Avaya Solution & Interoperability Test Lab

Application Notes for Voistore Live with Avaya Interaction Center – Issue 1.0

Abstract

Voistore Live is an Enterprise-level voice recording solution for corporate applications and contact centers, providing continuous, high-quality digital recording and network archiving of telephone conversations. Voistore Live performs recording of Voice over IP (VoIP) calls and integrates with Avaya Interaction Center for call control.

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

The objective of this interoperability compliance testing is to verify that Voistore Live can interoperate with Avaya Interaction Center (IC). The current version of Voistore Live is designed to record IP calls only. Voistore Live performs recording of VoIP calls by collecting the voice packets bound for the agents' IP telephones or softphones. The Ethernet switch ports connected to the IP telephones or softphones are mirrored to a Switched Port Analyzer (SPAN) port, which is connected to one of the network cards on the Voistore Live server. As such, this solution requires the use of an Ethernet switch that supports multi-port mirroring. Voistore Live utilizes Avaya IC to provide the details such as Automatic Number Identification (ANI) information and agent IDs that are associated with the recorded calls. Note that in this solution, the application of call recording tones (in countries where this is required by law) is the responsibility of Voistore.

Figure 1 illustrates the test configuration used to verify the Voistore Live solution.

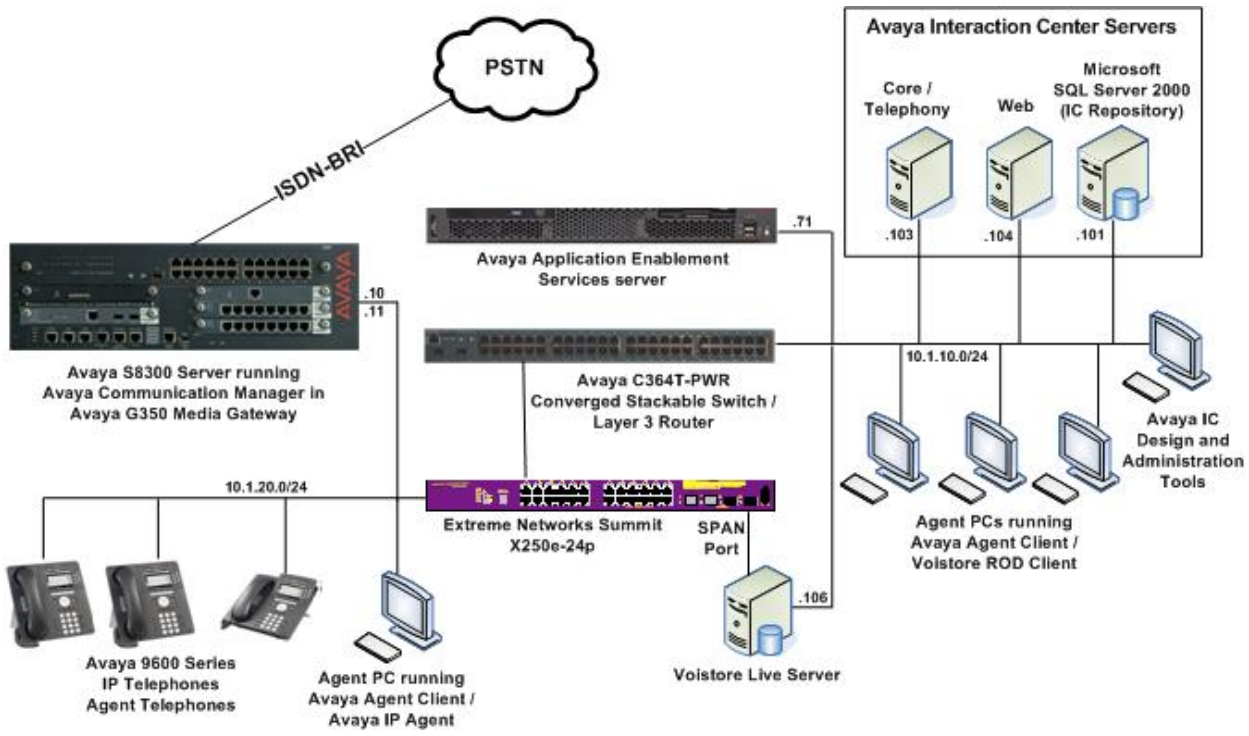


Figure 1: Test Configuration

The configuration utilized three servers to host Avaya IC components. The Agent PCs are running Avaya IC client applications. The Voistore Record-on-Demand (ROD) client application is also installed on the agent PC when on demand recording is required.

Avaya IC has a CallVisor LAN (CVLAN) Computer Telephony Integration (CTI) link to Avaya Application Enablement Services (AES) to enable call event reporting and third party call control of contact center devices on Avaya Communication Manager.

Voistore Live is installed on a server running Microsoft Windows Server 2003 with Service Pack 2. An Extreme Networks Summit X250e-24p Ethernet Switch provides connectivity to all the voice devices with all the ports mirrored to a Gigabit port, which functions as the SPAN port. An Avaya C364T-PWR Converged Stackable Switch provides connectivity to the servers and routing between the voice and data subnets.

2. Equipment and Software Validated

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

Equipment/Software	Version
Avaya S8300B Server	Avaya Communication Manager 4.0.1 (R014x.00.1.731.2)
Avaya G350 Media Gateway	26.33.0
Avaya Application Enablement Services	4.0.1 (r4-0-1-bld-51-0)
Avaya Interaction Center Servers on Dell PowerEdge 850	7.1.3 Microsoft Windows Server 2003, SP2
Avaya IC Agent clients with Voistore ROD clients on Dell PCs	7.1.3 3.2.7 Microsoft Windows XP Professional, SP2
Microsoft SQL Server	Microsoft SQL Server 2000, SP4
Avaya 9600 Series IP Telephones	1.5 (H.323)
Avaya IP Agent	7.0.22.110
Avaya C364T-PWR Converged Stackable Switch	4.5.18
Extreme Networks Summit X250e-24p	12.0.1.8
Voistore Live on Dell PowerEdge 850	3.2.7 Microsoft Windows Server 2003, SP2

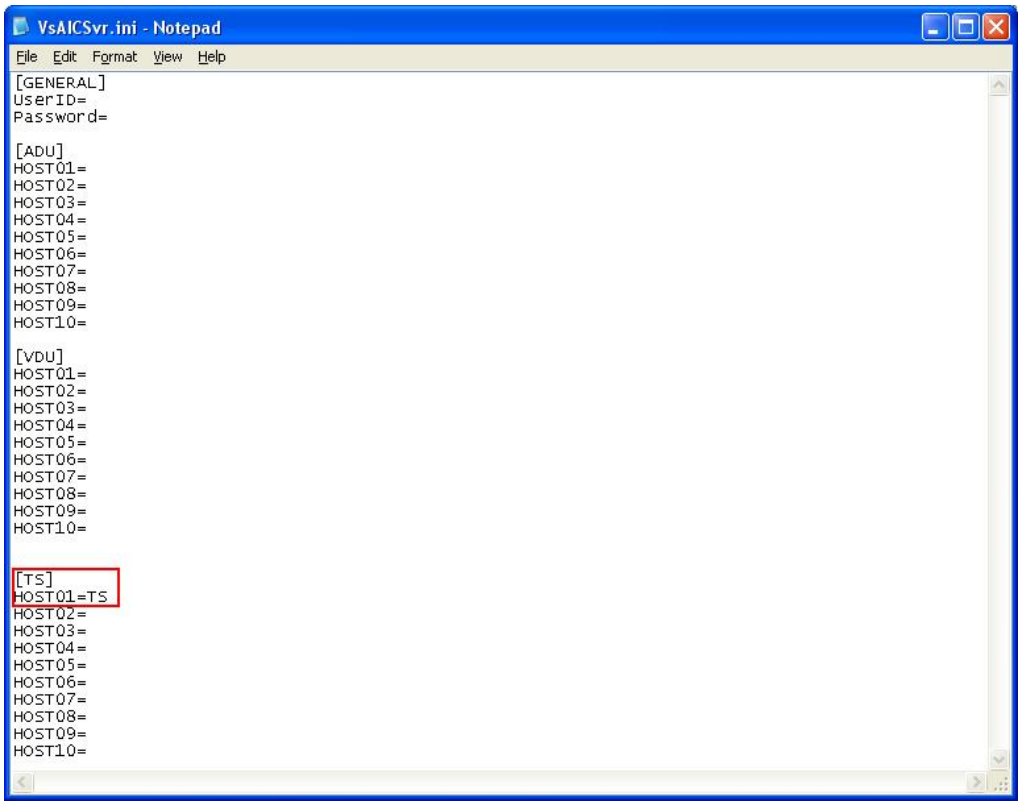
Table 1: Equipment/Software Validated

3. Configure Avaya Interaction Center

This document assumes that all Avaya products have been installed and configured as depicted in **Figure 1**. The installation and configuration administration of the CTI connectivity between Avaya IC, Avaya AES, and Avaya Communication Manager is not the focus of these Application Notes and will not be described. For administration of the CTI connectivity, refer to the appropriate documentation listed in **Section 9**.

It is assumed that the Avaya IC core server components have been installed with a secondary ORB server created as part of the installation. This section provides the procedures for adding the Voistore Live server into the Avaya IC environment.

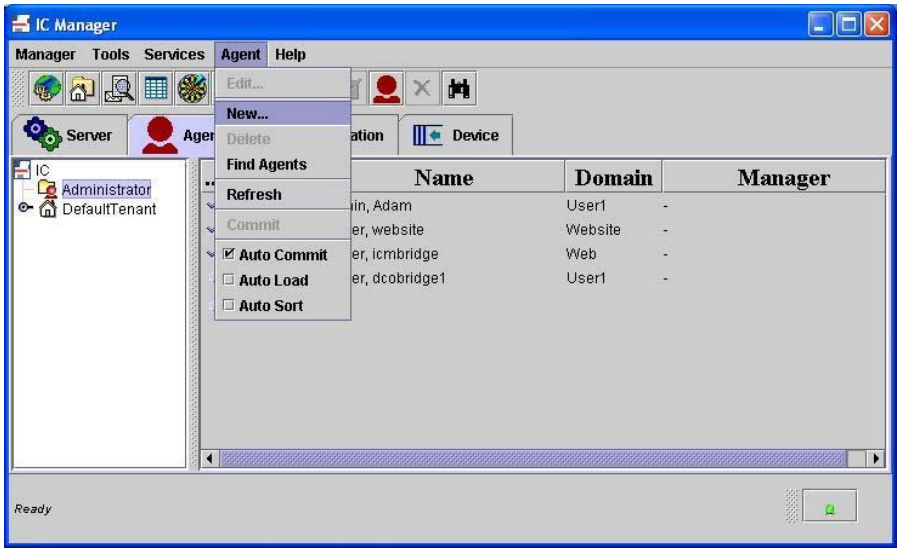
3.1. Install the Voistore Live VSREC Server

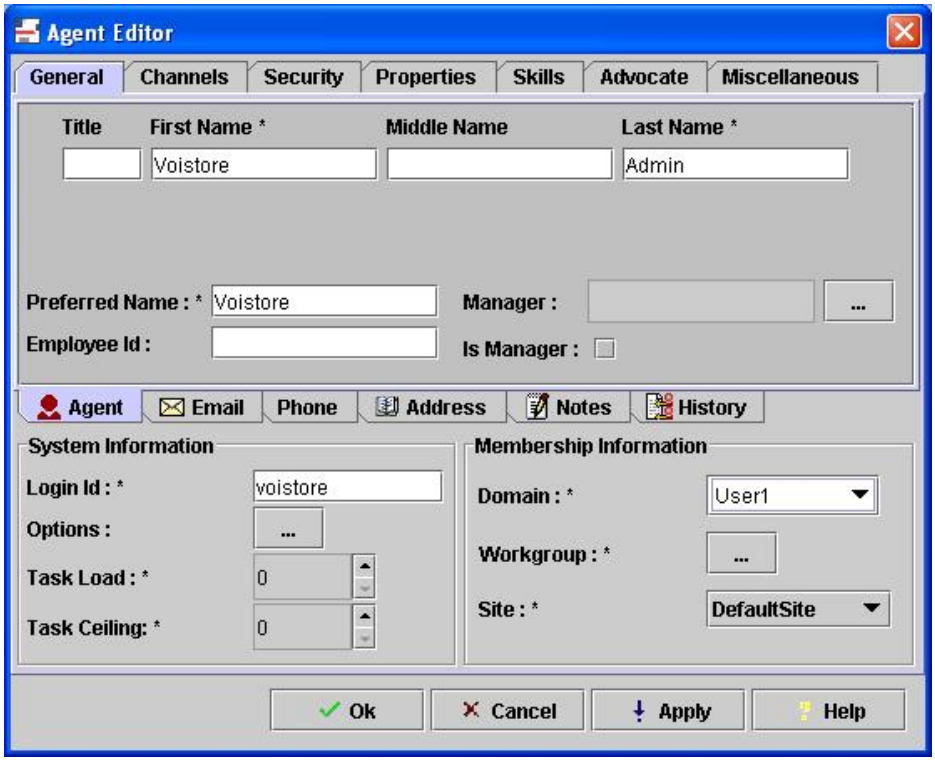
Step	Description
1.	From the Voistore Live server, copy the files **VsAICSvr.exe** and **VsAICSvr.ini** from the Voistore Live Installation CD-ROM to the \bin folder under the Avaya IC installation directory (e.g. **C:\Program Files\Avaya\IC71\bin**).
2.	Using Notepad, edit the file **VsAICSvr.ini**. In the **[TS]** section, verify that **HOST01** has the value of **TS**. The remaining fields are not in use. 

3.2. Launch IC Manager

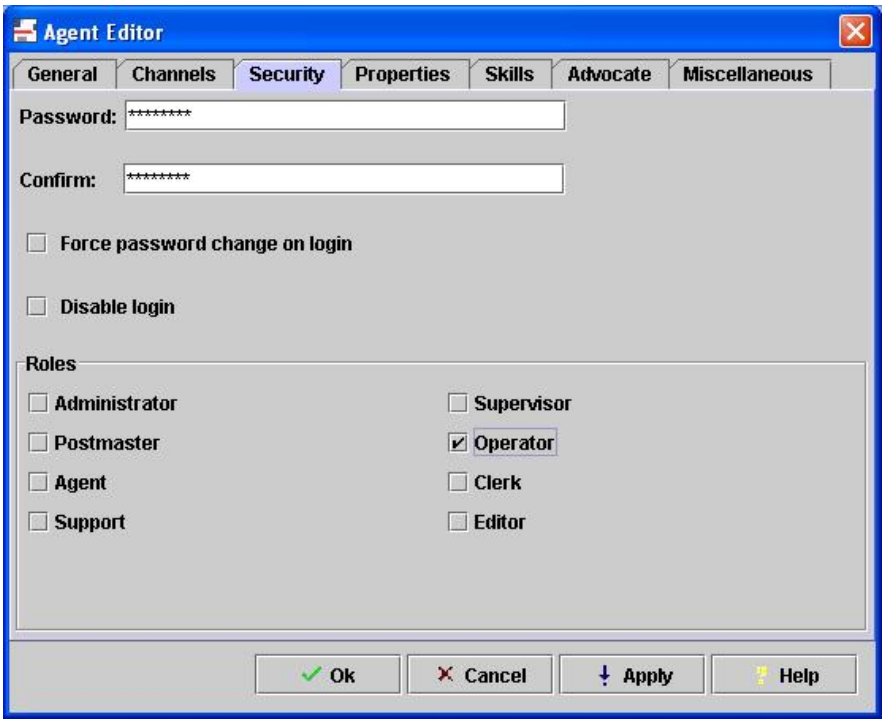
Step	Description
1.	From the PC where the Avaya IC Design and Administration Tools have been installed, select **Start > All Programs > Avaya Interaction Center 7.1 > IC Manager** to launch the IC Manager.
2.	The **IC Manager Login** dialog box is displayed as shown below. Enter the appropriate credentials and click **Ok**. The IC Manager window is displayed on successful login. 

3.3. Administer IC Account for Voistore Live Server

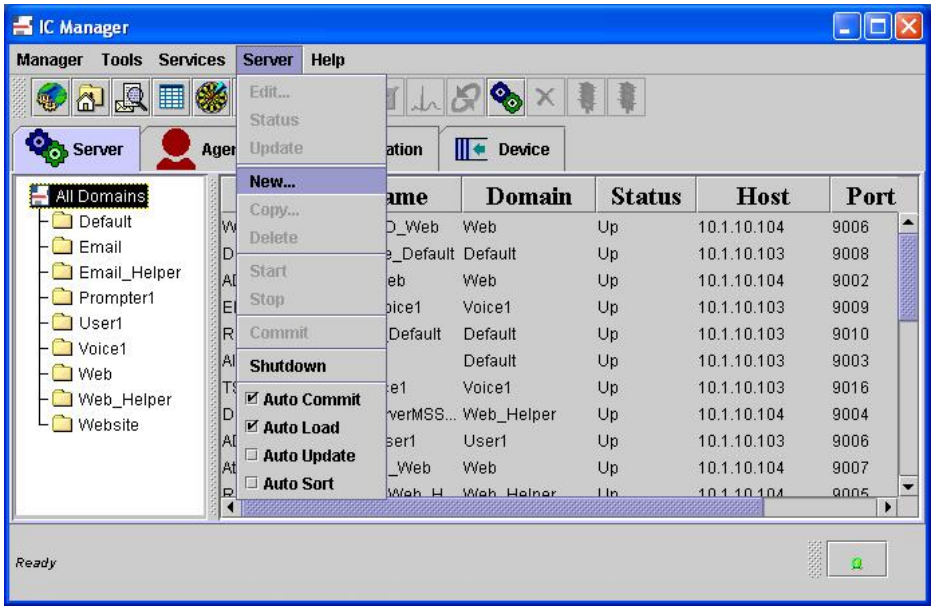
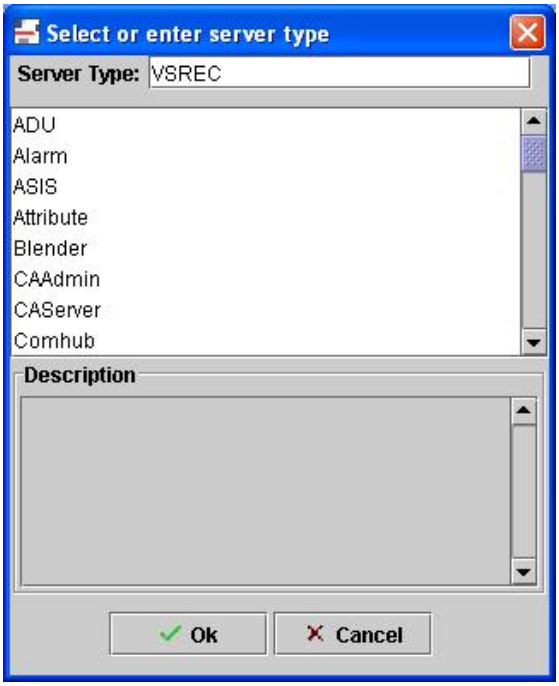
Step	Description
1.	From the IC Manager window, click the **Agent** tab. The **IC Manager** screen is updated with agent account information. In the left pane, navigate to the directory where a placeholder agent account will be created. For the compliance testing, the agent account was created under **IC > Administrator**, as shown below. Select **Agent > New** from the menu to create an agent account. 

Step	Description
2.	The **Agent Editor** screen is displayed. Select the **General** tab. Enter the following values for the specified fields, and retain the default values for the remaining fields. • **First Name:** A descriptive first name, in this case "Voistore". • **Last Name:** A descriptive last name, in this case "Admin". • **Preferred Name:** A descriptive preferred name, in this case "Voistore". • **Login Id:** A descriptive login id, in this case "voistore". • **Domain:** Select the **User1** domain. • **Task Load:** Use the down arrow to decrease the load to "0". • **Task Ceiling:** Use the down arrow to decrease the ceiling to "0". 

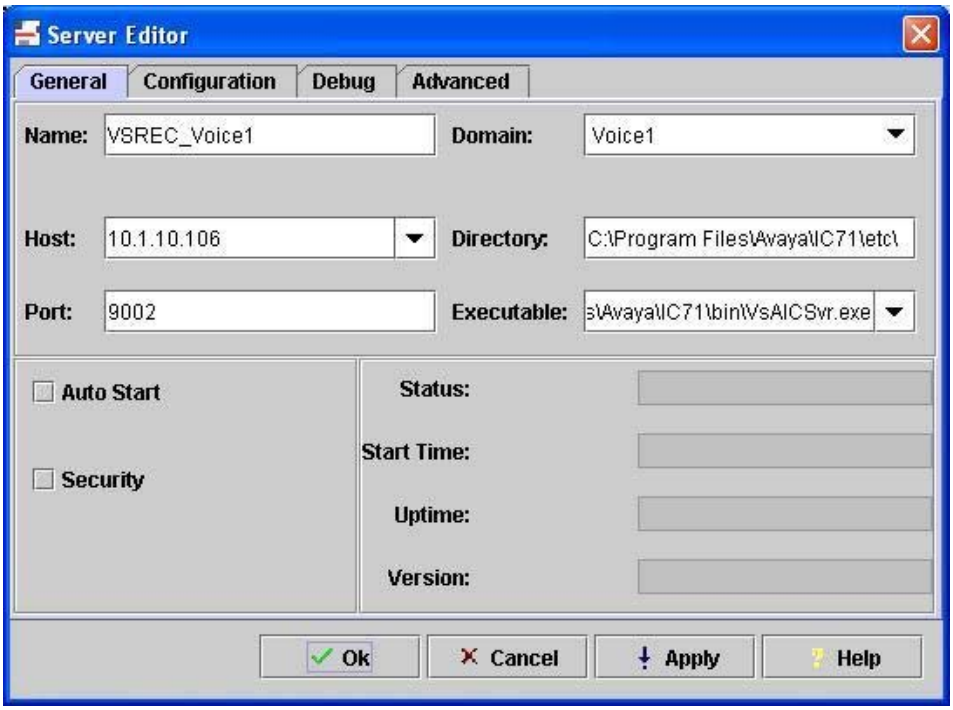
Step	Description
3.	Select the **Security** tab. Enter the desired password into the **Password** and **Confirm** fields. Uncheck the **Force password change on login** field, and check the **Operator** field. Click **Ok**.



3.4. Create the Voistore Live VSREC IC Server

Step	Description
1.	From the IC Manager window, click the **Server** tab. Select **Server** > **New** from the main menu, as shown below. 
2.	The **Select or enter server type** dialog box is displayed. Enter **VSREC** for the **Server Type** field and click **Ok**. 

Step	Description
3.	The **Server Editor** screen is displayed next. Select the **General** tab. For the **Name** field, enter a descriptive name. Select **Voice1** from the **Domain** field drop down list. Select the IP address of the Voistore Live server (in this configuration, **10.1.10.106)** from the **Host** field drop down list. Enter the full path to the **VsAICSvr.exe** file on the Voistore Live server for the **Executable** field. Leave all other fields with their default values and click **Ok**.

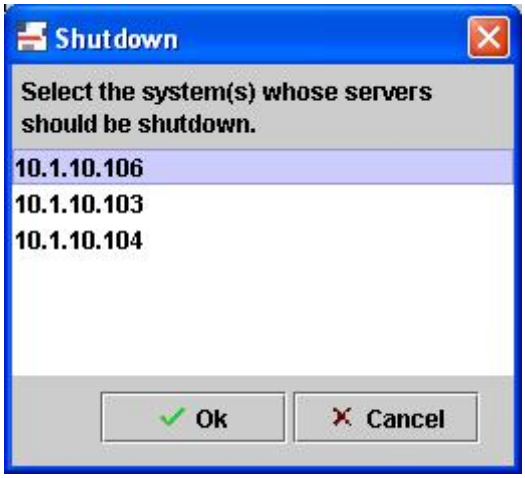
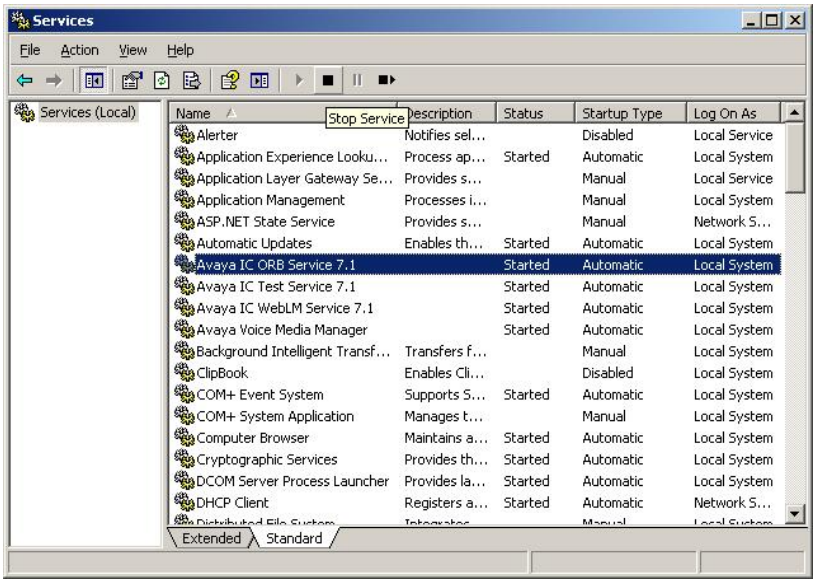


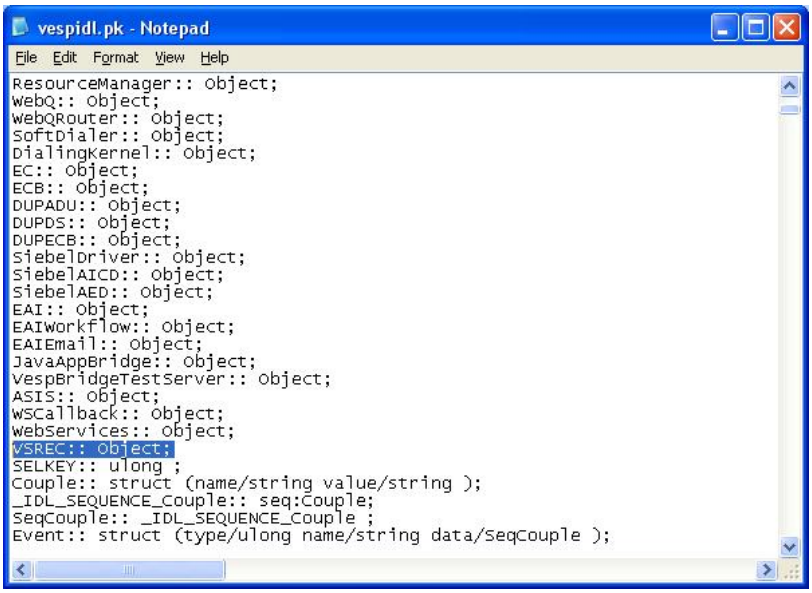
4. Configure Voistore Live

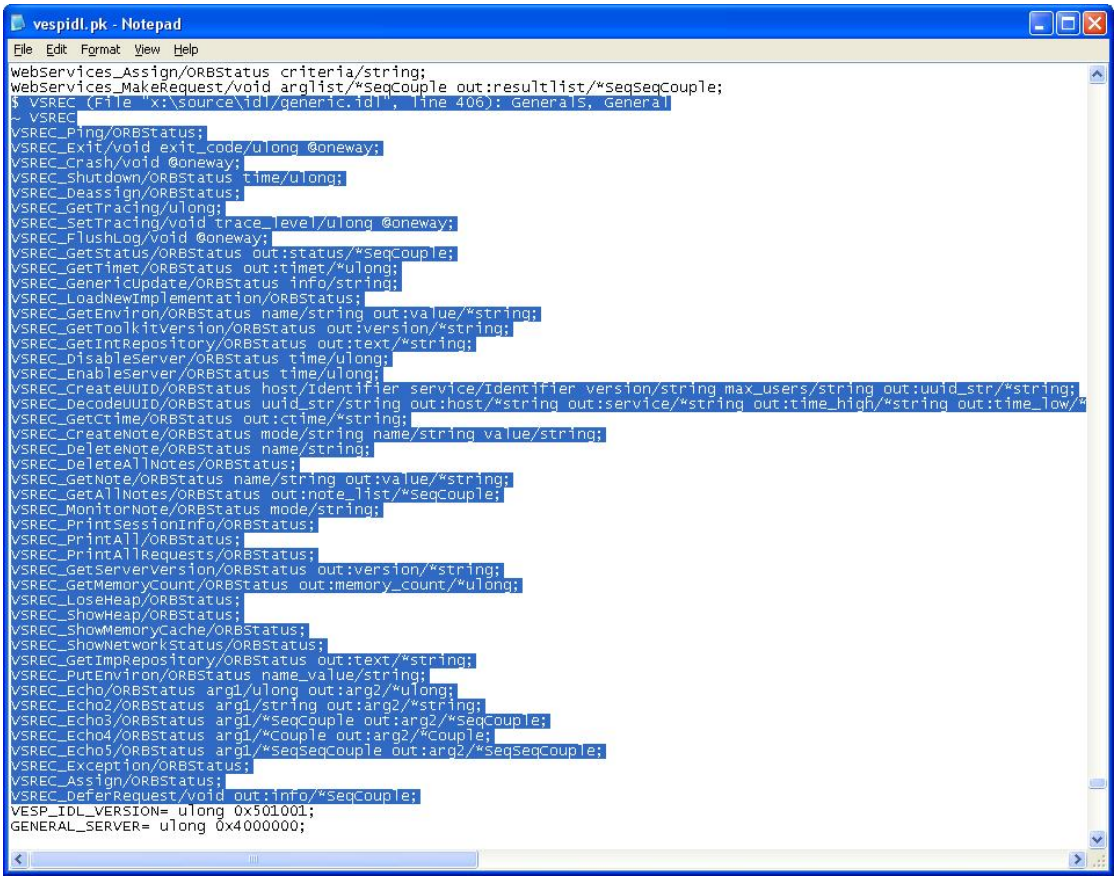
This section provides the procedures for configuring the Voistore Live server, which includes the following steps:

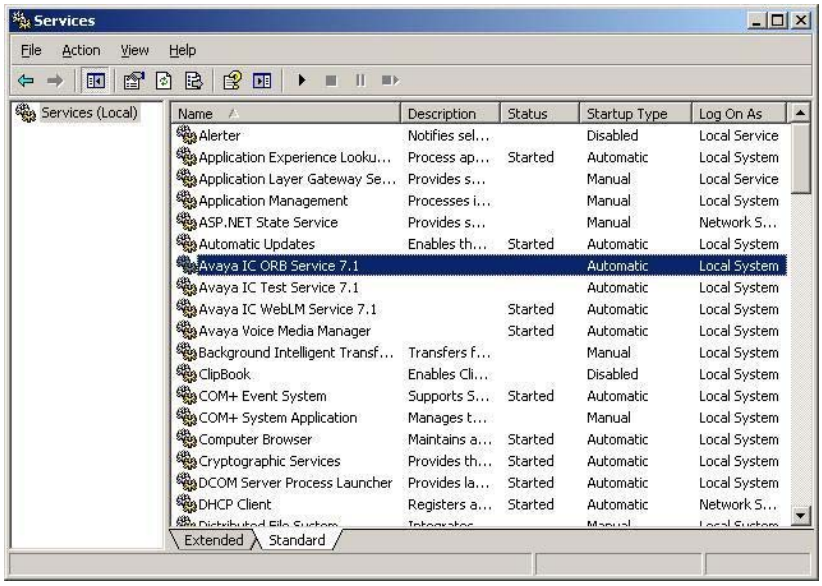
- Administer Voistore Live VSREC Server
- Administer VsCTIInterfacer
- Administer IP Telephone MAC Address
- Administer Phone Extensions

4.1. Administer Voistore Live VSREC Server

Step	Description
1.	Logout all Avaya IC Agent clients. Select **Server > Shutdown**. Select the first system in the list and click **Ok**. Repeat again for the rest of the IC Server systems. 
2.	From the primary IC Server system, start **Services** from **Start** > **All Programs** > **Administrative Tools**. Stop the **Avaya IC ORB Service 7.1** service. Repeat for all IC Server systems. 

Step	Description
3.	From the primary IC server system, use Notepad to edit the file **vespidl.pk** located in the **C:\Program Files\Avaya\IC71\etc** folder. Add the following lines to the end of the **Object** definition section of the file to add a new VSREC IC Server type: VSREC:: Object; 

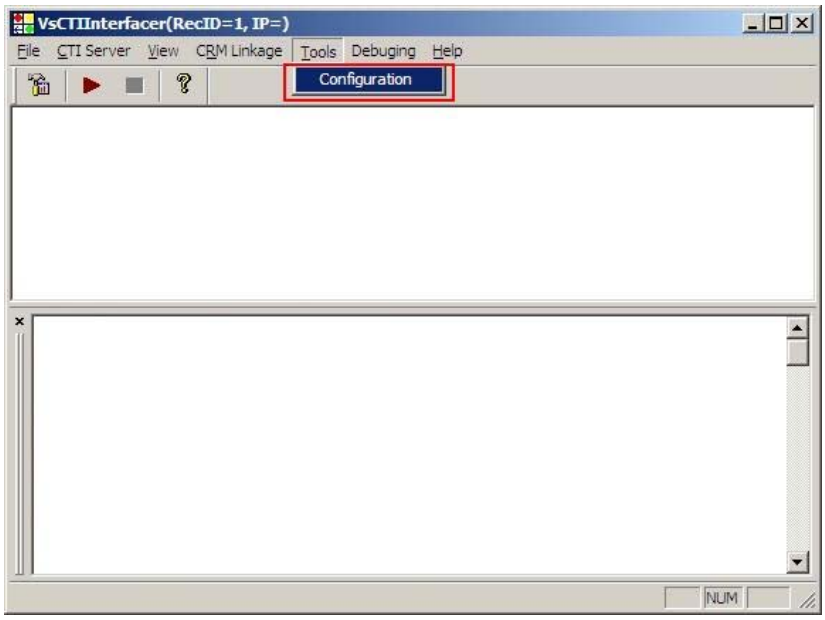
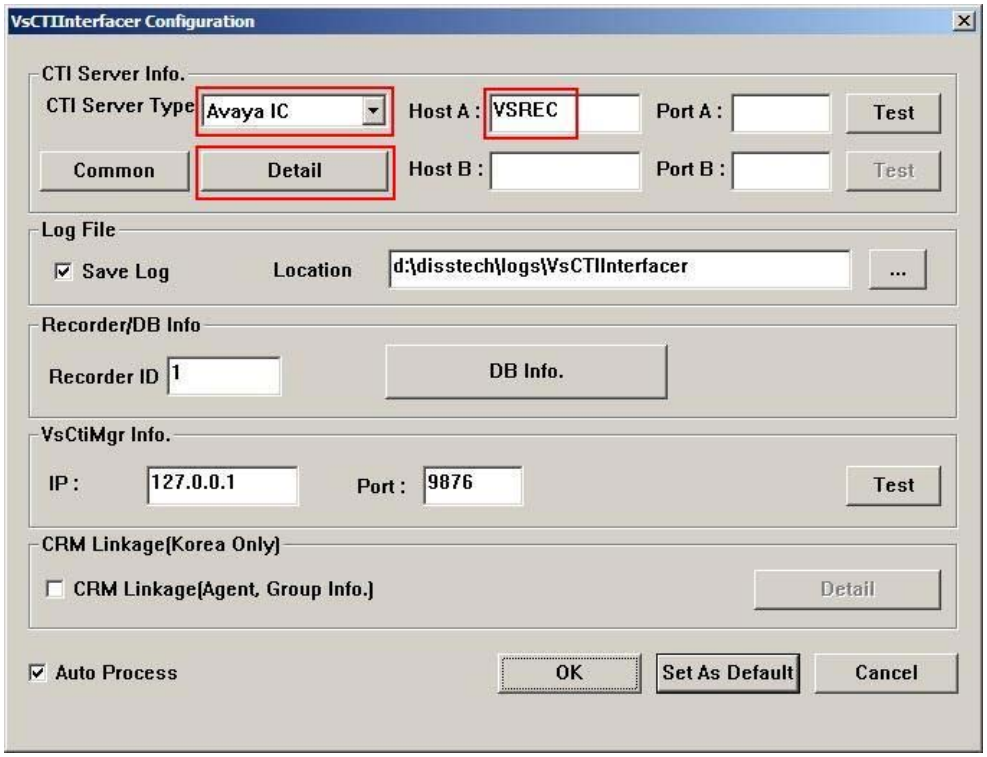
Step	Description
4.	Add the lines that describe the capabilities of the **VSREC** IC Server to the end of the **Interface** definition section (See below for example). The lines to be added can be found in the Voistore VsCTIInterfacer Configuration Guide (see [8]). Select **File > Save** to save the file. 
5.	Copy the modified **vespidl.pk** file to the \etc folder under the Avaya IC installation directory (e.g. **C:\Program Files\Avaya\IC71\etc**) on all the IC Secondary Server systems.

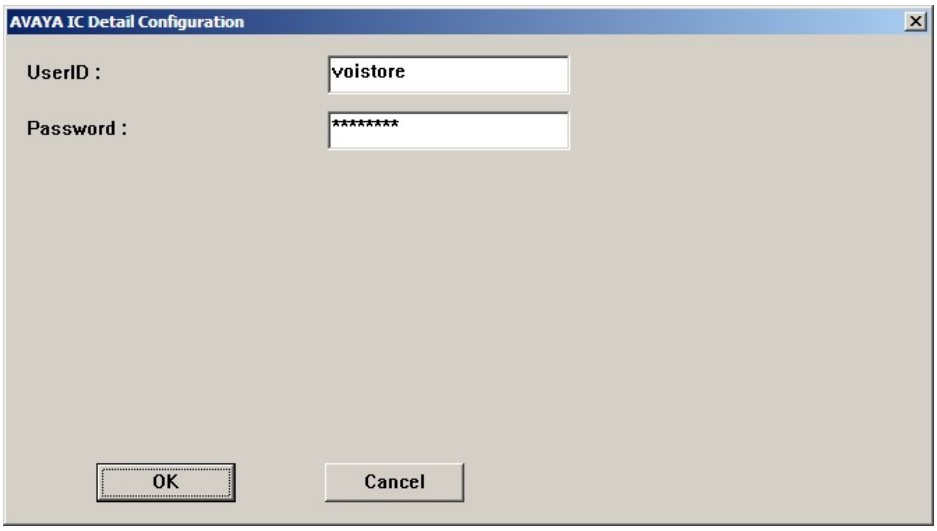
Step	Description
6.	Start **Services** from **Start** > **All Programs** > **Administrative Tools**. Start the **Avaya IC ORB Service 7.1** service. Repeat for all IC Server systems. 

4.2. Administer VsCTIInterfacer

The VsCTIInterfacer translates the call and agent events received from the Avaya IC TS server. The translated information is then sent to Voistore Live. The station and agent extension lists are extracted from the Voistore Live database in order to perform the monitoring.

Step	Description
1.	From the Voistore Live server, go to the **C:\Disstech\bin\VsCTIInterfacer** folder and double-click the file **VsCTIInterfacer.exe** file to launch the **VsCTIInterfacer** utility.

Step	Description
2.	From the VsCTIInterfacer window, click **Tools > Configuration**. 
3.	From the VsCTIInterfacer Configuration window, select **Avaya IC** from the drop-down list for the **CTI Server Type** field and enter **VSREC** for the **Host A** field. Keep all other default field values and click on the **Detail** button. 

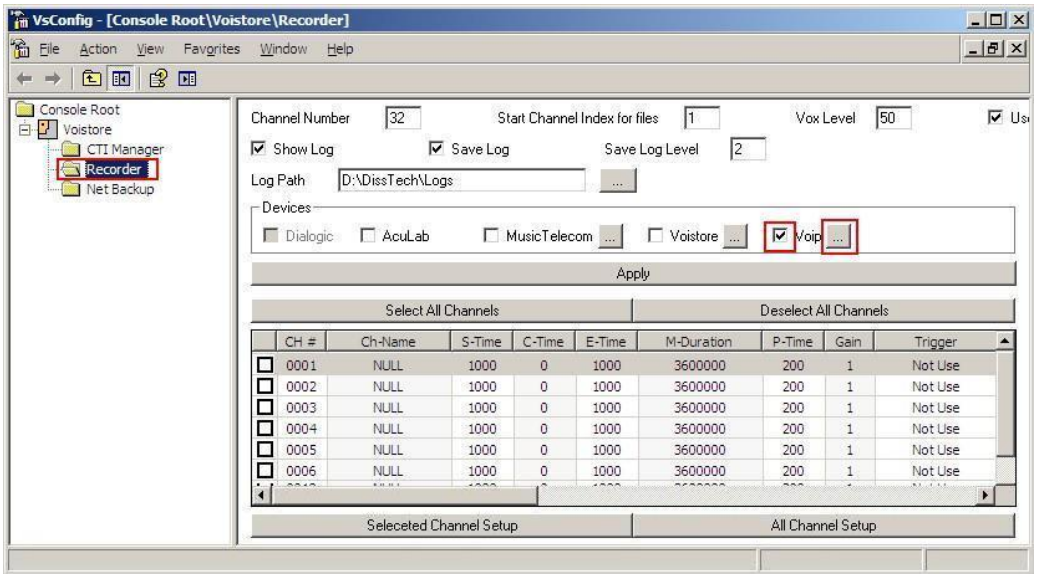
Step	Description
4.	From the AVAYA IC Detail Configuration window, enter the information for the IC Account created in **Section 3.3** in the **UserID** and **Password** fields. Click **OK**. Exit the **VsCTIInterfacer** utility. 

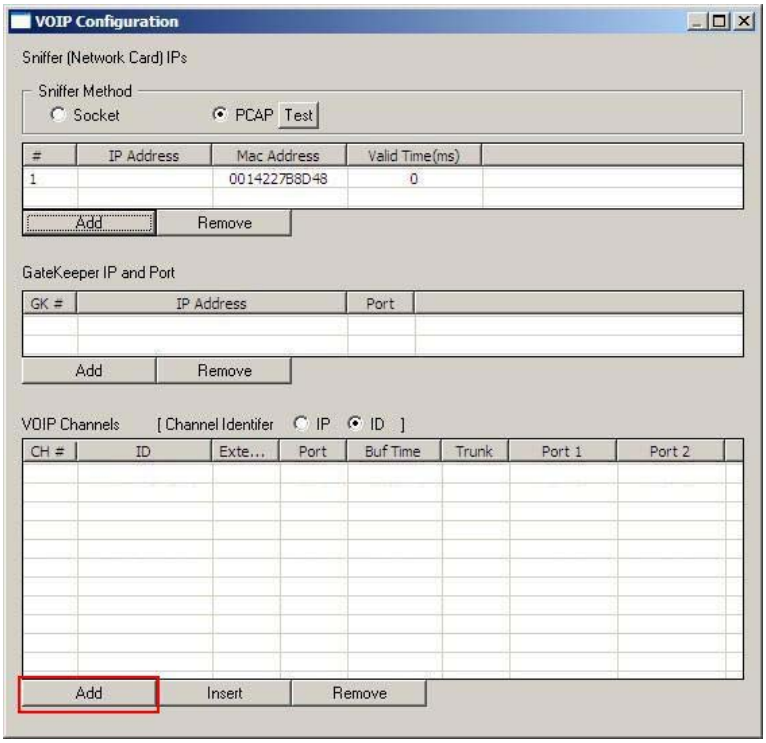
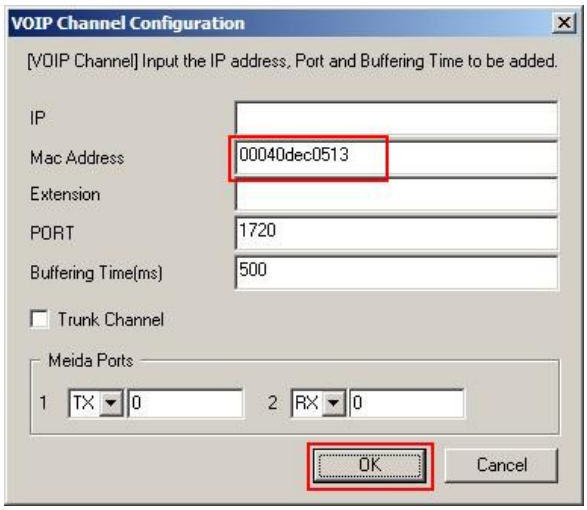
4.3. Administer IP Telephone MAC Address

In an Avaya IP telephony environment where the IP telephones are assigned IP addresses dynamically using Dynamic Host Configuration Protocol (DHCP), the MAC addresses of the IP telephones is used to identify the IP telephone extensions. Each MAC address is then mapped to a channel number. In this test configuration, the following five extensions are configured for recording.

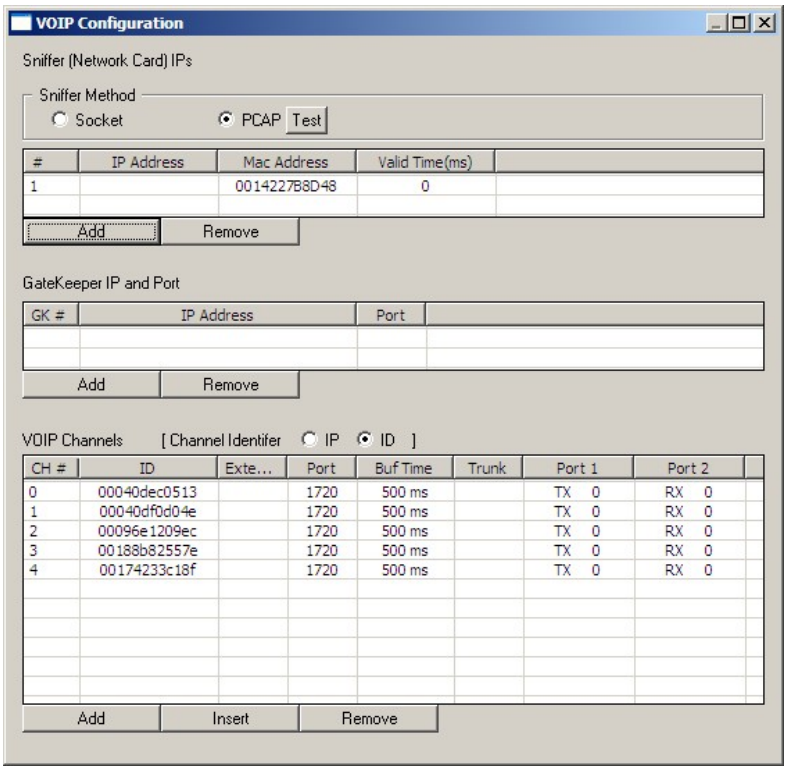
	Extension	MAC Address	Channel Number
1.	20001	00040dec0513	0
2.	20002	00040df0d04e	1
3.	20003	00096e1209ec	2
4.	20004	00188b82557e	3
5.	20005	00174233c18f	4

Table 2: Voistore Live Recording Extensions

Step	Description
1.	From the Voistore Live server, select **Start > All Programs > Voistore Live > Configuration > Server Configuration Console** to launch the **VsConfig** utility.
2.	From the VsConfig window, select **Recorder** on the left menu tree. Click on the check box beside the **Voip** field and click the **'…'** button to configure the VOIP settings. 

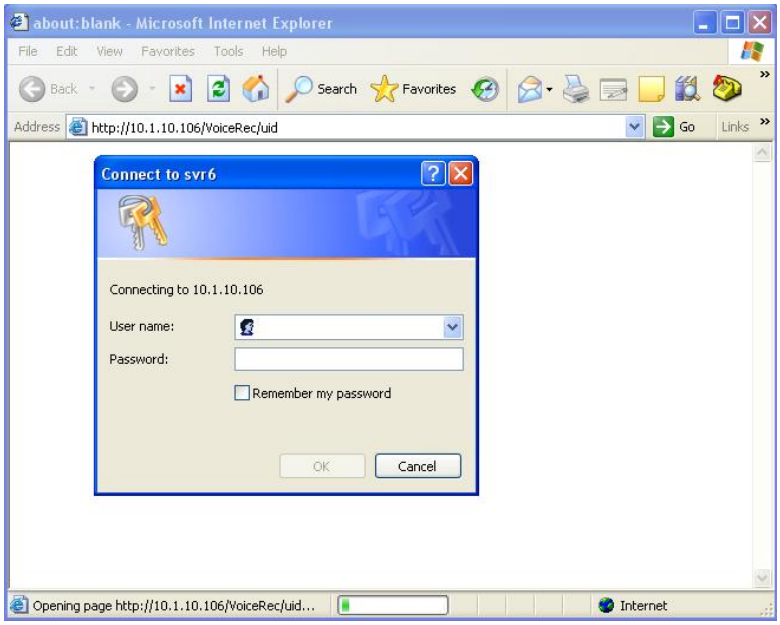
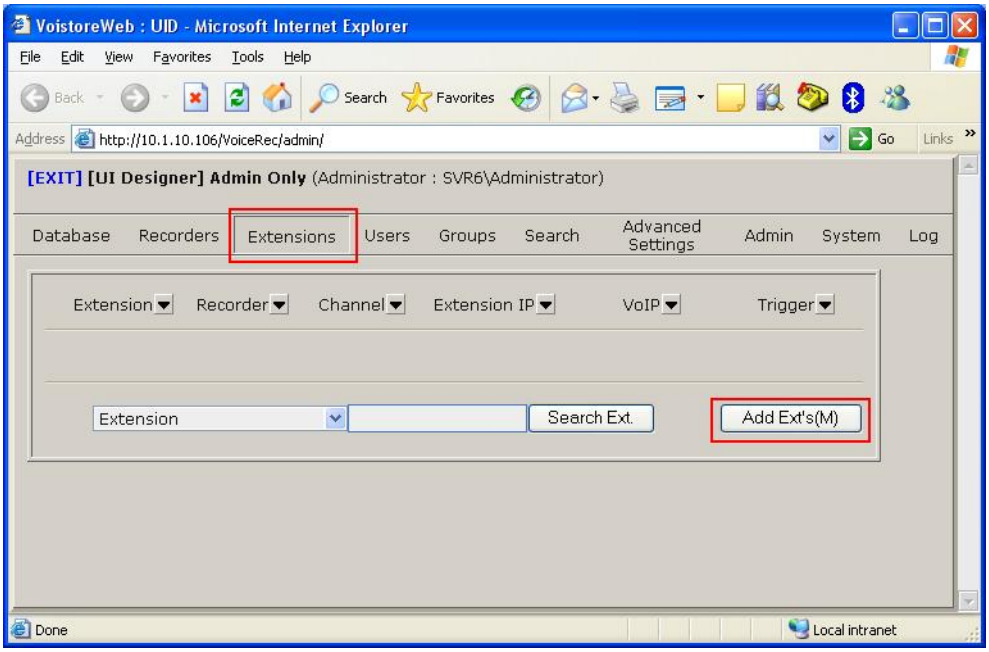
Step	Description
3.	From the VOIP Configuration window, click the **Add** button from the **VOIP Channels** section. 
4.	From the VOIP Channel Configuration window, enter the MAC address of the IP telephone in the **Mac Address** field. Click **OK**. (Note in **Step 5** that the next available Channel Number is automatically assigned.) 

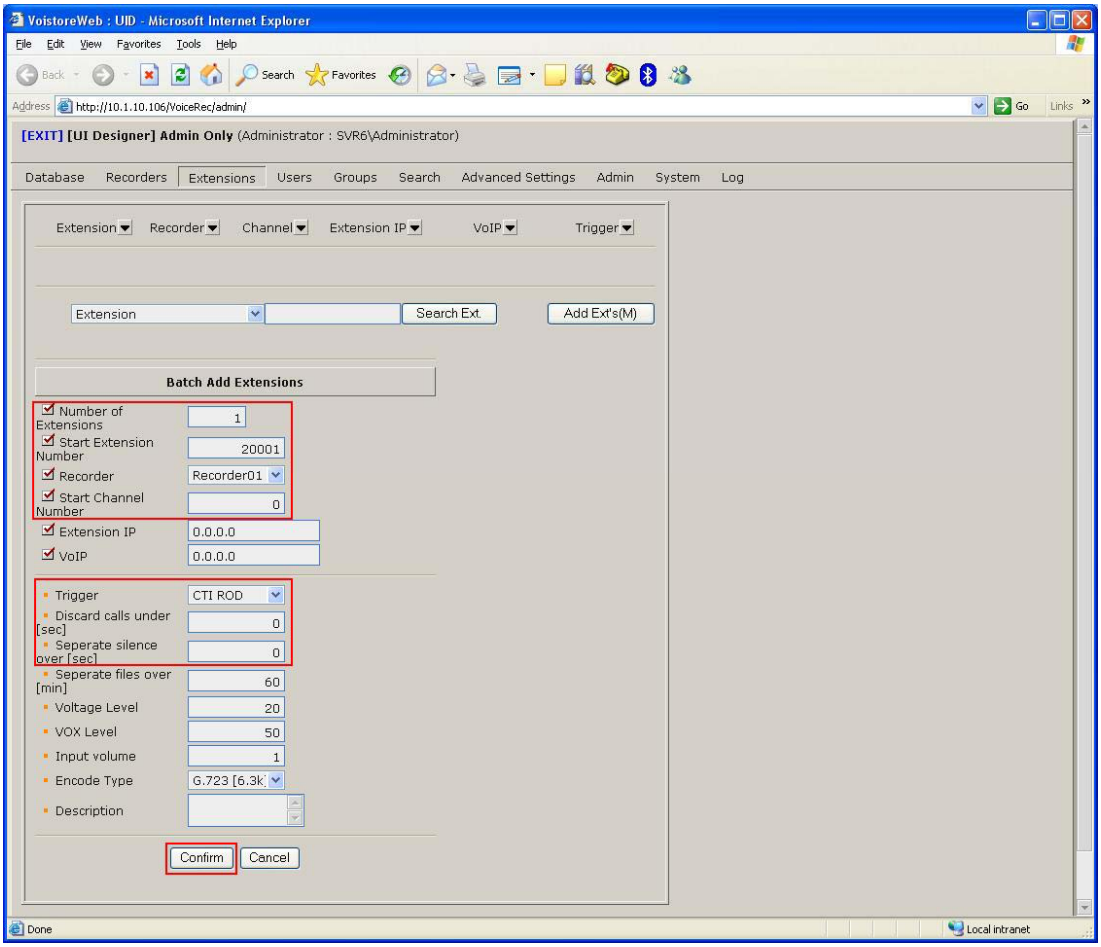
Step	Description
5.	Repeat **Steps 3** and **4** to add the MAC addresses of the remaining four IP telephones to be recorded. When completed, there will be five new entries in the **VOIP Channels** section of the VOIP Configuration window. Exit the **VsConfig** utility.

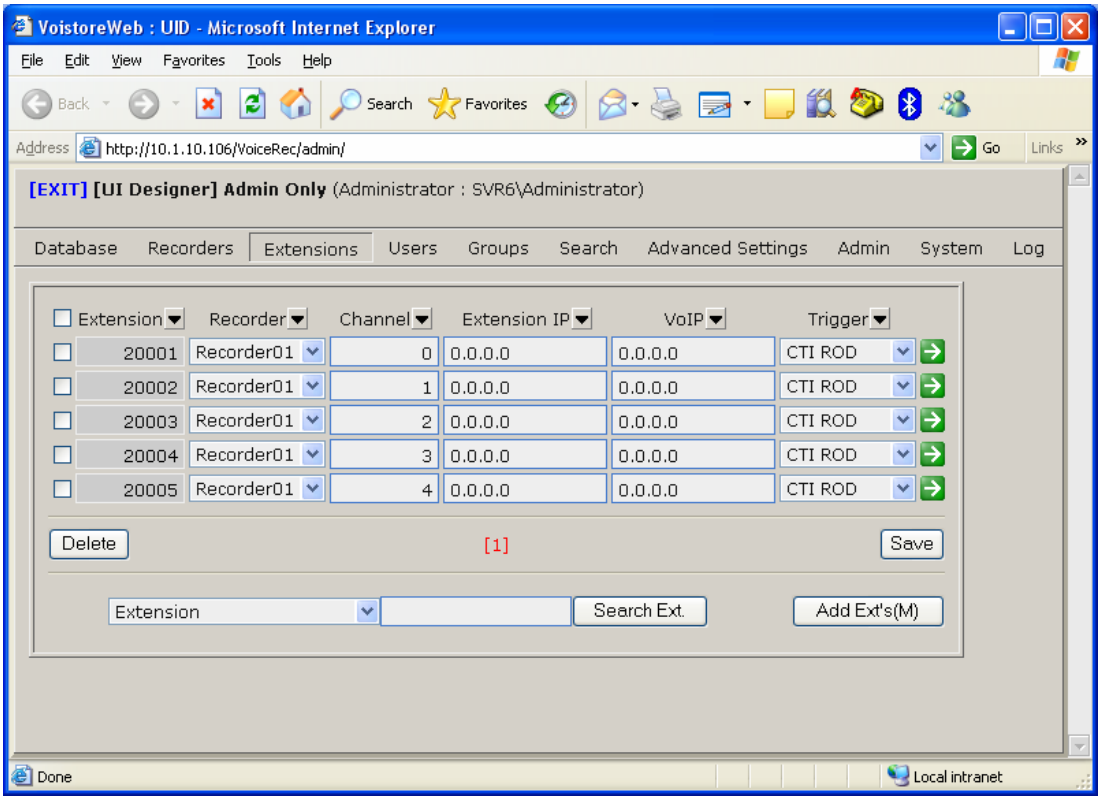


4.4. Administer Phone Extensions

In this section, the extension numbers of the IP telephones are associated with the respective channels created in **Section 4.3**.

Step	Description
1.	Browse to the URL **http://<Voistore Live IP address>/VoiceRec/uid** on the Voistore Live server. Enter an Administrator login and password to log in. 
2.	Click on the **Extensions** button and then click the **Add Ext's (M)** button. 

Step	Description
3.	Enter the following values for the specified fields, retain the default values for the remaining fields and click **Confirm** to continue. Refer to reference [6] for the explanation of the fields. (**Note**: This form can be used to add multiple consecutive extensions.) • **Number of Extensions:** Set to "1" to configure one extension • **Start Extension Number:** The extension number to be configured • **Recorder:** Select the Voistore recorder to use, in this case "Recorder01" • **Start Channel Number:** The channel number to associate with this extension • **Trigger:** Select "CTI ROD" from the drop-down list • **Discard calls under [sec]:** Set to "0" • **Separate silence over [sec]:** Set to "0" In this example, extension 20001 is associated with channel 0, which was configured in **Section 4.3**. 

Step	Description
4.	Repeat **Step 3** to add the remaining four extensions. The following shows the completed configuration for extensions 20001 to 20005. 
5.	Reboot the Voistore Live server for the configurations to become active.

5. Interoperability Compliance Testing

The interoperability compliance testing included feature and serviceability testing. The feature testing evaluated the ability of Voistore Live to monitor and record calls placed to and from stations, agents and VDNs. The serviceability testing introduced failure scenarios to see if Voistore Live is able to resume recording after failure recovery.

5.1. General Test Approach

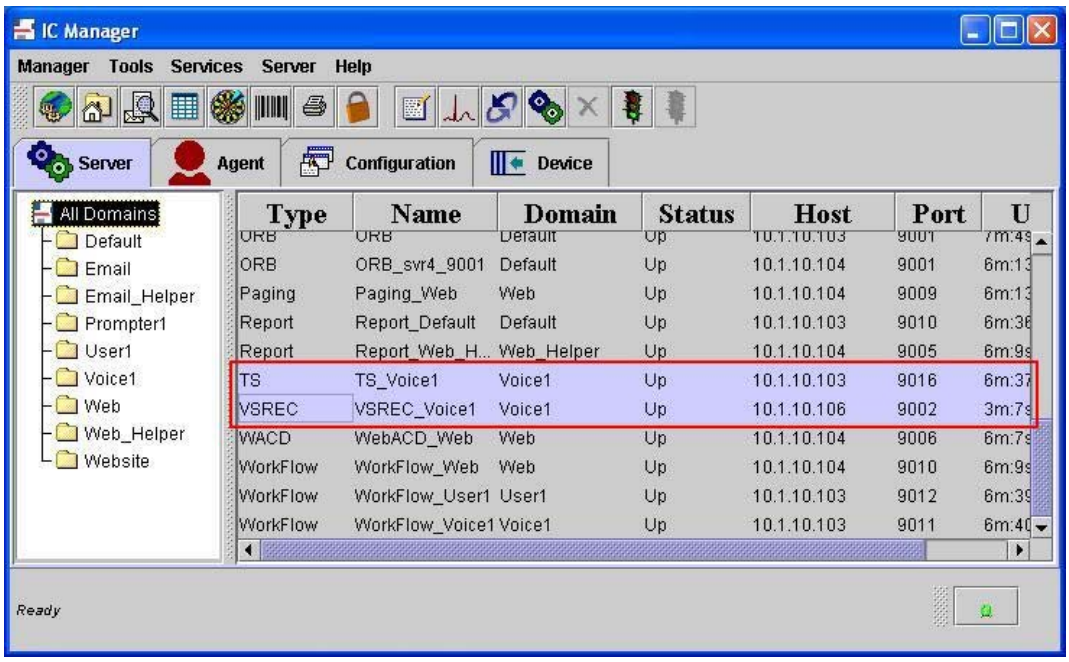
The general approach was to place various types of calls to and from stations, softphones, agents, and VDNs, monitor and record the calls using Voistore Live, and verify the recordings. For feature testing, the types of calls included internal calls, inbound trunk calls, outbound trunk calls, transferred calls, conference calls, service-observed calls and Avaya IC voice chat calls. For serviceability testing, failures such as network disruption and device resets were introduced.

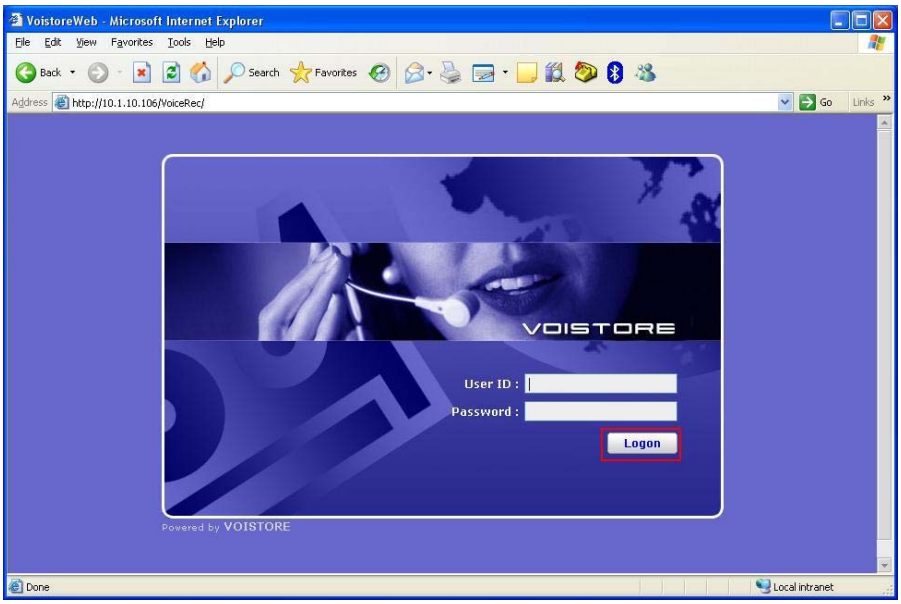
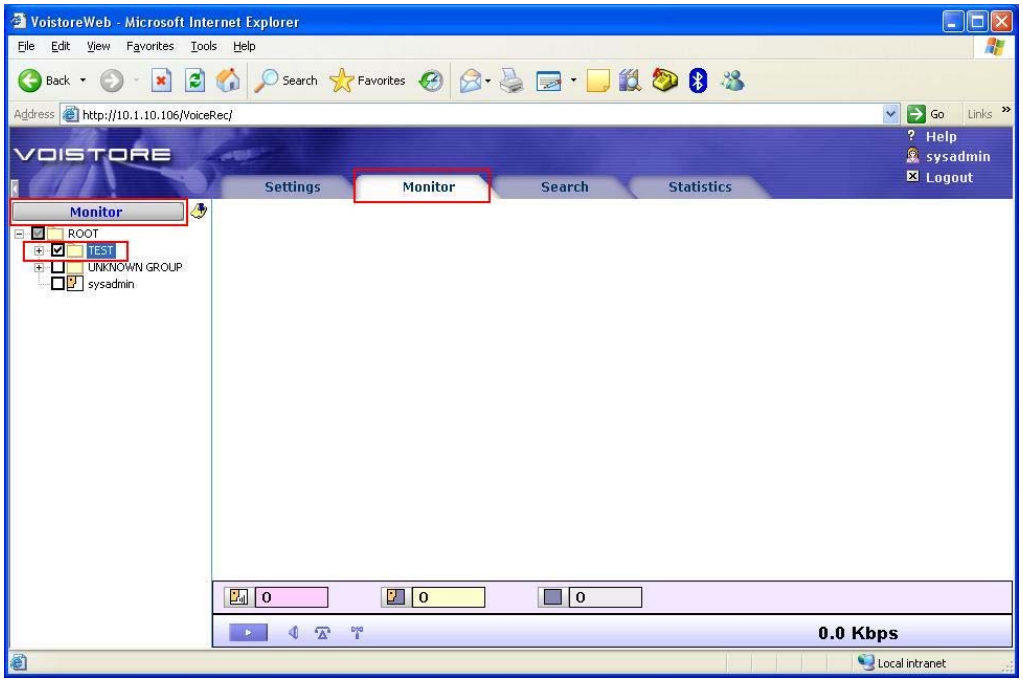
5.2. Test Results

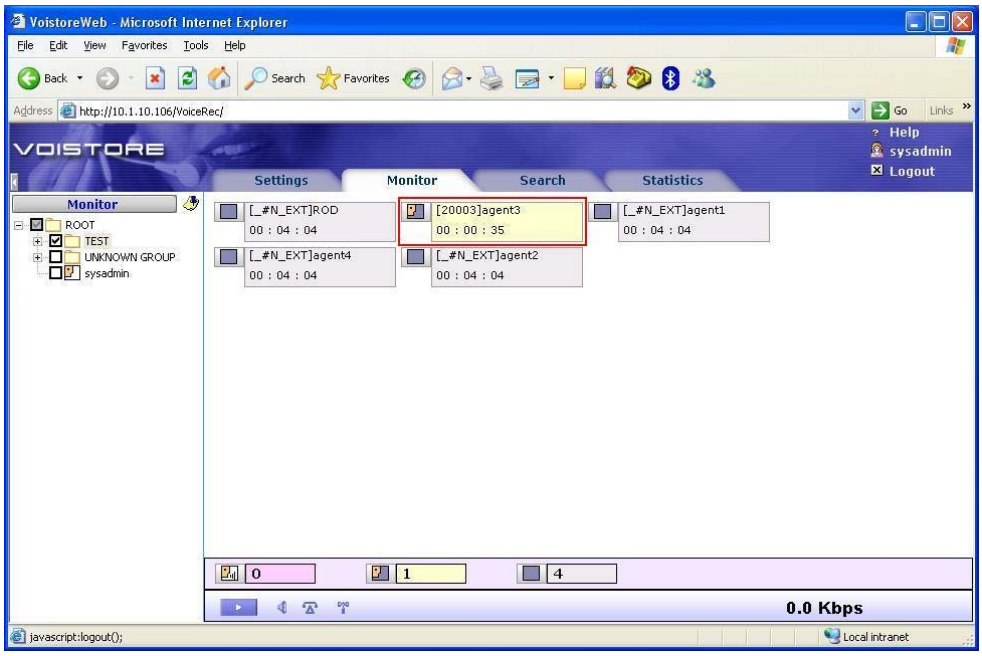
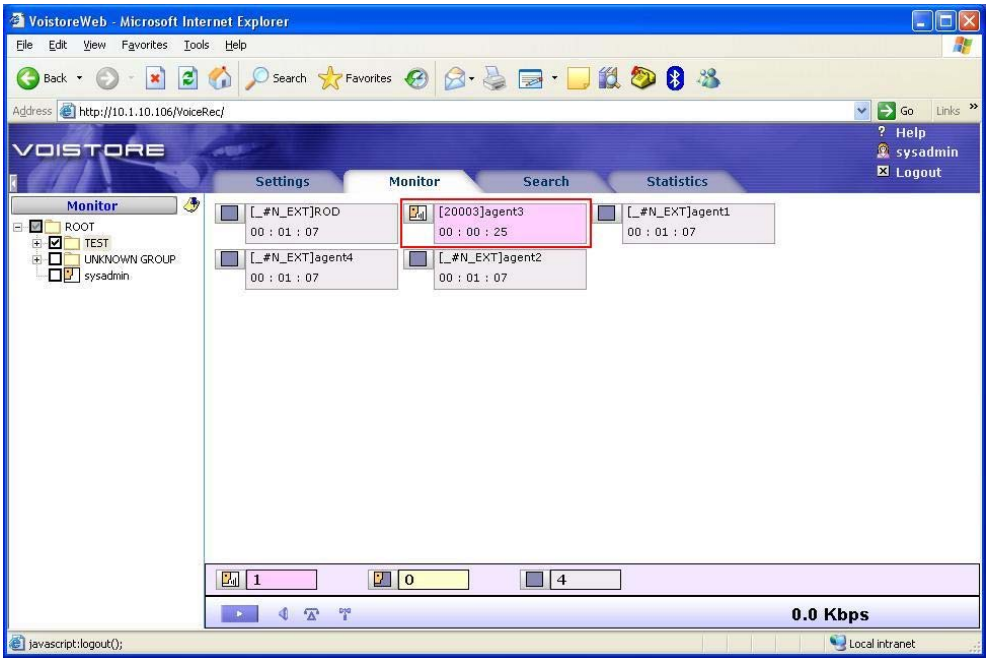
Voistore Live monitored, recorded, stored, and played back the various types of calls discussed in **Section 5.1** successfully. For serviceability testing, Voistore Live was able to resume the recording of calls after restoration of network connectivity to the Avaya AES server and Voistore Live server, and after resets of the Voistore Live server and Avaya Communication Manager.

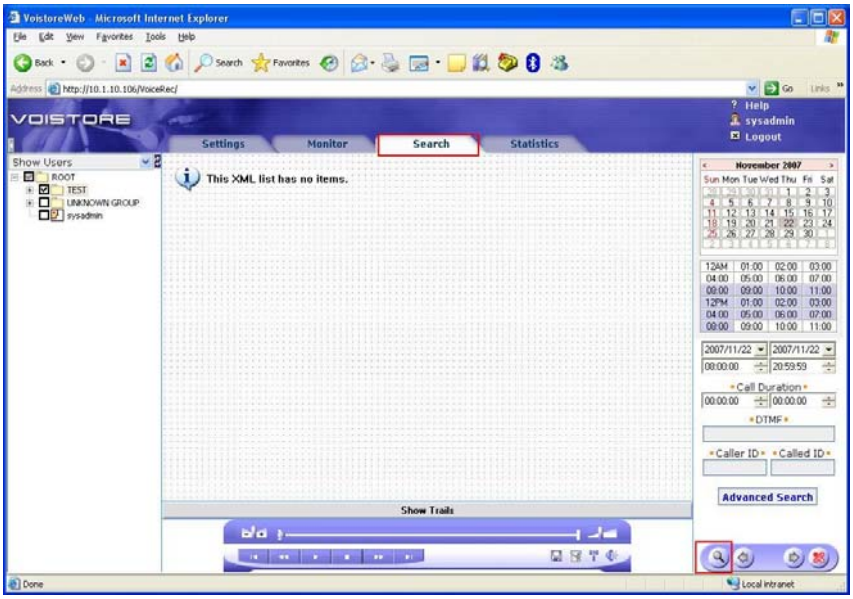
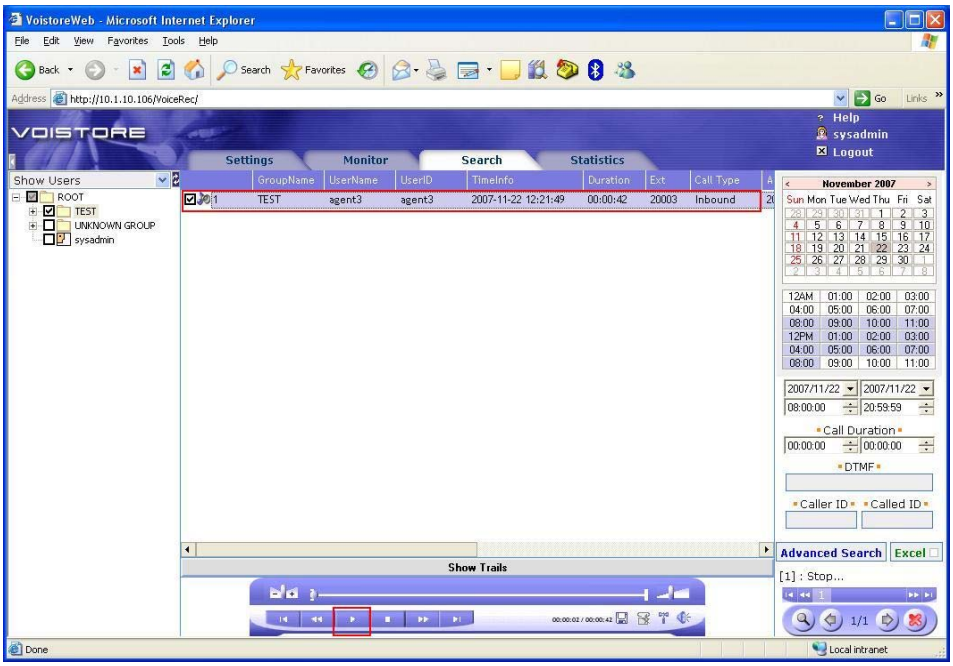
6. Verification Steps

The following steps may be used to verify the configuration.

Step	Description
1.	Launch the IC Manager from the PC where the Avaya IC Design and Administration Tools have been installed, click on the **Server** tab and select **All Domains** in the left pane. Verify that the **Status** field of the **TS** and **VSREC** servers shows **Up**. 

Step	Description
2.	Browse to the URL **http://<Voistore Live IP address>/VoiceRec/** from a PC with a sound card and speakers. Enter the Voistore Live administrator User ID and password and click **Logon**. 
3.	Click on the **Monitor** tab to monitor the agents. In the left window pane, check the box next to the group where the agents are assigned and click the **Monitor** button. In this configuration, all agents are assigned to the **TEST** group. 

Step	Description
4.	Log in an agent using the Avaya Agent client. Verify that the Monitor window shows the agent extension correctly and that the color of the agent changes to **yellow**. In this example, the Avaya Agent "agent3" is logged in to extension 20003. 
5.	Place a call to the agent either through the VDN or directly to the agent extension. Verify that the color of the agent changes to **pink**, indicating that the agent is being recorded. 

Step	Description
6.	To retrieve the recording, click on the **Search** tab. Click on the **Search** button on the bottom right of the screen to display all the recordings for the day. 
7.	From the list of recordings, check the box next to the recording to be played back and click on the **Play** button at the bottom of the window. Verify that the recording is played back correctly. Verify also that the call information above the playback controls is correct for the recording. 

7. Support

Technical support for Voistore Live can be obtained by contacting Voistore's Support Desk at +82 (2) 2025-9111, or sending an e-mail to support@voistore.com.

8. Conclusion

These Application Notes describe the procedures for configuring Voistore Live to interoperate with Avaya Interaction Center to monitor and record calls placed to and from IP stations and softphones on Avaya Communication Manager. The current version of Voistore Live is designed to record IP calls only. Voistore Live successfully passed the compliance testing.

9. Additional References

Avaya product documentation can be found at http://support.avaya.com.

[1] *Administrator Guide for Avaya Communication Manager*, Issue 3, February 2007, Document Number 03-300509
[2] *Avaya MultiVantage Application Enablement Services Administration and Maintenance Guide Release 4.0*, Issue 6, February 2007, Document Number 02-300357
[3] *Avaya Interaction Center Release 7.1 Installation & Configuration*, May 2006, Document Number 07-300569
[4] *Avaya Interaction Center Release 7.1 IC Administration Volume 1: Servers & Domains*, Release 7.1, Issue 3, May 2006, Document Number 07-300570

The following Voistore Live documentation is provided by Voistore.

[5] *Voistore Administration guide*, Release 3.2.7
[6] *Voistore UID Manual*, Release 3.2.7
[7] *Voistore VsConfig Manual*, Release 3.2.7
[8] *Voistore VsCTIInterfacer Configuration Guide*, Release 3.2.7

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.