya IP Deskphones were mirrored from the local layer 2 switch and replicated over to the local Engage.

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 switches is also outside the scope of these Application Notes and will not be described.

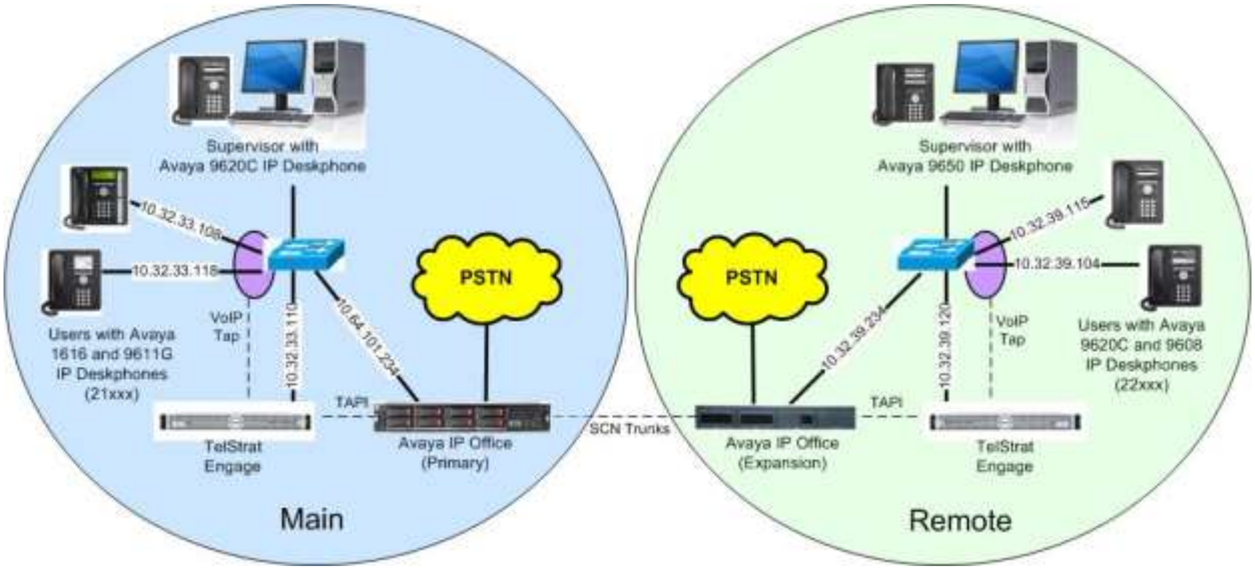


Figure 1: Compliance Testing Configuration

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Main Site	
Avaya IP Office Server Edition (Primary)	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
TelStrat Engage on Windows Server 2012 • VoIPEngine.exe • Avaya TAPI (tspi2w.tsp)	4.2.1 R2 Standard 4.2.1.21 1.0.0.41
Remote Site	
Avaya IP Office on IP500 V2 (Expansion)	9.1.0.437
Avaya 9608 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 2008 • VoIPEngine.exe • Avaya TAPI (tspi2w.tsp)	4.2.1 R2 Standard 4.2.1.21 1.0.0.41

Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office 500 V2 and also when deployed with IP Office Server Edition in all configurations.

5. Configure Avaya IP Office

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

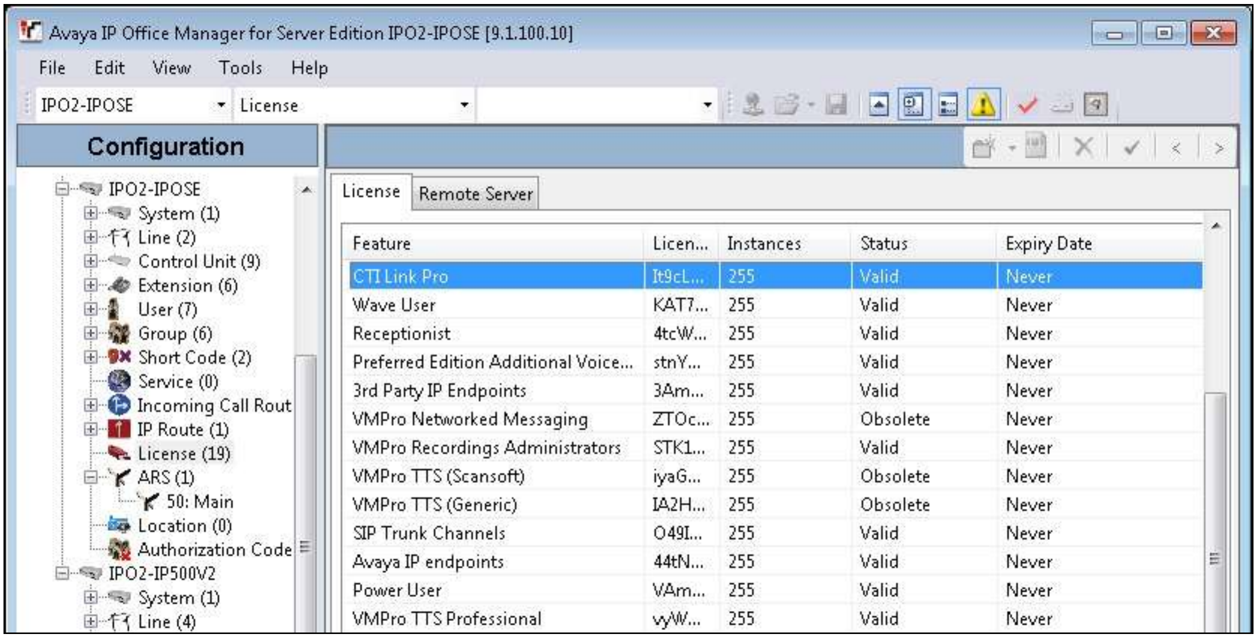
- Verify license
- Obtain telephone IP addresses

The screenshots in this section were captured from the primary IP Office on the Main site. The same procedures need to be repeated for the expansion IP Office on the Remote site.

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.

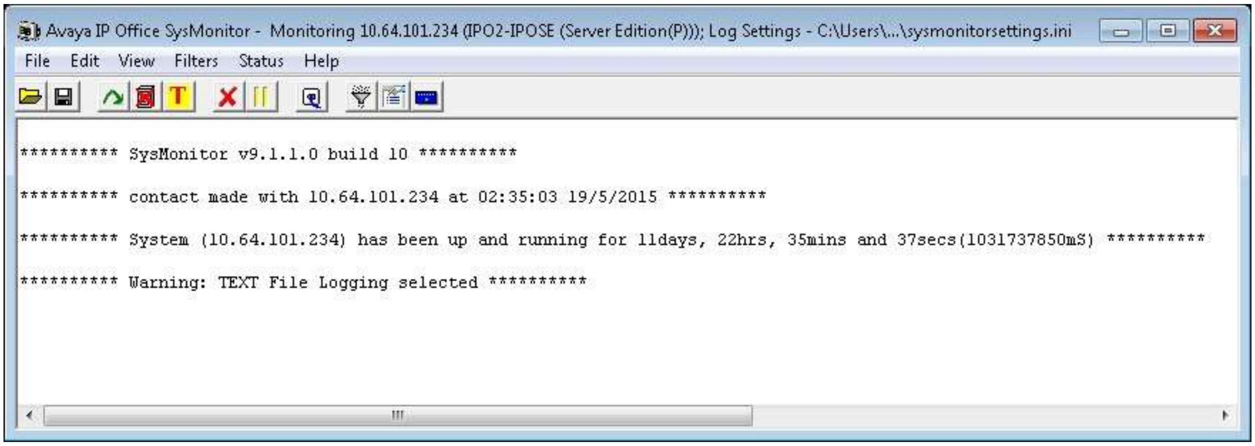
The **Avaya IP Office Manager** screen is displayed. From the configuration tree in the left pane, select **License** under the applicable IP Office node to display a list of licenses in the right pane. Verify that there is a license for **CTI Link Pro** and that the **Status** is "Valid", as shown below.



Feature	Licen...	Instances	Status	Expiry Date
CTI Link Pro	It9cL...	255	Valid	Never
Wave User	KAT7...	255	Valid	Never
Receptionist	4tcW...	255	Valid	Never
Preferred Edition Additional Voice...	stnY...	255	Valid	Never
3rd Party IP Endpoints	3Am...	255	Valid	Never
VMPro Networked Messaging	ZTOc...	255	Obsolete	Never
VMPro Recordings Administrators	STK1...	255	Valid	Never
VMPro TTS (Scansoft)	iyaG...	255	Obsolete	Never
VMPro TTS (Generic)	IA2H...	255	Obsolete	Never
SIP Trunk Channels	O49I...	255	Valid	Never
Avaya IP endpoints	44tN...	255	Valid	Never
Power User	VAm...	255	Valid	Never
VMPro TTS Professional	vyW...	255	Valid	Never

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 and connect to the applicable IP Office node. The **Avaya IP Office SysMonitor** screen is displayed, as shown below. Select **Status → H323 Phone Status** from the top menu.

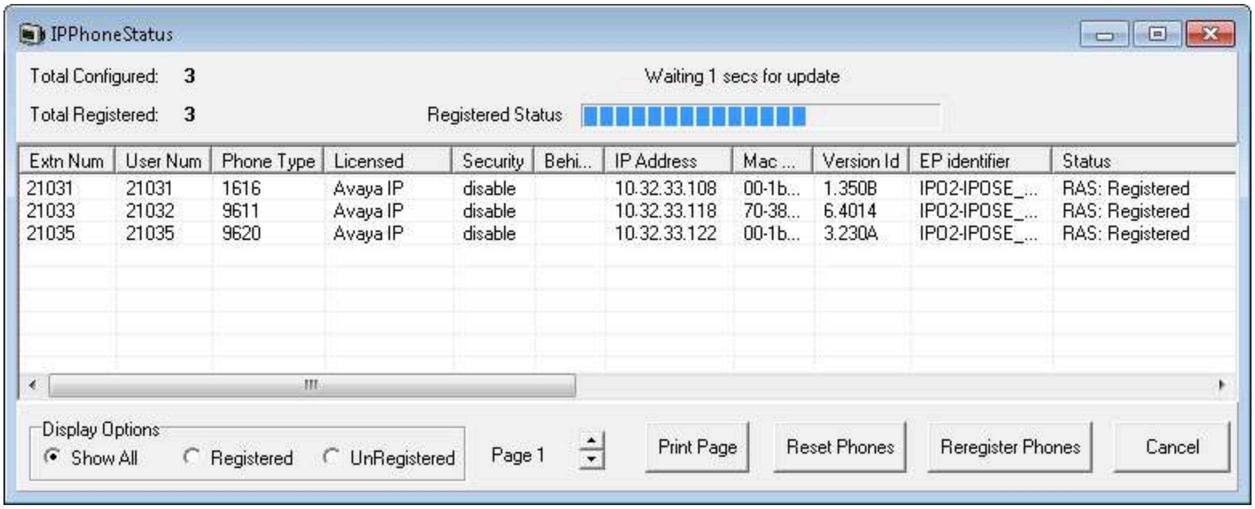


Avaya IP Office SysMonitor - Monitoring 10.64.101.234 (IPO2-IPOSE (Server Edition(P))); Log Settings - C:\Users\...\sysmonitorsettings.ini
File Edit View Filters Status Help

```
********** SysMonitor v9.1.1.0 build 10 **********

********** contact made with 10.64.101.234 at 02:35:03 19/5/2015 **********

********** System (10.64.101.234) has been up and running for 11days, 22hrs, 35mins and 37secs(1031737850mS) **********

********** Warning: TEXT File Logging selected **********
```

The **IPPhoneStatus** screen is displayed. Make a note of the **IP Address** associated with each **Extn Num** that the hunt group users may be using.

In this case, the monitored extensions for the Main site are 21031 and 21033. Extension 21031 was used by non-hot-desking user 21031, whereas extension 21033 was used by hot-desking user 21032. Extension 21035 was used by the non-monitored supervisor, for scenarios involving non-monitored users.



Total Configured: 3
Total Registered: 3

Extn Num	User Num	Phone Type	Licensed	Security	Behi...	IP Address	Mac ...	Version Id	EP identifier	Status
21031	21031	1616	Avaya IP	disable		10.32.33.108	00-1b...	1.350B	IPO2-IPOSE_...	RAS: Registered
21033	21032	9611	Avaya IP	disable		10.32.33.118	70-38...	6.4014	IPO2-IPOSE_...	RAS: Registered
21035	21035	9620	Avaya IP	disable		10.32.33.122	00-1b...	3.230A	IPO2-IPOSE_...	RAS: Registered

6. Configure TelStrat Engage

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

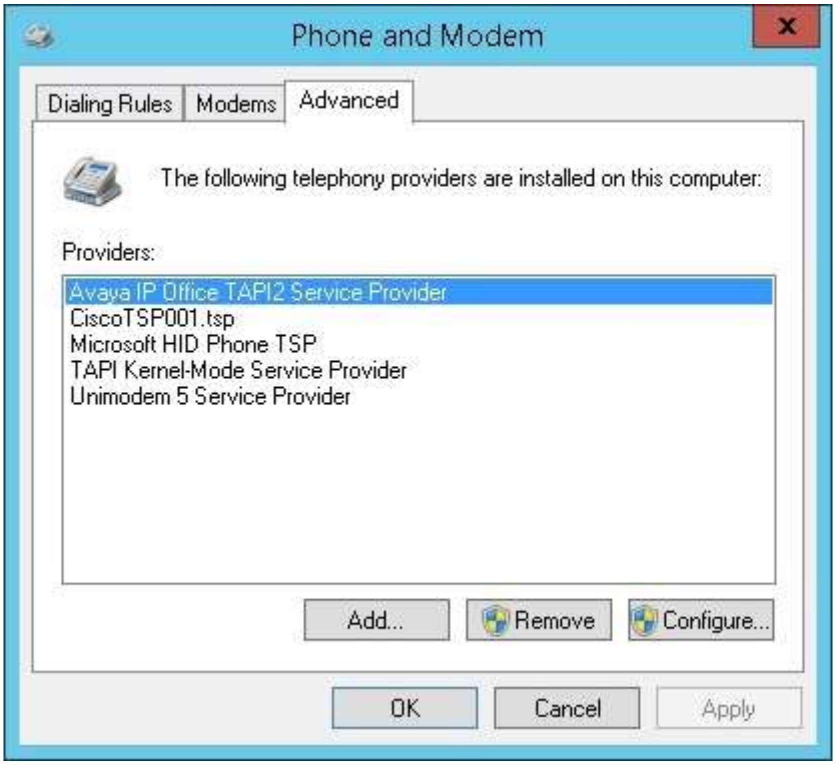
- Administer TAPI driver
- Launch VoIP Engine Configuration
- Administer SPAN configuration
- Administer port mapping

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.

The screenshots in this section were captured from the Engage server connected to the primary IP Office on the Main site. The same procedures need to be repeated for the Engage server connected to the expansion IP Office on the Remote site.

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**.

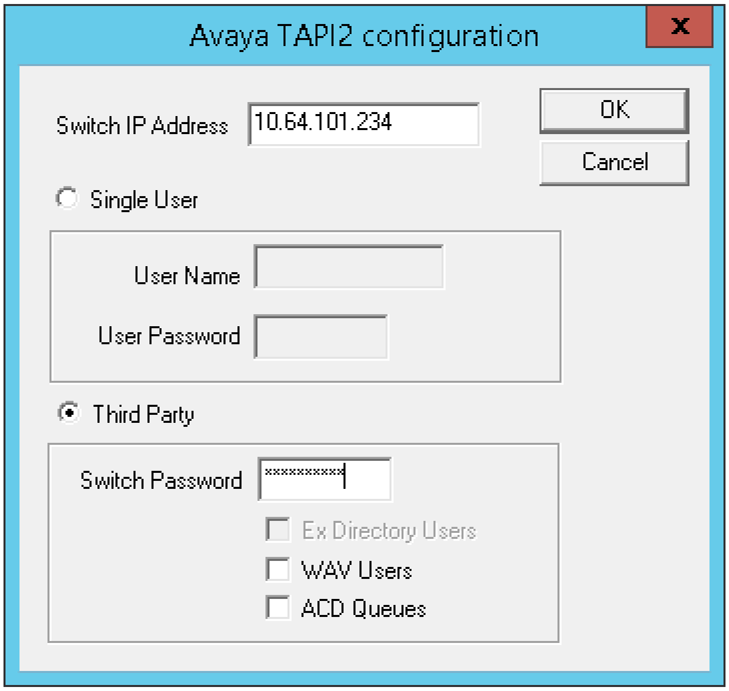


The following telephony providers are installed on this computer:

Providers:

Avaya IP Office TAPI2 Service Provider
CiscoTSP001.tsp
Microsoft HID Phone TSP
TAPI Kernel-Mode Service Provider
Unimodem 5 Service Provider

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



Avaya TAPI2 configuration

Switch IP Address: 10.64.101.234

○ Single User

User Name:

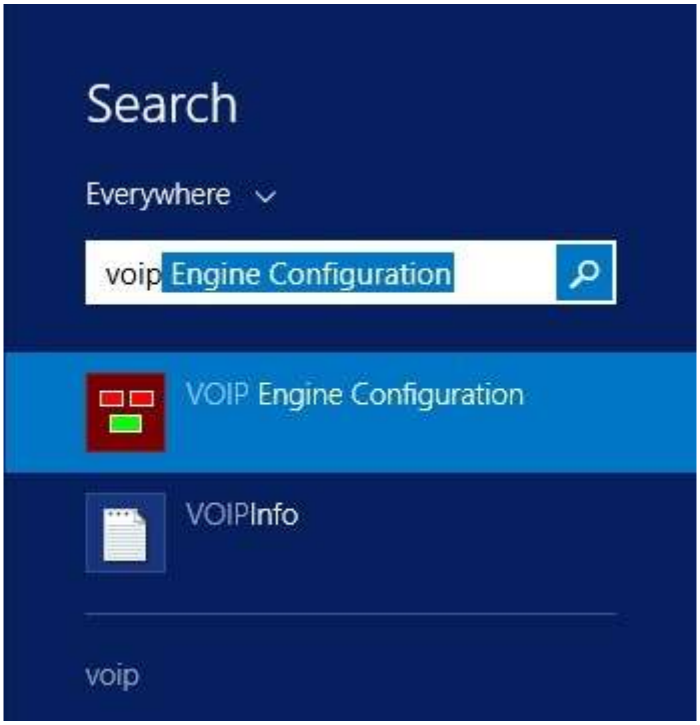
User Password:

● Third Party

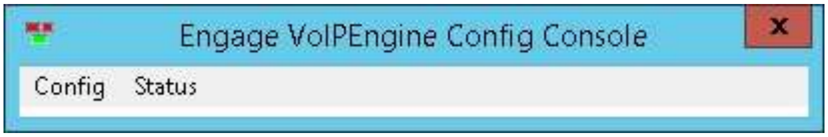
Switch Password: **********

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.

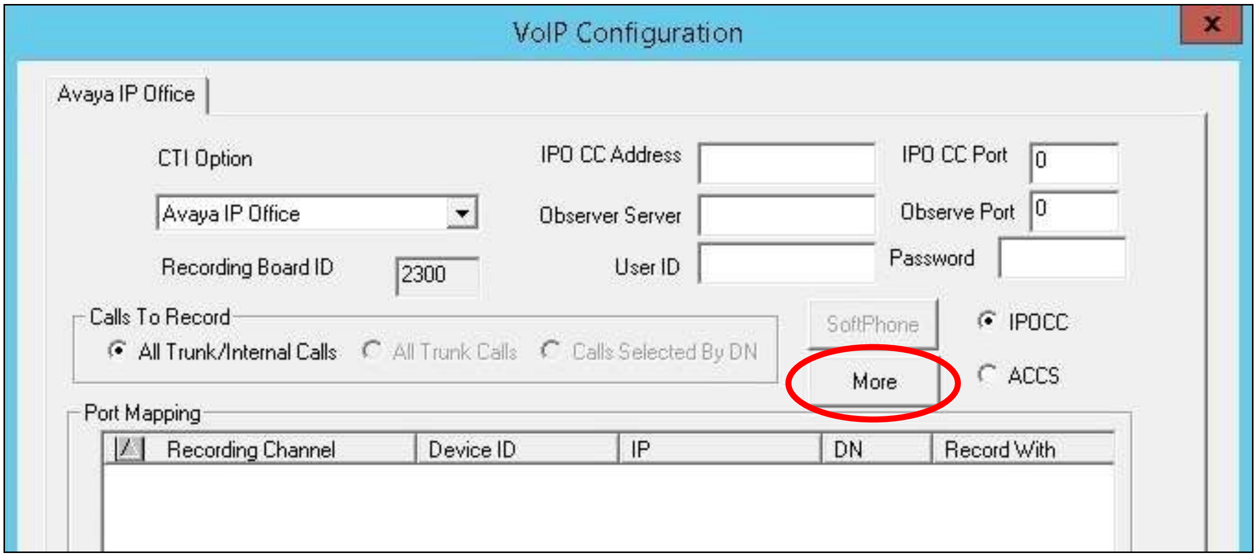


The **Engage VoIPEngine Config Console** screen below is displayed. Click **Config**.



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**.



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:

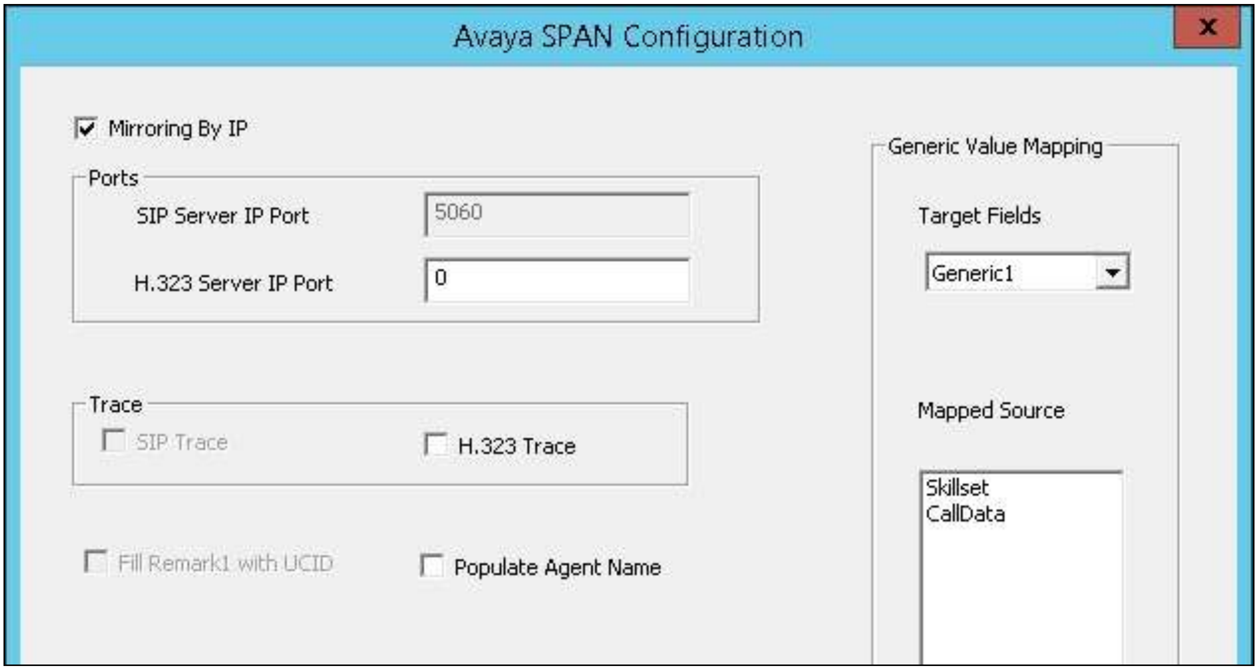
Calls To Record: ● All Trunk/Internal Calls ○ All Trunk Calls ○ Calls Selected By DN

● IPOCC ○ ACCS

Port Mapping

Recording Channel	Device ID	IP	DN	Record With

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.



Avaya SPAN Configuration

☑ Mirroring By IP

Ports

SIP Server IP Port: 5060

H.323 Server IP Port: 0

Trace

□ SIP Trace □ H.323 Trace

□ Fill Remark1 with UCID □ Populate Agent Name

Generic Value Mapping

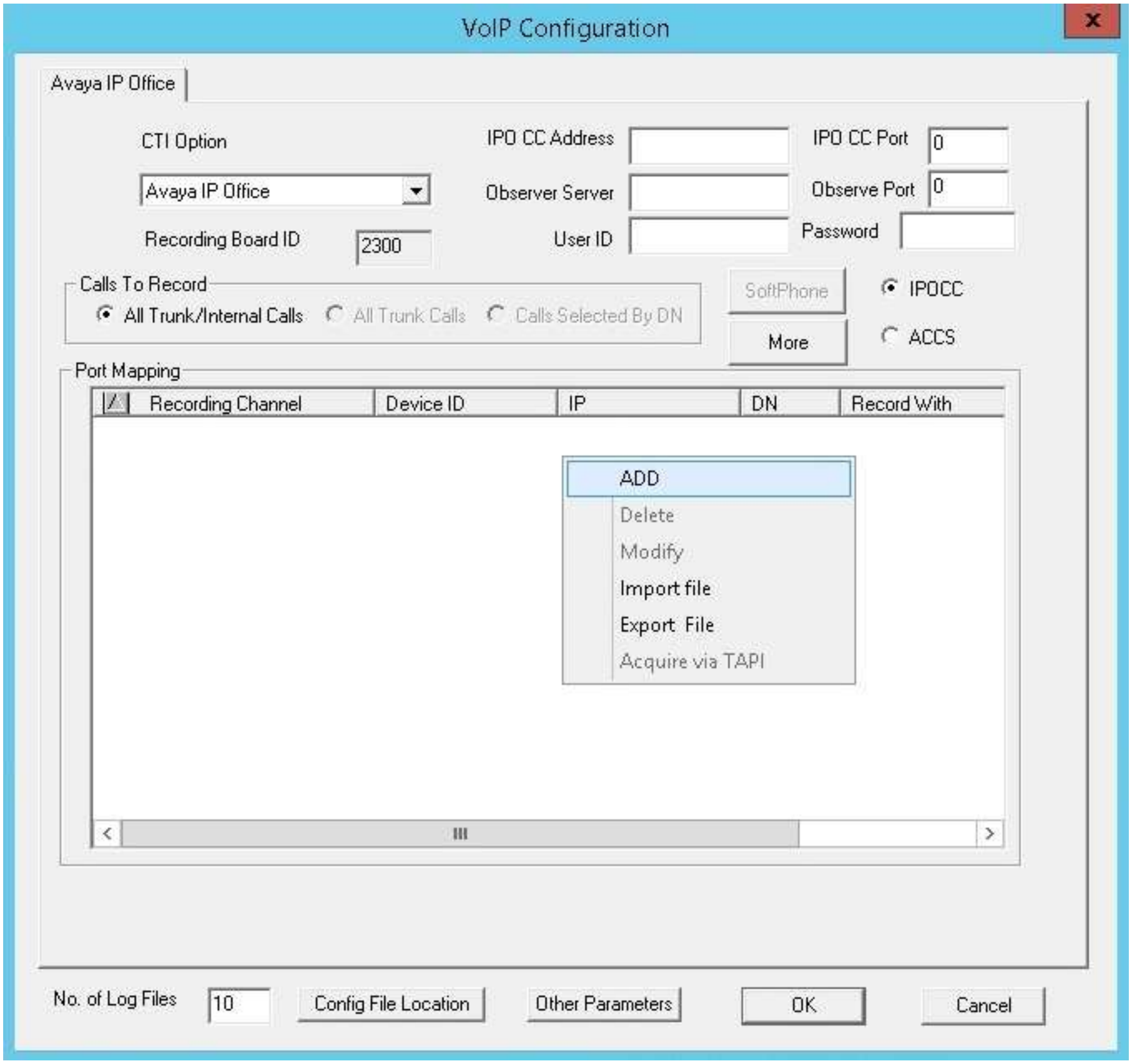
Target Fields: Generic1

Mapped Source:

Skillset
CallData

6.4. Administer Port Mapping

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



VoIP Configuration

Avaya IP Office

CTI Option: Avaya IP Office

Recording Board ID: 2300

IPO CC Address:

Observer Server:

User ID:

IPO CC Port: 0

Observe Port: 0

Password:

Calls To Record: ● All Trunk/Internal Calls ○ All Trunk Calls ○ Calls Selected By DN

● IPOCC ○ ACCS

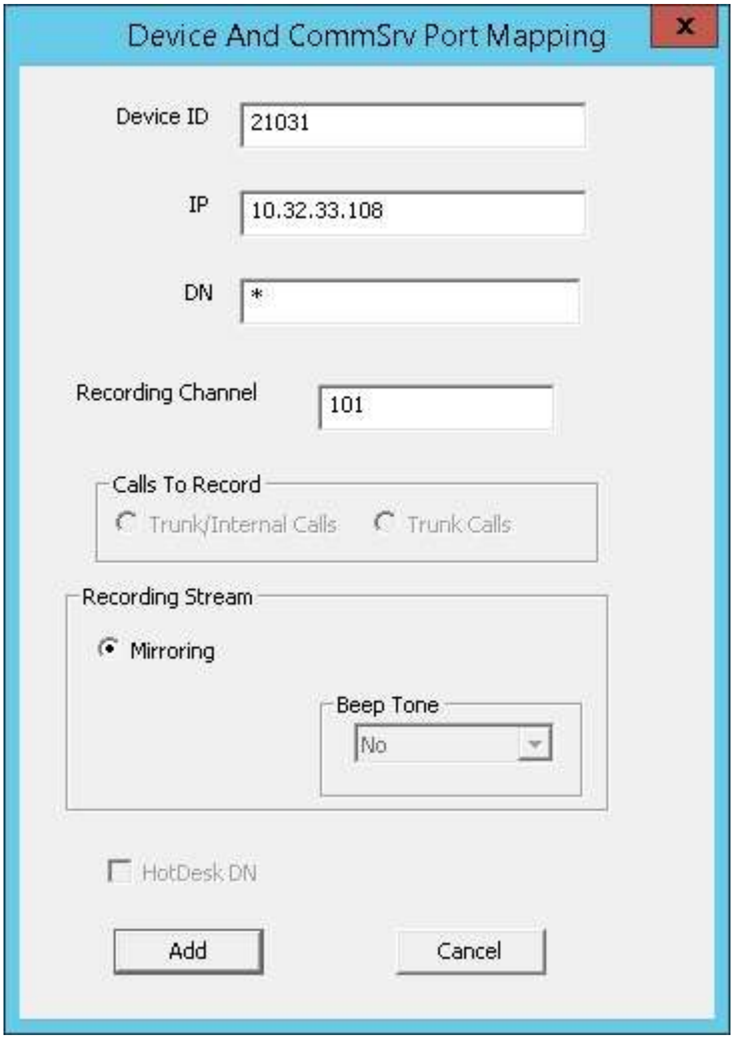
Port Mapping

Recording Channel	Device ID	IP	DN	Record With

No. of Log Files: 10

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 to monitor from **Section 5.2**.
- **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 21031

IP 10.32.33.108

DN *

Recording Channel 101

Calls To Record

○ Trunk/Internal Calls ○ Trunk Calls

Recording Stream

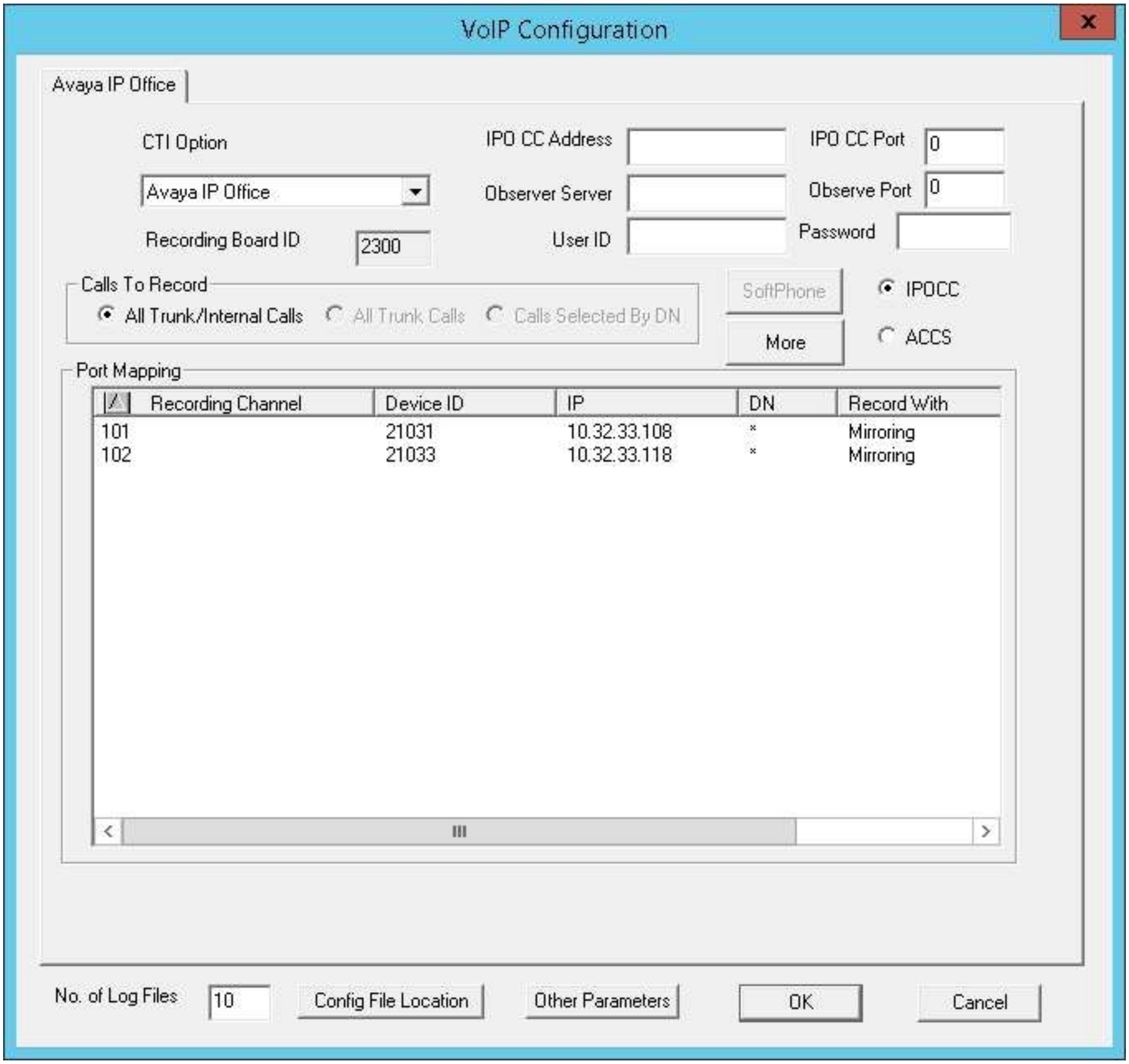
● Mirroring

Beep Tone No

□ HotDesk DN

Repeat this section to create a port mapping for each extension to monitor from **Section 5.2**.

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



CTI Option: Avaya IP Office

Recording Board ID: 2300

IPO CC Address:

Observer Server:

User ID:

IPO CC Port: 0

Observe Port: 0

Password:

Calls To Record: ● All Trunk/Internal Calls ○ All Trunk Calls ○ Calls Selected By DN

● IPOCC ○ ACCS

Port Mapping

Recording Channel	Device ID	IP	DN	Record With
101	21031	10.32.33.108	*	Mirroring
102	21033	10.32.33.118	*	Mirroring

No. of Log Files: 10

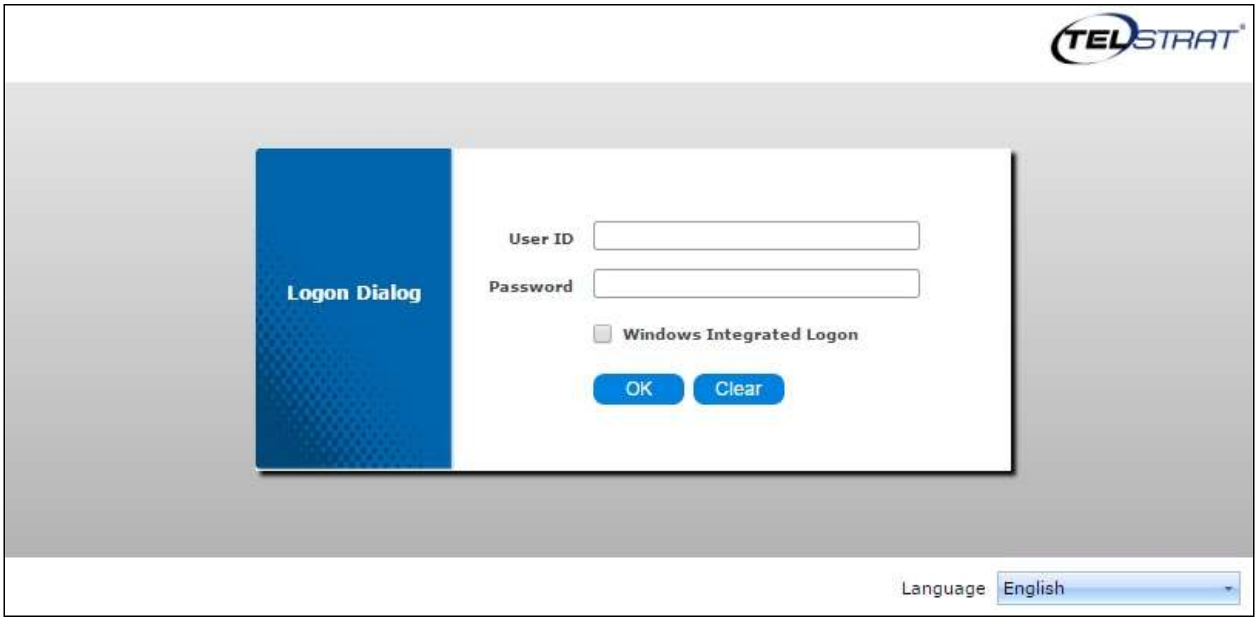
7. Verification Steps

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

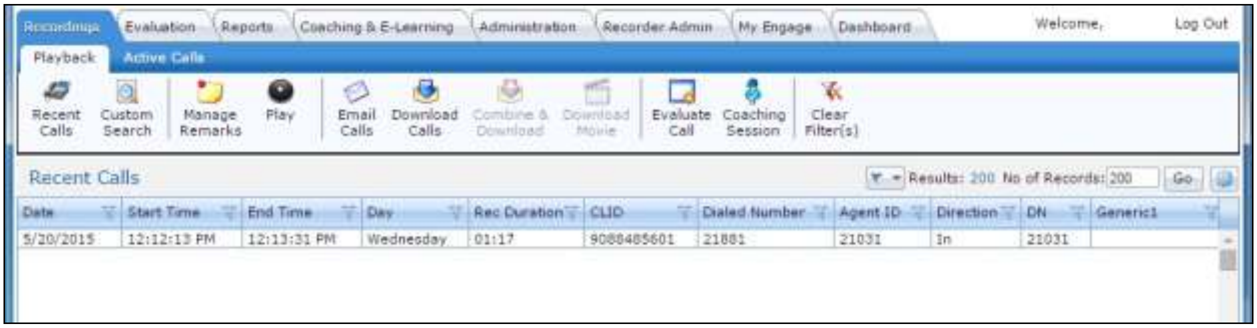
7.1. Verify Main Site

Complete a call from the PSTN to a distributed hunt group with answering user on the Main site. 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 in the Main site.

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



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. In this case, the **Dialed Number** is the distributed group extension “21881”, and the **Agent ID** and **DN** is “21031”, which is a hunt group user on the Main site.

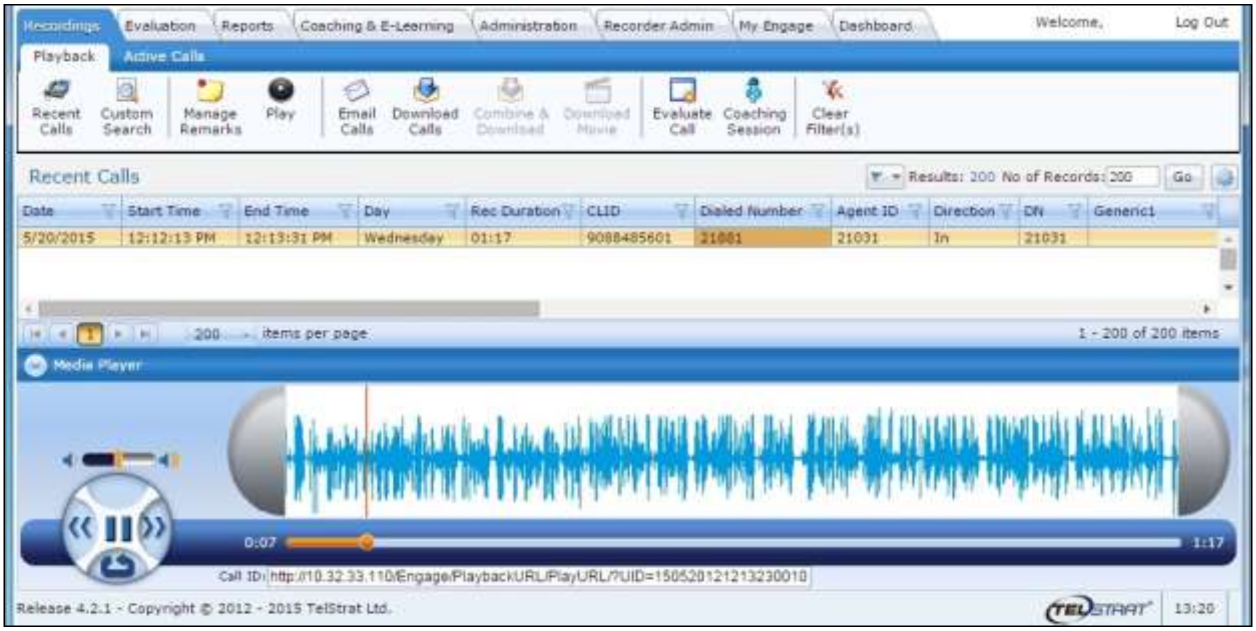


Recent Calls

Results: 200 No of Records: 200

Date	Start Time	End Time	Day	Rec Duration	CLID	Dialed Number	Agent ID	Direction	DN	Generic1
5/20/2015	12:12:13 PM	12:13:31 PM	Wednesday	01:17	9088485601	21881	21031	In	21031	

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



Recent Calls

Results: 200 No of Records: 200

Date	Start Time	End Time	Day	Rec Duration	CLID	Dialed Number	Agent ID	Direction	DN	Generic1
5/20/2015	12:12:13 PM	12:13:31 PM	Wednesday	01:17	9088485601	21881	21031	In	21031	

1 200 items per page 1 - 200 of 200 items

Call ID: http://10.32.33.110/Engage/PlaybackURL/PlayURL/?UID=150520121213230010

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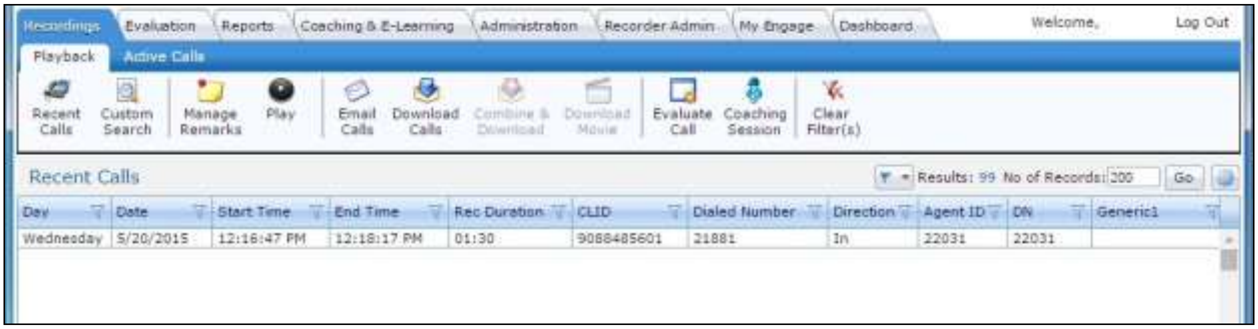
7.2. Verify Remote Site

Complete a call from the PSTN to a distributed hunt group with answering user on the Remote site. 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 in the Remote site. Log in using the appropriate credentials.

Verify that there is an entry reflecting the last call, with proper values in the relevant fields. In this case, the **Dialed Number** is the distributed group extension “21881”, and the **Agent ID** and **DN** is “22031”, which is a hunt group user on the Remote site.

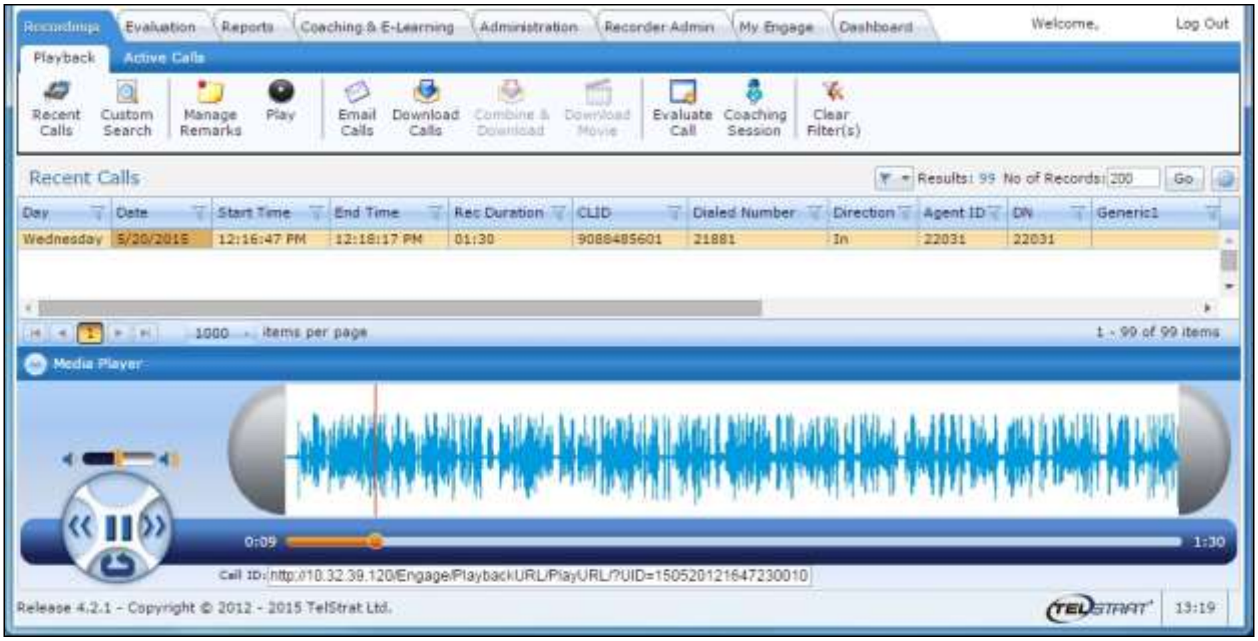


Recent Calls

Results: 99 No of Records: 200

Day	Date	Start Time	End Time	Rec Duration	CLID	Dialed Number	Direction	Agent ID	DN	Generic1
Wednesday	5/20/2015	12:16:47 PM	12:18:17 PM	01:30	9088485601	21881	In	22031	22031	

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



Recent Calls

Results: 99 No of Records: 200

Day	Date	Start Time	End Time	Rec Duration	CLID	Dialed Number	Direction	Agent ID	DN	Generic1
Wednesday	5/20/2015	12:16:47 PM	12:18:17 PM	01:30	9088485601	21881	In	22031	22031	

1000 items per page 1 - 99 of 99 items

Call ID: http://10.32.39.120/Engage/PlaybackURL/PlayURL/?UID=150520121647230010

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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 Server Edition 9.1.   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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