



Avaya Solution & Interoperability Test Lab

Application Notes for BBX Technologies Vuesion Multimedia Contact Center Voice Recording (using PRI Tap) Module with Avaya IP Office 8.0 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for BBX Technologies Vuesion Multimedia Contact Center Voice Recording (using PRI Tap) module to interoperate with Avaya IP Office. In the compliance testing, BBX Technologies Vuesion Multimedia Contact Center provided skill based routing and announcements using the SIP User, TAPI, and DevLink interfaces from Avaya IP Office 8.0. The Voice Recording (using PRI Tap) module supports preconfigured recording of both inbound and outbound calls.

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 BBX Technologies Vuesion Multimedia Contact Center Voice Recorder (using PRI Tap) module to interoperate with Avaya IP Office. In the compliance testing, BBX Technologies Vuesion Multimedia Contact Center provided skill based routing and announcements by using the SIP User, TAPI, and DevLink interfaces from Avaya IP Office. The Voice Recording (using PRI Tap) module supports preconfigured recording of both inbound and outbound calls.

The SIP User interface was used by Vuesion to register virtual SIP users and to route incoming calls via an available SIP user in a hunt group to the Vuesion server. The TAPI interface was used by Vuesion to monitor and control the virtual SIP and physical agent and supervisor users, and to provide call control via the agent and supervisor desktops. Voice Recording (using PRI Tap) module supports preconfigured recording by tapping into a physical PRI trunk and listen to the call through the PRI Tap hardware.

The BBX Technologies Vuesion Multimedia Contact Center consisted of the Vuesion Server, and Vuesion Client software.

2. General Test Approach and Test Results

The feature test cases were performed manually. Upon start of the BBX Technologies Vuesion Multimedia Contact Center application, the application automatically registers the virtual SIP users to Avaya IP Office.

For the manual part of the testing, incoming calls were made to the main hunt group. The Vuesion server used the TAPI event messages to track agent states, and specified calls to be redirected to available agents. Since the testing concentrated on the Voice Recording module, preconfigured recording was verified. A call was made into the main hunt group and call was recorded based on a preconfigured template on the agent desktop. The recording is made possible by having the Vuesion Server tap into a physical PRI trunk and listen to the call through the PRI Tap hardware.

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 only on verifying the following on BBX Technologies Vuesion Multimedia Contact Center Voice Recording module:

- Proper registration of virtual SIP users.
- Verify if call is being presented to an available agent.
- Verify if incoming call to the agent is recorded properly.
- While agent on active call, activate features like hold and reconnect, transfer and call park. Verify if call is recorded properly.
- Establish two active calls at two different agents and verify if both calls are recorded properly.
- Establish two active calls at one agent and verify if both calls are recorded properly.
- Verify if outbound PSTN call from the agent is recorded properly.

The serviceability testing focused on verifying the ability of BBX Technologies Vuesion Multimedia Contact Center Voice Recording module to recover from adverse conditions, such as disconnecting and reconnecting the Ethernet cables to the Vuesion server and to the Vuesion client.

2.2. Test Results

All test cases were executed and passed. The following observations were noted on BBX Technologies Vuesion Multimedia Contact Center Voice Recording module during compliance testing:

- Recording is not supported for Conference calls. However during a conference call, the recording file can be found and played from the folder. The entry is not seen in the Call Recorder Administration screen.
- In the blind transfer scenario, the entire recording is on one file. The Call Recorder Administration screen entry shows the first called agent information.
- Agent is presented an incoming call through the main hunt group from Set A. Set B calls the Agent directly while Agent is in conversation with Set A. Agent puts Set A on hold and answers call from Set B. Agent then releases the call from Set B and reconnects the call to Set A and then releases the call. Call Recorder Administration screen shows one entry and it is for the first call. The entire recording is on one file.
- Agent 1 is presented an incoming call through the main hunt group. Agent 1 then parks the call and the call is un-parked by Agent 2. Call Recorder Administration screen has two entries, one for Agent 1 and the other for Agent 2. The file size for Agent 2 entry shows 0 even though there is content in the file, so it's only a display issue
- Disconnect Ethernet cable on the Vuesion server while recording is in progress. Reconnect the cable. There were no entries in the Call Recorder Administration screen however there was an entry in the Call Recorder folder with no contents in it.

2.3. Support

Technical support on BBX Technologies Vuesion Multimedia Contact Center can be obtained through the following:

- **Phone:** (800) 930-4229, option 4
- **Email:** bbxservice@bbxtech.com
- **Web:** www.bbxtech.com

3. Reference Configuration

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

In the compliance testing, the Vuesion Manager, Vuesion Reports and Vuesion Client software were running on the Vuesion server, while another server was hosting the Avaya IP Office Manager. During compliance testing two Vuesion clients were logged in on the same server where one was connected to the Desktop agent and the other to the Desktop Supervisor agent. Emulated PSTN was used to make inbound/outbound calls. The Vuesion Server hosted the folders related to Voice Recording module and therefore the recordings were played back on the same. The Vuesion server had PRI Tap card installed in it. The T1/E1 cable from the PSTN was connected to the PRI Tap card and another T1/E1 cable from the PRI Tap card was connected to the PRI port of the IP Office.

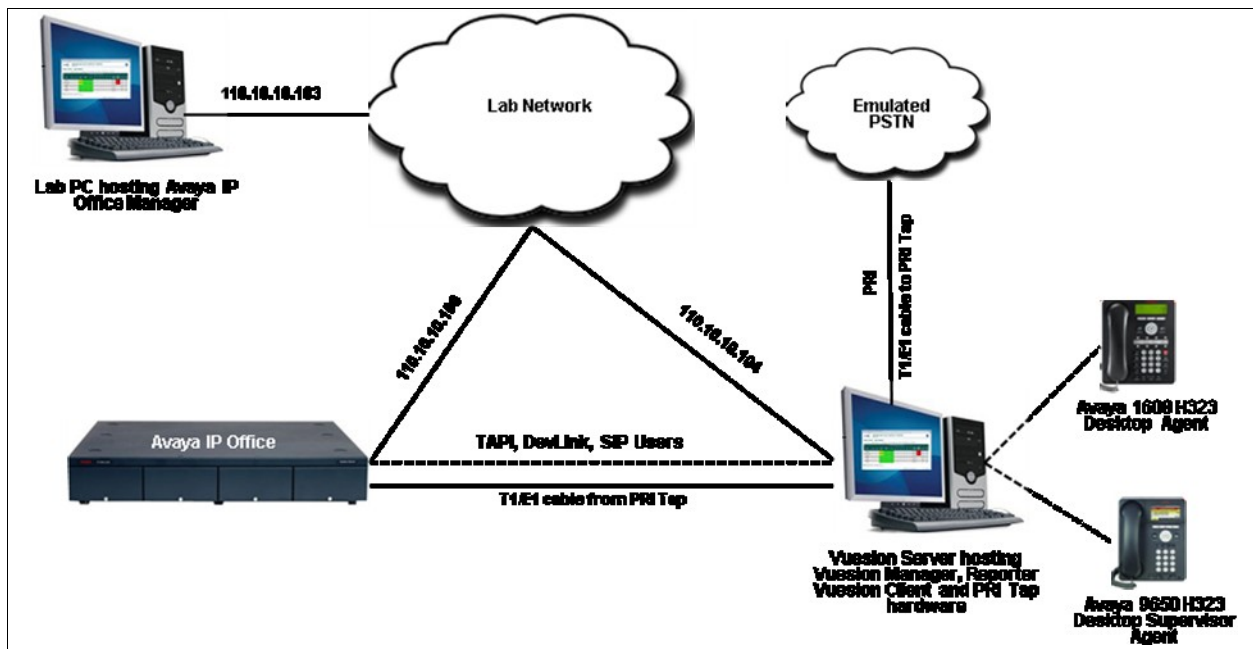


Figure 1: Compliance Test Lab Configuration

4. Equipment and Software Validated

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

Equipment	Software
Avaya IP Office 500	8.0 (18)
Avaya IP Office Manager	10.0 (18)
Avaya 9650 IP Telephone (H.323)	3.186a
Avaya 1608 IP Telephone (H.323)	1.300B
BBX Technologies Vuesion Server on Windows 2008 Server R2 Standard <ul style="list-style-type: none">• Avaya TAPI (tspi2w.tsp)• Avaya DevLink (devlink.dll)	V7.03 1.0.0.35 1.0.0.5
BBX Technologies Vuesion Client	V7.03
AudioCode PRI Tap card Hardware	5.6.0

5. Configure Avaya IP Office

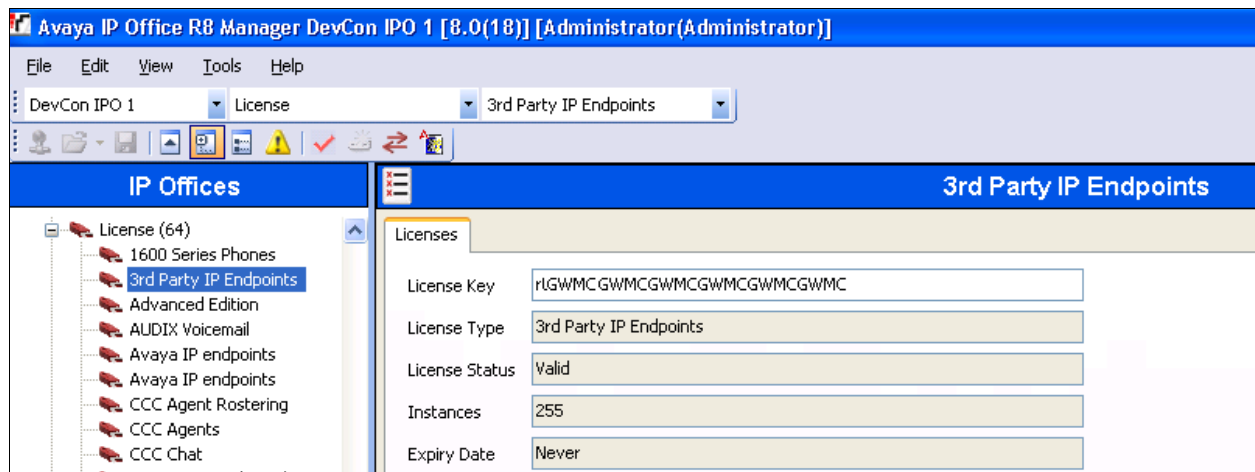
This section provides the procedures for configuring Avaya IP Office. The procedures include the following areas:

- Verify IP Office license
- Obtain LAN IP address
- Administer SIP Registrar
- Administer SIP extensions
- Administer SIP users
- Administer hunt groups
- Administer agents
- Administer supervisors
- Administer incoming call route
- Administer short code

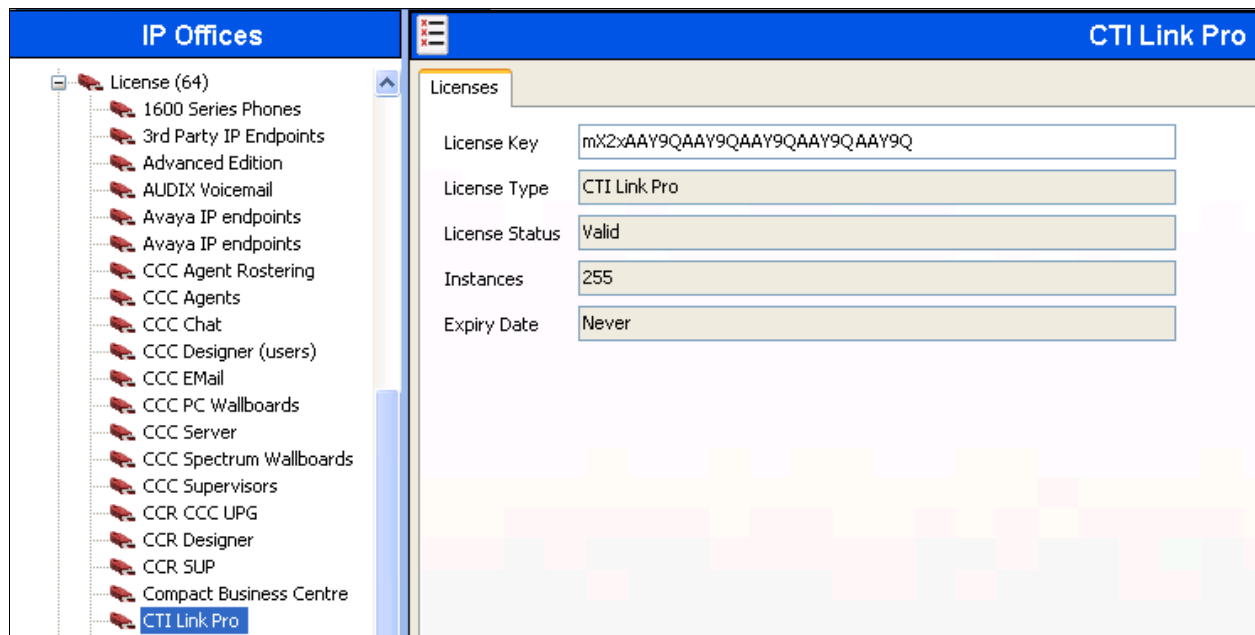
5.1. Verify IP Office License

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

The **Avaya IP R8 Office Manager** screen is displayed. From the configuration tree in the left pane, select **License** → **3rd Party IP End-points** to display the **3rd Party IP End-points** screen in the right pane. Verify that the **License Status** is “Valid”.

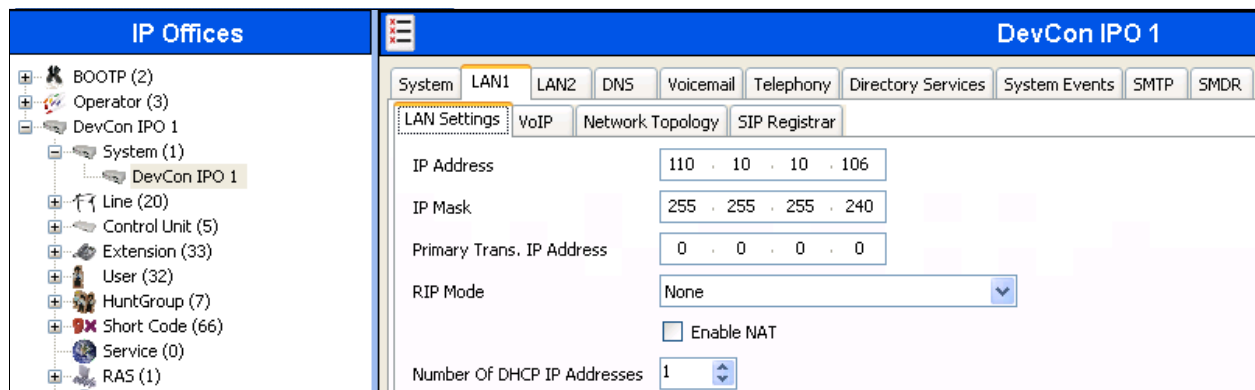


Scroll down the left pane and select **License** → **CTI Link Pro**, to display the **CTI Link Pro** screen in the right pane. Verify that the **License Status** is “Valid”.



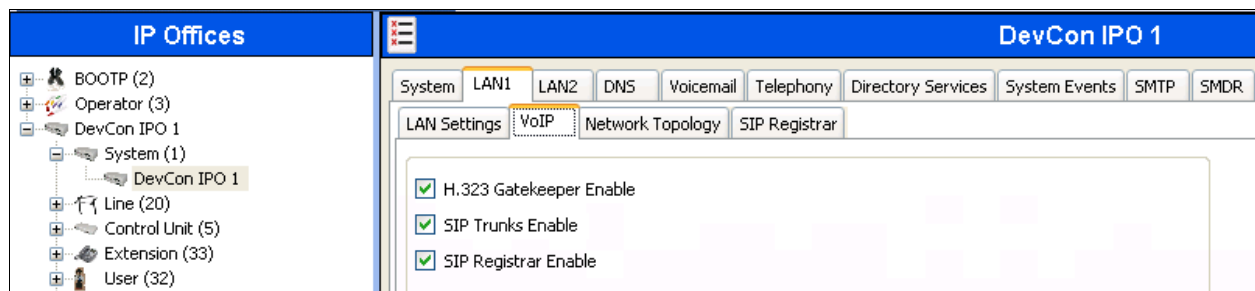
5.2. Obtain LAN IP Address

From the configuration tree in the left pane, select **System** to display the **DevCon IPO 1** screen in the right pane. Select the **LAN1** tab, followed by the **LAN Settings** sub-tab in the right pane. Make a note of the **IP Address**, which will be used later to configure Vuesion. Note that IP Office can support SIP on the LAN1 and/or LAN2 interfaces, and the compliance testing used the LAN1 interface.

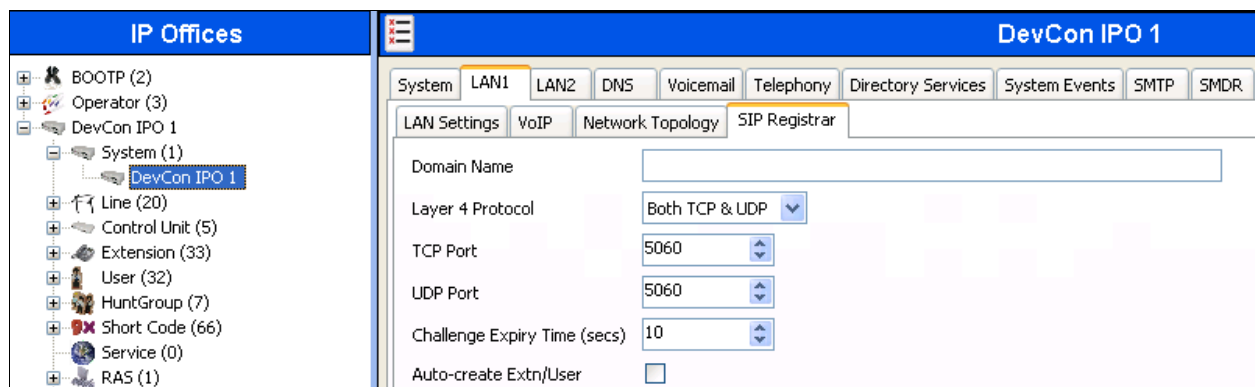


5.3. Administer SIP Registrar

Select the **VoIP** sub-tab. Make certain that **SIP Registrar Enable** is checked, as shown below. Retain default values for the remaining fields.

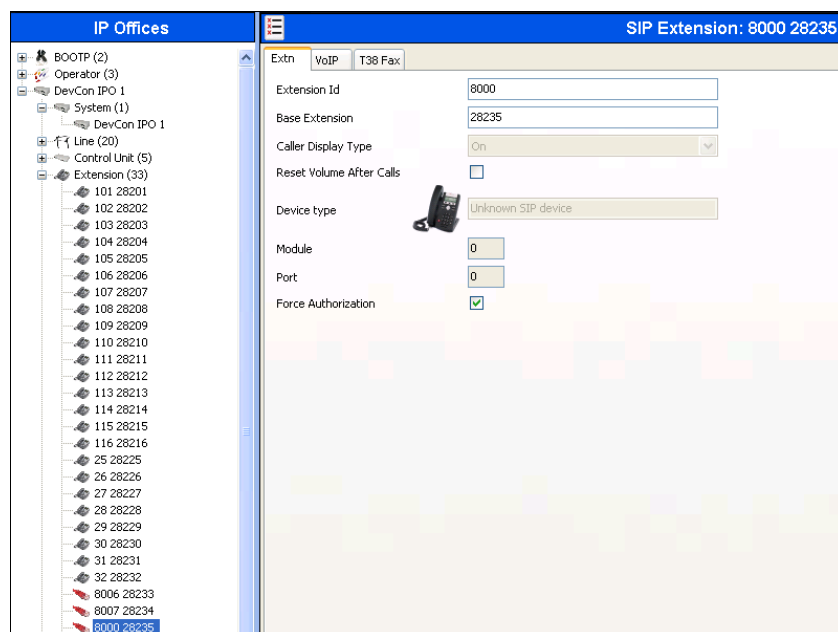


Select the **SIP Registrar** sub-tab, and enter a valid **Domain Name** for SIP endpoints to use for registration with IP Office. In the compliance testing, the **Domain Name** was left blank, so the LAN IP address was used for registration.



5.4. Administer SIP Extensions

From the configuration tree in the left pane, right-click on **Extension**, and select **New → SIP Extension** from the pop-up list to add a new SIP extension. Enter the desired digits for **Base Extension**, and retain the default values in the remaining fields. The screen below shows the added SIP extension.



Select the **VoIP** tab. Check **Re-invite Supported**, and **Reserve 3rd party IP endpoint license**, as shown below. Uncheck **Allow Direct Media Path**. Select “Custom” from **Codec Selection** drop down box and move “G.729 (a) 8K CS-ACELP” to the **Selected** column. Retain the default values in the remaining fields.

Repeat this section to add the desired number of SIP extensions. In the compliance testing, five SIP extensions with base extensions of 28235-28239 were created.

IP Offices

BOOTP (2)

Operator (3)

DevCon IPO 1

System (1)

DevCon IPO 1

Line (20)

Control Unit (5)

Extension (33)

101 28201

102 28202

103 28203

104 28204

105 28205

106 28206

107 28207

108 28208

109 28209

110 28210

111 28211

112 28212

113 28213

114 28214

115 28215

116 28216

SIP Extension: 8000 28235*

Extn

VoIP

T38 Fax

IP Address

0 . 0 . 0 . 0

Codec Selection

Custom

Unused

G.711 ULAW 64K

G.711 ALAW 64K

G.722 64K

G.723.1 6K3 MP-MLQ

>>

<<

↑

↓

>>

Selected

G.729(a) 8K CS-ACELP

Fax Transport Support

None

TDM->IP Gain

Default

IP->TDM Gain

Default

DTMF Support

RFC2833

☐ VoIP Silence Suppression

☐ Local Hold Music

☐ Allow Direct Media Path

☒ Re-invite Supported

☐ Use Offerer's Preferred Codec

☐ Reserve Avaya IP endpoint license

☒ Reserve 3rd party IP endpoint license

5.5. Administer SIP Users

From the configuration tree in the left pane, right-click on **User**, and select **New** from the pop-up list. For **Name** and **Full Name**, enter the same desired value prefixed with “IVR”, as required by Vuesion. For **Extension**, enter the first SIP base extension from **Section 5.4**. Retain the default values in the remaining fields. The screen below shows the added SIP user.

The screenshot shows the configuration page for a new SIP user, titled "IVR 28235: 28235". The left pane shows the "IP Offices" configuration tree with "User (32)" selected. The main pane has tabs for "User", "Voicemail", "DND", "ShortCodes", "Source Numbers", "Telephony", "Forwarding", "Dial In", "Voice Recording", and "Button Programming". The "User" tab is active, showing fields for Name, Password, Confirm Password, Full Name, Extension, Locale, Priority, System Phone Rights, and Profile. Below these are checkboxes for "Receptionist", "Enable Softphone", "Enable one-X Portal Services", "Enable one-X TeleCommuter", "Enable Remote Worker", and "Ex Directory". A "Device Type" section shows a telephone icon and "Unknown SIP device". A "User Rights" section includes "User Rights view", "Working hours time profile", "Working hours User Rights", and "Out of hours User Rights".

Select the **Voicemail** tab, and uncheck **Voicemail On**, as shown below.

The screenshot shows the same configuration page, but with the "Voicemail" tab selected. The "Voicemail" tab contains fields for "Voicemail Code", "Confirm Voicemail Code", and "Voicemail Email". To the right are checkboxes for "Voicemail On", "Voicemail Help", "Voicemail Ringback", "Voicemail Email Reading", and "UMS Web Services". Below these is a "Voicemail Email" section with radio buttons for "Off", "Copy", "Forward", and "Alert". A "DTMF Breakout" section includes fields for "Reception / Breakout (DTMF *0)", "Breakout (DTMF *2)", and "Breakout (DTMF *3)".

Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab. Enter a desired **Login Code**.

Repeat this section to add a new user for each SIP extension from **Section 5.4**. In the compliance testing, five users with extensions of 28235-28239 were created.

The screenshot displays the Avaya IP Office configuration interface. On the left, the 'IP Offices' tree shows a hierarchy: BOOTP (2), Operator (3), DevCon IPO 1, System (1), DevCon IPO 1, Line (20), Control Unit (5), Extension (33), and User (32). Under 'User (32)', a list of extensions is visible: 28201 Extn28201, 28202 Extn28202, 28203 Extn28203, 28204 Extn28204, 28205 Extn28205, 28206 Extn28206, 28207 Extn28207, 28208 Extn28208, 28209 Extn28209, 28210 Extn28210, and 28211 Extn28211.

The main panel is titled 'IVR 28235: 28235' and contains several tabs: User, Voicemail, DND, ShortCodes, Source Numbers, Telephony (selected), Forwarding, Dial In, Voice Recording, and Button Programming. Within the 'Telephony' tab, there are sub-tabs: Call Settings, Supervisor Settings (selected), Multi-line Options, and Call Log.

The 'Supervisor Settings' sub-tab contains the following configuration options:

- Login Code: A text field containing '****'.
- Login Idle Period (secs): A text field.
- Monitor Group: A dropdown menu showing '<None>'.
- Coverage Group: A dropdown menu showing '<None>'.
- Status on No-Answer: A dropdown menu showing 'Logged On (No change)'.
- Reset Longest Idle Time: A section with two radio buttons: 'All Calls' (selected) and 'External Incoming'.
- After Call Work Time (secs): A dropdown menu showing 'System Default (10)'.
- Force Login: A checkbox.
- Force Account Code: A checkbox.
- Outgoing Call Bar: A checkbox.
- Inhibit Off-Switch Forward/Transfer: A checkbox.
- Can Intrude: A checkbox.
- Cannot be Intruded: A checked checkbox.
- Can Trace Calls: A checkbox.
- CCR Agent: A checkbox.
- Automatic After Call Work: A checkbox.

5.6. Administer Hunt Groups

Administer three hunt groups for the following purposes:

- Main hunt group for delivering of incoming trunk calls to Vuesion.
- Monitor hunt group for supervisor monitoring of agents.
- Transfer hunt group for use by Vuesion for internal transfers.

5.6.1. Administer Main Hunt Group

From the configuration tree in the left pane, right-click on **HuntGroup** and select **New** from the pop-up list to add a new hunt group. This hunt group will be used to deliver incoming trunk calls to Vuesion.

Enter desired values for **Name** and **Extension**. For **Ring Mode**, select “Rotary” from the drop-down list. Retain the default values in the remaining fields

In the **User List** section, add the desired number of virtual SIP users from **Section 5.5** as members. In the compliance testing, 28235 to 28237 were added as members as shown below.

The screenshot displays the configuration window for a 'Rotary Group BBX Main: 77100'. The left pane shows the 'IP Offices' tree with 'HuntGroup (7)' expanded, highlighting '77100 BBX Main'. The main pane shows the configuration for this group. The 'Name' is 'BBX Main' and the 'Extension' is '77100'. The 'Ring Mode' is set to 'Rotary'. The 'No Answer Time (secs)' is 'System Default (15)'. The 'Hold Music Source' is 'No Change'. The 'Agent's Status on No-Answer Applies To' is 'None'. The 'Central System' is 'DevCon IPO 1'. The 'User List' section contains a table with three members:

Extension	Name	System
28235	IVR 28235	DevCon IPO 1
28236	IVR 28236	DevCon IPO 1
28237	IVR 28237	DevCon IPO 1

Buttons for 'Edit...' and 'Remove' are at the bottom right of the User List section.

Select the **Voicemail** tab, and uncheck **Voicemail On**.

IP Offices

- BOOTP (2)
- Operator (3)
- DevCon IPO 1
 - System (1)
 - DevCon IPO 1
 - Line (20)
 - Control Unit (5)
 - Extension (33)
 - User (32)
 - HuntGroup (7)
 - 77200 BBX CSR
 - 77600 BBX Failover
 - 77100 BBX Main

Rotary Group BBX Main: 77100

Hunt Group | **Queuing** | Overflow | Fallback | **Voicemail** | Voice Recording | Announcements | SIP

Voicemail Code:
Confirm Voicemail Code:
Voicemail Email:
Voicemail Email: ☐ Off ☐ Copy ☐ Forward ☐ Alert

☐ **Voicemail On**
Voicemail Answer Time (secs): 45
☐ Voicemail Help
☐ Broadcast
☐ UMS Web Services

Select the **Queuing** tab, and uncheck **Queuing On**.

IP Offices

- BOOTP (2)
- Operator (3)
- DevCon IPO 1
 - System (1)
 - DevCon IPO 1
 - Line (20)
 - Control Unit (5)
 - Extension (33)
 - User (32)
 - HuntGroup (7)
 - 77200 BBX CSR
 - 77600 BBX Failover
 - 77100 BBX Main

Rotary Group BBX Main: 77100

Hunt Group | **Queuing** | Overflow | Fallback | Voicemail | Voice Recording | Announcements | SIP

☐ **Queuing On**
Queue Length: No Limit ☒ Normalize Queue Length
Queue Type: Assign Call On Agent Answer
Calls In Queue Alarm:
Analog Extension to Notify: <None>

5.6.2. Administer Monitor Hunt Group

From the configuration tree in the left pane, right-click on **HuntGroup** and select **New** from the pop-up list to add a new hunt group. This hunt group will be used for supervisor monitoring of agents and also for Call Recording.

Enter desired values for **Name** and **Extension**, and retain the default values in the remaining fields.

Follow the procedures in **Section 5.6.1** to uncheck **Voicemail On**.

In the **User List** section, add the agent users as members. In the compliance testing, 28233 and 28234 were added as members as shown below.

IP Offices

- BOOTP (2)
- Operator (3)
- DevCon IPO 1
 - System (1)
 - DevCon IPO 1
 - Line (20)
 - Control Unit (5)
 - Extension (33)
 - User (32)
 - HuntGroup (7)
 - 77200 BBX CSR
 - 77600 BBX Failover
 - 77100 BBX Main
 - 77500 BBX Monitor
 - 77700 BBX NetCSR
 - 77300 BBX Outdial
 - 77199 IVR Pilot
- Short Code (66)
- Service (0)
- RAS (1)
- Incoming Call Route (4)
- WanPort (0)
- Directory (0)
- Time Profile (0)
- Firewall Profile (1)
- IP Route (2)
- Account Code (1)
- License (64)
- Tunnel (0)

Sequential Group BBX Monitor: 77500

Hunt Group | Queuing | Overflow | Fallback | Voicemail | Voice Recording | Announcements | SIP

Name: BBX Monitor ☐ CCR Agent Group

Extension: 77500

Ring Mode: Sequential No Answer Time (secs): System Default (15)

Hold Music Source: No Change

Agent's Status on No-Answer Applies To: None

Central System: DevCon IPO 1 ☐ Advertize Group

User List

Extension	Name	System
<input checked="" type="checkbox"/> 28233	Extn28233	DevCon IPO 1
<input checked="" type="checkbox"/> 28234	Extn28234	DevCon IPO 1

Edit... Remove

5.6.3. Administer Transfer Hunt Group

From the configuration tree in the left pane, right-click on **HuntGroup** and select **New** from the pop-up list to add a new hunt group. This hunt group will be used by Vuesion for internal transfers.

Enter desired values for **Name** and **Extension**. For **Ring Mode**, select “Rotary” from the drop-down list. Retain the default values in the remaining fields.

In the **User List** section, add the desired number of virtual SIP users from **Section 5.5** as members. In the compliance testing, 28235 to 28237 were added as members as shown below.

Follow the procedures in **Section 5.6.1** to uncheck **Voicemail On** and **Queuing On**.

IP Offices

- BOOTP (2)
- Operator (3)
- DevCon IPO 1
 - System (1)
 - DevCon IPO 1
 - Line (20)
 - Control Unit (5)
 - Extension (33)
 - User (32)
 - HuntGroup (7)
 - 77200 BBX CSR**
 - 77600 BBX Failover
 - 77100 BBX Main
 - 77500 BBX Monitor
 - 77700 BBX NetCSR
 - 77300 BBX Outdial
 - 77199 IVR Pilot
 - Short Code (66)
 - Service (0)
 - RAS (1)
 - Incoming Call Route (4)
 - WanPort (0)
 - Directory (0)
 - Time Profile (0)
 - Firewall Profile (1)
 - IP Route (2)
 - Account Code (1)
 - License (64)
 - Tunnel (0)

Rotary Group BBX CSR: 77200

Hunt Group | Queuing | Overflow | Fallback | Voicemail | Voice Recording | Announcements | SIP

Name: BBX CSR
Extension: 77200
Ring Mode: Rotary
Hold Music Source: No Change
Agent's Status on No-Answer: None
Central System: DevCon IPO 1

☐ CCR Agent Group
☐ Advertise Group

No Answer Time (secs): System Default (15)

User List

Extension	Name	System
<input checked="" type="checkbox"/>	28235	IVR 28235 DevCon IPO 1
<input checked="" type="checkbox"/>	28236	IVR 28236 DevCon IPO 1
<input checked="" type="checkbox"/>	28237	IVR 28237 DevCon IPO 1

5.7. Administer Agents

From the configuration tree in the left pane, select the first agent user, in this case “28233”.

Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab. Uncheck **Cannot be Intruded**, as shown below. If this agent needs to be monitored then select the required monitoring group from the **Monitor Group** drop down menu.

Repeat this section for all agent users.

The screenshot displays the Avaya configuration interface. On the left, the 'IP Offices' tree is expanded to 'User (32)', showing a list of extensions from 28201 to 28233. The right pane is titled 'Extn28233: 28233' and contains several tabs: 'User', 'Voicemail', 'DND', 'ShortCodes', 'Source Numbers', 'Telephony', 'Forwarding', 'Dial In', 'Voice Recording', and 'Button Programming'. The 'Telephony' tab is active, and within it, the 'Supervisor Settings' sub-tab is selected. The 'Supervisor Settings' sub-tab contains the following fields and options:

- Login Code**: Text input field.
- Login Idle Period (secs)**: Text input field.
- Monitor Group**: Dropdown menu set to 'BBX Monitor'.
- Coverage Group**: Dropdown menu set to '<None>'. Below this is a 'Reset Longest Idle Time' section with radio buttons for 'All Calls' (selected) and 'External Incoming'.
- Status on No-Answer**: Dropdown menu set to 'Logged On (No change)'.
- After Call Work Time (secs)**: Text input field set to 'System Default (10)'.
- Force Login**: Unchecked checkbox.
- Force Account Code**: Unchecked checkbox.
- Outgoing Call Bar**: Unchecked checkbox.
- Inhibit Off-Switch Forward/Transfer**: Unchecked checkbox.
- Can Intrude**: Unchecked checkbox.
- Cannot be Intruded**: Unchecked checkbox.
- Can Trace Calls**: Unchecked checkbox.
- CCR Agent**: Unchecked checkbox.
- Automatic After Call Work**: Unchecked checkbox.

5.8. Administer Supervisors

From the configuration tree in the left pane, select the first supervisor user that will be monitoring agents, in this case “28234”.

Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab. For **Monitor Group**, select the Monitor hunt group from **Section 5.6.2**. Check **Can Intrude** and **Cannot be Intruded**.

Repeat this section for all supervisors that will be monitoring agents. In the compliance testing, one supervisor user with extension 28234 was configured, as shown below.

The screenshot displays the Avaya configuration interface. On the left, the 'IP Offices' tree shows a hierarchy: BOOTP (2), Operator (3), DevCon IPO 1, System (1), DevCon IPO 1, Line (20), Control Unit (5), Extension (33), and User (32). Under 'User (32)', a list of extensions from 28201 to 28234 is shown, with 28234 highlighted. The main panel is titled 'Extn28234: 28234*' and contains several tabs: User, Voicemail, DND, ShortCodes, Source Numbers, Telephony (selected), Forwarding, Dial In, Voice Recording, and Button Programming. The 'Telephony' tab has sub-tabs: Call Settings, Supervisor Settings (selected), Multi-line Options, and Call Log. The 'Supervisor Settings' sub-tab contains the following fields and options:

- Login Code: [Text Field]
- Login Idle Period (secs): [Text Field]
- Monitor Group: [Dropdown Menu] (BBX Monitor)
- Coverage Group: [Dropdown Menu] (<None>)
- Status on No-Answer: [Dropdown Menu] (Logged On (No change))
- Reset Longest Idle Time: [Radio Button] All Calls (selected), [Radio Button] External Incoming
- After Call Work Time (secs): [Text Field] (System Default (10))
- Force Login: [Checkbox]
- Force Account Code: [Checkbox]
- Outgoing Call Bar: [Checkbox]
- Inhibit Off-Switch Forward/Transfer: [Checkbox]
- Can Intrude: [Checked Checkbox]
- Cannot be Intruded: [Checked Checkbox]
- Can Trace Calls: [Checkbox]
- CCR Agent: [Checkbox]
- Automatic After Call Work: [Checkbox]

5.9. Administer Incoming Call Route

If necessary, create an incoming call route to route incoming calls to the Main hunt group. In the compliance testing, a PRI line “2” was created for incoming route

As shown in the screen below, the **Line Group ID** of “2” is selected and enter the expected incoming number in the **Incoming Number** field.

The screenshot displays the 'IP Offices' configuration window. On the left, a tree view shows the hierarchy: BOOTP (2), Operator (3), DevCon IPO 1, System (1), DevCon IPO 1, Line (20), Control Unit (5), Extension (33), User (32), HuntGroup (7), 77200 BBX CSR, 77600 BBX Failover, 77100 BBX Main, 77500 BBX Monitor, 77700 BBX NetCSR, 77300 BBX Outdial, 77199 IVR Pilot, Short Code (66), Service (0), RAS (1), and Incoming Call Route (4). Under 'Incoming Call Route (4)', lines 2, 17, 1, and 2 1613962xxxx are listed. Line 2 is selected. The right pane shows the configuration for line 2. The 'Standard' tab is active. The 'Line Group ID' is set to 2, and the 'Incoming Number' is 1613962xxxx. Other fields include Bearer Capability (Any Voice), Incoming Sub Address, Incoming CLI, Locale, Priority (1 - Low), Tag, and Hold Music Source (System Source).

In the **Destinations** tab, the use of “.” in the **Destination** field enables the routing to reach all extensions in the IP Office.

If desired, the Main hunt group can be selected from the **Destination** drop-down to route all incoming trunk calls to Vuesion.

The screenshot displays the 'IP Offices' configuration window. On the left, the tree view is the same as in the previous screenshot. Under 'Incoming Call Route (4)', lines 2, 17, 1, and 2 1613962xxxx are listed. Line 17 is selected. The right pane shows the configuration for line 17. The 'Destinations' tab is active. It shows a table with columns: TimeProfile, Destination, and Fallback Extension. The first row has 'Default Value' in the TimeProfile column, a period (.) in the Destination column, and a dropdown arrow in the Fallback Extension column.

5.10. Administer Short Code

From the configuration tree in the left pane, right-click on **Short Code** and select **New** from the pop-up list to add a new short code for Outbound dialing. Configure the fields as shown below in the right pane.

Note that the short code **19N;** was used during compliance testing for making outbound calls. Outbound calls were routed using **Line Group ID “2”**, which is a PRI Line created on IP Office.

The screenshot displays the IP Office configuration interface. On the left, the 'IP Offices' pane shows a list of short codes, with '19N;' selected at the bottom. The right pane, titled '19N;; Dial', contains the configuration fields for the selected short code:

Short Code	
Code	19N;
Feature	Dial
Telephone Number	.
Line Group ID	2
Locale	United States (US English)
Force Account Code	<input type="checkbox"/>

6. Configure BBX Technologies Vuesion Multimedia Contact Center

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

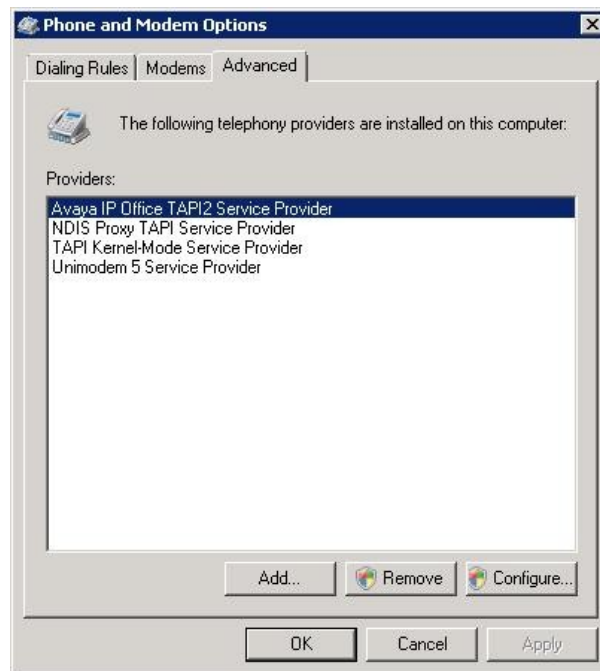
- Administer TAPI driver.
- Administer Switch.txt.
- Stop service.
- Launch Vuesion Manager.
- Administer communication settings.
- Administer local extensions.
- Administer tenants.
- Administer VMAIL extensions.
- Administer queues sizing.
- Administer ACD members.
- Administer ACD groups.
- Administer Trunks.
- Administer Call Recorder.
- Start service.

The configuration of the Vuesion server is typically performed by BBX Technologies technicians. The procedural steps are presented in these Application Notes for informational purposes.

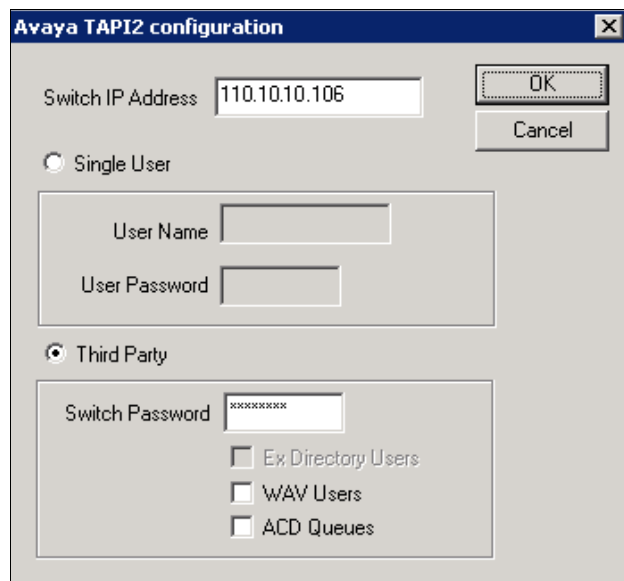
In addition to the shown procedural steps, the application also requires the auto attendant, and the class of service for the agents and supervisors be configured by following reference in **Section 9 [2]**.

6.1. Administer TAPI Driver

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

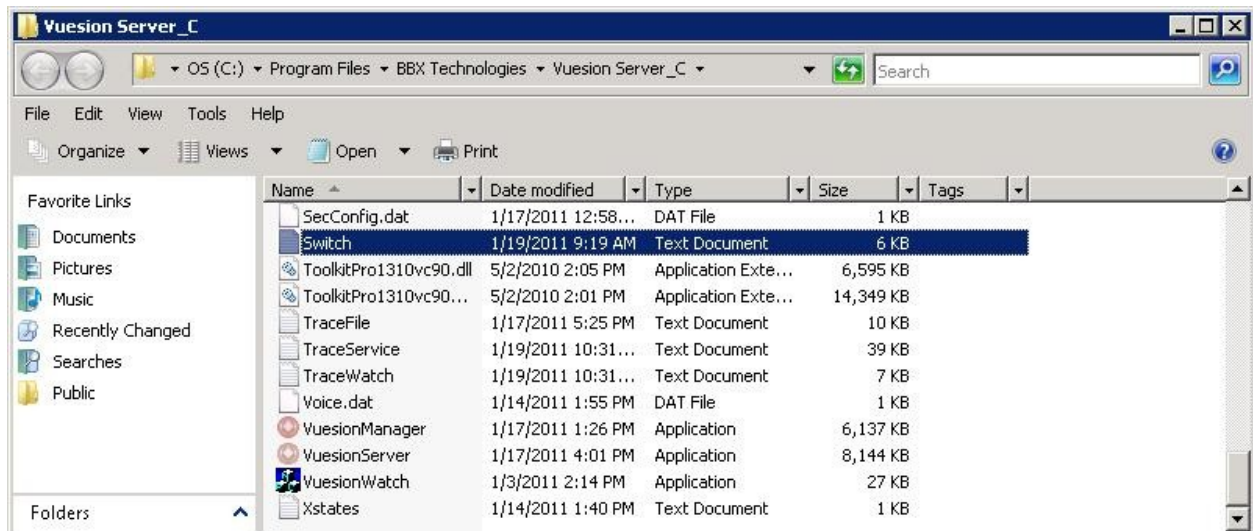


The **Avaya TAPI2 configuration** screen is displayed. For **Switch IP Address**, enter the IP address of Avaya IP Office. Select the radio button for **Third Party**, and enter the IP Office password into the **Switch Password** field. Reboot the Vuesion server.

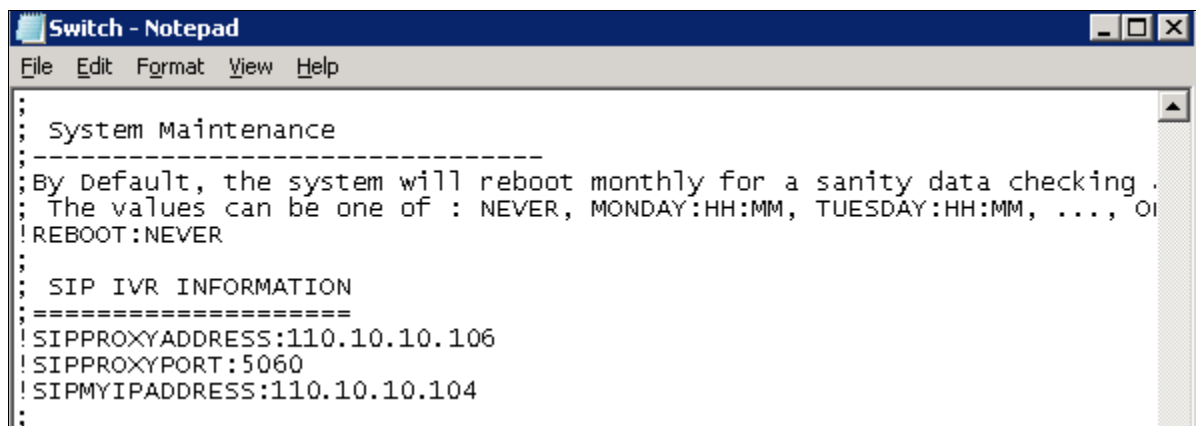


6.2. Administer Switch.txt

Navigate to the **C:\Program Files\BBX Technologies\Vuesion Server_C** directory to locate the **Switch** text file shown below.

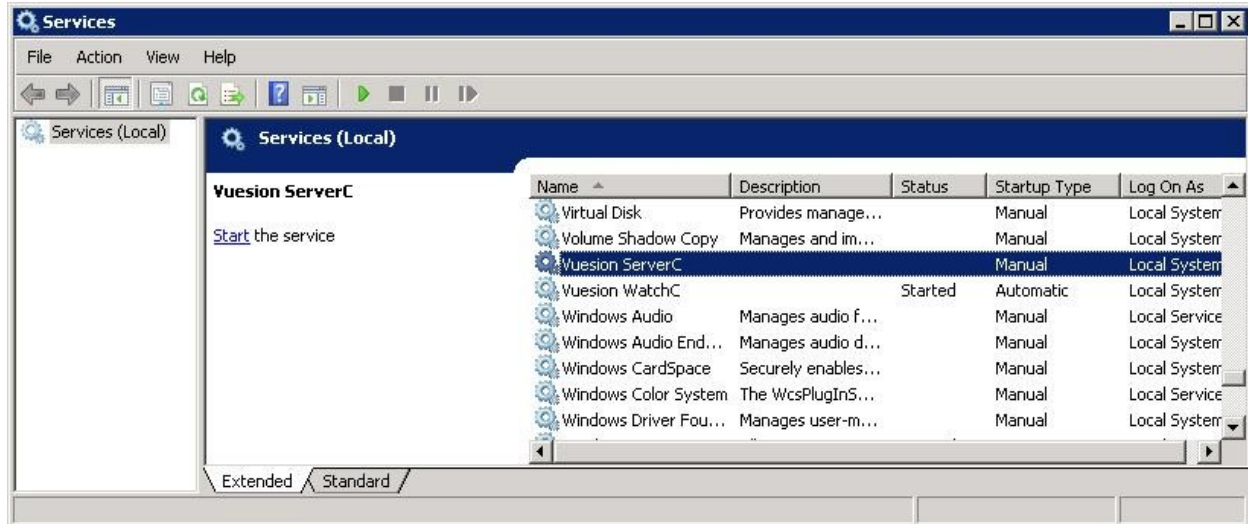


Open the **Switch** text file with the NotePad application. For **SIPPROXYADDRESS**, enter the IP address of IP Office from **Section 5.2**. For **SIPPROXYPORT**, enter the UDP port number from **Section 5.3**. For **SIPMYIPADDRESS**, enter the IP address of the local Ethernet interface used for connectivity with IP Office, in this case "110.10.10.104".



6.3. Stop Service

Select **Start → Control Panel → Administrative Tools → Services**, to display the **Services** screen. Navigate to the **Vuesion ServerC** entry, right-click on the entry and select **Stop**.



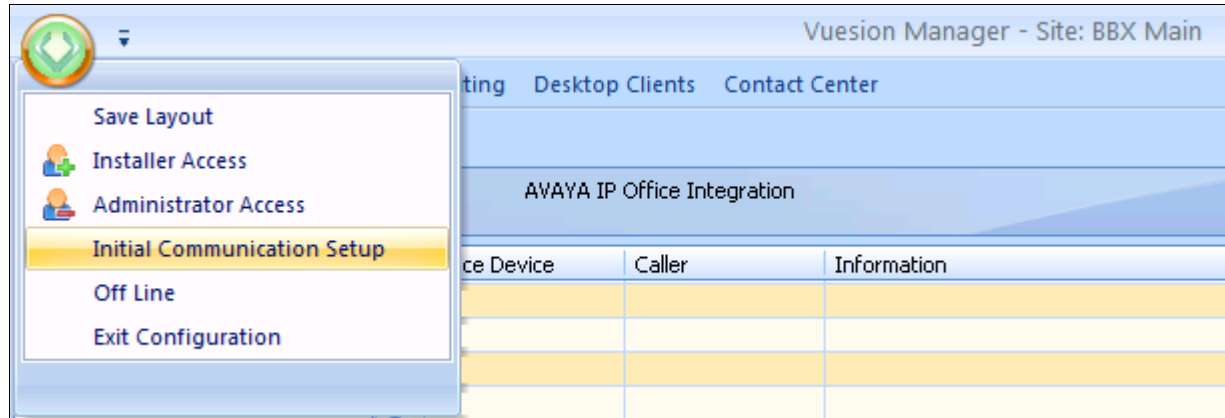
6.4. Launch Vuesion Manager

From the Vuesion server, double-click the **VuesionManager** icon shown on the desktop, which was created as part of installation.



6.5. Administer Communication Settings

The **Vuesion Manager** screen is displayed. Click on the icon in the top left corner, and select **Initial Communication Setup** from the drop-down list.



The **VuesionServer** dialog box is displayed, click **OK**



The **COMMUNICATION SETTINGS** screen is displayed next. Check **IP Enabled**. Enter the IP address and password for IP Office in **PBX IP Addr** and **PBX Password**. **IVR Pilot Number** should be a unique number and therefore use available extension numbers on IP Office. Retain the default values in the remaining fields.

COMMUNICATION SETTINGS

SWITCH COMMUNICATION

RS232 Port #: COM1 BaudRate: 9600

☒ IP Enabled

PBX IP Addr: 110.10.10.106

PBX Password: [Masked]

PBX SMDR IP Address: [Empty]

PBX SMDR TCP Port: 0

NETWORKING SETUP: MASTER SERVER

NetServer IP address: [Empty]

NetServer IP Port: [Empty]

Node Index: [Empty]

THIS SERVER DEFINITION

Customer Location Name: BBX Main

This Server IP address: 110.10.10.104

This Server IP Port: 62029

IVR Location: BBX Main

IVR Pilot Number: 77199

OK

6.6. Administer Local Extensions

The **Vuesion Manager** screen is displayed again. Select **Switch Setup** → **Local Extensions** from the left pane.

Vuesion Manager - Site: BBX Main

Switch Setup Messaging Routing Desktop Clients Contact Center

Switch Setup

- Communication
- Local Extensions
- Off Premise Extensions
- Phantom Extensions
- Park Orbits
- Hold Extensions
- Area Paging
- Trunks
- Reload Switch Info

AVAYA IP Office Integration

	Voice Device	Caller	Information
↓			
↓			
↓			
↓			
↓			

	Record Device	Recording	Information
↓			
↓			
↓			
↓			
↓			

The **DIRECTORY CONFIGURATION** screen is displayed as shown below. Click on **Add** to start adding required agents, supervisors and hunt groups.

[illegible]

The **Extension Range Selection** screen is shown below where Local User Extensions can be added and if required a range can be provided too.

EXTENSION RANGE SELECTION

LOCAL USER EXTENSIONS

First Device #:

How Many ?

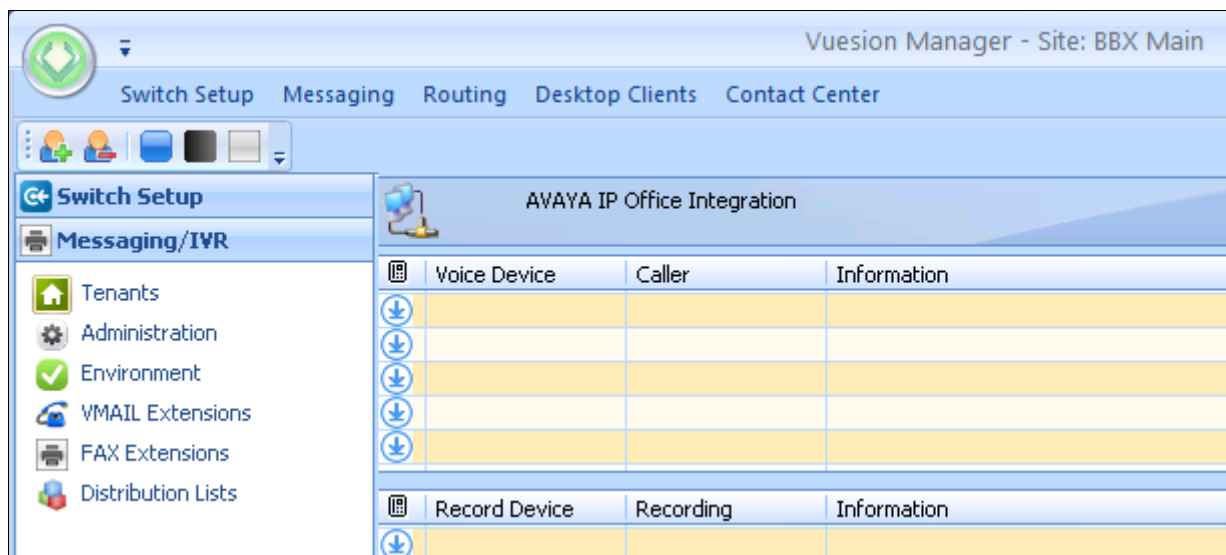
OK

Update the **Full Name** field as desired, and retain the default values in the remaining fields. **Class of Service** can be set from the drop down menu depending on each user's requirement. Note that the port numbers are automatically assigned by the system subsequently.

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6.7. Administer Tenants

From the **Vuesion Manager** screen, select **Messaging/IVR** → **Tenants** from the left pane.



The **TENANTS/GROUPS** screen is displayed as shown below. Click on **Add Tenant**.

[illegible]

For **Name**, enter the Main hunt group name from **Section 5.6.1**. For **ID** and **Password**, enter the Main hunt group extension from **Section 5.6.1**. Retain the default values in the remaining fields, and click **Edit Members**.

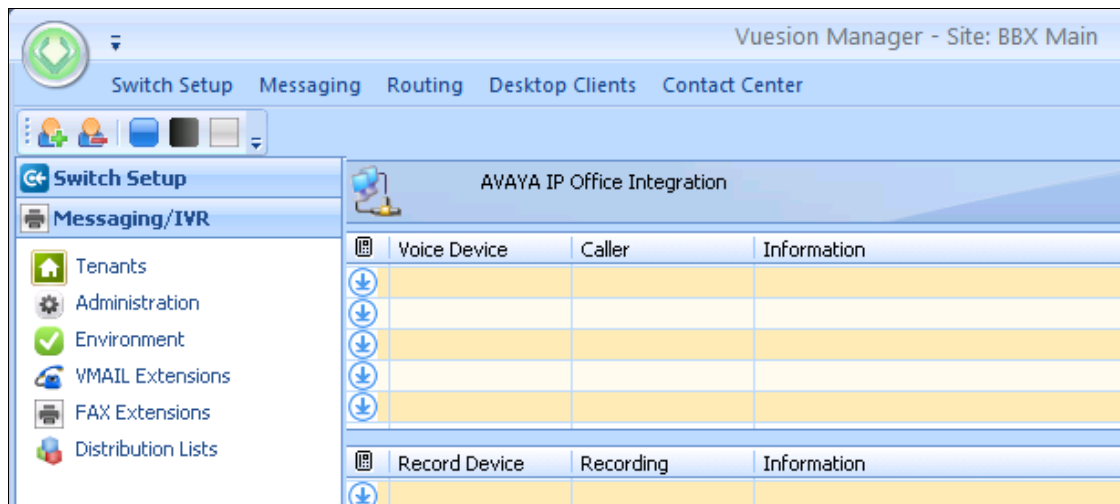
32 of 51
IPO8VuesionPTap

The **Selected Tenant** screen is displayed. Select the applicable entries in the **Available User List** section, and click the double-left-arrow to move the entries to the **Tenant/Group Members List** section, as shown in screen below. Click on **Save** to complete the selection.

[illegible]

6.8. Administer VMAIL Extensions

From the **Vuesion Manager** screen, select **Messaging/IVR → VMAIL Extensions** from the left pane.



The **DIRECTORY CONFIGURATION** screen is displayed as shown below. Click on **Add** to start adding IVR Extensions.

The screenshot shows the 'DIRECTORY CONFIGURATION' window. The 'IVR EXTENSIONS' tab is selected, displaying a table with columns 'Full Name', 'DN #', and 'Port#'. To the right, the 'DIRECTORY ASSIGNMENT' section contains fields for 'Directory #', 'FullName', 'Title', 'PBX', 'Account', 'Password', 'Tenant Name', and 'Class of Service'. Below these are checkboxes for 'Shared Station', 'Virtual/Single Line', 'Disable SMDR', 'Live Record', 'Announce/Notify', 'Reserved', 'Recorder', and 'Disabled'. There are also checkboxes for 'SIP IVR', 'Network Advertise', 'Guest Telephone', 'Music On Hold', and 'Nurse/CareGiver'. The 'FOLLOW ME OPTIONS' section includes fields for 'Cellular #', 'Home #', 'Alternate #', and 'Active Forward'. At the bottom are buttons for 'Add', 'Delete', 'Save', 'Refresh All', and 'Exit'.

The **Extension Range Selection** screen is shown below where IVR Extensions can be added and if required a range can be provided too.

EXTENSION RANGE SELECTION

IVR EXTENSIONS

First Device #:

How Many ?

OK

The **DIRECTORY CONFIGURATION** screen is displayed with entry for each virtual SIP user from **Section 5.5**.

For **Full Name**, enter the SIP user name from **Section 5.5**. For **Password**, enter the SIP user login code from **Section 5.5**. Check **SIP IVR**. Retain the default values in the remaining fields. Note that the port numbers are automatically assigned by the system subsequently.

[illegible]

6.9. Administer Queues Sizing

From the **Vuesion Manager** screen, select **Contact Center → Queues Sizing** from the left pane.

Vuesion Manager - Site: BBX Main

Switch Setup Messaging Routing Desktop Clients Contact Center

Switch Setup Messaging/IVR Routing Desktop Clients Contact Center

Queues Sizing ACD Members ACD Groups ACD Network Call Recorder

AVAYA IP Office Integration

	Voice Device	Caller	Information
28235			
28236			
28237			
28238			
28239			

	Record Device	Recording	Information

The **DIRECTORY CONFIGURATION** screen is displayed. Click on **Add** to start adding Call Center Queue.

DIRECTORY CONFIGURATION

CALL CENTER QUEUE

Full Name	DN #	Port#

DIRECTORY ASSIGNMENT

Directory #:

FullName:

Title:

PBX

Power-Up Destination:

Password:

Tenant Name:

Class of Service

☐ Shared Station
 ☐ SIP

☐ Virtual/Single Line
 ☐ Network Advertise

☐ Disable SMDR

☐ Reserved
 ☐ Guest Telephone

☐ Recorder
 ☐ Music On Hold

☐ Disabled
 ☐ Nurse/CareGiver

FOLLOW-ME OPTIONS

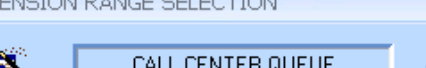
Mobile #:

Home #:

Alternate #:

Active Forward:

The **Extension Range Selection** screen is shown below where Call Center Queue numbers can be added and if required a range can be provided too.



EXTENSION RANGE SELECTION

CALL CENTER QUEUE

First Device #:

How Many ?

OK

Screen below shows the desired number of entries for queuing of incoming ACD calls used for compliance testing.

[illegible]

The **DN #** are used by Vuesion to park and unpark the queued calls on IP Office, therefore use available extension numbers on IP Office.

6.10. Administer ACD Members

From the **Vuesion Manager** screen shown in **Section 6.9**, select **Contact Center → ACD Members** from the left pane.

The **ACD Members** screen is displayed as shown below. Click on **Add** to start adding ACD Members.

The screenshot shows the 'ACD Members' window. On the left is a table with columns: Name, ID, Passw, COS, Type, and Def. The table is currently empty. On the right is a form with the following sections:

- Member Definition:** Fields for Member (text), FullName (text), and Password (text).
- Setup:** Fields for Type (dropdown menu), Primary (dropdown menu), and Class (dropdown menu).
- Allow Agents Screen Capture:** Five Supervisor ID text input fields.
- Auto Login:** An Extension text input field.
- Buttons at the bottom: Add, Delete, Save, and Exit.

Create an entry for each agent user from **Section 5.7**, and for each supervisor user from **Section 5.8**, as shown in screen below. Enter the desired **FullName**. For **Member ID**, enter a unique value for each agent and supervisor. The recommendation is to use available extension numbers on IP Office. For **Password**, enter desired values. In the compliance testing, the same values are used for member ID and password for simplicity. For **Type**, select “ACD Agent” for agents and “ACD Supervisor” for supervisors. For **Primary Group**, select the Transfer hunt group name from **Section 5.6.3**. For **Class**, select the appropriate class of service.

The screenshot shows the 'ACD Members' window with the table populated with three entries:

Name	ID	Passw	COS	Type	Def.
Agent 1	78100	7810	1	ACD Agent	
Agent 2	78101	7811	1	ACD Agent	
Supervisor 1	78102	7812	1	ACD Supervisor	

The form fields on the right are populated with data from the first row of the table:

- Member Definition:** Member: 78100, FullName: Agent 1, Password: 7810.
- Setup:** Type: ACD Agent, Primary: BBX CSR, Class: 1.
- Allow Agents Screen Capture:** Five empty Supervisor ID fields.
- Auto Login:** Extension: empty.
- Buttons at the bottom: Add, Delete, Save, and Exit.

6.11. Administer ACD Groups

From the **Vuesion Manager** screen shown in **Section 6.9**, select **Contact Center → ACD Groups** from the left pane, to display the **SkillSets Administration** screen. Create an entry for the Transfer hunt group from **Section 5.6.3**, as shown below.

The **Voice Routing Options** section defines the parameters used for routing of ACD calls. The **Multimedia Contact Center Members Assignment** section defines the members and their skills level. The **Announcements** section defines the announcement treatments.

The screenshot below shows the values used in the compliance testing.

SkillSets Administration

Group ID: 77200 Group Name: BBX CSR Routing Method: Least Productive

Group Name	ID
BBX CSR	77200

Voice Routing Options

Enable ☒ Priority: 09

Overflow Time: 10 Min

Overfl. Destination: 77200

Signed-Out OVF: 77200

All Busy Overflow:

Longest InQ Thr: 10 Sec

Force Priority: 00

Calls Queued Thr.: 01

☒ Auto WrapUp @ 15 Sec

☐ Ringback on Queue

Email Routing Options

Enable ☐ Priority: 00

Subject Filter:

Overflow Time: 00

OVF Destination:

Signed-Out OVF:

EmailQ Threshold: 2

Longest InQ Thr: 300

Force Priority: 9

Fax Routing Options

Enable ☐ Priority: 00

Overflow Time: 00

OVF Destination:

Signed-Out OVF:

FaxQ Threshold: 10

Longest InQ Thr: 300

Force Priority: 0

Miscellaneous

☐ Auto Logout @ 11:50:00 PM

Advance Time: 10 Sec

☐ Follow Me (Non Call Center)

Multimedia Contact Center Members Assignment

VoiceSkill: 00 EmailSkill: 00 FaxSkill: 00 OutdialSkill: 00

HandleVoice ☐ HandleEmails ☐ HandleFax ☐ HandleOutdial ☐

Name	ID	Type
Agent 1	78100	ACD Agent
Agent 2	78101	ACD Agent
Supervisor 1	78102	ACD Supervisor

Name	ID
------	----

Announcements

1:	AA	QPosition	~ Hold	AA	Repeat	Frequency
2:	AA	QPosition	~ Hold	AA	Repeat	Never
3:	AA	QPosition	~ Hold	AA	Repeat	Never

Outbound Campaign

☐ Enable Campaign Campaign Priority: 00

ODBC - DSN:

Table: Password:

Login:

Name Field:

Phone Field:

Contact:

Priority Field:

Comment Field:

Resolution Field:

Restricted Hours During Schedule (Format: 12:00-13:00,...)

☐ Enable Schedule Timezone: (CST)

Start Datetime: 4/ 3/2012 8:00:00 AM

Stop Datetime: 4/ 3/2012 5:00:00 PM

M T W T F S S

Import Records Restart Campaign

Add Remove Refresh Scripts Save Exit

6.12. Administer Trunks

From the **Vuesion Manager** screen shown in **Section 6.6**, select **Switch Setup → Trunks** from the left pane, to display the **DIRECTORY CONFIGURATION** screen as shown below. Click on **Add** to start adding Trunks.

Full Name	DN #	Port#

The **Extension Range Selection** screen is shown below where Trunk Numbers can be added and if required a range can be provided too.

First Device #:

How Many ?

OK

For **Directory #**, use the value “xy”, where “x” is the slot number of the line and “y” is the channel number specified in two-digits. During compliance testing the PRI Tap was connected to PRI Line “2”, Slot “1” of the IP Office and the channel numbers are “34-56”. Retain the default values in the remaining fields.

The screenshot below shows the values used in the compliance test.

The screenshot shows the 'DIRECTORY CONFIGURATION' window. On the left, under 'TRUNK NUMBERS', is a table with three columns: Full Name, DN #, and Port#. The table lists trunks from Trunk101 to Trunk139. Trunk101 is selected. On the right, under 'DIRECTORY ASSIGNMENT', are fields for Directory # (101), FullName (Trunk101), Title, PBX, Account, Password, Tenant Name, and Class of Service (0). There are also checkboxes for Shared Station, Virtual/Single Line, Disable SMDR, Reserved, Recorder, Disabled, SIP, Network Advertise, Guest Telephone, Music On Hold, and Nurse/CareGiver. At the bottom right, under 'FOLLOW ME OPTIONS', are fields for Cellular #, Home #, Alternate #, and Active Forward. At the bottom of the window are buttons for Add, Delete, Save, Refresh All, and Exit.

Full Name	DN #	Port#
Trunk101	101	
Trunk102	102	
Trunk103	103	
Trunk104	104	
Trunk105	105	
Trunk106	106	
Trunk107	107	
Trunk108	108	
Trunk109	109	
Trunk110	110	
Trunk111	111	
Trunk112	112	
Trunk113	113	
Trunk114	114	
Trunk115	115	
Trunk116	116	
Trunk117	117	
Trunk118	118	
Trunk119	119	
Trunk120	120	
Trunk121	121	
Trunk122	122	
Trunk123	123	
Trunk134	134	
Trunk135	135	
Trunk136	136	
Trunk137	137	
Trunk138	138	
Trunk139	139	

From the **Vuesion Manager** screen shown in **Section 6.9**, select **Contact Center** → **Call Recorder** from the left pane, to display the **Call Recorder Templates Selection** screen as shown below. Select a blank row from the **Recording Templates** column to start adding a template.

RS; Reviewed:
SPOC 5/24/2012

[illegible]

The screen below shows the **Call Recorder Templates Selection** screen with the template created. For the Voice Recording module using the PRI Tap, the **Enable External Recorder** option needs to be selected. Also enter the Trunks that will be used for recording. During compliance testing trunks 133-155 were used for PRI recording. Note that the number of calls being recorded simultaneously depends on the number of available PRI ports.

Call Recorder Templates Selection

PRI TAP Call Recorder

SPAN - 1		SPAN - 2		SPAN - 3		SPAN - 4	
CH	Trunk#	CH	Trunk#	CH	Trunk#	CH	Trunk#
T 01	133						
T 02	134						
T 03	135						
T 04	136						
T 05	137						
T 06	138						
T 07	139						
T 08	140						
T 09	141						
T 10	142						
T 11	143						
T 12	144						
T 13	145						
T 14	146						
T 15	147						
T 16	148						
T 17	149						
T 18	150						
T 19	151						
T 20	152						
T 21	153						
T 22	154						
T 23	155						

1st Trunk: 133 1st Trunk: 1st Trunk: 1st Trunk:

#BChannels: 22 #BChannels: #BChannels: #BChannels:

Update Update Update Update

Recording Templates

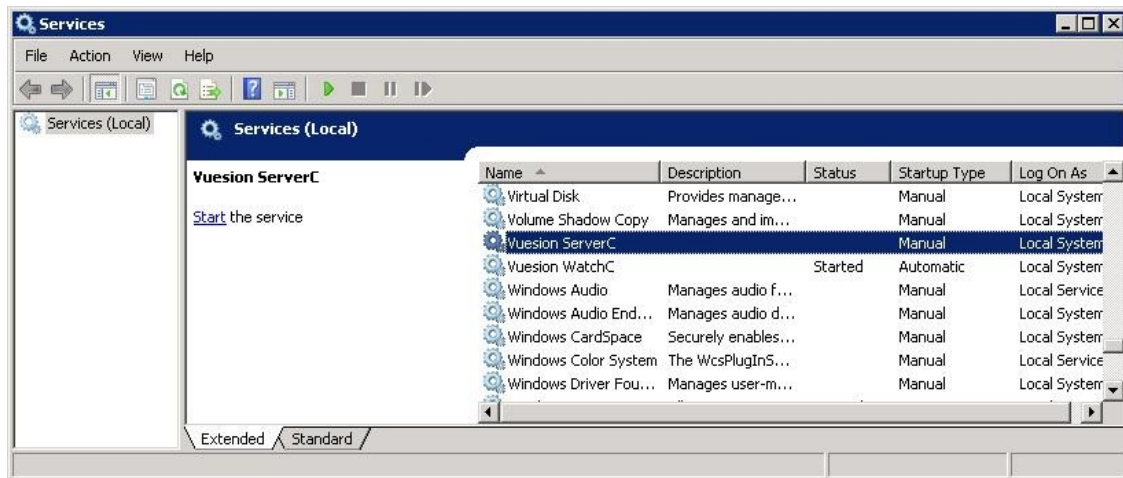
Name	Template
BBXREC	01
	02
	03
	04
	05
	06
	07
	08
	09
	10
	11
	12
	13
	14
	15
	16

☒ Enable External Recorder

Save All Exit

6.14. Start Service

Select **Start** → **Control Panel** → **Administrative Tools** → **Services**, to display the **Services** screen. Navigate to the **Vuesion ServerC** entry, right-click on the entry and select **Start**.



7. Verification Steps

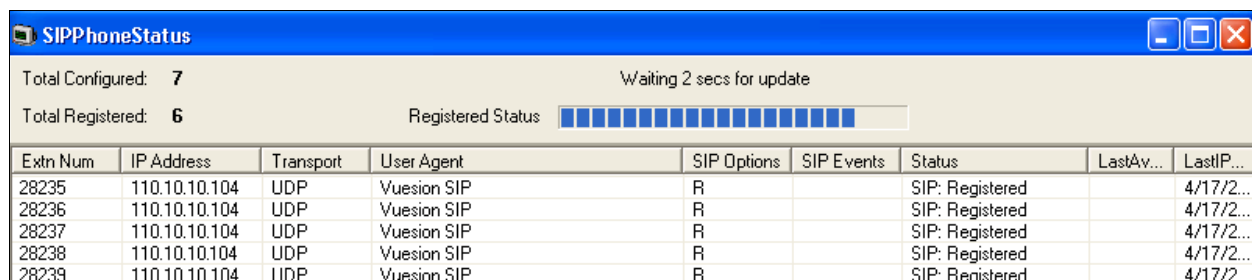
This section provides the tests that can be performed to verify proper configuration of Avaya IP Office and BBX Technologies Vuesion Multimedia Contact Center Voice Recording (using PRI Tap) module.

7.1. Verify Avaya IP Office

From a PC running the Avaya IP Office Monitor application, select **Start → Programs → IP Office → Monitor** to launch the application. The **Avaya IP Office R8 SysMonitor** screen is displayed, as shown below. Select **Status → SIP Phone Status** from the top menu.



The **SIPPhoneStatus** screen is displayed. Verify that there is an entry for each virtual SIP user from **Section 5.5**, that the **User Agent** contains “Vuesion SIP”, and that the **Status** is “SIP: Registered”, as shown below.



Extn Num	IP Address	Transport	User Agent	SIP Options	SIP Events	Status	LastAv...	LastIP...
28235	110.10.10.104	UDP	Vuesion SIP	R		SIP: Registered		4/17/2...
28236	110.10.10.104	UDP	Vuesion SIP	R		SIP: Registered		4/17/2...
28237	110.10.10.104	UDP	Vuesion SIP	R		SIP: Registered		4/17/2...
28238	110.10.10.104	UDP	Vuesion SIP	R		SIP: Registered		4/17/2...
28239	110.10.10.104	UDP	Vuesion SIP	R		SIP: Registered		4/17/2...

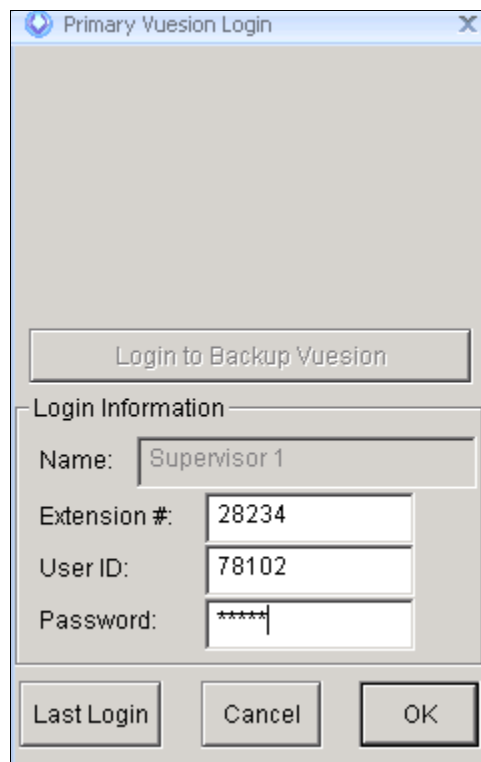
7.2. Verify BBX Technologies Vuesion Multimedia Contact Center

From the agent user PC running Vuesion Client, double-click on the **VuesionClient** icon shown on the desktop, which was created as part of installation.



The **Vuesion User Login** screen is displayed. The screen shows the “Supervisor 1” **Login Information**.

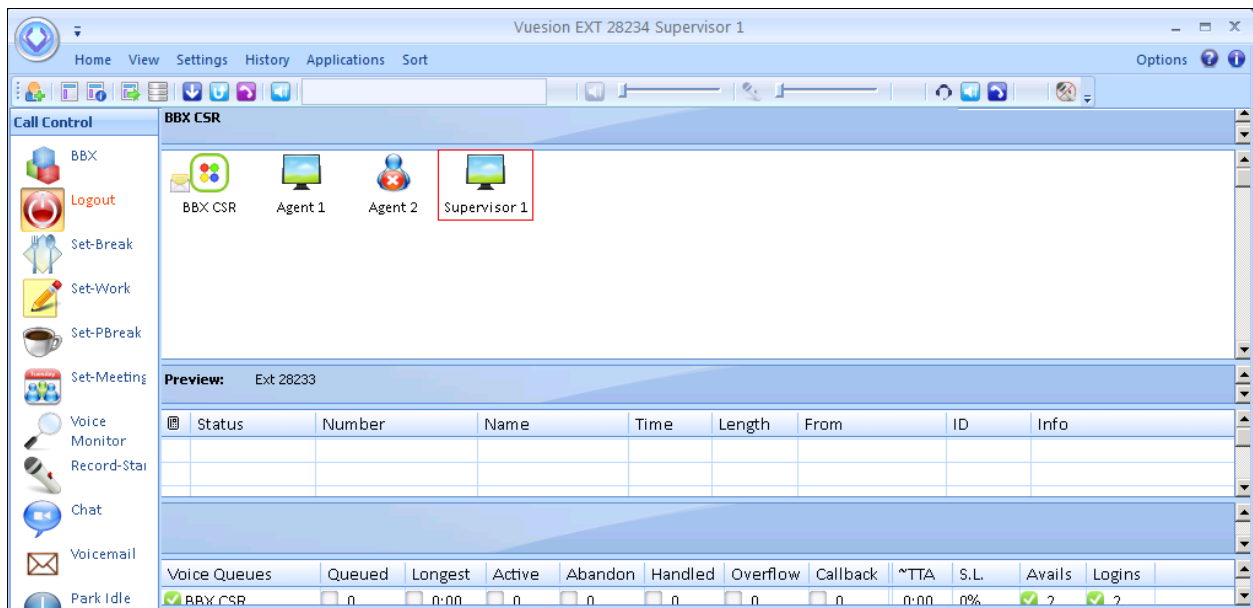
For **Extension #**, enter the extension number of the supervisor from **Section 6.6**. For **User ID** and **Password**, enter the corresponding credentials for the supervisor from **Section 6.10**, as shown below. During compliance testing this client was run from the Vuesion server.

A screenshot of the "Primary Vuesion Login" dialog box. The dialog has a title bar with a blue icon and the text "Primary Vuesion Login". Below the title bar is a large grey rectangular area. Below this area is a button labeled "Login to Backup Vuesion". Below the button is a section titled "Login Information" with a minus sign on the left. This section contains four input fields: "Name:" with the text "Supervisor 1", "Extension #:" with the text "28234", "User ID:" with the text "78102", and "Password:" with the text "*****". At the bottom of the dialog are three buttons: "Last Login", "Cancel", and "OK".

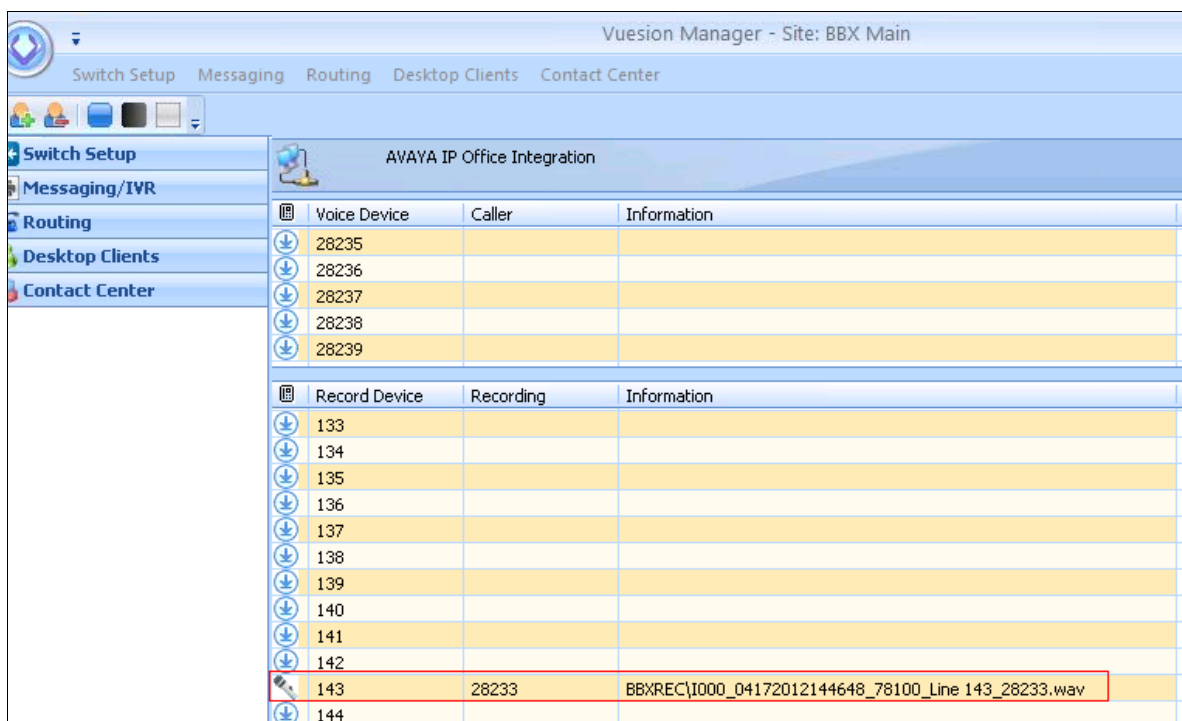
Login Information	
Name:	Supervisor 1
Extension #:	28234
User ID:	78102
Password:	*****

The **Vuesion** screen is displayed. Click on the **Login** icon from the left pane (not shown).

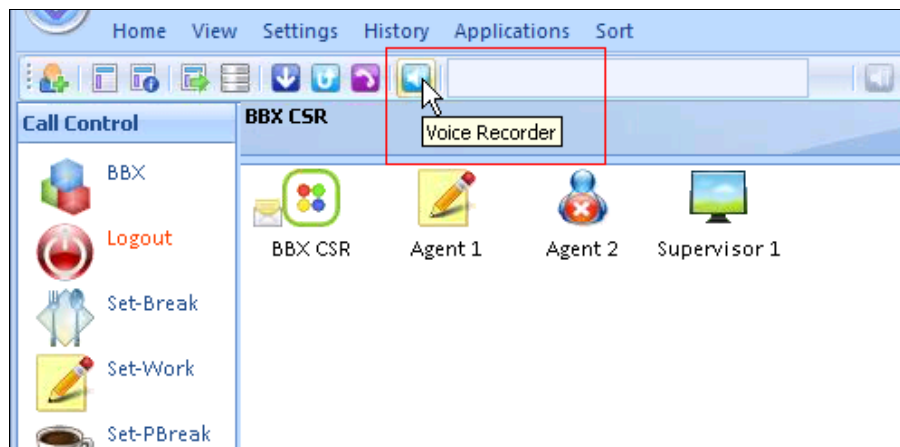
The screen is updated in the right pane, as shown below.



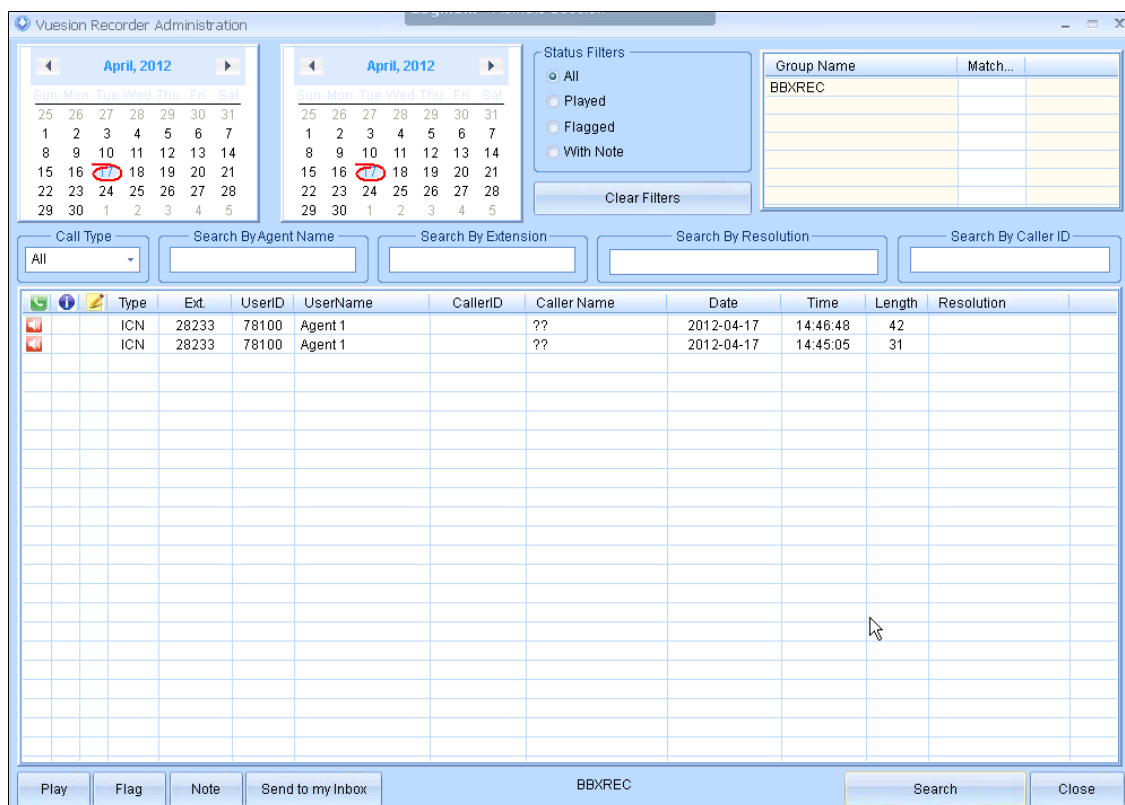
To verify Voice Recording module, make an incoming trunk call to the Main hunt group answered by an agent that is subjected to recording. Screen below shows the call being recorded at the PRI trunk 143.



The recording can be played by clicking on the Voice Recorder icon as shown in the screen below. During compliance testing only the “Supervisor 1” agent was given access to recording management.



The **Vuesion Recorder Administration** screen is shown below with a recording entry which can be played by clicking on the **Play** button.



Call Recordings can also be found under the folder **C:\Program Files\BBX Technologies\Vuesion Server_C\Recorder\<Template_Name>**.

8. Conclusion

These Application Notes describe the configuration steps required for BBX Technologies Vuesion Multimedia Contact Center Voice Recording (using PRI Tap) module to successfully interoperate with Avaya IP Office. All feature test cases were completed. Observations are noted in **Section 2.2**.

9. Additional References

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

1. *IP Office KnowledgeBase 8.0 Documentation CD*, December 2011, available at <http://support.avaya.com>.
2. *Vuesion Application Server Contact Center Configuration Guide*, available upon request to BBX Technologies Support.

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