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Application Notes for BBX Technologies Vuesion Multichannel Contact Center 11.3 with Avaya IP Office 10.0 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for BBX Technologies Vuesion Multichannel Contact Center 11.3 to interoperate with Avaya IP Office 10.0. BBX Technologies Vuesion Multichannel Contact Center is a contact center management solution. The compliance testing focused on the voice integration with Avaya IP Office using the TAPI and SIP user interfaces.

In the compliance testing, BBX Technologies Vuesion Multichannel Contact Center provided routing, announcements, screen pop, call control, and call reporting by using the TAPI and SIP user interfaces from Avaya IP Office.

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.

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1. Introduction

These Application Notes describe the configuration steps required for BBX Technologies Vuesion Multichannel Contact Center 11.3 to interoperate with Avaya IP Office 10.0. Vuesion is a contact center management solution. The compliance testing focused on the voice integration with IP Office using the TAPI and SIP user interfaces.

In the compliance testing, Vuesion provided routing, announcements, screen pop, call control, and call reporting by using the TAPI and SIP user interfaces from IP Office.

The SIP user interface was used by Vuesion to register virtual SIP users, to route incoming group calls via an available SIP user to Vuesion, and to provide announcements where applicable.

The TAPI 2 in third party mode was used by Vuesion to monitor and control the virtual SIP users and physical agents and supervisors, to provide screen pop and call control via the agent and supervisor desktops, and to obtain events for call reporting purposes.

The Vuesion solution consisted of the Vuesion server, Vuesion Client application, and Vuesion Reports application.

2. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon start of the Vuesion application, the application automatically registered the virtual SIP users to IP Office.

For the manual part of the testing, incoming calls were made to the main routing group. The Vuesion server used TAPI events to track agent states, and transferred calls to available agents using SIP REFER. Manual call controls from both the agent desktops and agent telephones were exercised to verify remaining features such as answering and transferring of calls.

The serviceability test cases were performed manually by disconnecting and reconnecting the Ethernet connection to the Vuesion server and client.

The verification of tests included use of IP Office TAPI and SIP traces for proper message exchanges, and use of Vuesion Client application for proper call controls. A sanity test of Vuesion Reports was performed to verify proper reporting of basic calls in the Call Detail Activity report.

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 compliance testing included feature and serviceability areas.

The feature testing focused on verifying the following on Vuesion:

- Proper registration of virtual SIP users.

- Use of TAPI functions to monitor users and groups, route incoming calls, support call control and supervisor monitor via client desktops, and set call forwarding.

- Proper handling of call scenarios including incoming calls to the main group, screen pop, answer, hold/resume, drop, blind/attended transfer, queuing, announcements, DTMF, hot desking, park/unpark, call forwarding, supervisor monitor, outgoing call, non-ACD call, long duration, multiple agents, and multiple calls.

- Reporting of basic call scenarios including inbound, outbound, hold/resume, and drop.

The serviceability testing focused on verifying the ability of Vuesion to recover from adverse conditions, such as disconnecting and reconnecting the Ethernet connection to the Vuesion server and to the Vuesion Client.

2.2. Test Results

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

- The current release does not support conference actions from the Vuesion Client application.

- By design, when the transfer-to destination involved a non-Vuesion user, then none of the associated reporting entries contained the transfer-to destination number.

- After release of an unparked call via the agent desktop, the desktop reflected agent state to be available, although treated by Vuesion server to be in wrap up state and not available for subsequent calls. The workarounds include manual update of the agent state via the desktop, or perform unpark call actions from the agent telephone instead of desktop.

2.3. Support

Technical support on Vuesion can be obtained through the following:

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

3. Reference Configuration

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

In the compliance testing, the Vuesion Reports application was running on the supervisor PC, and the Vuesion Client application was running on the supervisor and agent desktops.

The contact center devices used in the compliance testing are shown in the table below.

Device Type	Device Number/Extension
Extensions	20031, 20035, 20051
Agent Users	20031, 20032
Supervisor User	20035
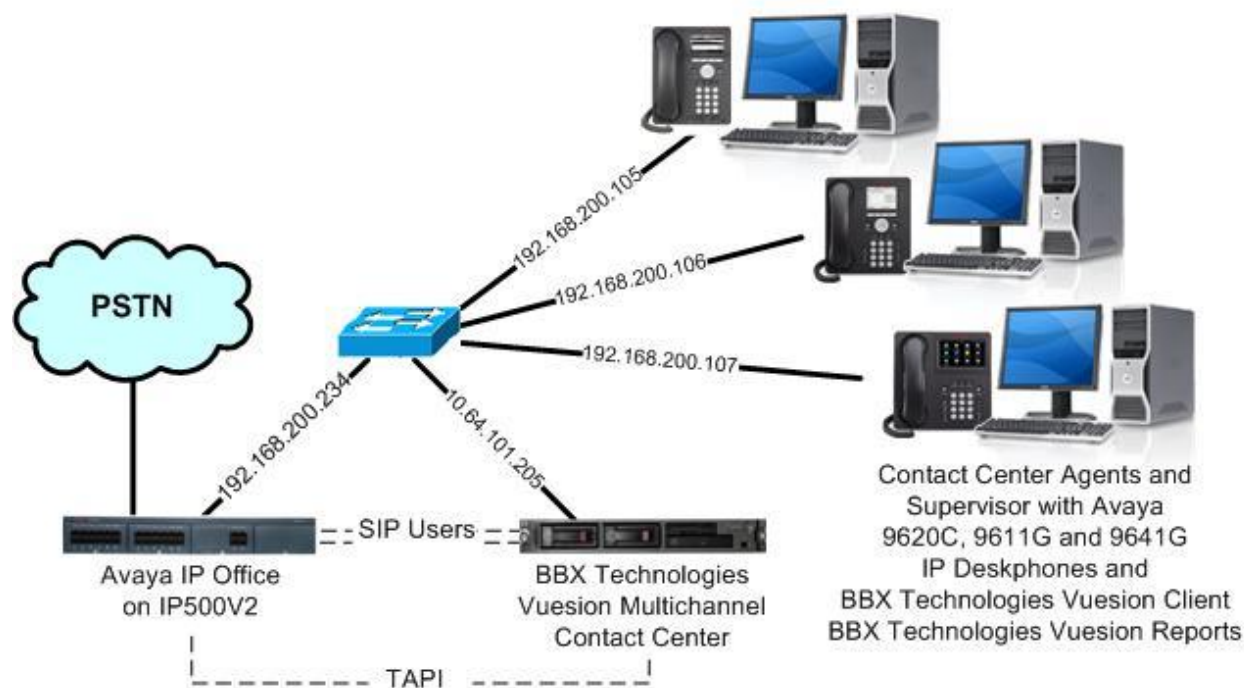
Figure 1: Compliance Testing Configuration

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office on IP500V2	10.0.0.1.0
Avaya 9620C IP Deskphone (H.323)	3.270B
Avaya 9611G & 9641G IP Deskphones (H.323)	6.6302
BBX Technologies Vuesion Multichannel Contact Center on Windows 2012 R2 Standard • Avaya IP Office TAPI2 Driver (tspi2w_64)	V11.3 1.0.0.44
BBX Technologies Vuesion Client	V11.3
BBX Technologies Vuesion Reports	V11.3

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

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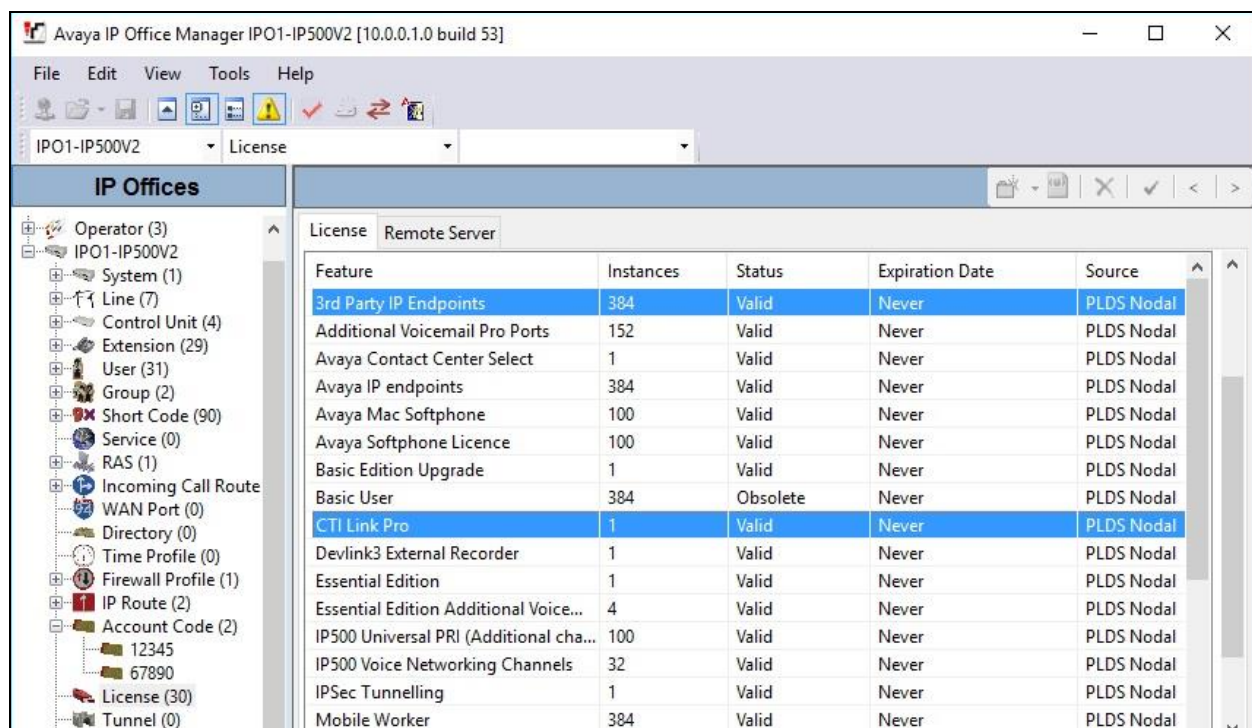
This section provides the procedures for configuring IP Office. The procedures include the following areas:

- Verify license
- Obtain LAN IP address
- Administer SIP Registrar
- Administer SIP extensions
- Administer SIP users
- Administer groups
- Administer agents and supervisors
- Administer incoming call route
- Administer security settings

5.1. Verify License

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

The **Avaya IP Office Manager** screen is displayed. From the configuration tree in the left pane, select **License** to display the licenses in the right pane. Verify that the license status for **3rd Party IP Endpoints** and **CTI Link Pro** are "Valid", as shown below.

5.2. Obtain LAN IP Address

From the configuration tree in the left pane, select **System** to display the **IPO-IP500V2** screen in the right pane, where **IPO-IP500V2** is the name of the IP Office system. 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.
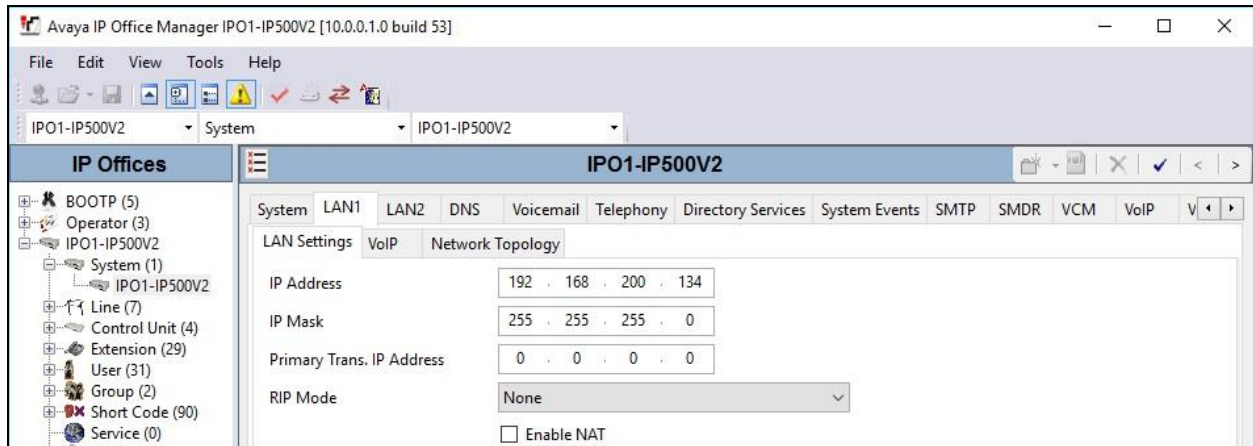
5.3. Administer SIP Registrar

Select the **VoIP** sub-tab. Make certain that **SIP Registrar Enable** is checked. A **SIP Domain Name** can be entered for SIP endpoints to use for registration with IP Office.

In the compliance testing, the **SIP Domain Name** was left blank, so the LAN IP address was used for registration.

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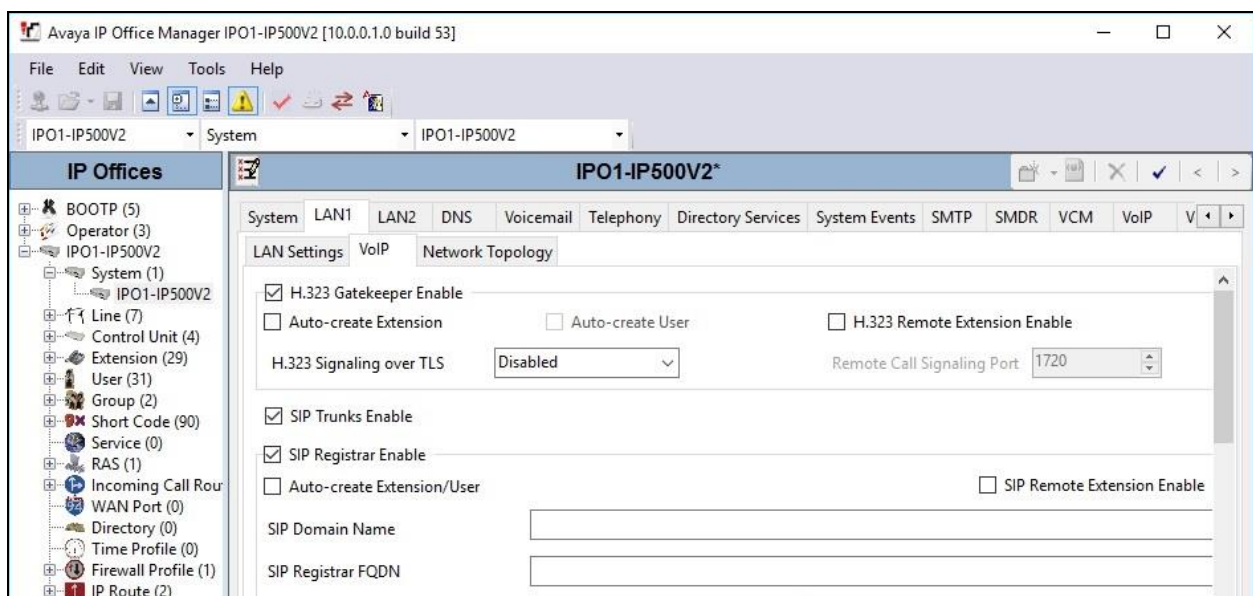
5.4. Administer SIP Extensions

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.
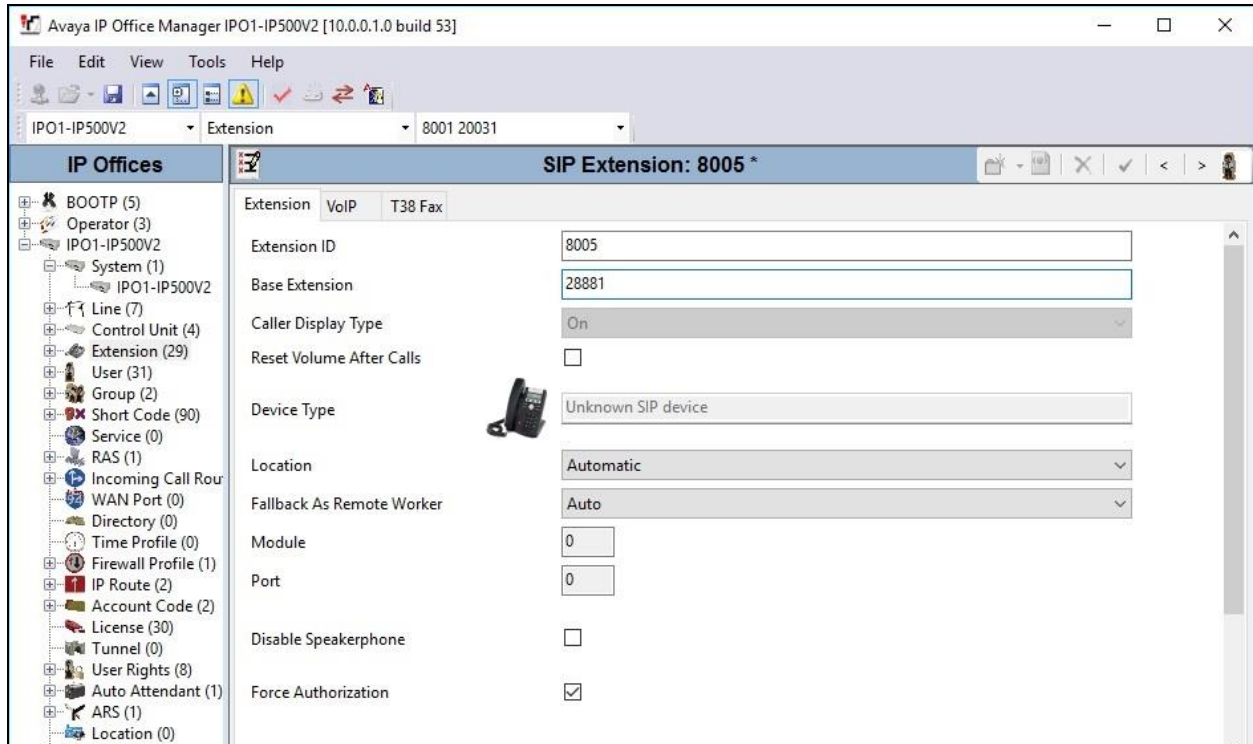
Select the **VoIP** tab. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Codec Selection:** "Custom"
- **Selected:** Retain only the applicable G.711 codec variation.
- **Allow Direct Media Path:** Uncheck this field.
- **Reserve License:** "Reserve 3rd party IP endpoint license"
- **Media Security:** "Disable"

Repeat this section to add the desired number of SIP extensions. In the compliance testing, four SIP extensions with base extensions of 28881-28884 were created.

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**, enter the same desired value prefixed with "IVR", as required by Vuesion. For **Extension**, enter the first SIP base extension from **Section 5.4**.

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

Select the **Telephony** tab, followed by the **Call Settings** sub-tab. Check **Call Waiting On**.
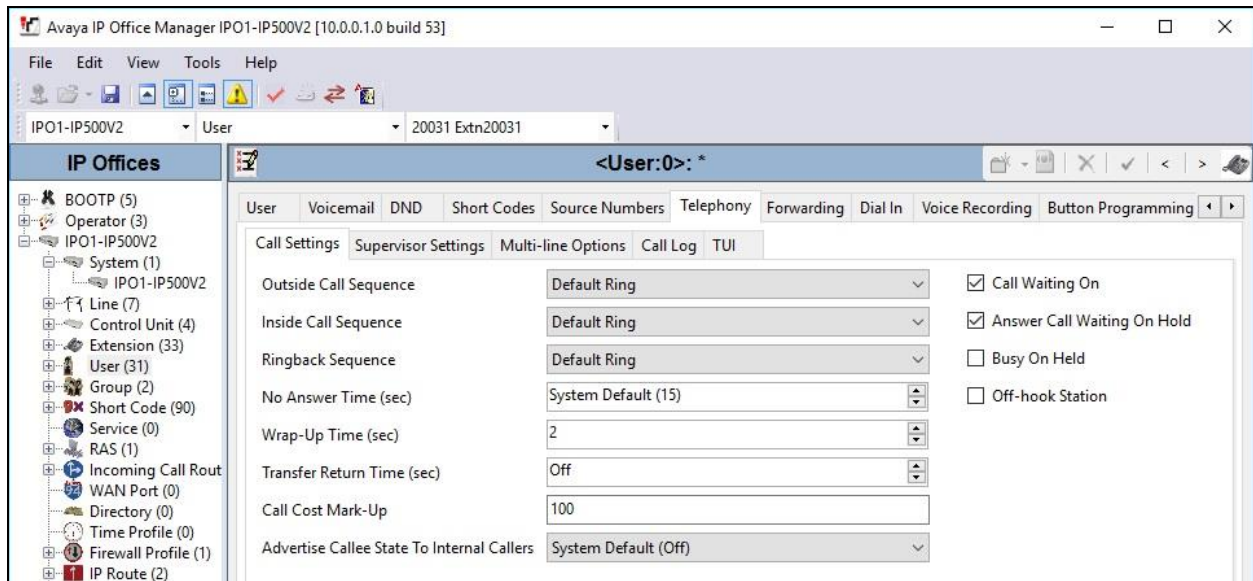
Select the **Supervisor Settings** sub-tab, and enter a desired **Login Code**.

Repeat this section to add a new user for each SIP extension from **Section 5.4**. In the compliance testing, four users with extensions 28881-28884 were created.
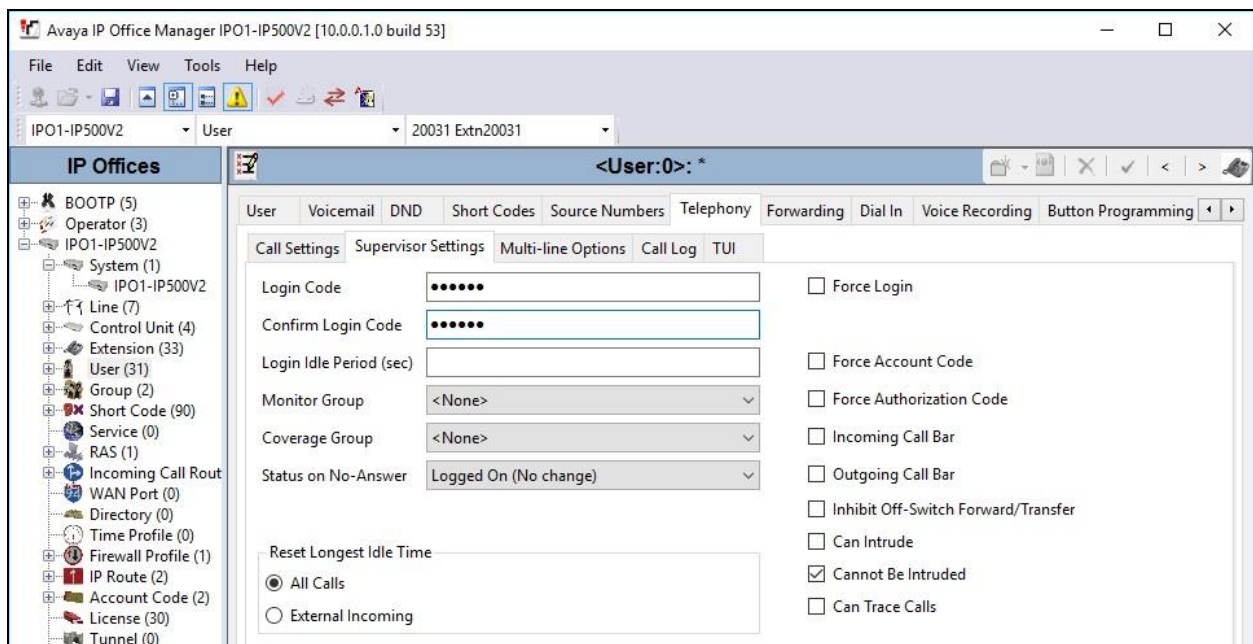
5.6. Administer Groups

Administer four groups as required by Vuesion for the following purposes:

- Main group for delivering of incoming calls to Vuesion.
- Monitor group for supervisor monitoring of agents.
- Tenant group for applying call treatments such as announcements and auto attendant.
- IVR pilot group for applying announcements outside of tenant configuration.

From the configuration tree in the left pane, right-click on **Group** and select **New** from the pop-up list to add a new group. This first group will be used to deliver incoming 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 all SIP users from **Section 5.5** as members, as shown below.
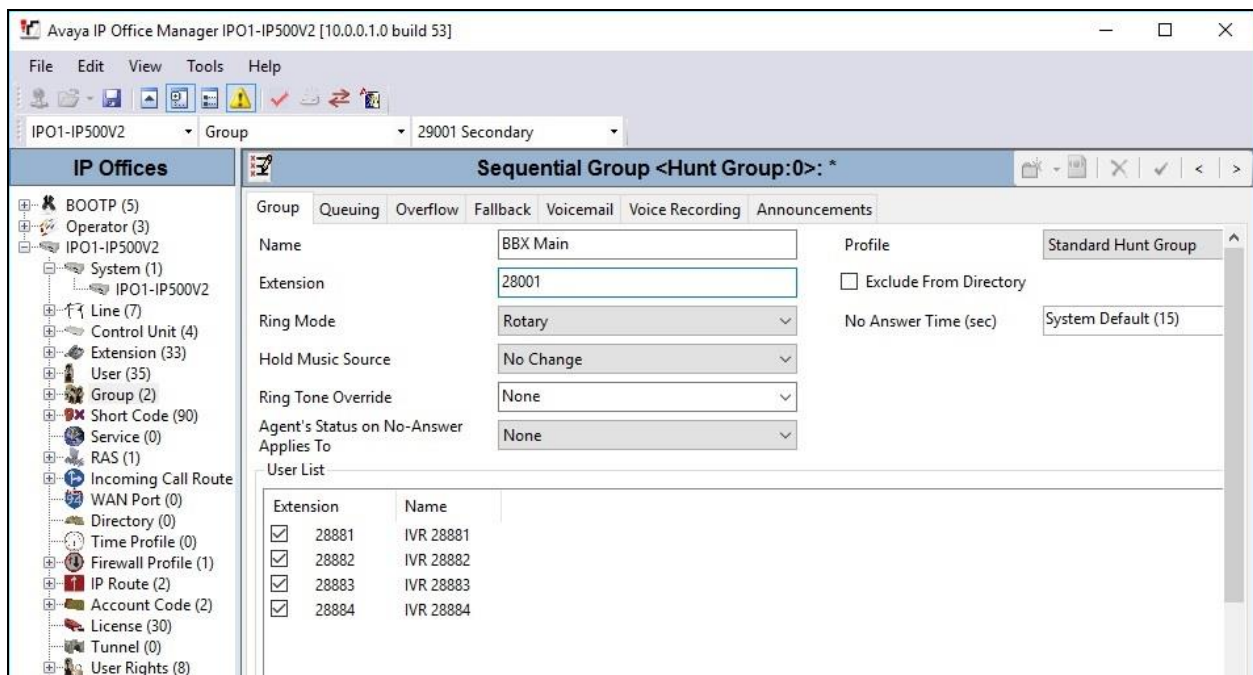
Select the **Voicemail** tab, and uncheck **Voicemail On**, as shown below.

Repeat this section to add the three remaining groups. The tenant and IVR pilot groups were configured the same as the main group with **Ring Mode** of "Rotary", **Voicemail On** unchecked, and **User List** containing all SIP users from **Section 5.5** as members.

For the monitor group, retain the default values for **Ring Mode** and **Voicemail On**, and add all agent users from **Section 3** into the **User List** section.
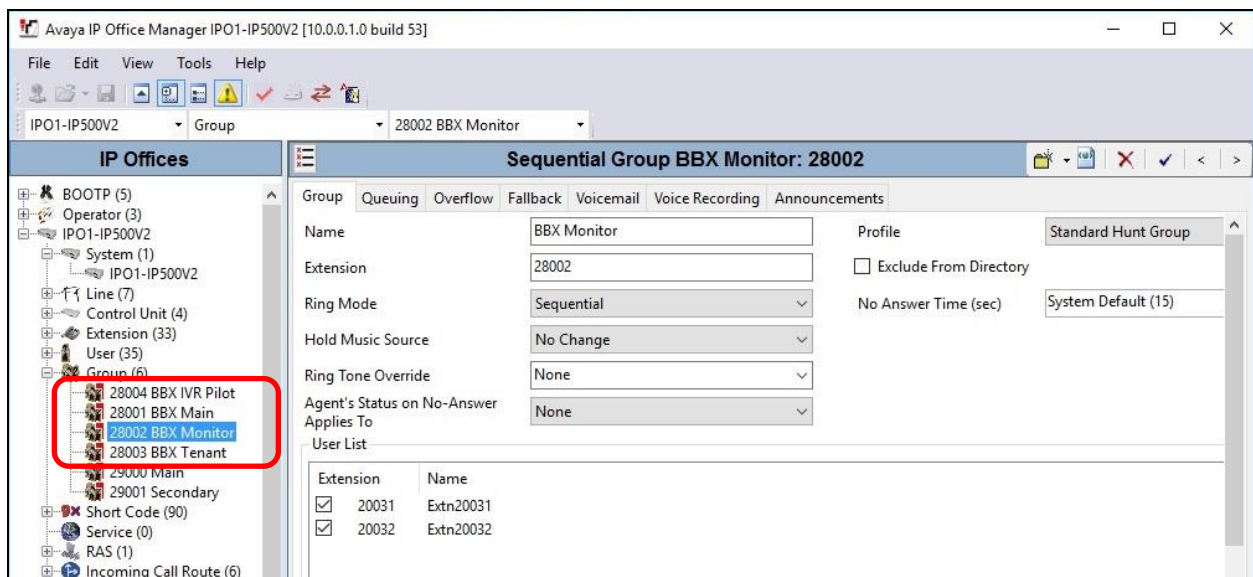
5.7. Administer Agents and Supervisors

From the configuration tree in the left pane, select the first agent user, in this case "20031". Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab. Uncheck **Cannot be Intruded** and configure **Can Intrude** as desired.

Repeat this for all agent users from **Section 3**. In the compliance testing, two agent users with extensions 20031-20032 were configured.
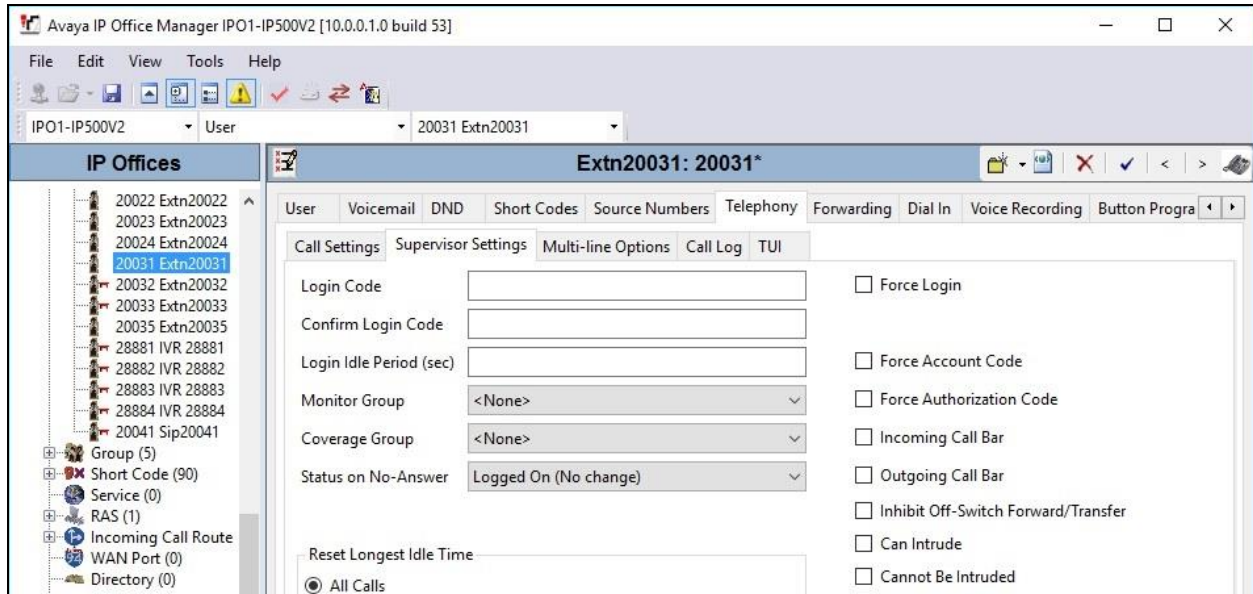
For each supervisor user, check **Can Intrude** and **Cannot be Intruded**. For **Monitor Group**, select the monitor group from **Section 5.6**. Repeat this for all supervisor users from **Section 3**.
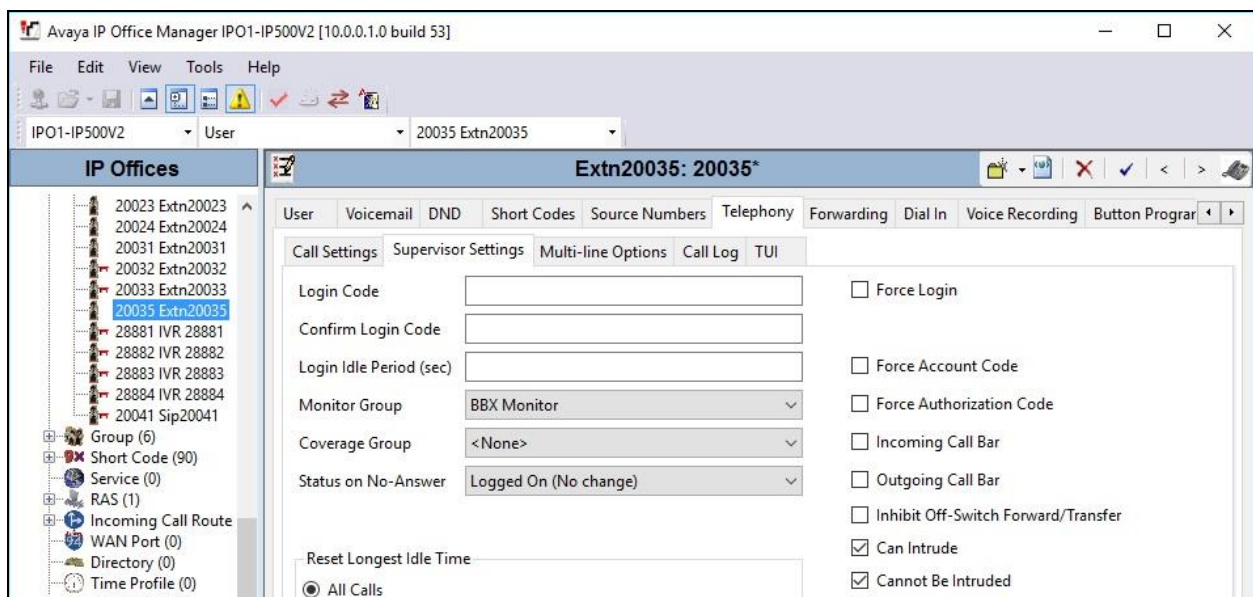
5.8. Administer Incoming Call Route

If necessary, create an incoming call route to route incoming calls to the main group. In the compliance testing, the existing incoming call route for a SIP line can route to any five digit extensions on IP Office.

As shown in screen below, the **Incoming Number** for SIP line "18" is "73285XXXXX", which uses five single digit wildcards "X" allowing the last five digits to be any number.

In the **Destinations** tab, the use of "#" in the **Destination** field enabled routing to be based on "XXXXX" from the **Incoming Number** field from above. Therefore, incoming calls to "7328528001" was routed to the main group with extension "28001" configured in **Section 5.6**.

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

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5.9. Administer Security Settings

From the configuration tree in the left pane, select **File → Advanced → Security Settings** from the top menu.

The **Avaya IP Office Manager – Security Administration** screen is displayed. Select **Security → System** to display the **System** screen in the right pane. Select the **Unsecured Interfaces** tab, and check **TAPI/DevLink3** as shown below.

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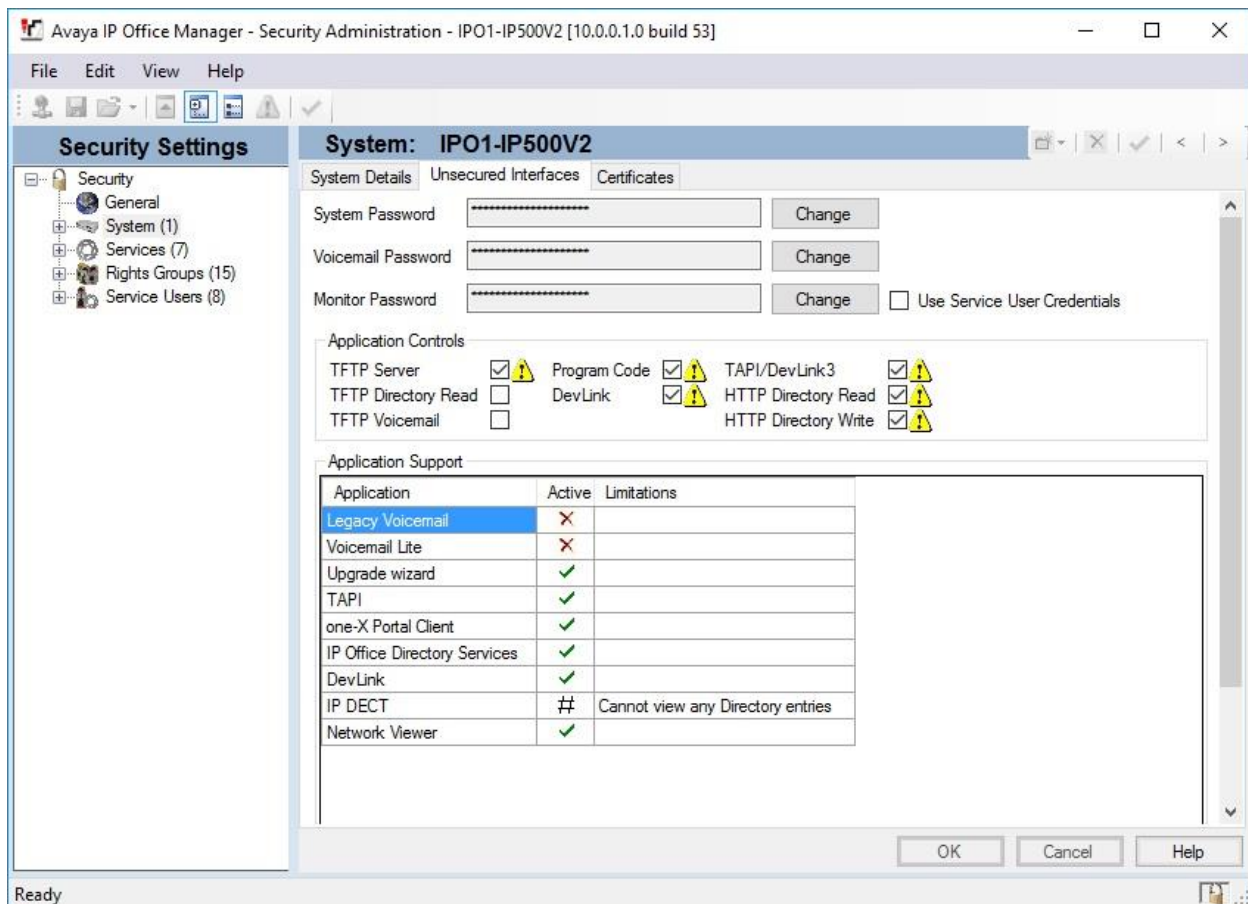
6. Configure BBX Technologies Vuesion Multichannel Contact Center

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

- Administer TAPI driver
- Launch Vuesion Manager
- Administer communication setup
- Administer ACD voice queues
- Administer ACD members
- Administer local extensions
- Administer tenants
- Administer IVR extensions
- Administer park orbits
- Start services

The configuration of 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 class of service for agents and supervisors to be configured by following reference [2].

6.1. Administer TAPI Driver

From the Vuesion server, select **Start → Control Panel → Phone and Modem**, to display the **Phone and Modem** screen below. Select the **Advanced** tab, followed by **Avaya IP Office TAPI2 Service Provider**, and click **Configure**.
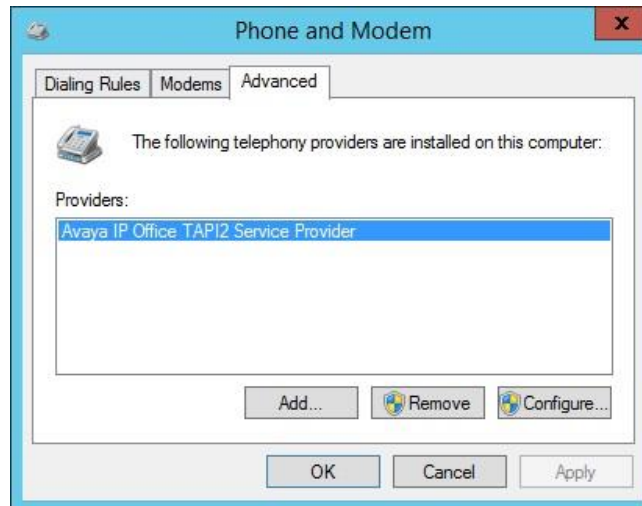
The **Avaya TAPI2 configuration** screen is displayed. For **Switch IP Address**, enter the IP address of IP Office. Select the radio button for **Third Party**, and enter the IP Office password into the **Switch Password** field. Reboot the Vuesion server.
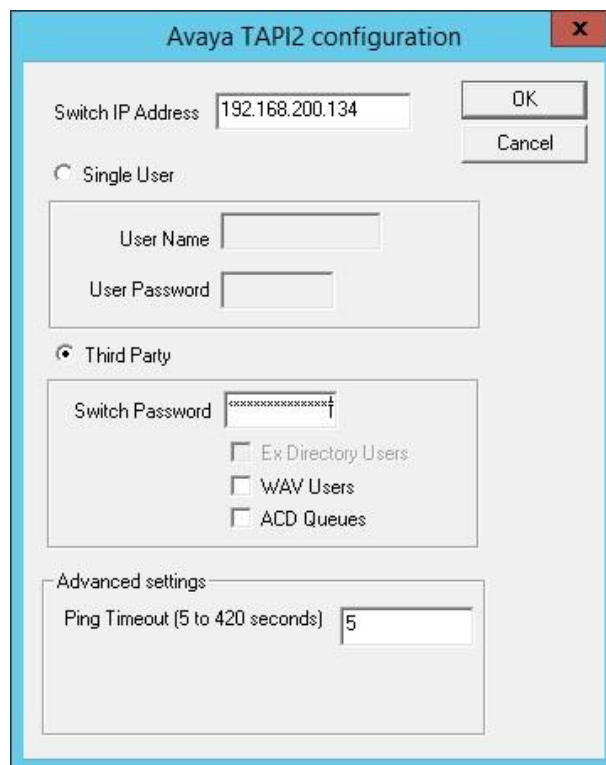
6.2. Launch Vuesion Manager

From the Vuesion server, double-click the **Launch VuesionManager.exe** icon, which was created as part of installation.
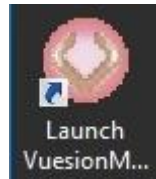
6.3. Administer Communication Setup

The main Vuesion screen below is displayed. Click on the **Vuesion** icon in the upper left corner, select **Installer Access** (not shown) and log in with installer permissions.

Select **Switch Setup → Communication Setup** from the top menu.
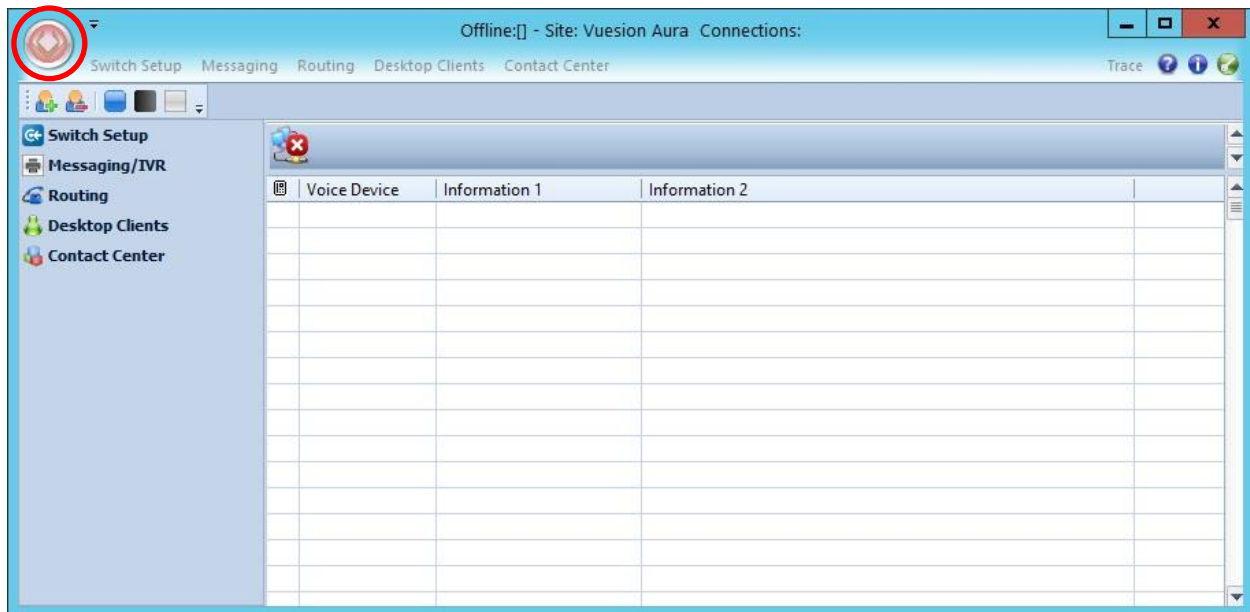
The **COMMUNICATION SETTINGS** screen is displayed. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **PBX IP Addr:** The IP address of IP Office.
- **Password:** The pertinent password of IP Office.
- **Customer Location Name:** A descriptive name.
- **This Server IP address:** The IP address of Vuesion server.
- **This Server IP Port:** An available port on Vuesion server.
- **IVR Location:** The same descriptive name.
- **IVR Pilot Number:** The IVR pilot group extension from **Section 5.6**.

COMMUNICATION SETTINGS

SWITCH COMMUNICATION INTERFACE

PBX IP Addr: 192.168.200.134   Password: ●●●●●●●●

Link Name:

App. Name

App. UserID

NETWORKING SETUP: MASTER SERVER

NetServer IP address:

NetServer IP Port: 65000

Node Index: 0

THIS SERVER DEFINITION

Customer Location Name: Avaya DevConnect

This Server IP address: 10.64.101.205

This Server IP Port: 62205

IVR Location: Avaya DevConnect

IVR Pilot Number: 28004

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6.4. Administer ACD Voice Queues

From the main Vuesion screen shown in **Section 6.3**, select **Contact Center → ACD Voice Queues** from the top menu to display the **Voice Queues** screen. Follow reference [2] to create an entry for the main group from **Section 5.6**, as shown below. Note that the **Queue ID** and **Queue Name** values must match to the main group extension and name from **Section 5.6**.

The **Voice Routing Options** sub-section defines parameters used for routing of incoming calls. The **Voice Contact Center Members Assignment** sub-section defines the members and their skills levels. The **Announcements** sub-section defines the announcement treatments.

The screenshot below shows the values used in the compliance testing. Note that the ACD voice queue was created initially without any member assignments, and subsequently updated to include assignments after the members were administered in the next section.

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6.5. Administer ACD Members

From the main Vuesion screen shown in **Section 6.3**, select **Contact Center → ACD Members** from the top menu to display the **ACD Members** screen. Follow reference [2] to create an entry for each agent and supervisor user from **Section 3**.

Enter the desired **FullName**. For **Member ID**, enter a unique value for each agent and supervisor. The recommendation is to use an available extension number on IP Office. For **Password**, enter desired values. In the compliance testing, the same values were 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 ACD voice queue from **Section 6.4**. For **Class**, select the appropriate class of service.

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

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6.6. Administer Local Extensions

From the main Vuesion screen shown in **Section 6.3**, select **Switch Setup → Local Extensions** from the top menu to display the **DIRECTORY CONFIGURATION** screen below.

Follow reference [2] to create an entry for each ACD member from **Section 6.5**, where **DN #** is the corresponding user extensions from **Section 3**, as shown below.   Note that the **Port#** value is automatically generated by Vuesion.

6.7. Administer Tenants

From the main Vuesion screen shown in **Section 6.3**, select **Messaging → Tenants** from the top menu, to display the **IDD_TENANT** screen.

Follow reference [2] to create an entry for the tenant group from **Section 5.6**. For **Name**, enter the tenant group name from **Section 5.6**. For **ID** and **Password**, enter the tenant group extension from **Section 5.6**. Retain the default values in the remaining fields, and click **Edit Members** (not shown) toward the bottom of the screen.

The **Selected Tenant** screen is displayed next. Select all entries from the **Available User List** and move to the **Tenant/Group Members List**, as shown below.

6.8. Administer IVR Extensions

From the main Vuesion screen shown in **Section 6.3**, select **Messaging → IVR Extensions** from the top menu to display the **DIRECTORY CONFIGURATION** screen below.

Follow reference [2] to create an entry for each 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**, and retain the default values in the remaining fields.

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6.9. Administer Park Orbits

From the main Vuesion screen shown in **Section 6.3**, select **Switch Setup → Park Orbits** from the top menu, to display the **DIRECTORY CONFIGURATION** screen below.

Follow reference [2] to create desired number of entries for parking of calls. The **DN #** are used by Vuesion to park and unpark calls on IP Office, therefore use available extension numbers on IP Office. The screenshot below shows the entries created in the compliance testing.

6.10. Start Services

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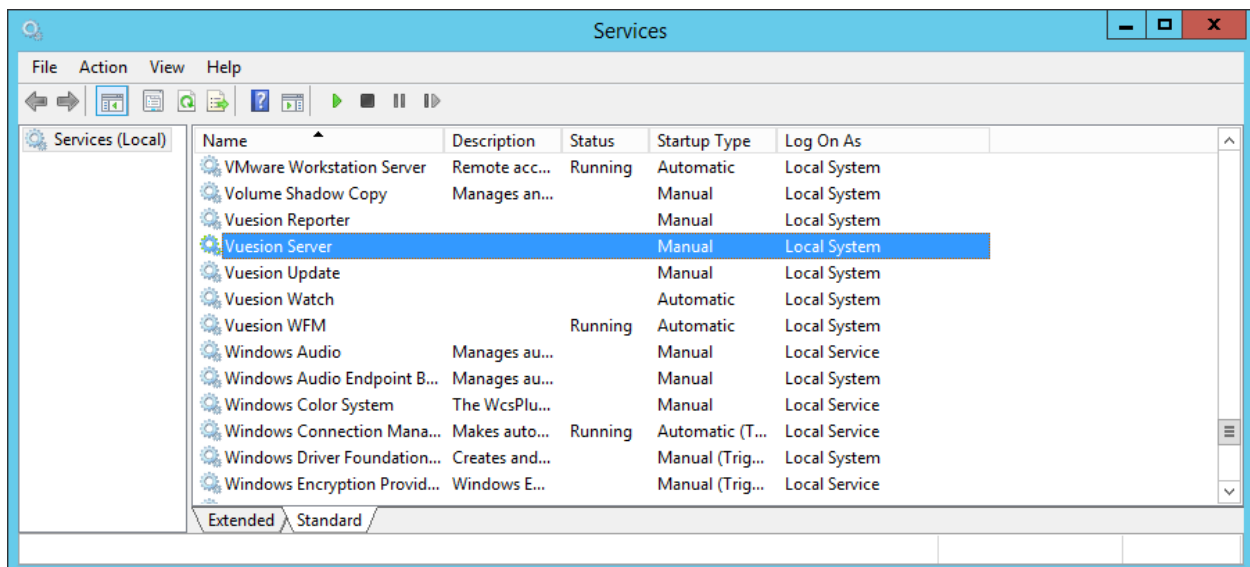
7. Verification Steps

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

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 SysMonitor** screen is displayed, as shown below. Select **Status → SIP Phone Status** from the top menu.
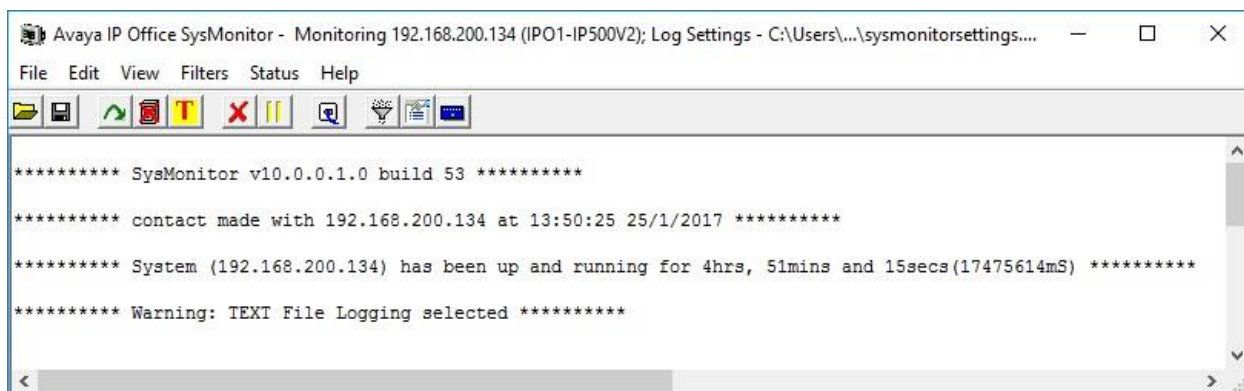
The **SIPPhoneStatus** screen is displayed. Verify that there is an entry for each virtual SIP user from **Section 5.5**, that the **User Agent** contains "VuesionSIP", and that the **Status** is "SIP: Registered", as shown below.
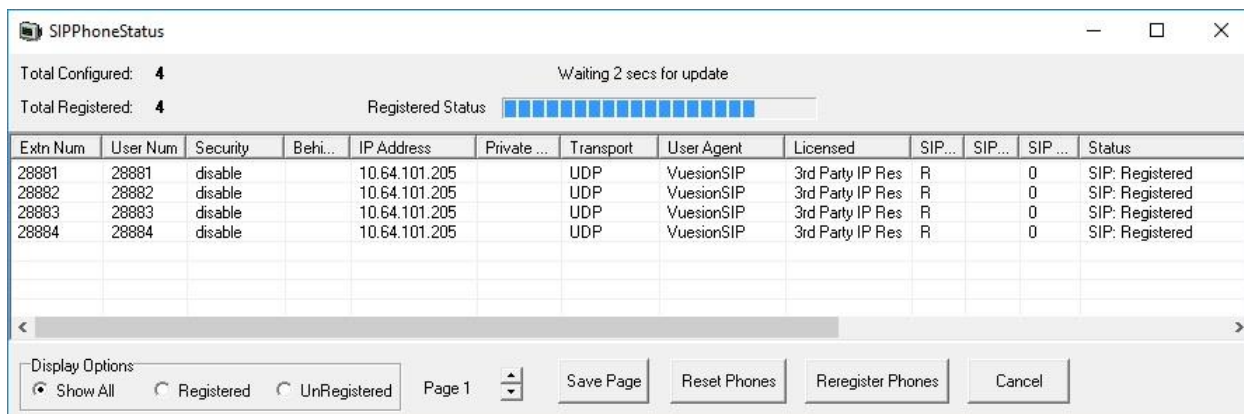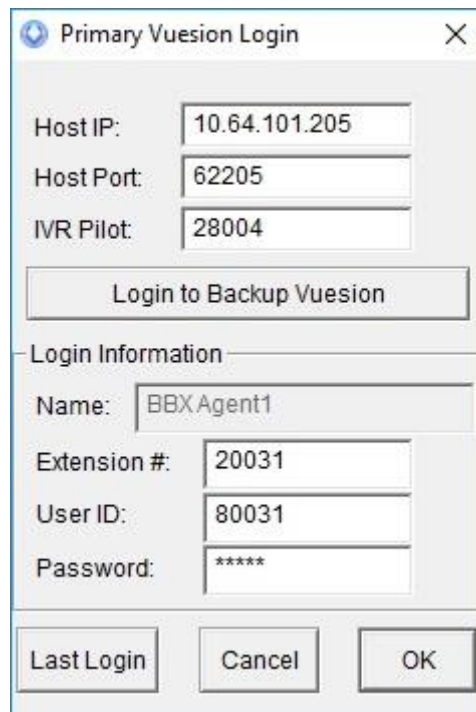
7.2. Verify BBX Technologies Vuesion Multichannel Contact Center

From the agent user PC running Vuesion Client, double-click on the **VuesionClient.exe** icon shown on the desktop, which was created as part of installation.
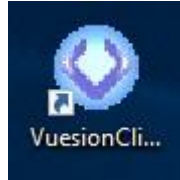
The **Primary Vuesion Login** screen is displayed. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Host IP:** The Vuesion server IP address from **Section 6.3**.
- **Host Port:** The Vuesion server port from **Section 6.3**.
- **IVR Pilot:** The IVR pilot number from **Section 6.3**.
- **Extension #:** The applicable member extension from **Section 6.7**.
- **User ID:** The applicable member ID from **Section 6.5**.
- **Password:** The applicable member password from **Section 6.5**.

The Vuesion screen below is displayed. Click on the **Login** icon from the left pane.
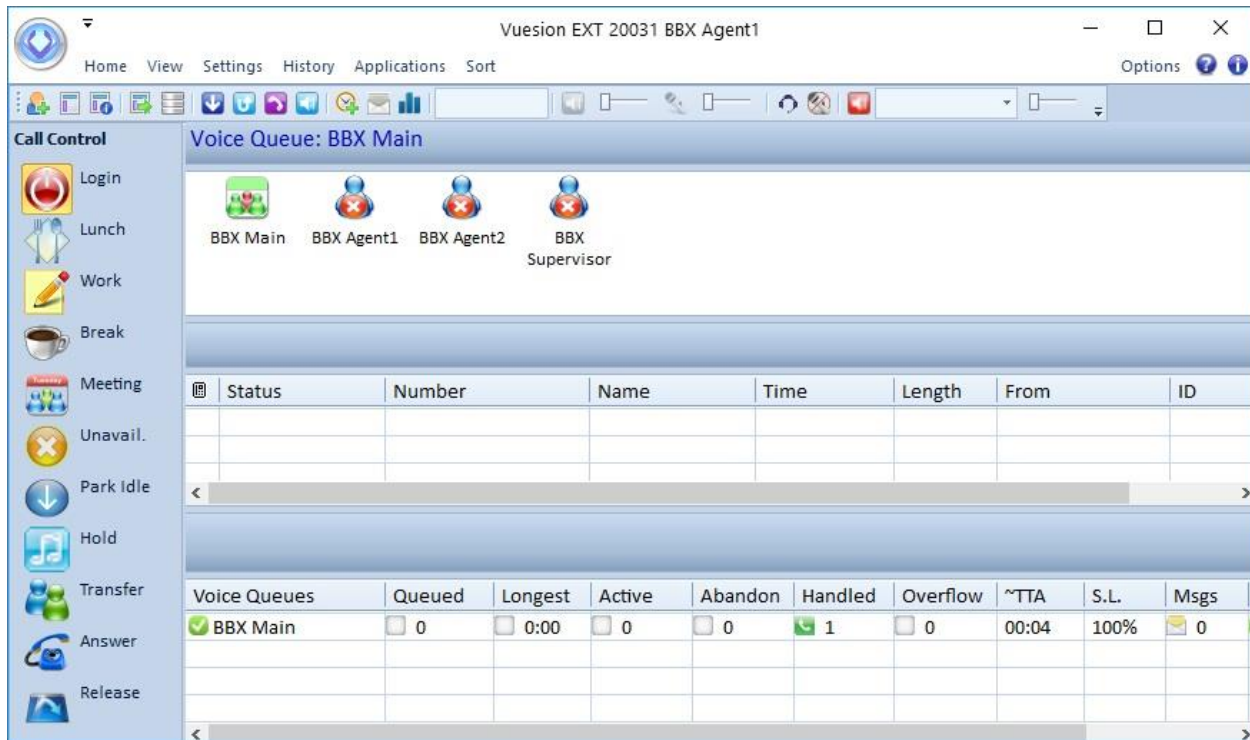
The applicable agent icon is updated in the right pane, as shown below.
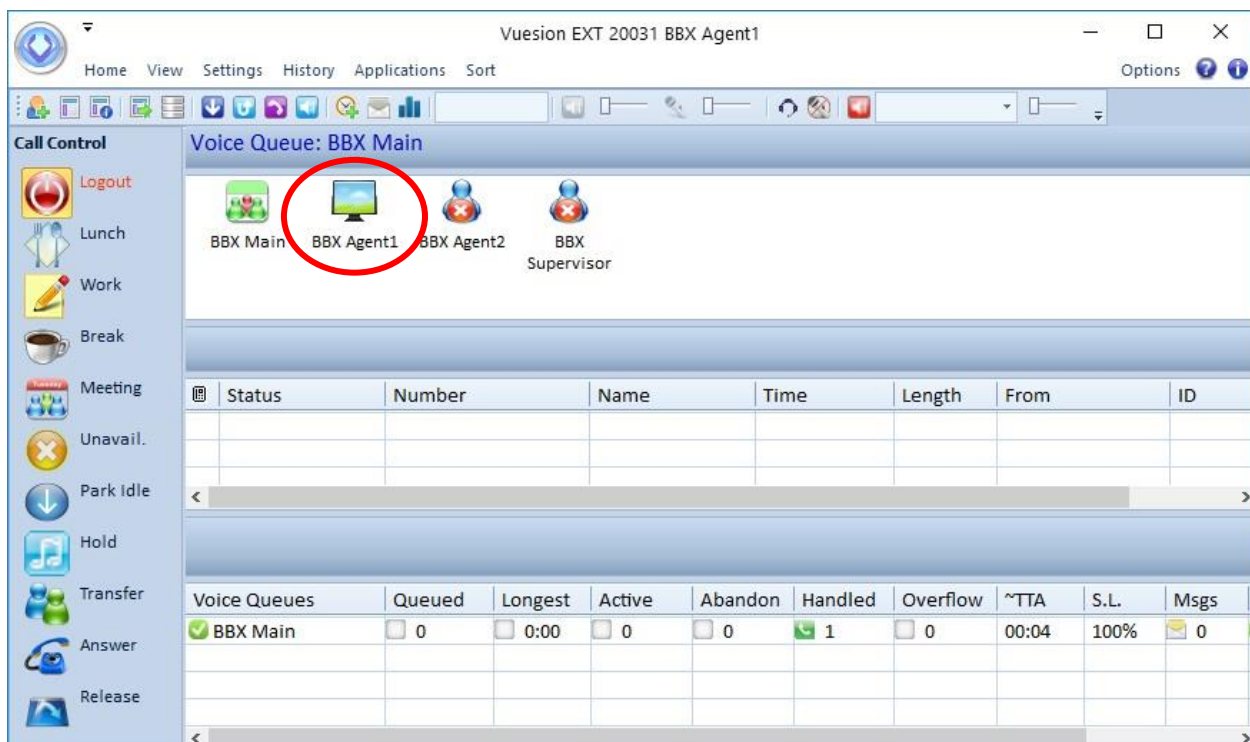
Make a call from the PSTN to the main group, and verify that the agent screen is updated to reflect a ringing call. Also verify that the entry shown in the middle right pane reflects proper information for the call. Click on the **Answer** icon in the left pane to answer the call.

Verify the agent telephone is connected to the caller with two-way talk path, and that the agent screen is updated to reflect the call being connected, as shown below. Click on the **Release** icon in the left pane to complete the call.

From the PC running Vuesion Reports, double-click on the **VuesionReports.exe** icon shown on the desktop, which was created as part of installation. In the compliance testing, Vuesion Reports was running on the supervisor PC.

The **Vuesion Reporting** screen is displayed. For **Server IP/Name**, enter the Vuesion server IP address from **Section 6.3**. For **TCP/Port**, enter the Vuesion server port from **Section 6.3**.

For **Supervisor ID** and **Password**, enter the applicable supervisor credentials from **Section 6.5**, as shown below.

The **Vuesion Reporting** screen below is displayed. Retain the default values, and click **View Reports** to view reports for the current day.

The **Vuesion Reporting** screen is updated. Select **All Calls → Activity** from the left pane.
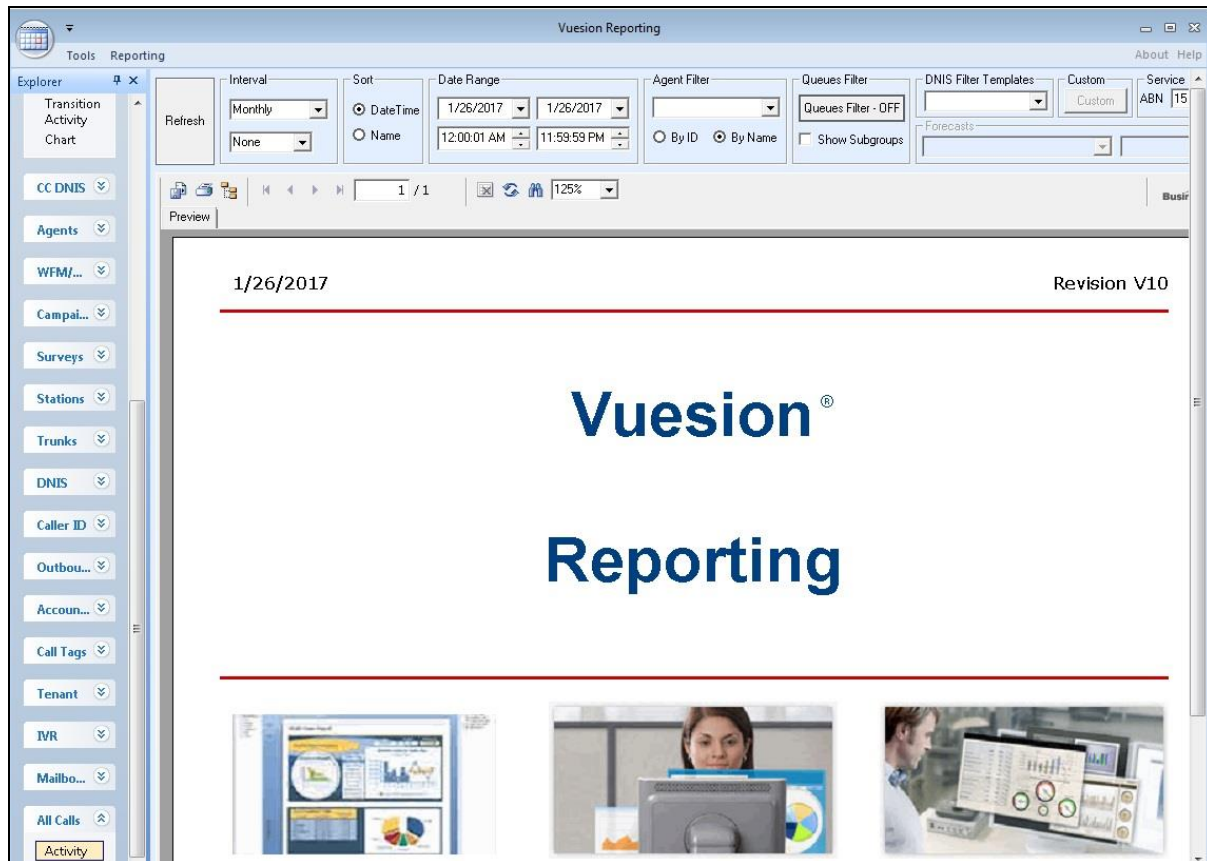
The **Vuesion Reporting** screen is updated with the **Call Detail Activity** report. Verify that there are entries reflecting the last call with proper information, as shown below.

8. Conclusion

These Application Notes describe the configuration steps required for BBX Technologies Vuesion Multichannel Contact Center 11.3 to successfully interoperate with Avaya IP Office 10.0.   All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

9. Additional References

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

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

2. *Vuesion Application Server Contact Center Configuration Guide*, 01/2017 Release V11, available upon request to BBX Technologies Support.