Avaya Solution & Interoperability Test Lab

Application Notes for CSI Virtual Observer with Avaya Contact Center Select 7 and Avaya IP Office Server Edition 10 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for CSI Virtual Observer to interoperate with Avaya Contact Center Select 7 and Avaya IP Office Server Edition 10. CSI Virtual Observer is a call recording solution.

The Avaya IP Office Server Edition configuration consisted of two Avaya IP Office systems, a primary Linux and an expansion IP500V2 that were connected via Small Community Network trunks. Avaya Contact Center Select 7 is configured with agents reside on both primary and IP500V2. In the compliance testing, CSI Virtual Observer used the CCT interface from Avaya Contact Center Select to monitor Avaya Contact Center Select agents, and the port mirroring method to capture media associated with the monitored agents 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 CSI Virtual Observer to interoperate with Avaya Contact Center Select (ACCS) 7 and Avaya IP Office Server Edition 10 using CSI Virtual Observer as a call recording solution.

In the compliance testing, CSI Virtual Observer used CCT .Net from Avaya Contact Center Select to monitor Avaya Contact Center Select agents. CTT .Net API events were used to obtain contact center information such as agent ID, ANI (caller ID) and Dialed number identification services (DNIS), skill CDN, digits dialed, digits entered, Call ID, UUI, attached data and any other fields available from CCT.NET.

SPAN port mirroring was used to determine when to start and stop recording and to capture media from the Avaya IP Deskphones that were associated with the monitored Avaya Contact Center Select agents for call recordings. Many different types of IP Office phones can be captured using packet sniffing. This document focuses on Avaya IP Deskphones using H.323, Avaya Communicator Softphones and SIP IP Deskphones using SIP over TCP.

The Avaya IP Office Server Edition configuration consisted of two Avaya IP Office systems, a primary Linux server and an expansion IP500V2 that were connected via Small Community Network trunks. Avaya Call Center Select agents were configured as user on IP Office primary and IP500V2.

2. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon start of the CSI Virtual Observer application, the application established CCT connectivity to Avaya Contact Center Select and SPAN Port monitoring of IP Office agent audio.

For the manual part of the testing, each call was handled manually on the agent desktop with generation of unique audio content for the recordings. Necessary agent actions such as hold and reconnect were performed from the agent desktops running the Avaya Aura® Agent Desktops application to test the different call scenarios.

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

The verification of tests included use of Virtual Observer logs for proper message exchanges and use of Virtual Observer web interface for playing back 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.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in this DevConnect Application Note does not include the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on Virtual Observer:

- Handling of CCT events.
- Proper recording, logging, and playback of calls for scenarios involving inbound, outbound, internal, external, personal, hold/reconnect, transfer, conference, multiple calls, multiple agents, long duration, observe, barge-in, emergency, join calls, G.711MU law and outbound campaign.

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

2.2. Test Results

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

- Reporting of skill name is only applicable for inbound calls.
- This solution was tested with G711 u-law only.
- In call record, agent information such as Agent's, Supervisor's First, Last Name is local information configured on CSI Server not obtained from ACCS.
- No call trunk information is provided.

2.3. Support

Technical support on Virtual Observer can be obtained through the following:

- **Phone:** **860-289-2151**
- **Web:** **http://www.csiworld.com**
- **Email:** **support@csiworld.com**

3. Reference Configuration

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

The detailed administration of basic connectivity between Avaya Contact Center Select and IP Office and 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.

The contact center devices used in the compliance testing is shown in the table below. In the testing, Virtual Observer monitored all activities associated with agent. The RTP stream from the Avaya IP Deskphones associated with the agent extensions were mirrored from the layer 2 switch and replicated over to Virtual Observer.

Contact Center Devices	Values
CDN	33000
Supervisor	26104
Agent Extension	26102, 26606, 26605

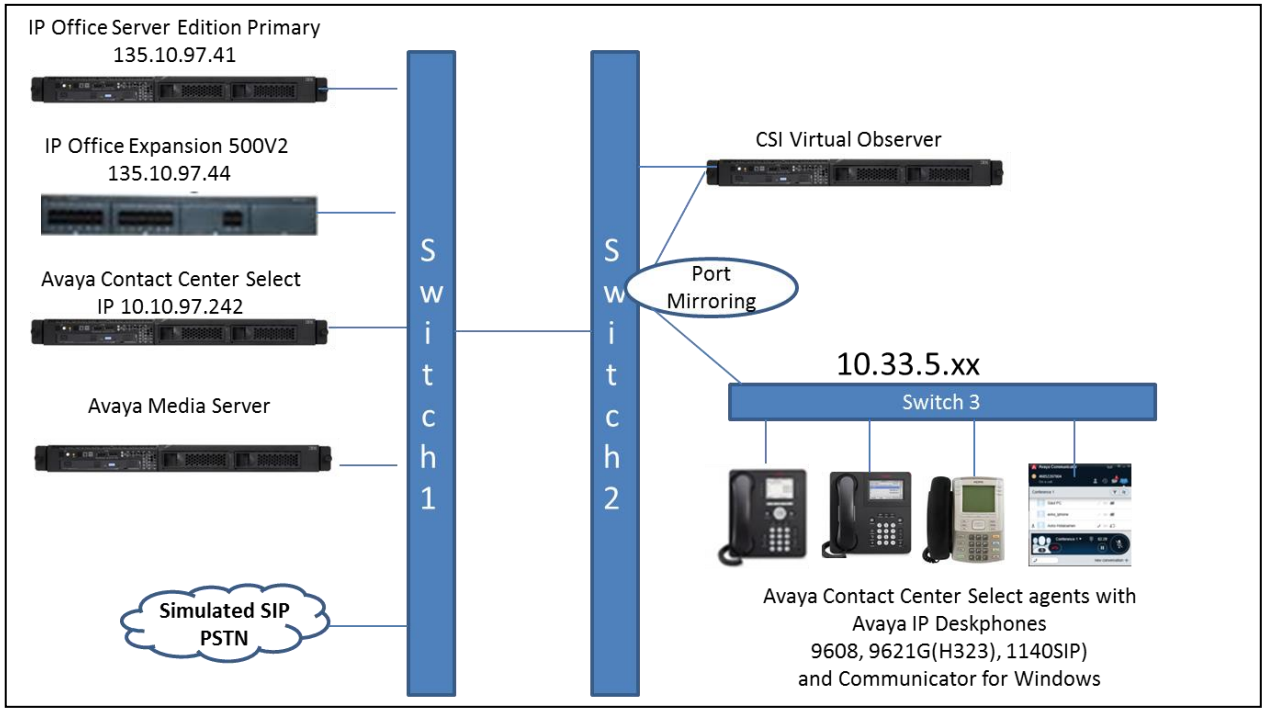


Figure 1: Compliance Testing Configuration

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Contact Center Select	7.0.0.1
Avaya Media Server	7.7.0.269
Avaya IP Office Server Edition (Primary)	10 SP2
Avaya IP Office on IP500 V2 (Expansion)	10 SP2
Avaya 9608, 9621GIP Deskphone (H.323)	6.6115
Avaya 1140E IP Deskphone (SIP)	4.4.26
Avaya Communicator for Windows (for IP Office)	2.1.3
CSI Virtual Observer on Windows Server 2012	5.2.1 R2 Standard

Avaya Contact Center Select supports only the following versions of IP Office:
• IP Office Server Edition Release 9.0.3, 9.0.4, 9.1 and 10.
• IP Office IP500V2, Release 9.0.3, 9.0.4, 9.1 and 10 software, Standard Mode, Advanced Edition License. Therefore, compliance testing is applicable when the tested solution is deployed with IP Office which support by Avaya Contact Center Select.

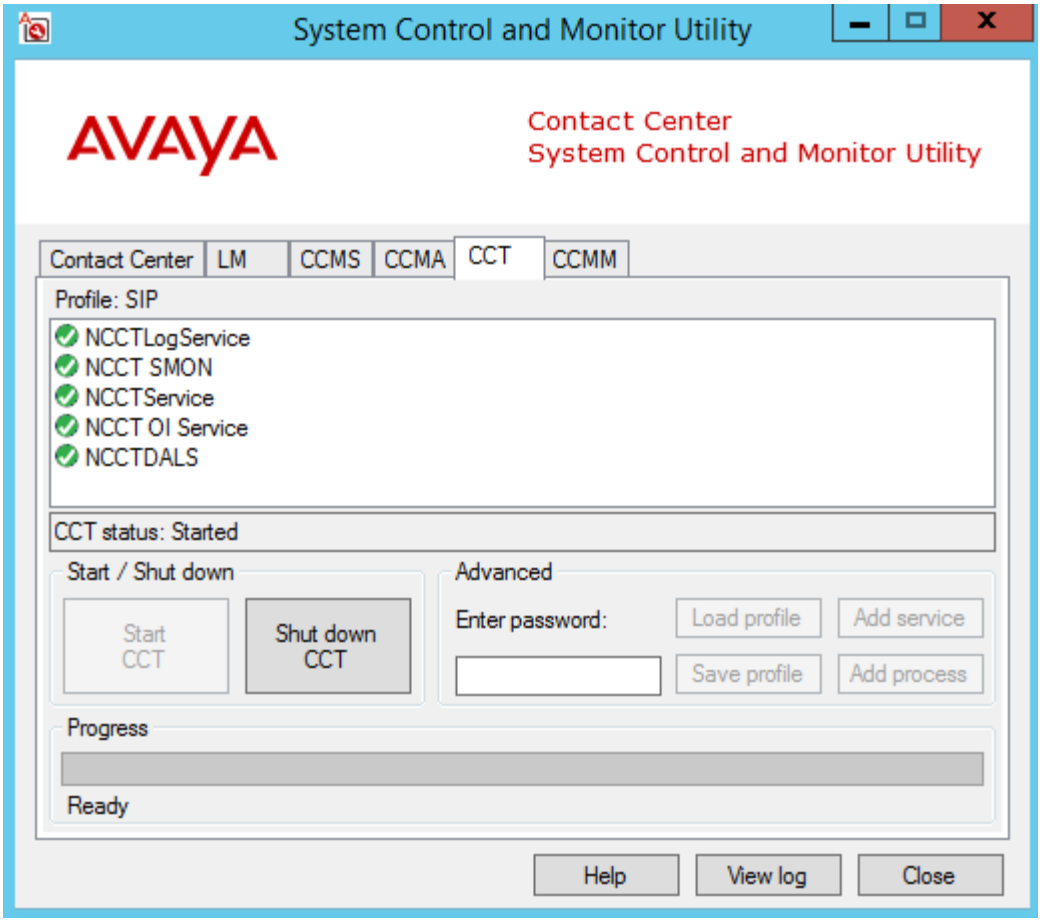
5. Configure Avaya Contact Center Select

This section provides the procedures for configuring Contact Center Select. The procedures include the following areas:

- Verify CCT Services.
- Administer Virtual Observer Windows account on ACCS.
- Administer Virtual Observer user in CCT Administrator.

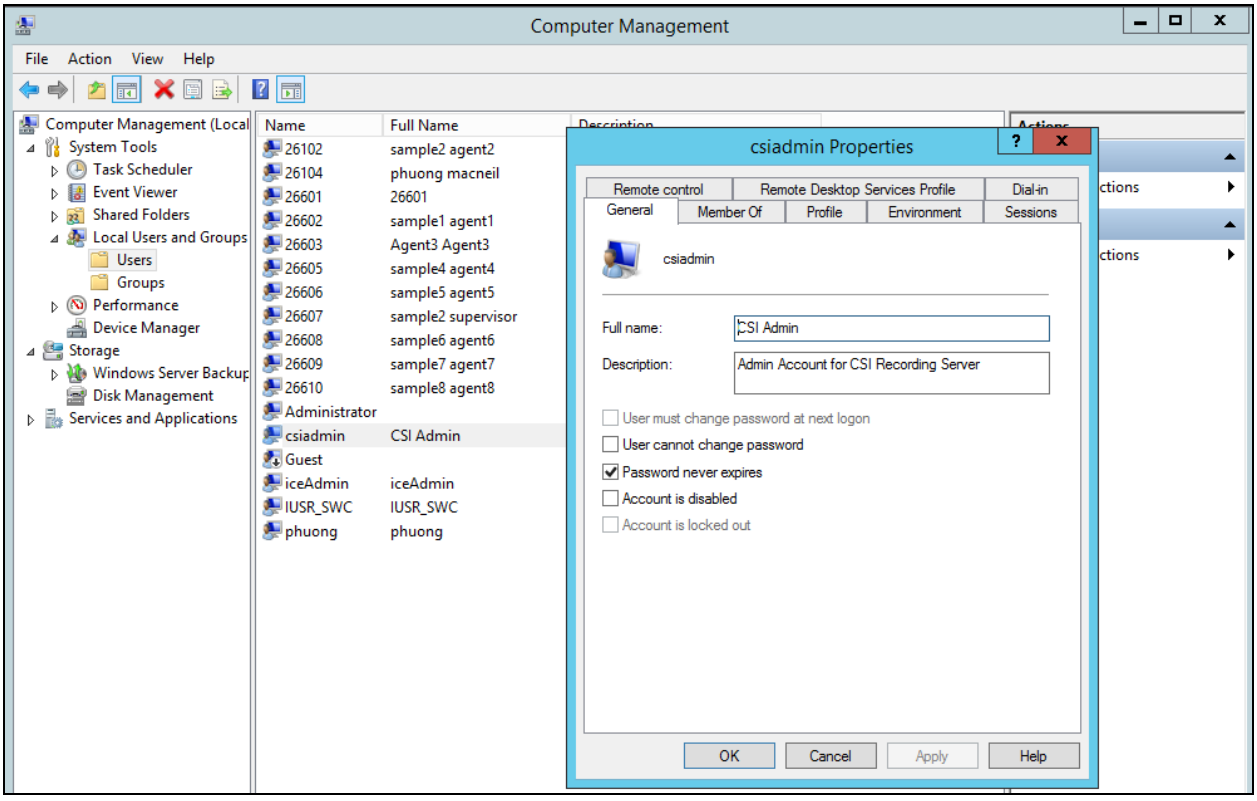
5.1. Verify CCT Services

Ensure ACCS server is running CCT Services. Run the "**System Control and Monitor Utility (SCMU)**" and select the **CCT** tab. The **NCCTService** should running.



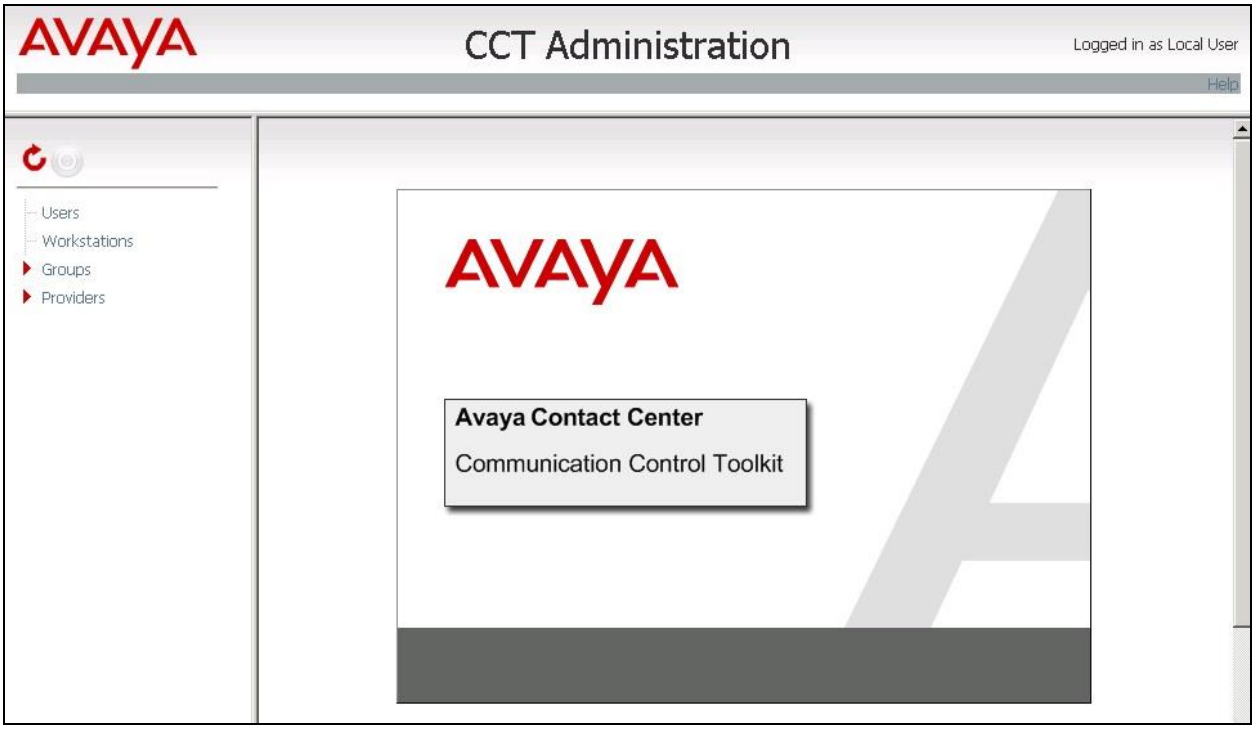
5.2. Administer Virtual Observer Windows account on Avaya Contact Center Select server

From the Avaya Contact Center Select server, select **Start → Administrative Tools**, and click on the **Computer Management** icon (not shown). In the displayed screen below, select **Local User and Groups → Users**. A list of existing accounts is displayed. Right click on **Users → New User …** to add account for CSI Virtual Observer. Enter a desired name in **User Name**, in this case "csiadmin". Below is the detail of user created during testing.



5.3. Administer Virtual Observer user in CCT Administration

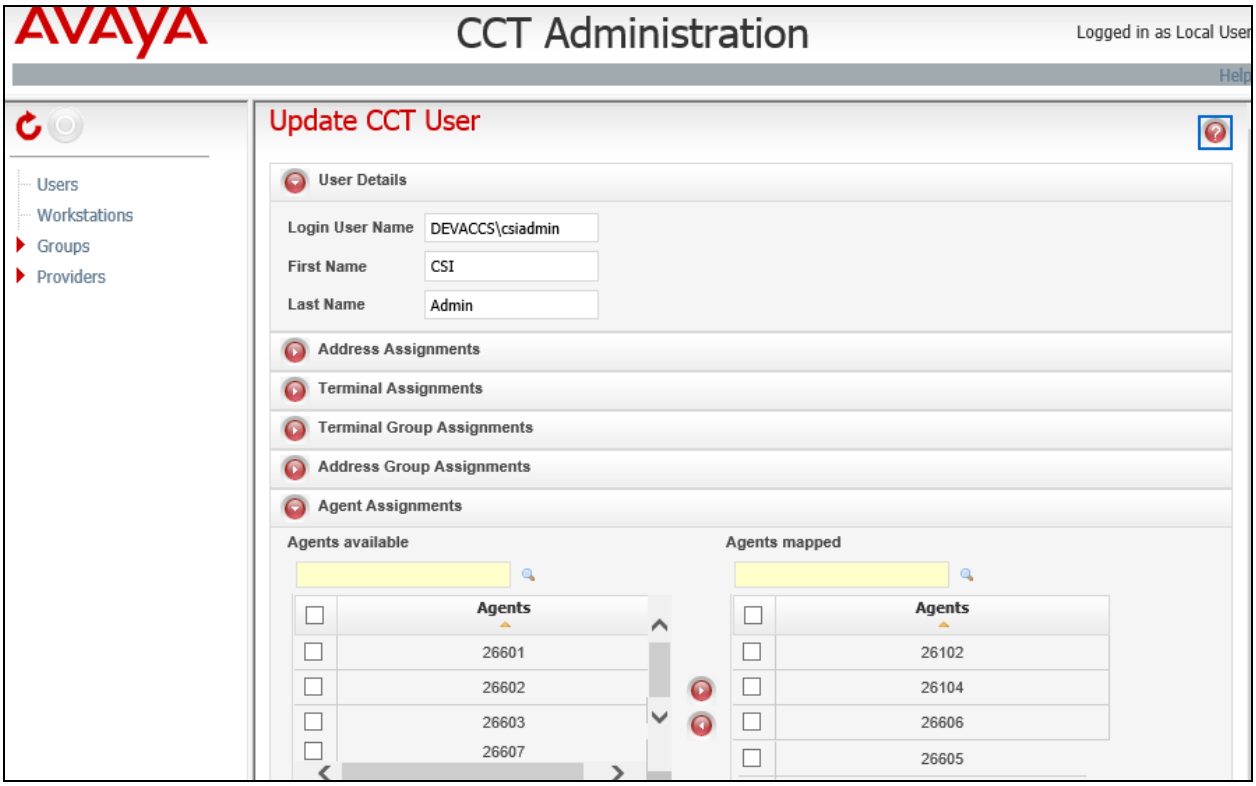
From the Avaya Contact Center Select server, access the CCT Administration web interface by using the URL "http://localhost:8081/WebAdmin" in an Internet browser window. The screen below is displayed.



Right click on **Users** in the left pane, and select **Add new User** (not shown). The **Update CCT User** screen is displayed in the right pane as shown in below screenshot.

For **Login User Name**, enter a user name in the format "x\y", where "x" is the hostname of the Avaya Contact Center Select server, and "y" is the newly created windows account from **Section 5.1**. Enter desired values for **First Name** and **Last Name**.

In the **Agent Assignments** sub-section, check the relevant agent users from **Section 3** in the left column, and use the arrow icon to move selected agents to the right. In the compliance testing, agent users "26102", "26605", "26606" and "26104" Supervisor were assigned, as shown below.

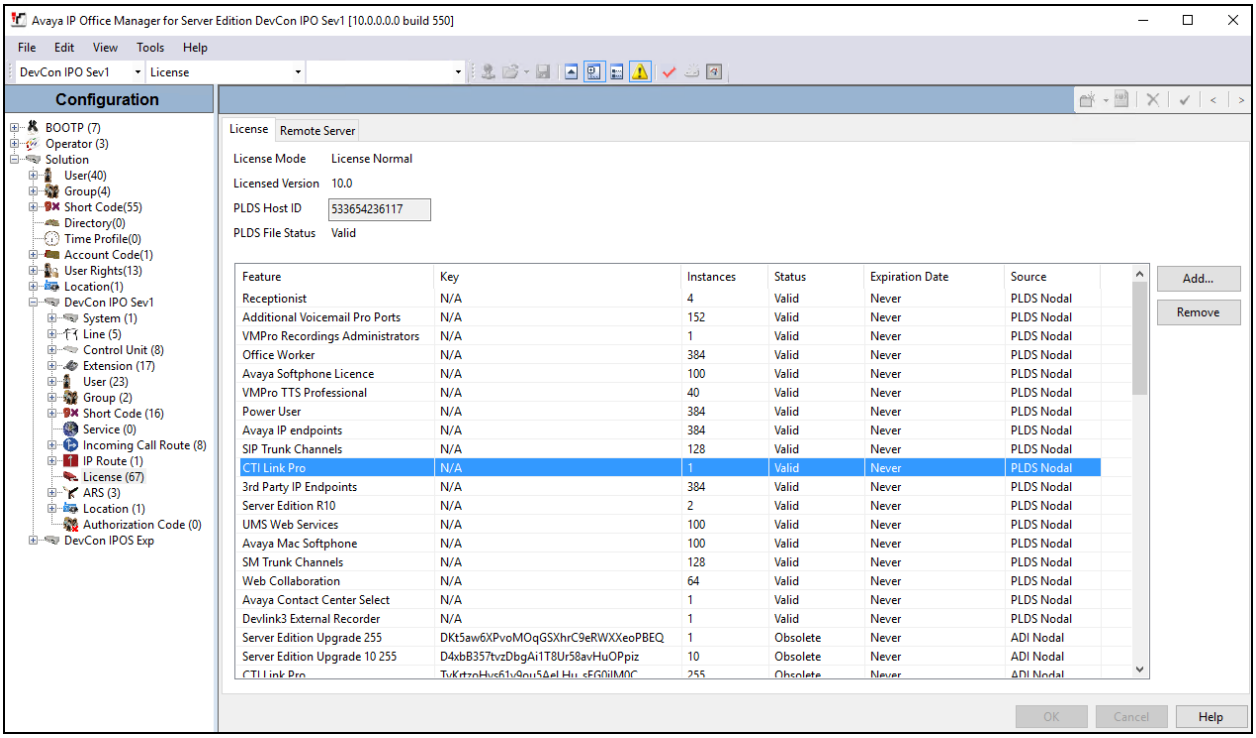


6. Configure Avaya IP Office

It is assumed that IP Office already in place and operation with ACCS Agents. For more information on how to set up ACCS with IP Office reference to **Section 10.** The procedure is to 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.



7. Configure CSI Virtual Observer

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

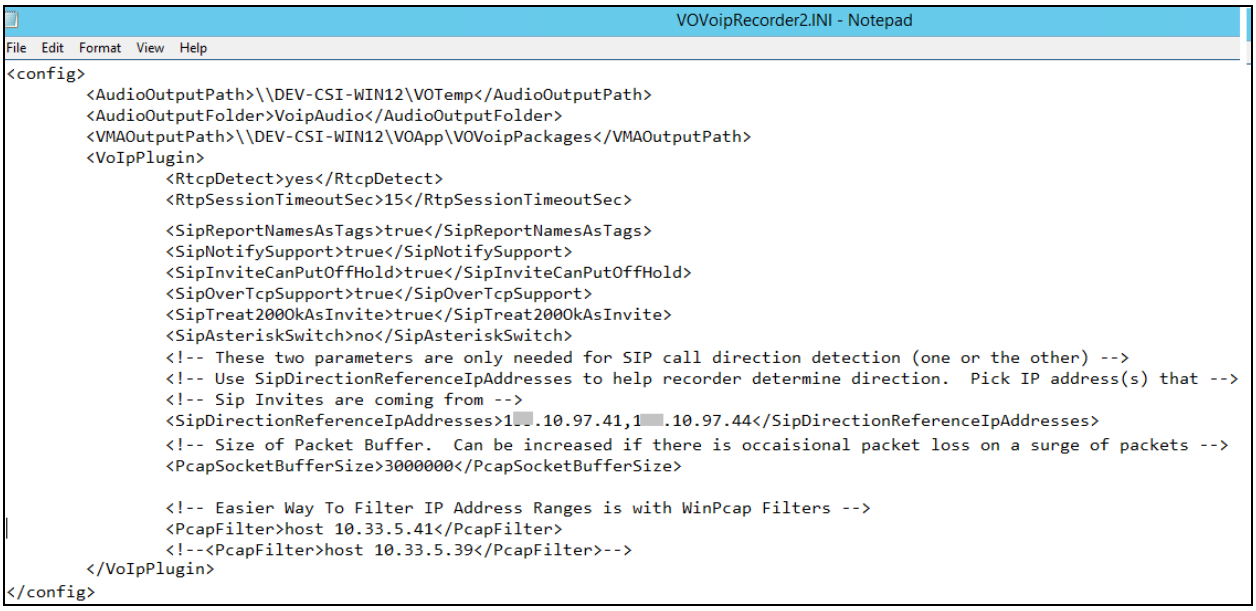
- Administer Virtual Observer Voip Recorder.
- Administer Voip Filter Service.
- Administer Avaya CCT Connector Service.
- Administer Agent.

The configuration of Virtual Observer is typically performed by CSI installation personnel or resellers. The procedural steps are presented in these Application Notes for informational purposes.

7.1. Administer Virtual Observer Voip Recorder

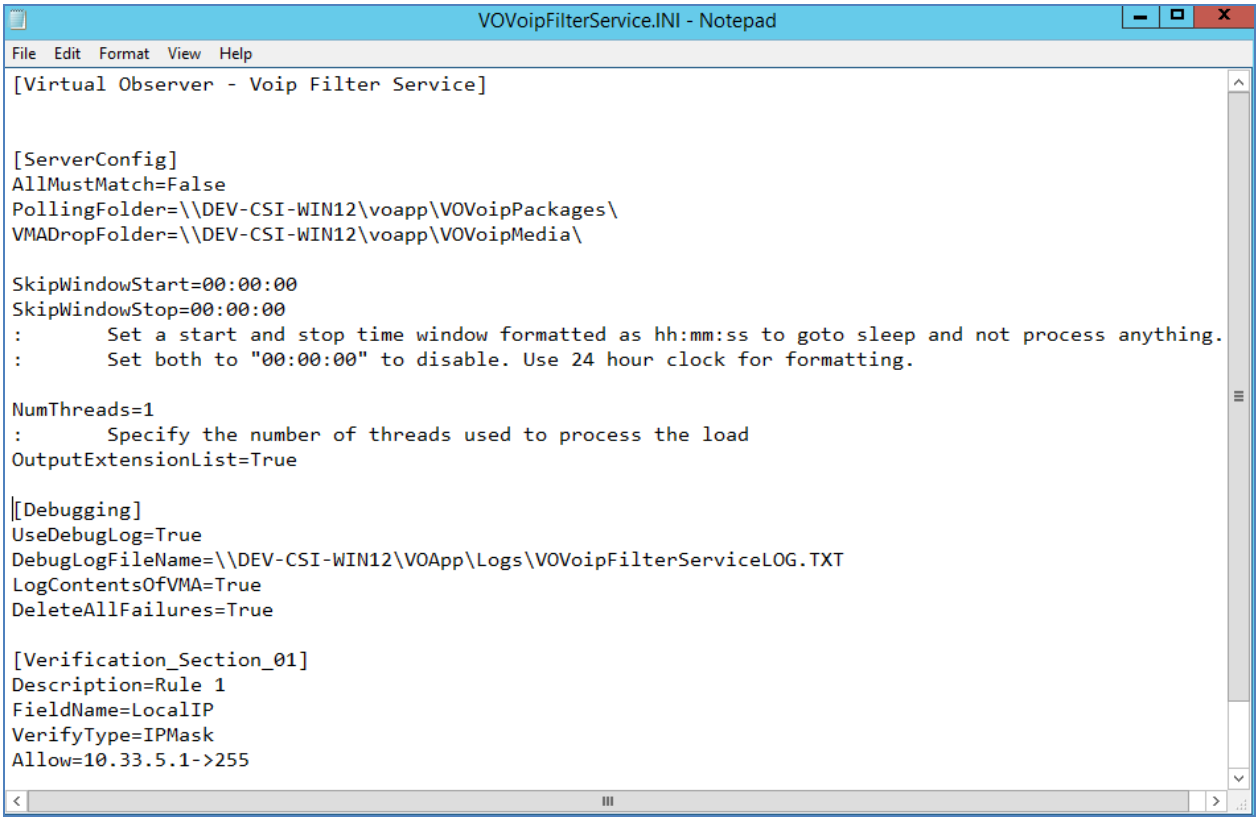
This section describe step to configure file **VOVoipRecorder.ini** to captures packets from SPAN port, configure the following:

- **<SipDirecttionReferenceIpAddresses>IPAddress </SipDirecttionReferenceIpAddresses>** where IP Address are IP Address of IPO primary and expansion IP500V2, in this case they are **10.10.97.41** and **10.10.97.44**.
- **<PcapFilter>host IPAddress </PcapFilter>** where IPAddress is IP address of deskphone that need to capture media from, in this case it is **10.33.5.41**.



7.2. Administer Voip Filter Service

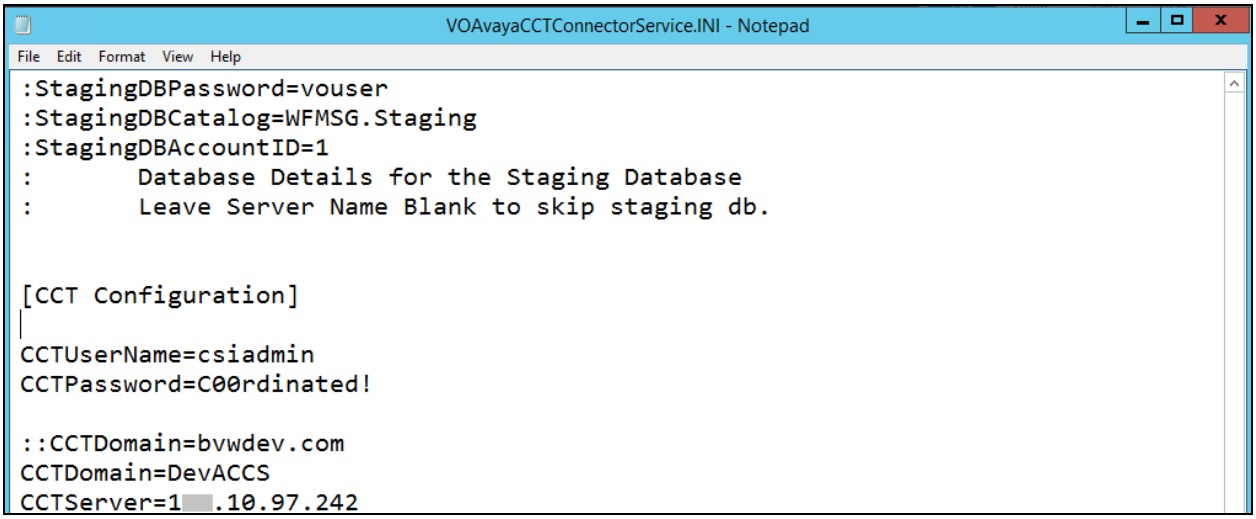
This describes steps to configure **VOVoipFilterService.INI** to filters which activity to record. This service reads event packages and sniffer files to determine which activity should be recorded based on filter rules, this setup is configured by CSI Administrator, it will not be mention here, the only field that is needed to modify for compliance testing is IP range for IP Office Deskphones which is **Allow= 10.33.5.1→255** as shown below.



7.3. Administer Avaya CCT Connector Service

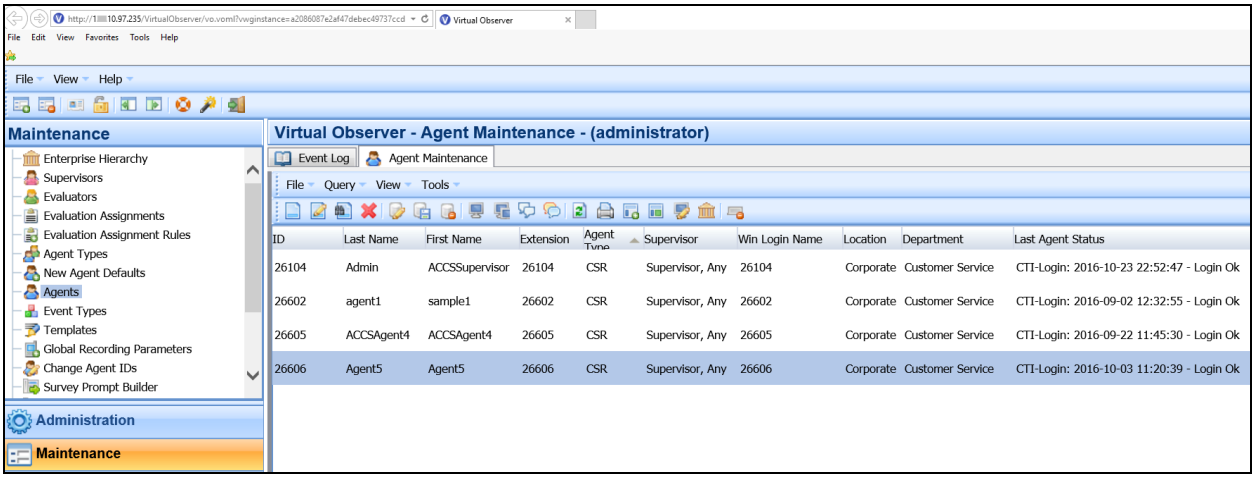
This section describe steps to configure **VOAvayaCCTConnectorService.INI** to captures metadata from CCT. This service connects to Avaya CCT.NET API and captures data about agents and phones. This service can be thought of as the CTI Service. It captures agent state changes such as, login, logout, ready, not ready, and also call events such as ring, answer, held, dropped. This service also captures value added metadata with call events such as ANI, DNIS, Skill, CDN, digits dialed, digits entered, Call ID, UUI, attached data.

- Configure **CCTServer**=IP address where IP address is Avaya Call Center Select IP address, in this case it is **10.10.97.242**

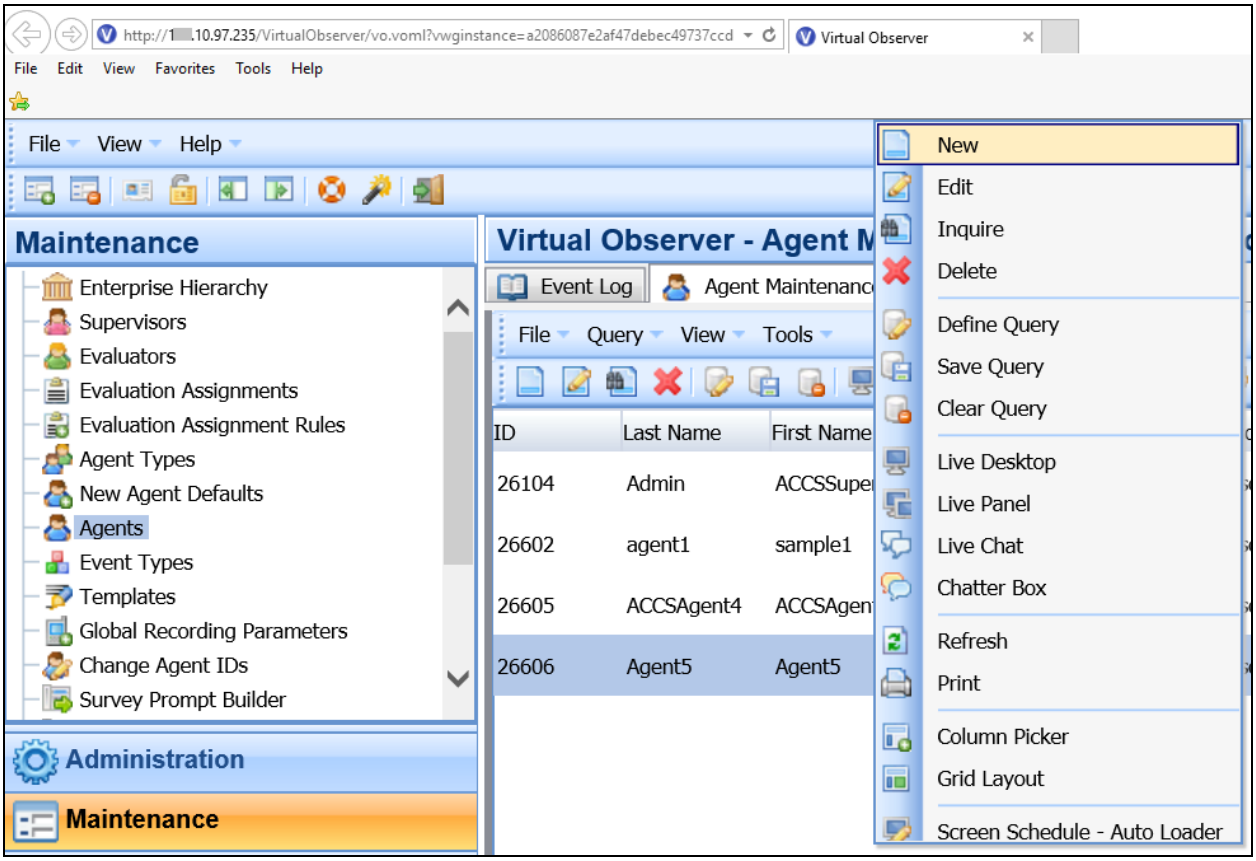


7.4. Administer Agent

On agent PC, log in Virtual Observer web-based client by using the URL "http://ip-address/Virtual Observer/vo.voml" in an Internet browser window, where "ip-address" is the IP address of the Virtual Observer server. The **Logon Dialog** screen is displayed (not shown). Log in using the appropriate credentials (not shown). Select **Maintenance → Agents** list of existing agents are listed as shown below.

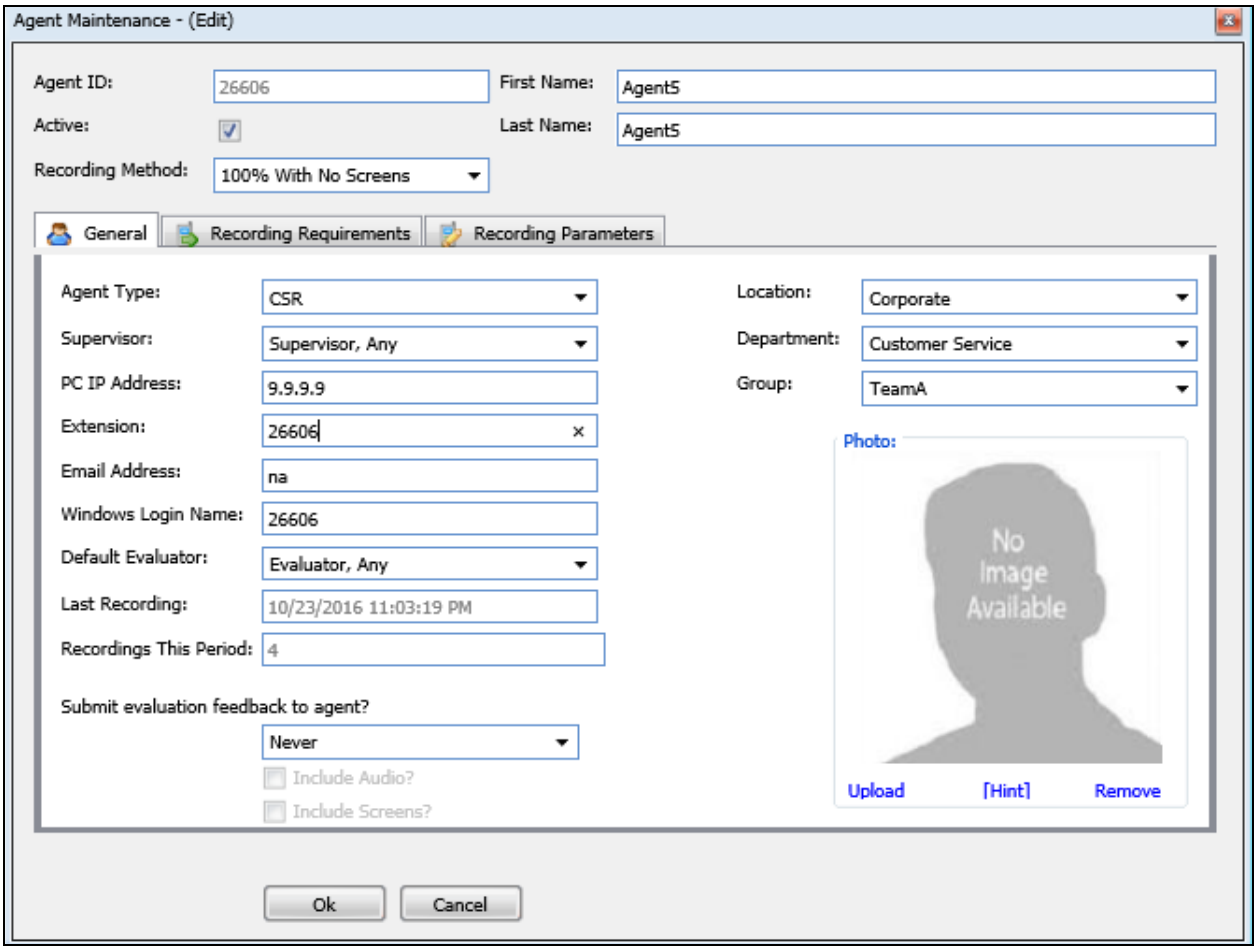


Right click on the Agent Maintenance right panel, select **New** as shown below.



In **Agent Maintenance – (Edit)** screen, enter the following:

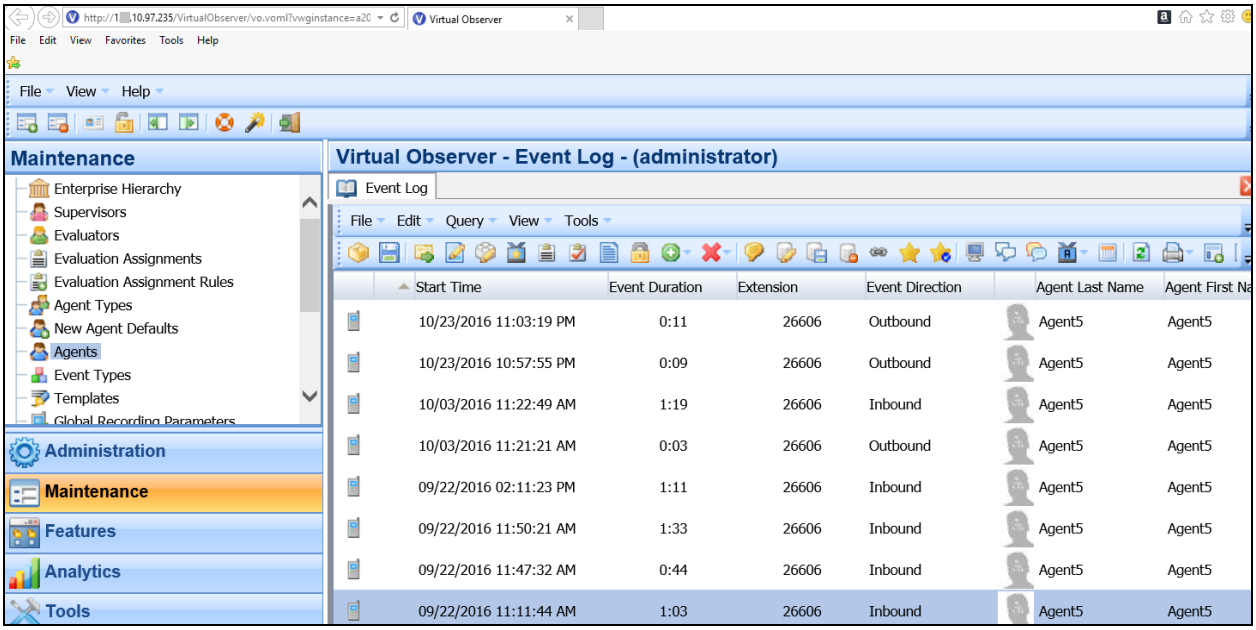
- **Agent ID**: enter ACCS agent ID, in this case 26606.
- **Active**: check the check mark to set agent active.
- **First Name**: Enter any descriptive agent first name, this is local name, not the first name on ACCS server, in this case is Agent 5.
- **Last Name**: Enter any descriptive agent last name, this is local name, not the last name on ACCS server, in this case is Agent 5.
- **Agent type**: this is precofigure on Virtual Observer and will not discuss here in detail. Select existing Agent type in the drop down list.
- **Supervisor**: this is precofigure on Virtual Observer and will not mention here and this is local supervisor, not the supervisor on ACCS server, select existing Supervisor in the drop down list.
- **Extension**: ACCS Agent extension on IP office system, in this case 26606.



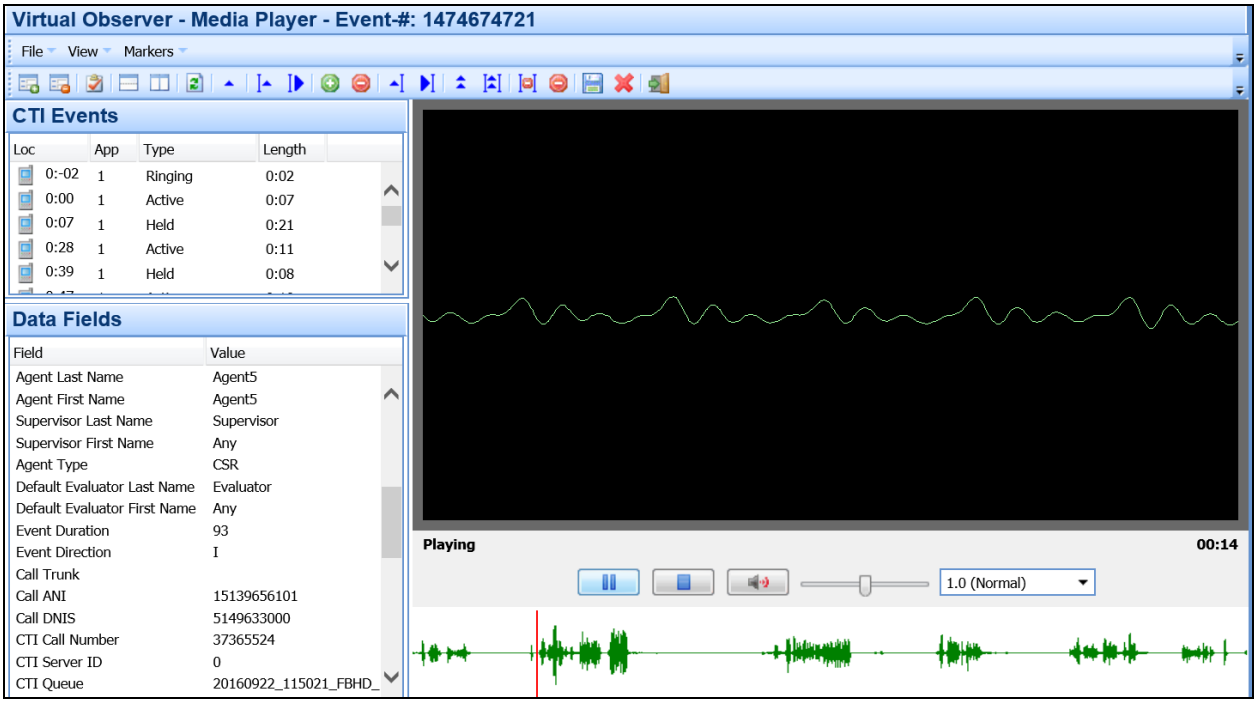
8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of IP Office, ACCS and Virtual Observer.

Log in Virtual Observer web base client by using the URL "http://ip-address/Virtual Observer/vo.voml" in an Internet browser window, where "ip-address" is the IP address of the Virtual Observer server. The **Logon Dialog** (not shown) is displayed. Log in using the appropriate credentials (not shown). The Virtual Observer page lists existing records as shown below. Make a call from simulated PSTN to ACCS DN, after the ACCS announcement and press selection 1 to talk to an available agent; caller will be connected with monitored agent. Talk for 15 seconds and hang up. Verify on Virtual Observer client a new record is added.



Double click on selected record. Listen to the record to make sure the previous phone call is properly recorded. Verify data in CTI Events, Data Fields with proper values in the relevant fields as shown below.



9. Conclusion

These Application Notes describe the configuration steps required for CSI Virtual Observer to successfully interoperate with Avaya Contact Center Select 7 and Avaya IP Office Server Edition 10. All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

10. Additional References

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

[1] *Administering Avaya Contact Center Select*, Release 7.0 Issue 02.02 March 2016 available at http://support.avaya.com.

[2] *Avaya Contact Center Select Advanced Administration*, Release 7.0 Issue 02.02 March 2016, available at http://support.avaya.com.

[3] *Deploying Avaya Contact Center Select Software Appliance*, Release 7.0 Issue 02.02 March 2016 available at http://support.avaya.com.

[4] *Avaya IP Office™ Platform Server Edition Reference Configuration*, Release 10.0 Issue 04.AD August 2016, available at http://support.avaya.com.

[5] *Administering Avaya IP Office™ Platform with Web Manager*, Release 10.0 September 2016, available at http://support.avaya.com.

Virtual Observer document available upon request, contact CSI for more information.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.