Avaya Solution & Interoperability Test Lab

Application Notes for Enghouse Interactive Communications Center 2016 with Avaya IP Office 9.1 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Enghouse Interactive Communications Center 2016 to interoperate with Avaya IP Office 9.1. Enghouse Interactive Communications Center is a multi-channel and multi-contact solution that can handle voice, fax, web, and email contacts.

The compliance testing focused on the voice integration with Avaya IP Office using the TAPI and SIP user interfaces.

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 Enghouse Interactive Communications Center (EICC) 2016 to interoperate with Avaya IP Office 9.1. EICC is a multi-channel and multi-contact solution that can handle voice, fax, web, and email contacts. The compliance testing focused on the voice integration with Avaya IP Office using the TAPI and SIP user interfaces.

The TAPI 2 in third party mode interface is used by EICC to monitor groups and agent users on Avaya IP Office. Incoming calls are routed by EICC to available agents using the TAPI line redirect capability.

The agents are configured as users on Avaya IP Office, with the ACD functionality provided by EICC. The agents have desktop computers running the Enghouse Interactive Executive Desktop client software. Upon notified of an incoming group call via TAPI events, EICC redirects the call to an available agent, and populates the answering agent's desktop screen with call related information received via the TAPI interface. Call related actions such as answering of incoming calls can be initiated via the agent desktop, or via the agent telephone. The call related actions from the agent desktops are supported by EICC using TAPI line control capabilities.

The SIP user interface is used by EICC along with the Aculab SIP stack to support voicemail, announcement, and basic call recording features. Voicemail and announcement calls are redirected to an available SIP user to terminate to EICC, and recording is accomplished by intruding a virtual SIP user onto the active call to pick up the media.

2. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon start of the EICC application, the application automatically requests monitoring of devices.

For the manual part of the testing, incoming calls were made to the general routing groups. EICC used the TAPI event messages to track agent states, and specify calls to be redirected to available agents. Manual call controls from both the agent desktops and the agent telephones were exercised to verify remaining features such as answering and transferring of calls.

Voicemail was tested by not answering personal calls at the agent, and have the call cover to EICC for proper leaving of voice message and activation of message waiting indicator (MWI). Manual call was then made from the agent to the Voicemail group for retrieval of voice message and proper deactivation of MWI.

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

The verification of tests included human checking of proper states at the agent desktop and telephone screens, and of reviewing the log files from EICC.

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 EICC:

- Virtual SIP user registrations, G.711and G.729 codec, and inbound DTMF.

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

- Proper handling of call scenarios including incoming calls to different groups, hold, reconnect, blind/attended transfer, attended conference, voicemail, announcement, call forwarding, MWI, hot desking, supervisor monitor, outgoing call, outpulse of DTMF digits, and recording of basic calls.

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

2.2. Test Results

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

- By design, for a hold and reconnect call scenario, the basic call recording feature captures the audio up to the hold action.

- For the attended conference scenarios, the last party remaining on the call needed to drop the call manually. This can be performed from either the telephone or from the desktop when applicable.

- For the attended conference scenario, after the conference-from agent drops from the conference first, the entry associated with the PSTN caller in the conference-to agent Conference Call detail section was removed. However, this did not impact the remaining call between the conference-to agent and the PSTN caller.

- For the attended conference scenario, after the PSTN caller drops from the conference first, the Conference Call detail section for both the conference-from and the conference-to agents continued to include the entry associated with the PSTN caller. However, this did not impact the remaining call between the two agents.

2.3. Support

Technical support on EICC can be obtained through the following:

- **Phone:**   (800) 513-2810
- **Web:**   www.enghouseinteractive.com
- **Email:**   usa.support@zeacom.com

3. Reference Configuration

The configuration used for the compliance testing is shown below.
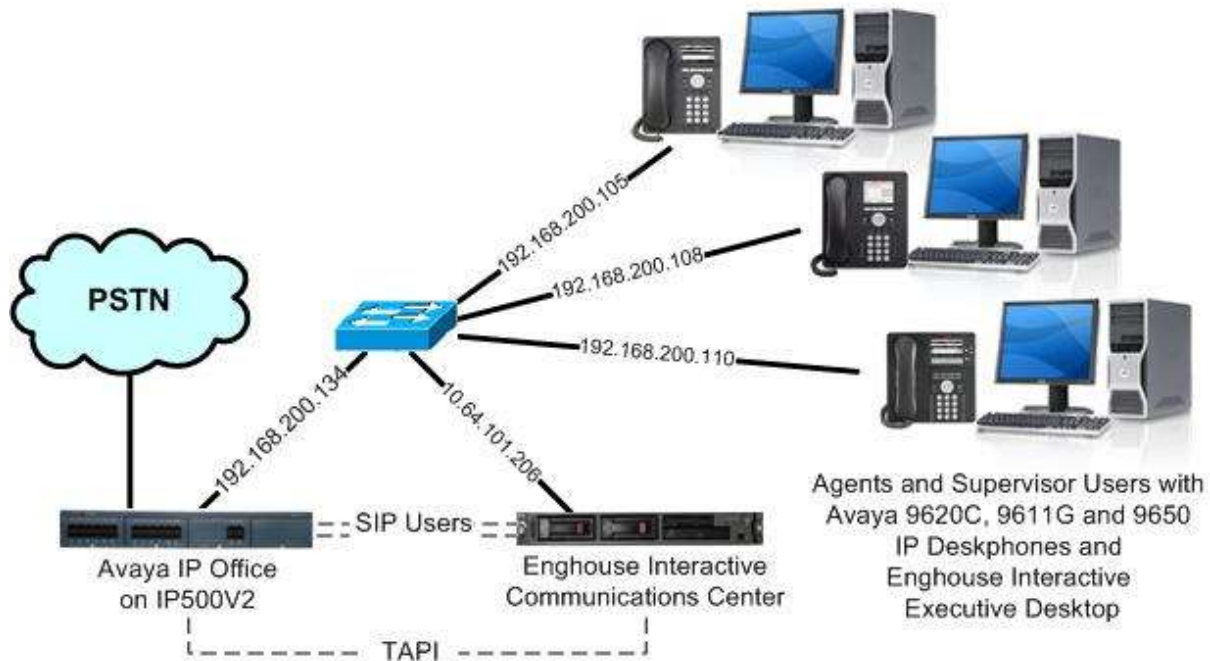
Figure 1: Compliance Testing Configuration

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	9.1.400.137
Avaya 9620C & 9650 IP Deskphones (H.323)	3.250A
Avaya 9611G IP Deskphone (H.323)	6.6029
Enghouse Interactive Communications Center on Windows Server 2012 R2 • Avaya IP Office TAPI2 Driver (tspi2w) • Aculab SIP Stack	2016 (9.0.0.4388) Standard 1.0.0.42 2.0.11
Enghouse Interactive Executive Desktop	2016 (9.0.0.4334)

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

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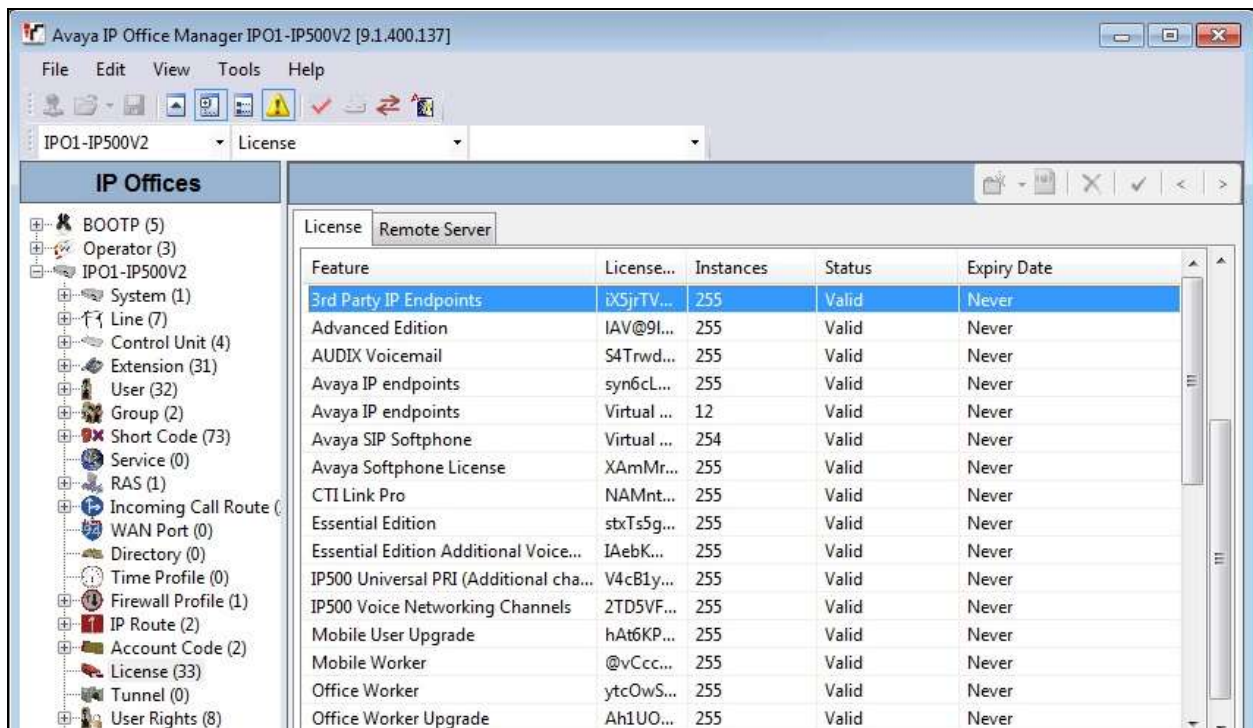
This section provides the procedures for configuring IP Office. The procedures include the following areas:

- Verify license
- Administer groups
- Administer agent users
- Assign agents users to monitor group
- Administer supervisors
- Obtain LAN IP address
- Administer SIP registrar
- Administer SIP extensions
- Administer SIP users
- Administer short code

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 using 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.

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5.2. Administer Groups

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. For **Name** and **Extension**, enter desired values. Retain the default values for the remaining fields.
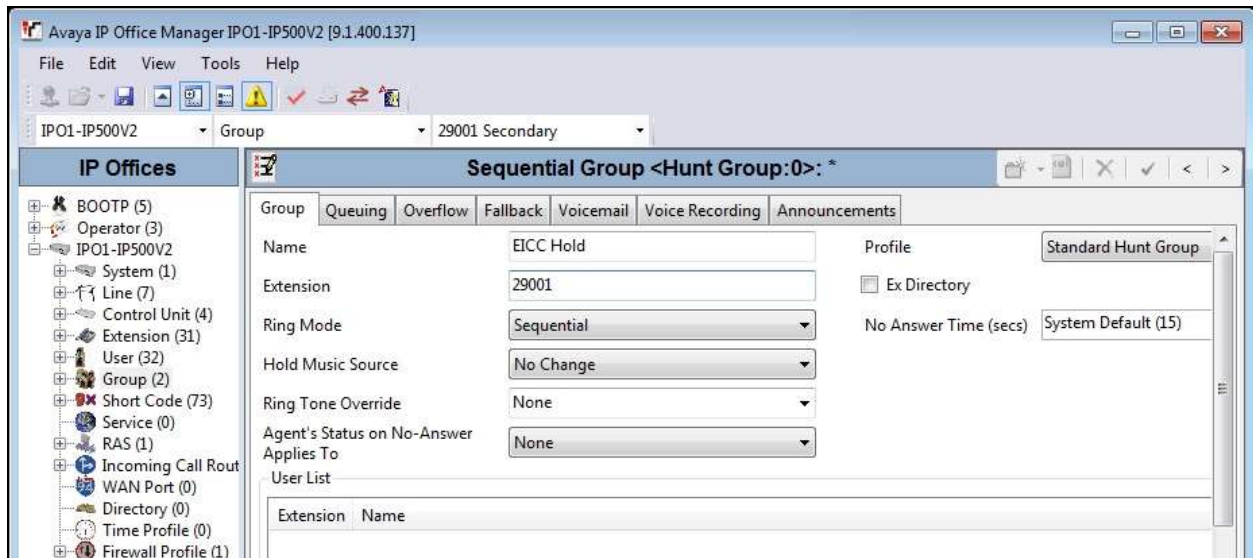
Select the **Voicemail** tab, and uncheck **Voicemail On** as shown below.

Repeat this section to create the groups shown below. These groups are used by EICC for routing and handling of incoming calls.

Extension	Name
29001	EICC Hold
29002	EICC Voicemail
29003	EICC Operator
29004	EICC Monitor
29005	EICC Fallback
29006	EICC Sales
29007	EICC Support

The created groups are shown in the left pane of the screenshot below.
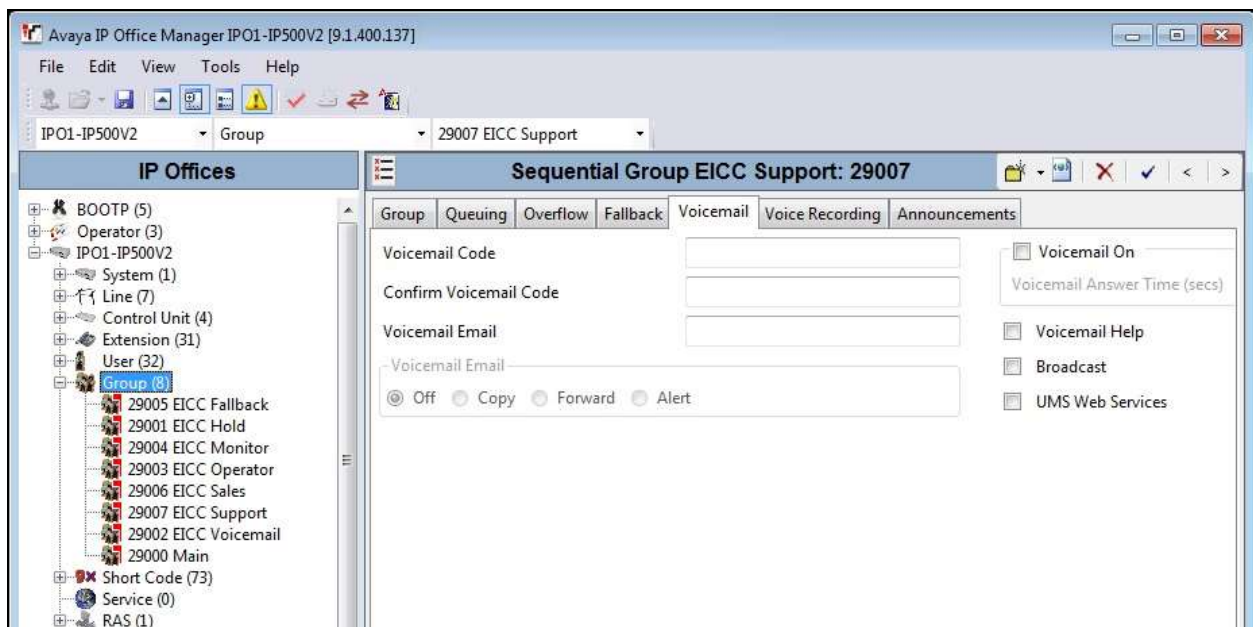
5.3. Administer Agent Users

From the configuration tree in the left pane, select the first user that will be used for answering ACD calls, in this case "20031". Select the **Voicemail** tab, and uncheck **Voicemail On** as shown below.
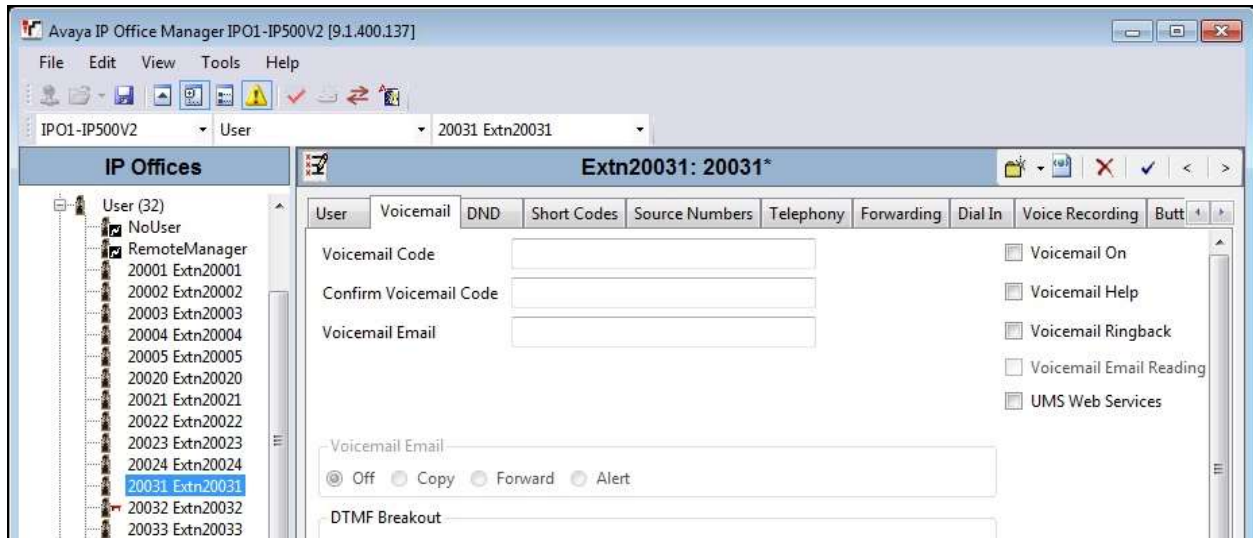
Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab. Uncheck **Cannot be Intruded**, and set **Can Intrude** to the desired setting.

Select the **Forwarding** tab. Check **Forward On Busy**, **Forward On No Answer**, and **Forward Internal calls**. For **Forward Number**, enter the EICC Voicemail group extension from **Section 5.2**.

Repeat this section for all users that will be used for answering ACD calls. In the compliance testing, two users with extensions "20031" and "20032" were configured.
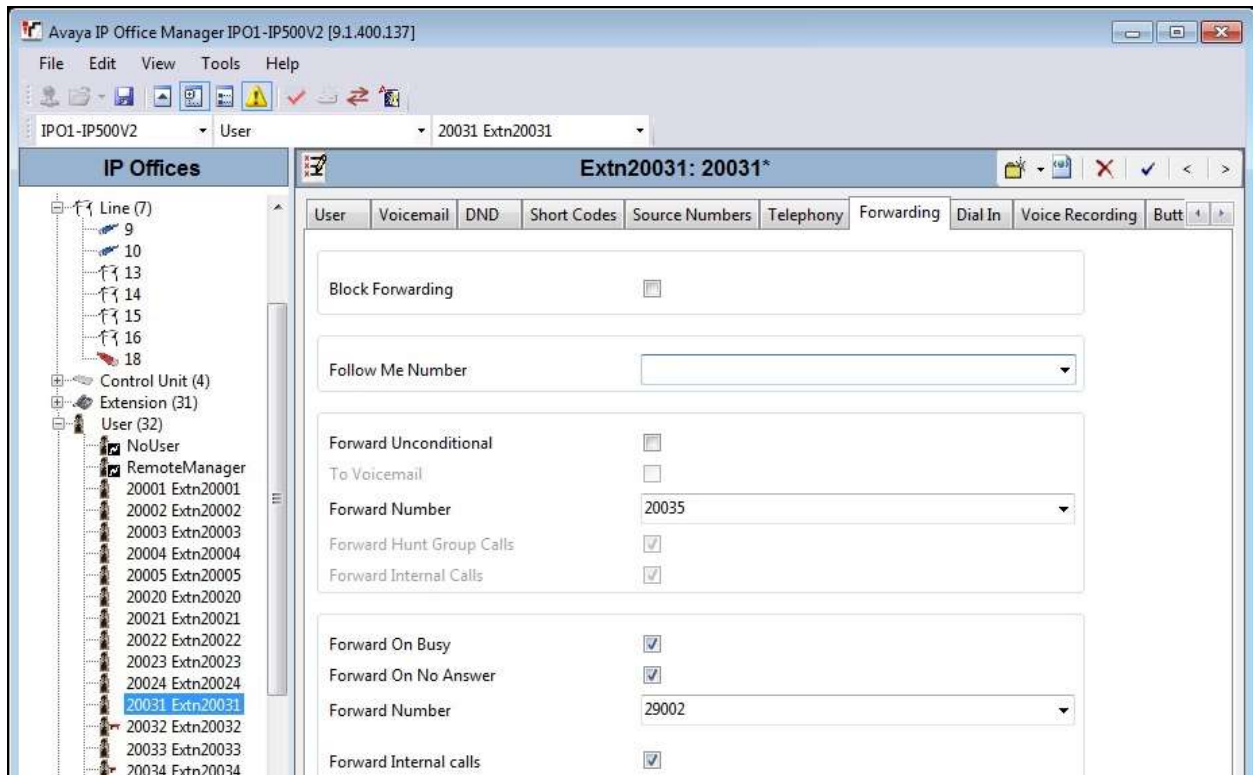
5.4. Assign Agent Users to Monitor Group

From the configuration tree in the left pane, select the EICC Monitor group, in this case "29004". Click on **Edit** in the **User List** section to add members. In the next screen (not shown), select all agent users from **Section 5.3**.
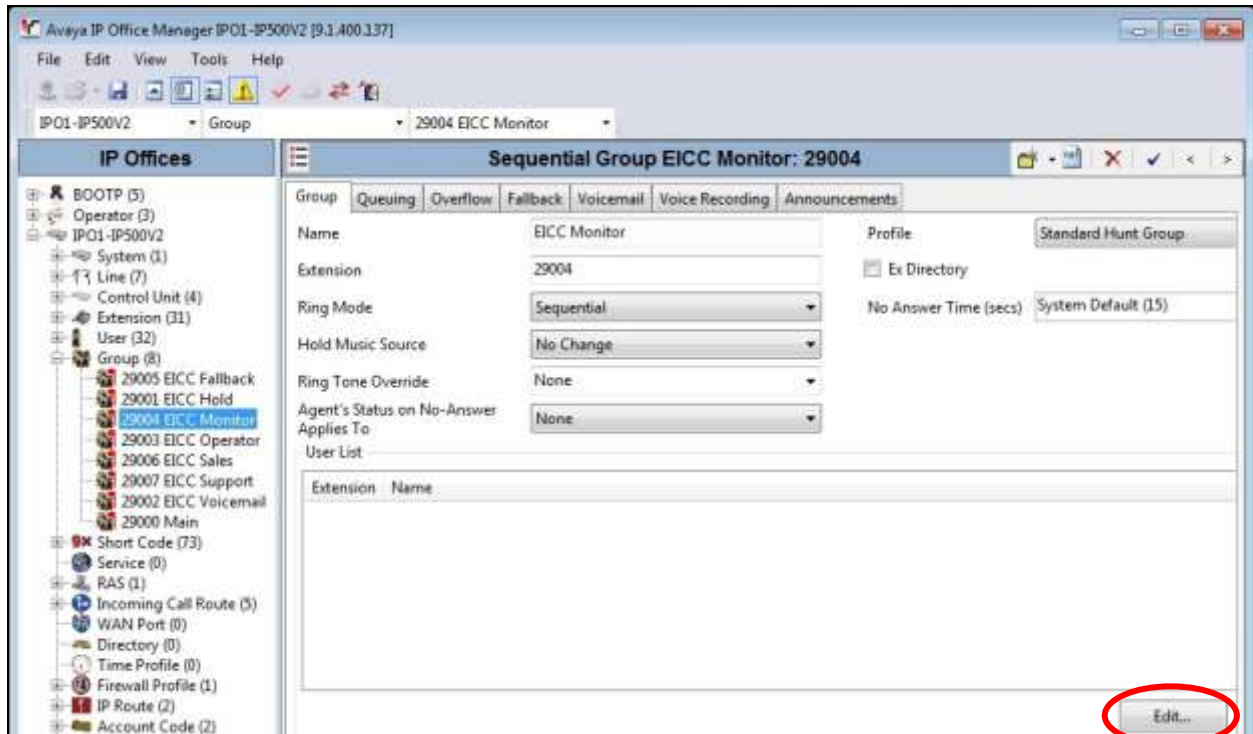
The resultant screen after the selection is shown below.
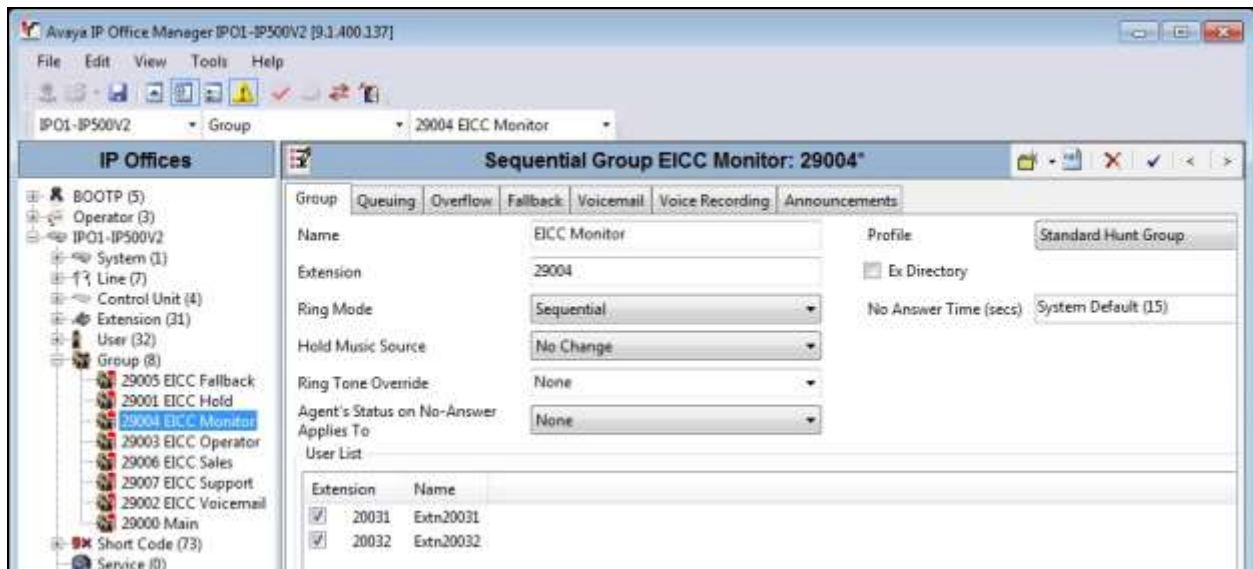
5.5. Administer Supervisors

From the configuration tree in the left pane, select the first user that will be used as the supervisor, in this case "20035".

Select the **Voicemail** tab, and uncheck **Voicemail On** as shown below.
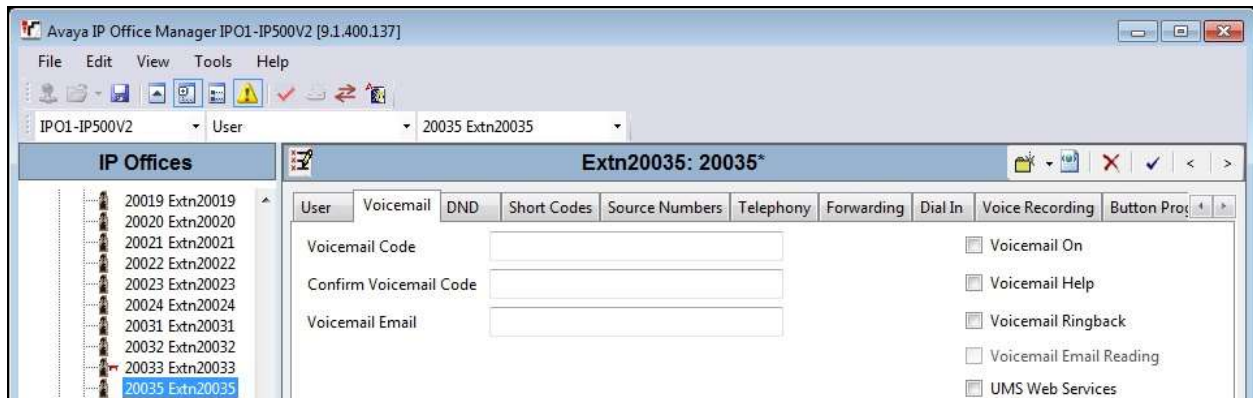
Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab. Check **Can Intrude**, and set **Cannot be Intruded** to the desired setting. For **Monitor Group**, select the EICC Monitor group from **Section 5.2**.
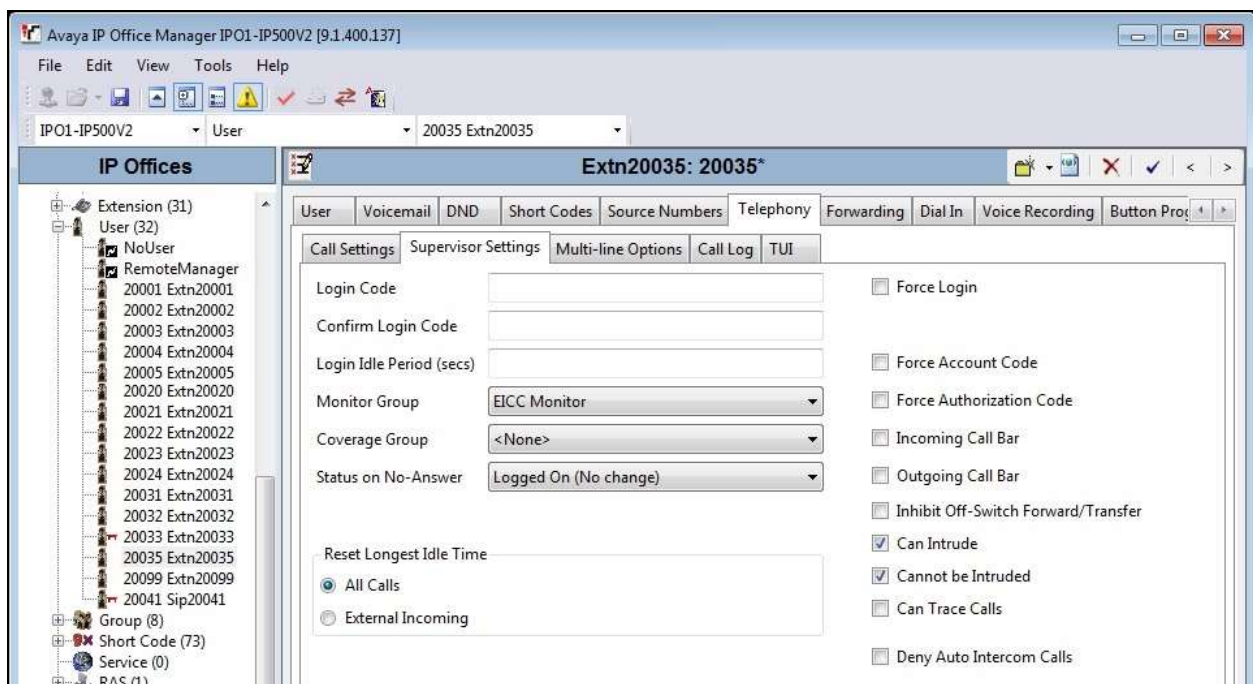
Select the **Forwarding** tab. Check **Forward On Busy**, **Forward On No Answer**, and **Forward Internal calls**. For **Forward Number**, enter the EICC Voicemail group extension from **Section 5.2**.

Repeat this section for all supervisors. In the compliance testing, one supervisor with extension "20035" was configured.
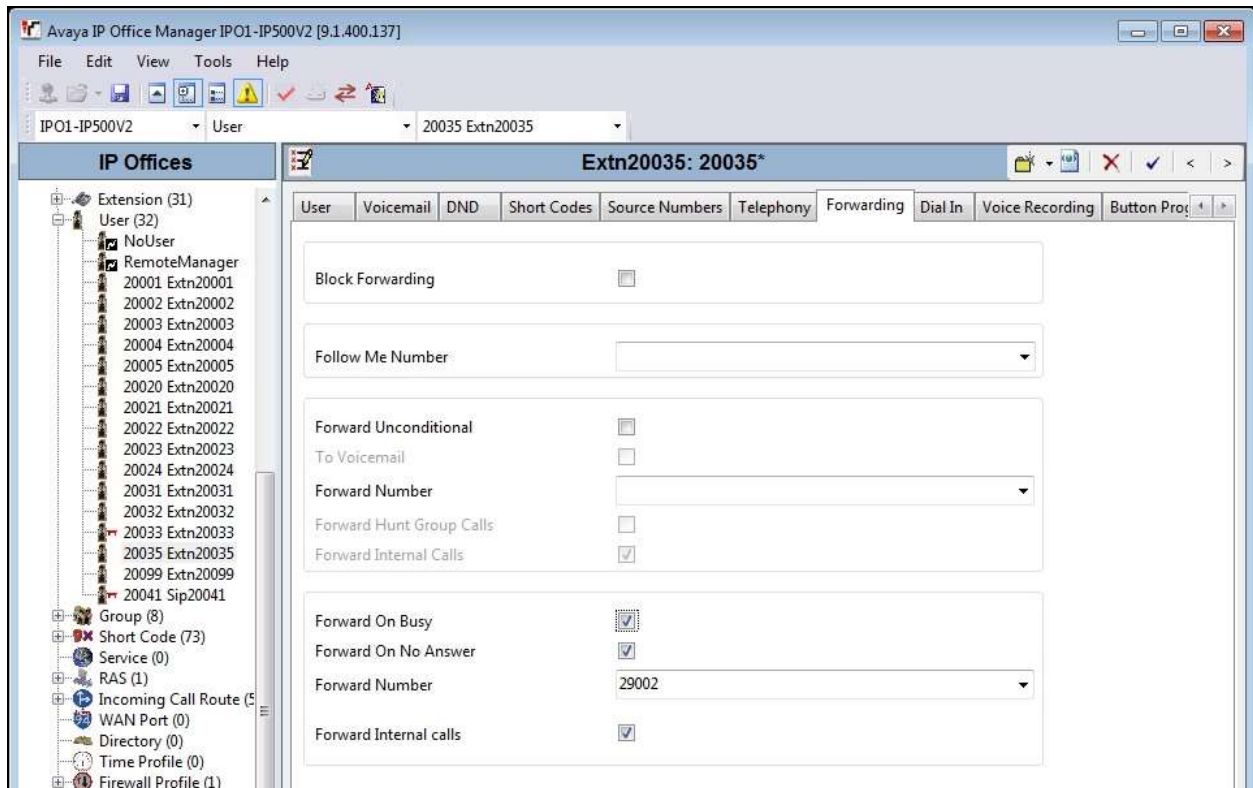
5.6. Obtain LAN IP Address

From the configuration tree in the left pane, select **System** to display the system screen in the right pane. Select the **LAN1** tab, followed by the **LAN Settings** sub-tab.

Make a note of the IP Address, which will be used later to configure EICC. Note that IP Office can support SIP on the LAN1 and/or LAN2 interfaces, and the compliance testing used the LAN1 interface.
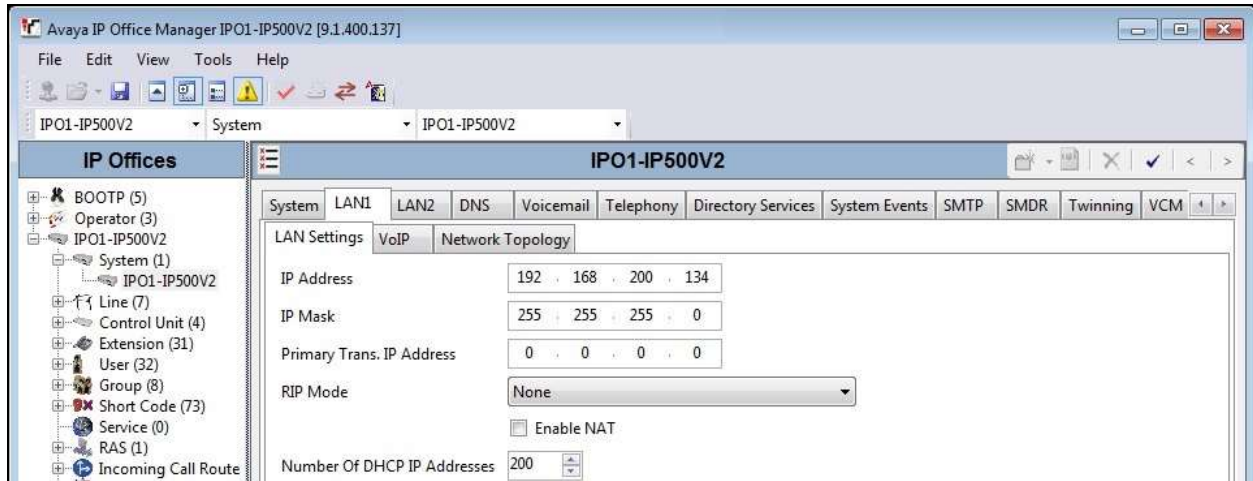
5.7. Administer SIP Registrar

Select the **VoIP** sub-tab. Make certain that **SIP Registrar Enable** is checked, as shown below.
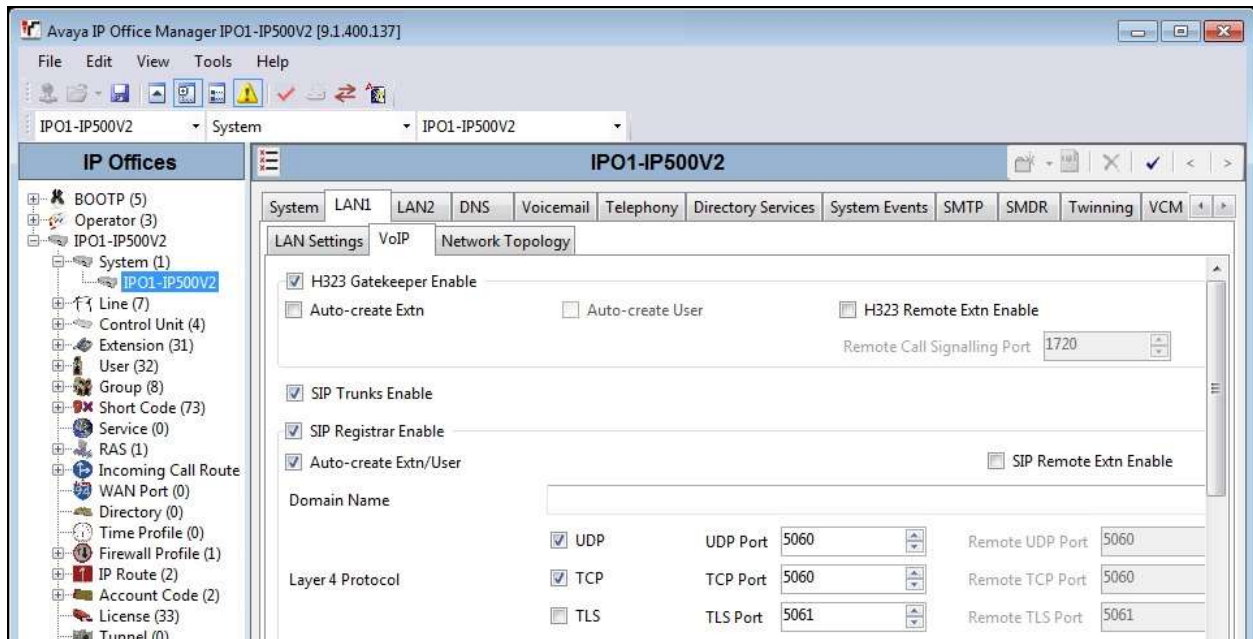
5.8. Administer SIP Extensions

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. For **Base Extension**, enter an available extension number, in this case "20061". Uncheck **Force Authorization**, as shown below.

Repeat this section to add the desired number of SIP extensions with consecutive extension numbers. In the compliance testing, two SIP extensions "20061" and "20062" were created.
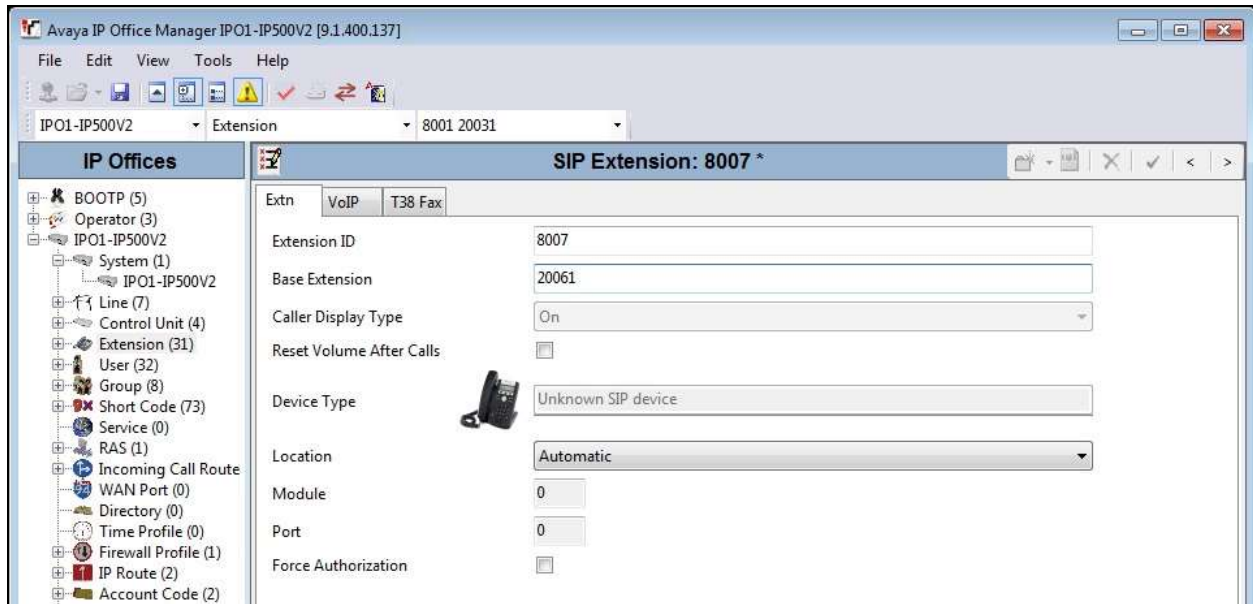
5.9. Administer SIP Users

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 desired values. For **Extension**, enter the first SIP base extension from **Section 5.8**.

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

Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab. Check **Can Intrude** and **Cannot be Intruded**. For **Monitor Group**, select the EICC Monitor group from **Section 5.2**.

Repeat this section to add a new user for each SIP extension from **Section 5.8**. In the compliance testing, two users with extensions of "20061" and "20062" were created.
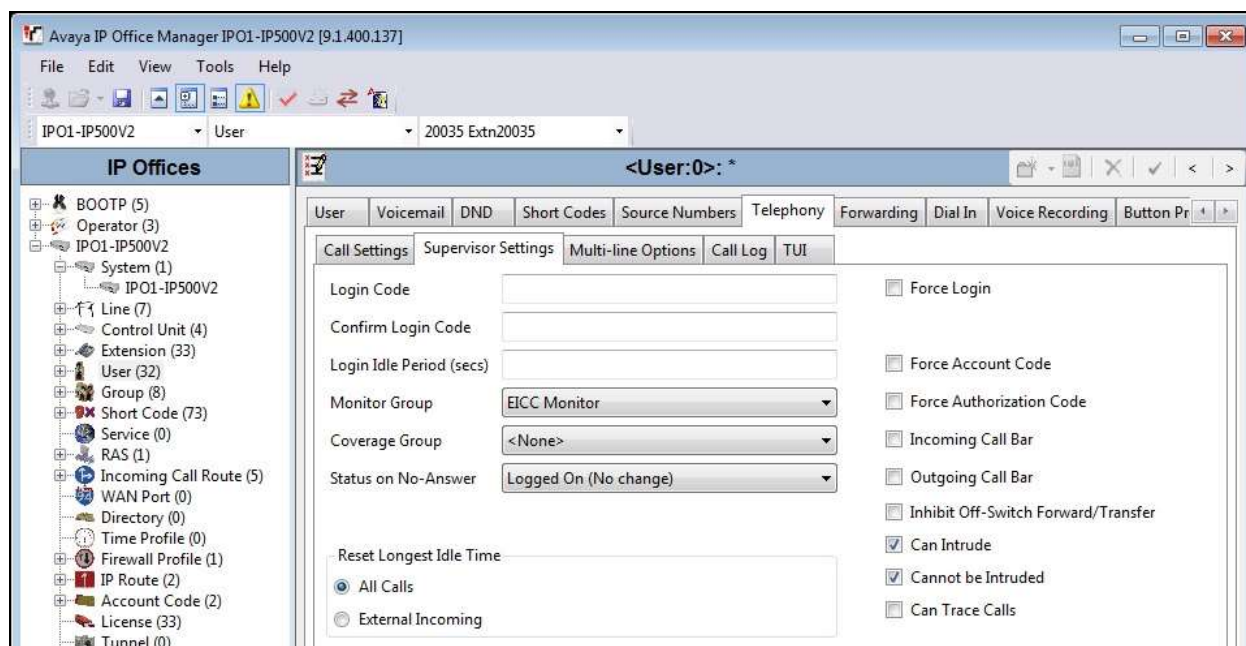
5.10. Administer Short Code

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 Call Listen.   Configure the fields exactly as shown below. This fixed short code value will be used by EICC to intrude virtual SIP users onto active calls for basic call recording.
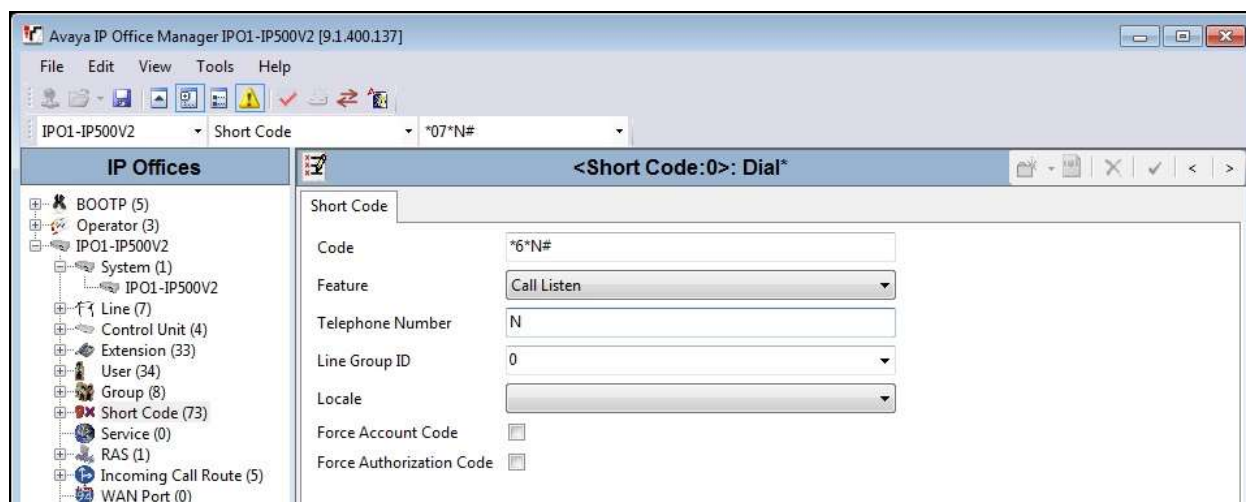
6. Configure Enghouse Interactive Communications Center

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

- Administer TAPI Driver
- Administer phone system type
- Administer phone system data
- Verify license
- Administer lines
- Administer queues
- Administer phonebook

The configuration of EICC is typically performed by Enghouse Interactive installation technicians or third party resellers. The procedural steps are presented in these Application Notes for informational purposes.

6.1. Administer TAPI Driver

From the EICC server, select **Start → Control Panel → Phone and Modem**, to display the **Location Information** screen. Enter the proper area code and any other pertinent data.

The **Phone and Modem** screen is displayed next. Select the **Advanced** tab, followed by **Avaya IP Office TAPI2 Service Provider**, as shown below. 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 applicable IP Office password into the **Switch Password** field. Check **ACD Queues** as shown below.

Reboot the EICC server.
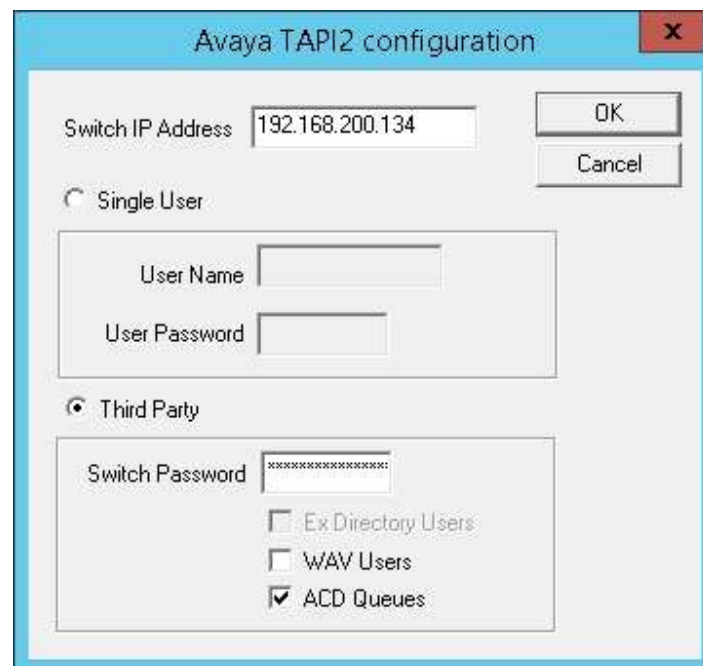
6.2. Administer Phone System Type

At the conclusion of installation, the **Installation Process** screen will be displayed by the Installation Wizard. Follow [2] to import licenses and configure the default company.

The **Installation Process** screen shown below is displayed next. Click the **Run** icon associated with **Define Phone System Type**.
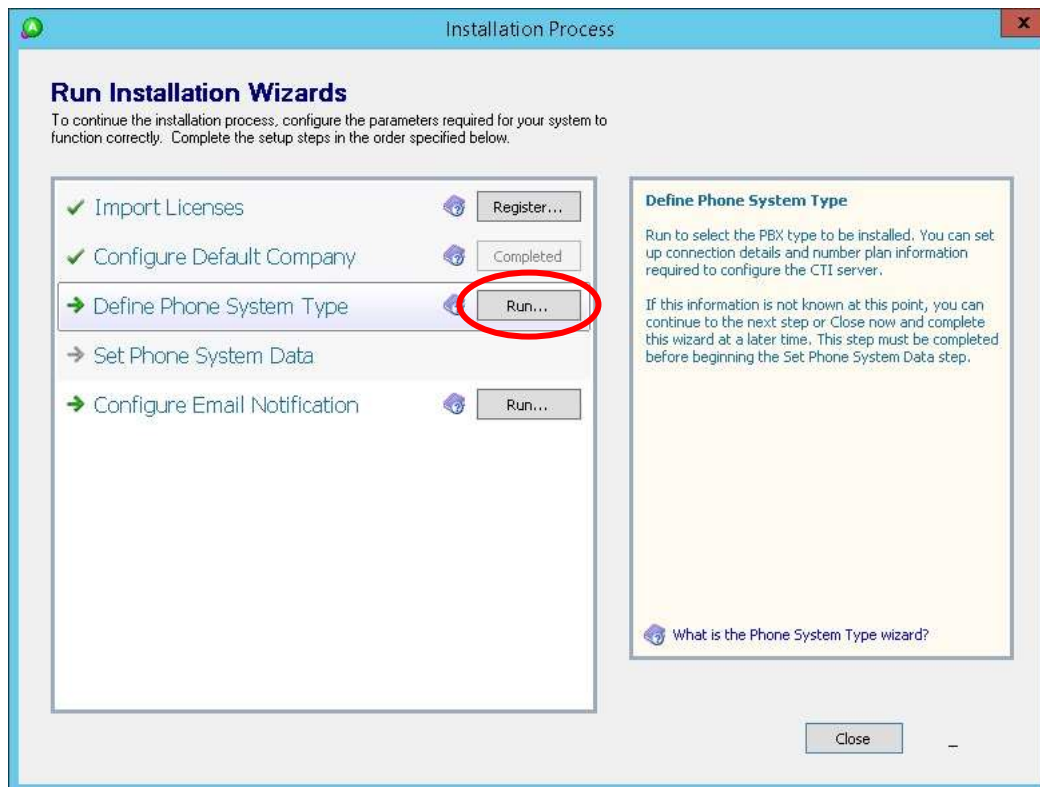
The **Phone System Type** screen is displayed next. For **PBX Type**, select "Avaya IP Office".
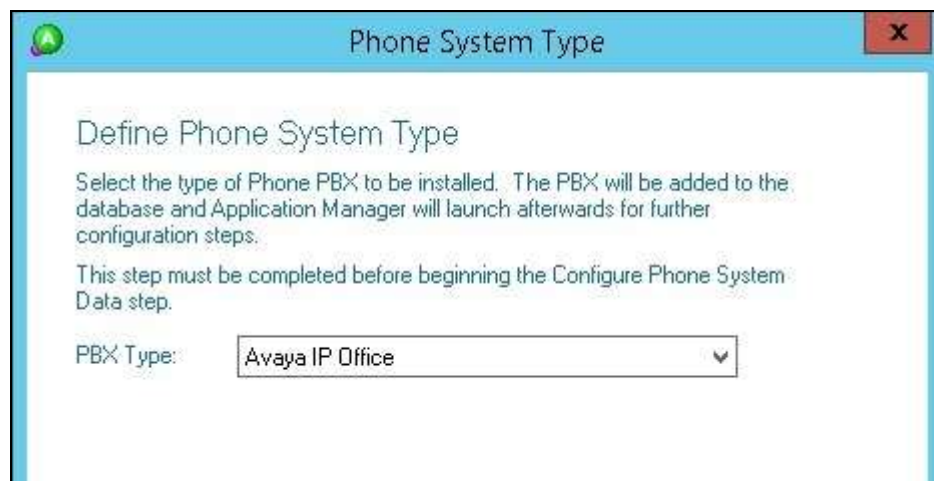
6.3. Administer Phone System Data

The **Installation Process** screen shown below is displayed. Click the **Run** icon associated with **Set Phone System Data** → **Configure PBX Connection** shown below.
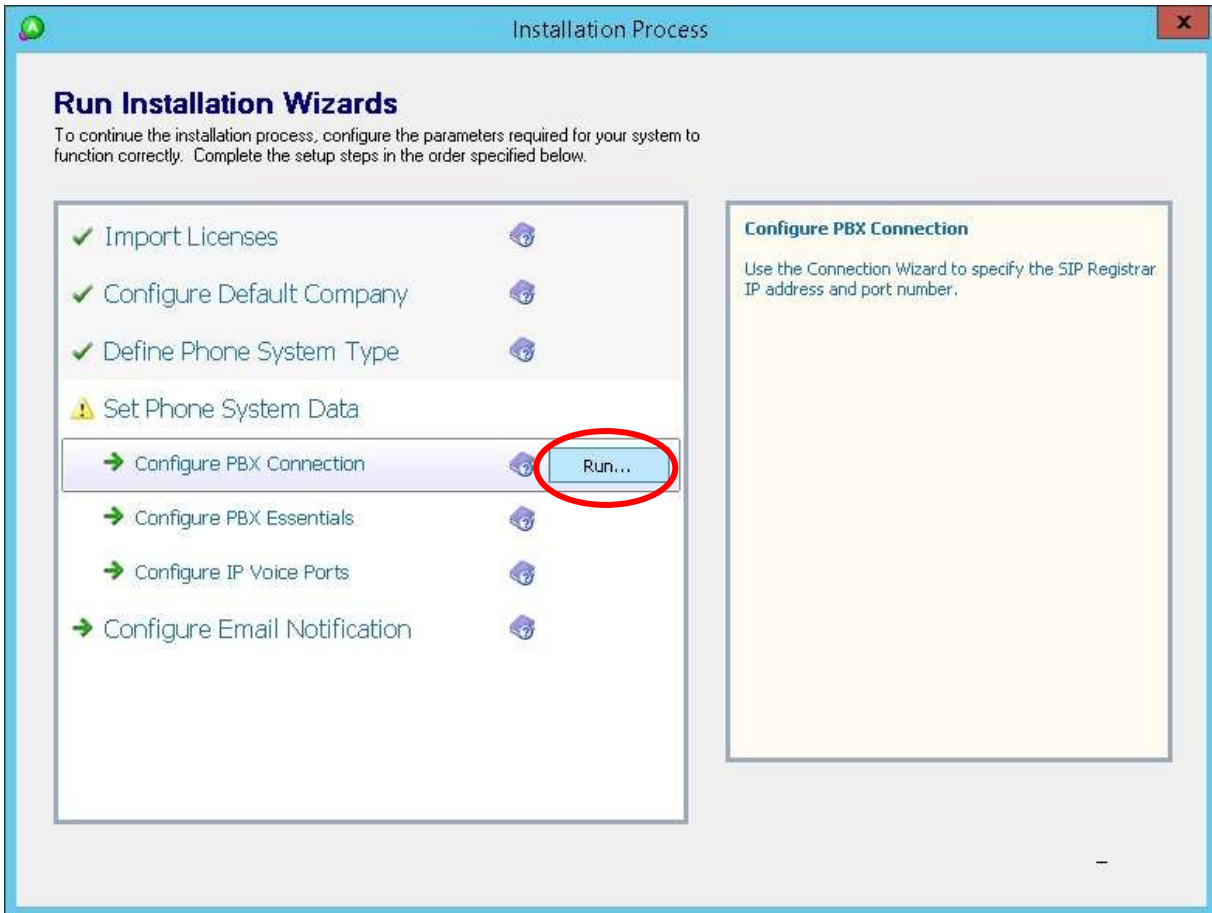
The **Avaya IP Office PBX Setup Wizard** → **Configure PBX Connection** screen is displayed. For **SIP Registrar IP Address**, enter the IP address of IP Office.
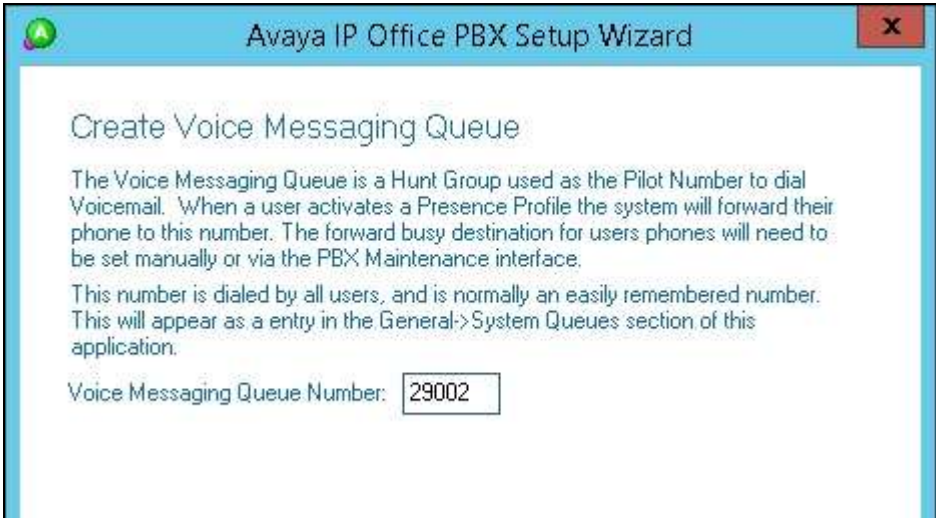
Continue with the Installation Wizard until the **Avaya IP Office PBX Setup Wizard → Create Park Queue** screen is displayed. For **Park Queue Number**, enter the extension of the EICC Hold group from **Section 5.2**.

The **Avaya IP Office PBX Setup Wizard → Create Voice Messaging Queue** screen is displayed next. For **Voice Messaging Queue Number**, enter the extension of the EICC Voicemail group from **Section 5.2**.

Continue with the Installation Wizard until the **IP Voice Ports Setup → Configure IP Voice Ports** screen is displayed. For **Start Extension**, enter the first SIP base extension from **Section 5.8**. For **Number of Ports**, select the total number of SIP extensions from **Section 5.8**.

6.4. Verify License

The **Communications Center Administrator** screen is displayed upon completion of the Installation Wizard. Select **General → Licenses** from the left pane, to display **All Licenses** in the right pane.

Verify that the following licenses are in place: **Aculab SIP Ports**, **Agent Desktop**, **Avaya IP Office**, and **UCUL (UC User License)**.

6.5. Administer Lines

Select **General → Lines** from the left pane, to display all extensions obtained automatically from IP Office. Locate the entries associated with the EICC groups from **Section 5.2**, in this case extensions 29003-29007, right-click on the entries one at a time and select **Convert Into Queue**.

Note that the EICC groups with extensions 29001-29002 were already configured as part of the Installation Wizard in **Section 6.3**.

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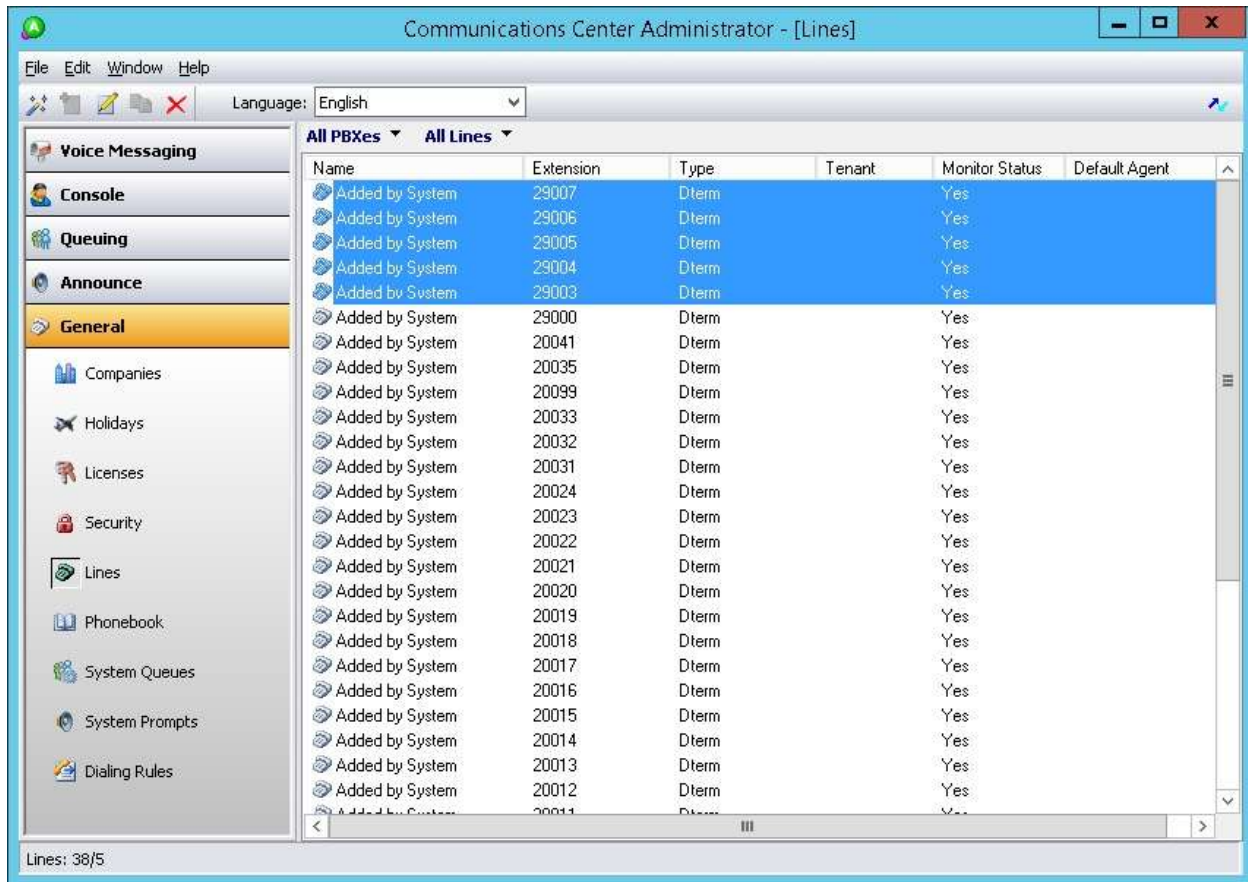
6.6. Administer Queues

Select **Queuing → Queues** from the left pane, to display a list of queues converted from **Section 6.5**. Right click on the entry associated with the EICC Operator group from **Section 5.2**, in this case extension 29003, and select **Convert to Operator Queue**.
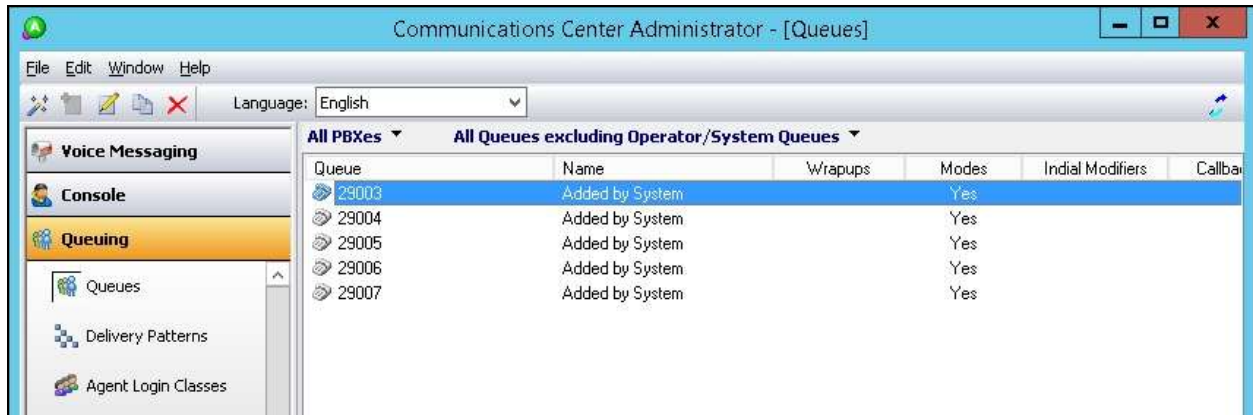
Right click on each remaining entry, and select **Edit** to modify the **Name** as desired (not shown). The queue name will be used in the agent desktop screen pops.

In the compliance testing, the queues were modified to match the corresponding group names from **Section 5.2**, as shown below.
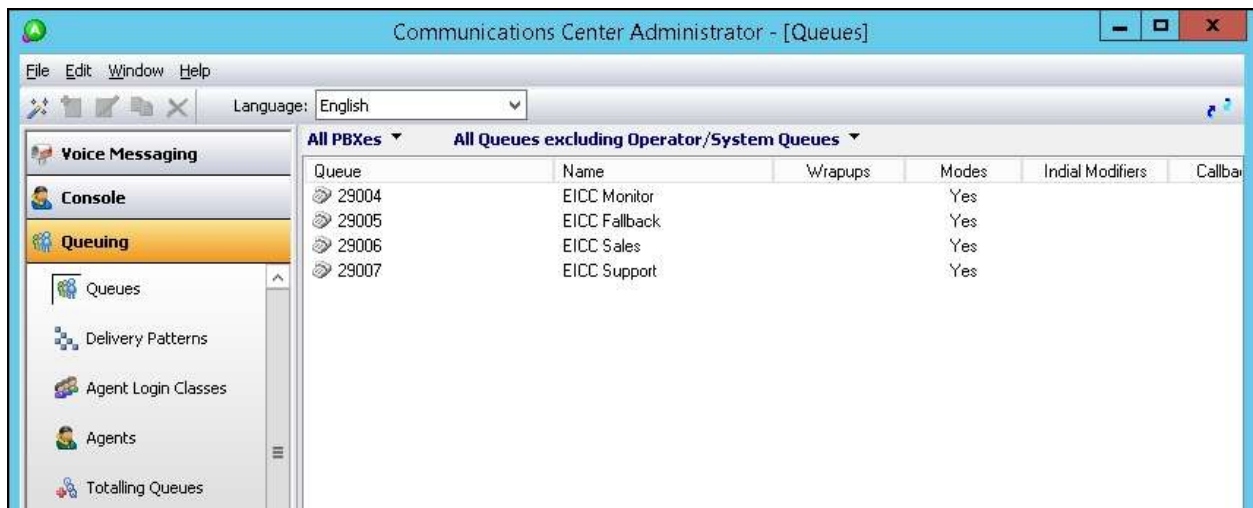
6.7. Administer Phonebook

Select **General → Phonebook** from the left pane, followed by the **Add Wizard** icon located at the upper left corner of the screen.
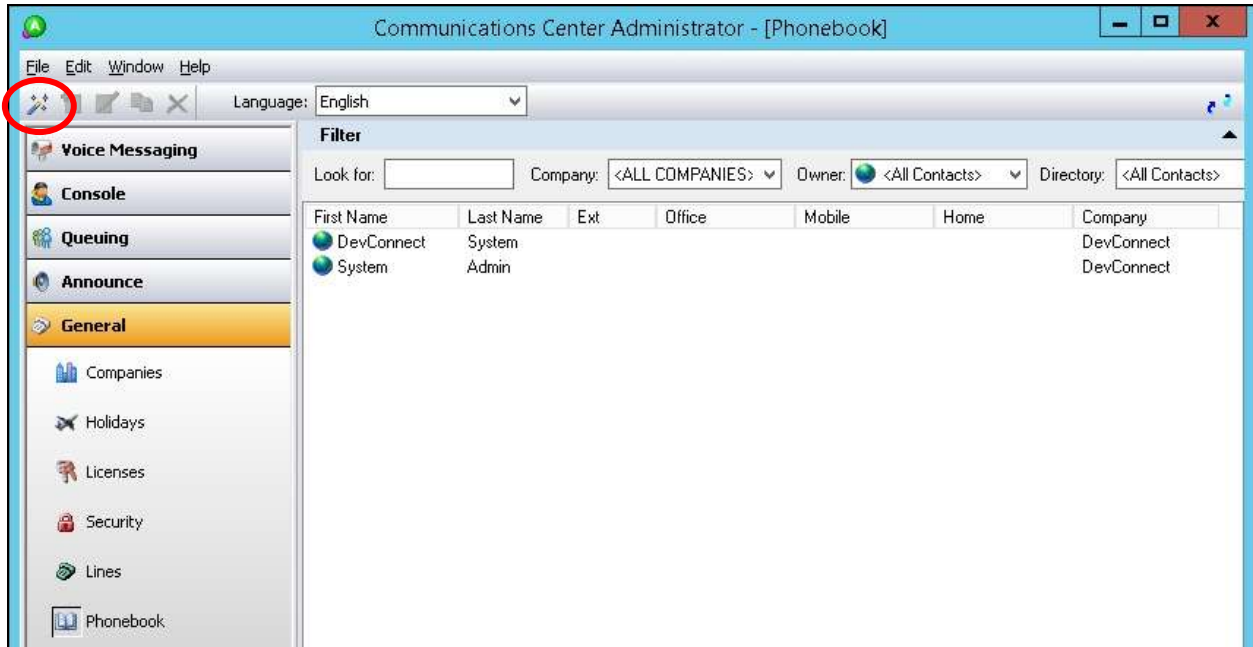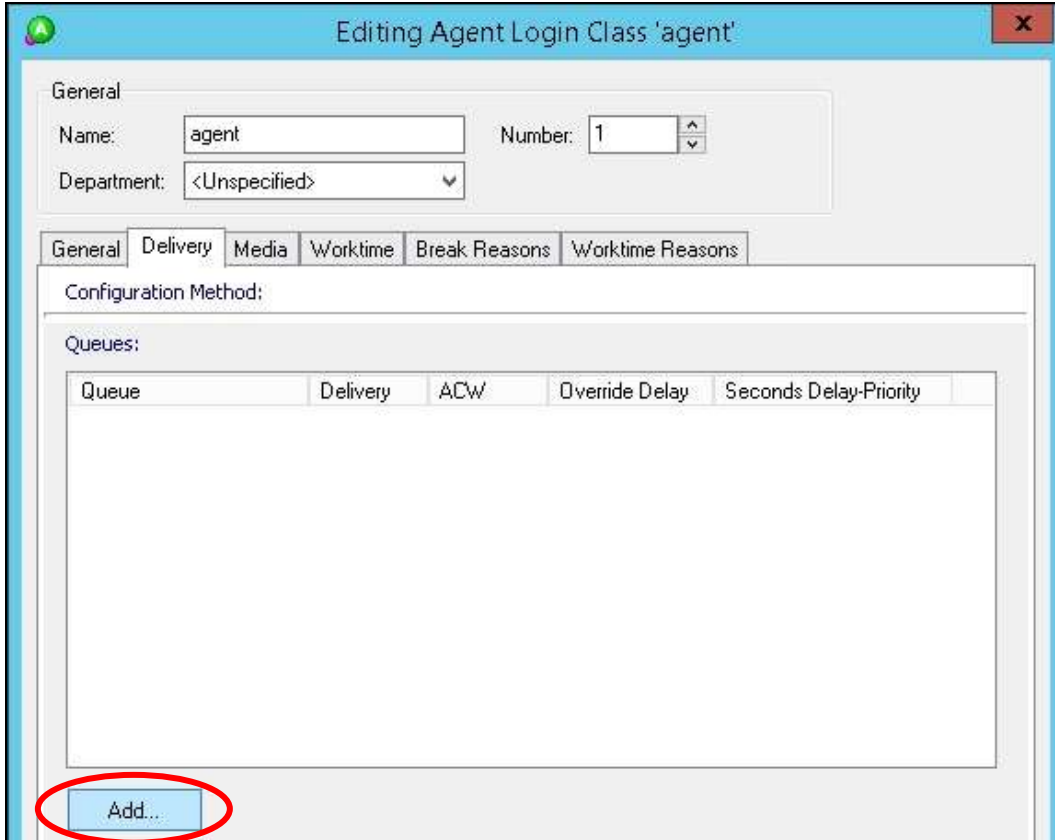
Follow the **Adding Phonebook Contact** pop-up screens (not shown) to configure a corresponding entry for each agent and supervisor from **Section 5.3** and **Section 5.5** respectively. In the compliance testing, two agents and one supervisor were created as shown below.

Double click on **Class has no delivery**.
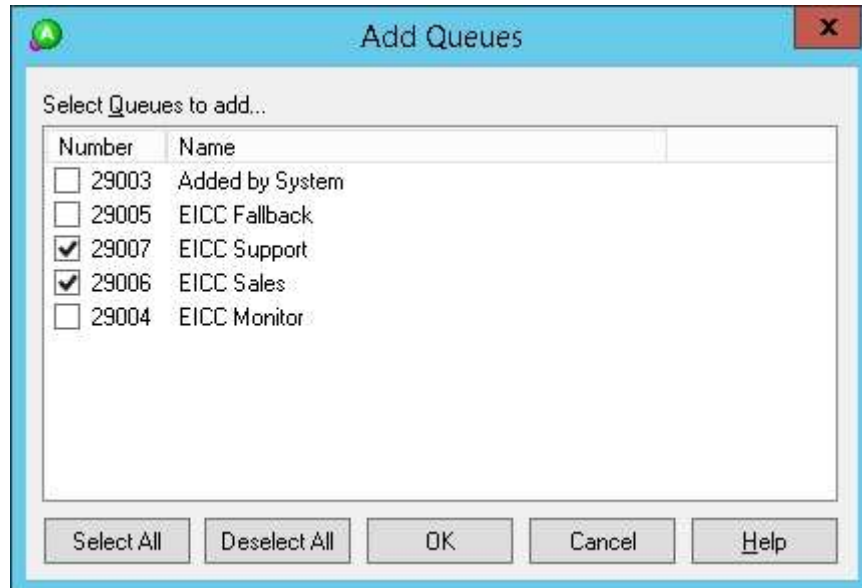
The **Editing Agent Login Class** screen is displayed. Select the **Delivery** tab, and click **Add**.

The **Add Queues** screen is displayed next. Select the applicable queues to be handled by the agents, in this case **EICC Sales** and **EICC Support**, as shown below.

7. Verification Steps

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

7.1. Verify Avaya IP Office

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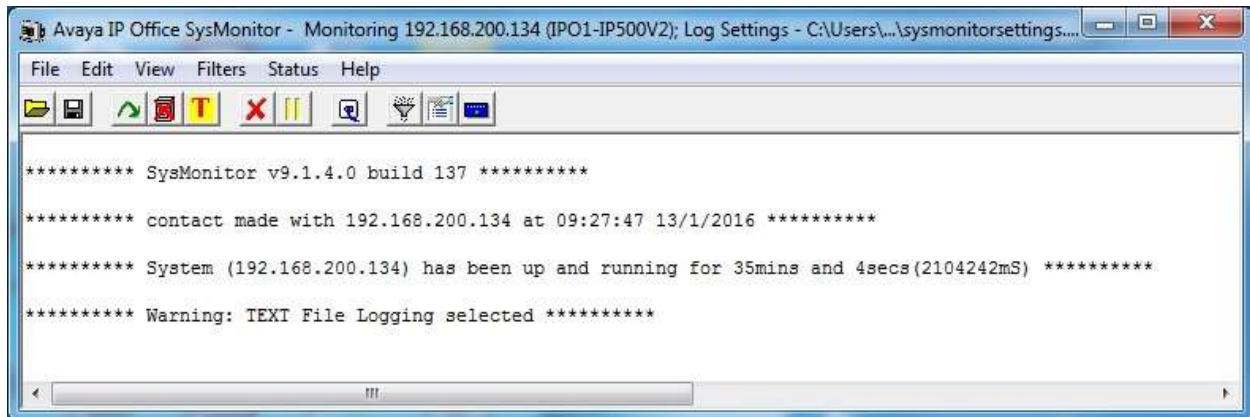

The **SIPPhoneStatus** screen is displayed. Verify that there is an entry for each SIP extension from **Section 5.8** and that the **Status** is "SIP: Registered", as shown below.
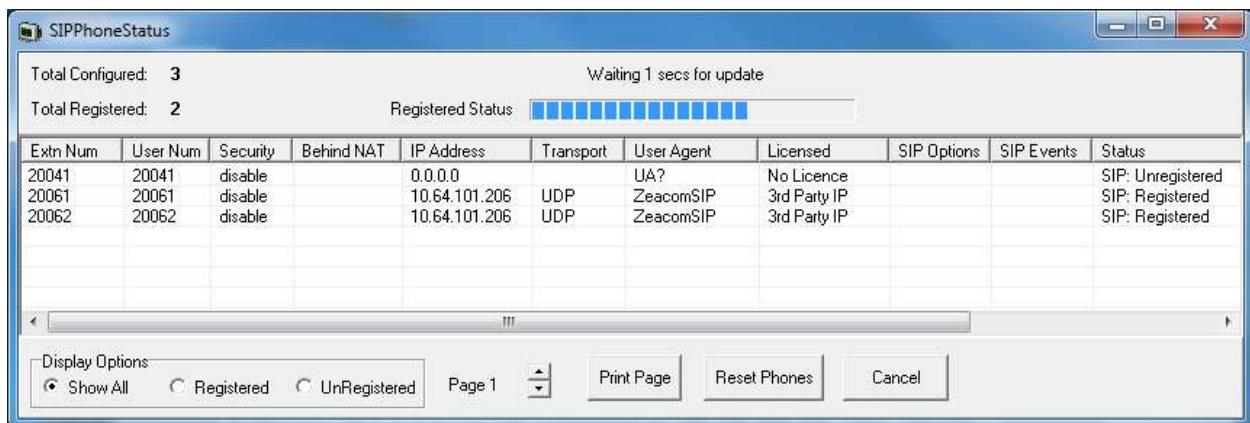
## 7.2. Verify Enghouse Interactive Communications Center

From the agent desktop with a shortcut to the Enghouse Interactive Executive Desktop client application, double-click on the **Desktop** shortcut icon shown below, which was created as part of installation.
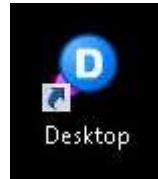
The **Desktop** login screen is displayed. Enter a valid login name from **Section 6.7**, and use the generic default PIN value from EICC. Retain the default value in the remaining fields.

The **Communications Center Desktop** screen is displayed. Click on the **Log into Queues** icon shown below.
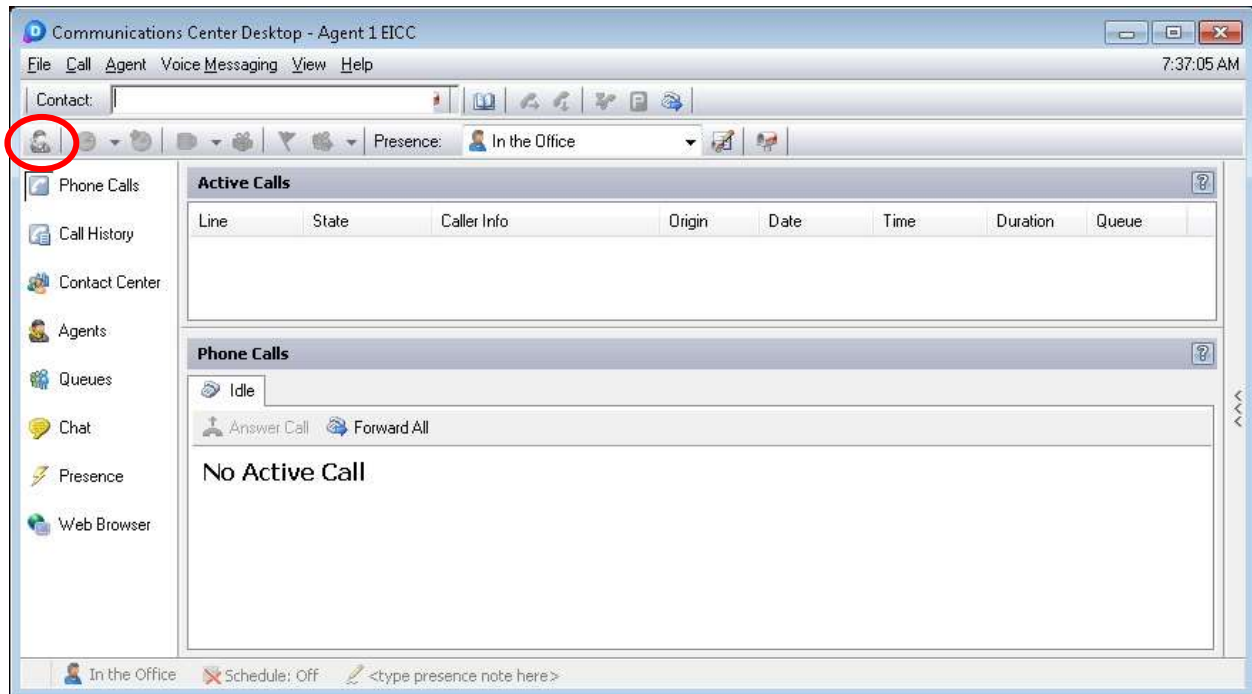

The **Log into Queues** dialog box is displayed next. Retain all default values.

Make an incoming call from PSTN to the EICC Sales group, with available agent "20031". Verify that the agent desktop is populated with a voice call entry, and that the **State** is "Offering", as shown below. Click **Answer Call**.
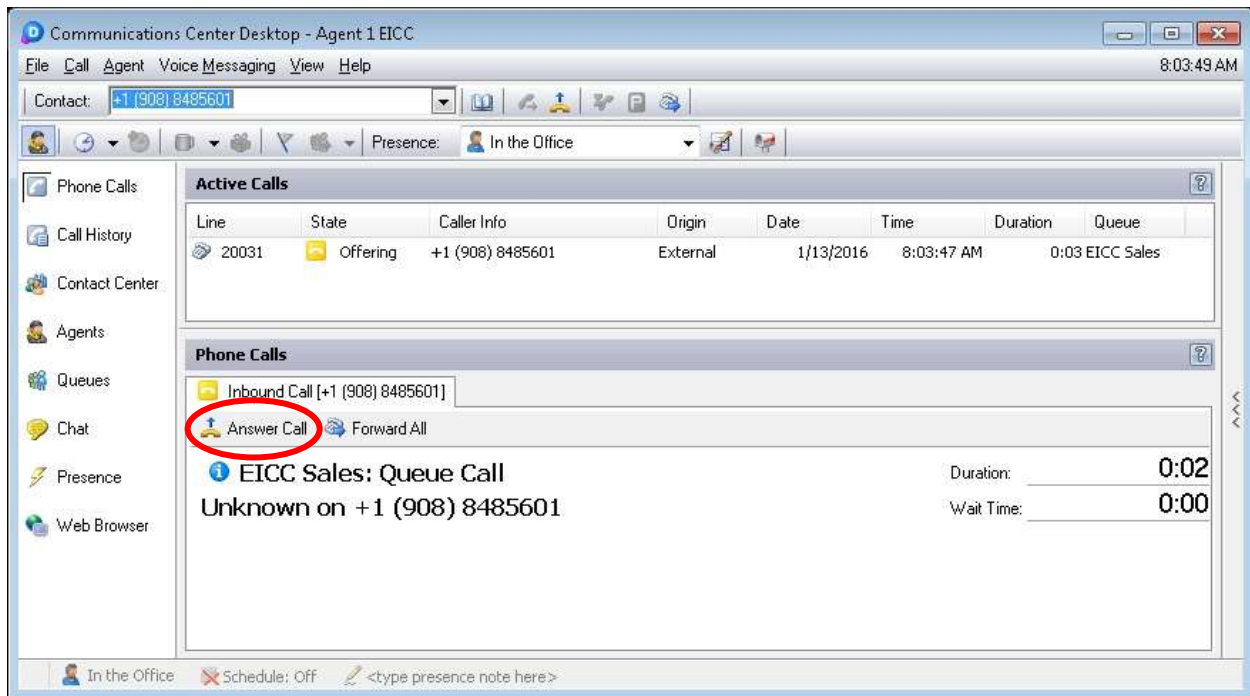
Verify that the agent is connected to the PSTN caller with two-way talk paths, and that the **State** is updated to "Connected", as shown below.
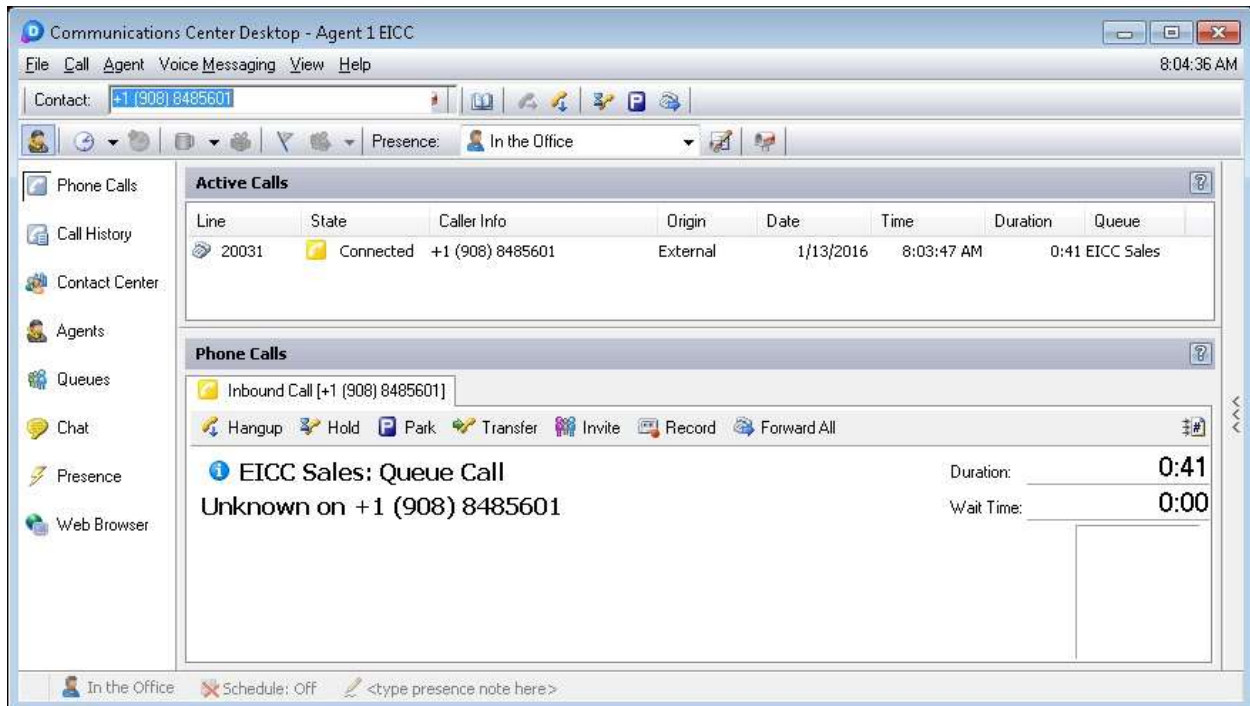
8. Conclusion

These Application Notes describe the configuration steps required for Enghouse Interactive Communications Center 2016 to successfully interoperate with Avaya IP Office 9.1 using the TAPI and SIP user interfaces. All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

9. Additional References

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

1. *Administering Avaya IP Office™ Platform with Manager*, Release 9.1.0, Issue 10.03, February 2015, available at http://support.avaya.com.

2. *EICC 2016 First-time Installation and Server Setup – IP Office*, January 2016, available via IP Office training course provided by Enghouse Interactive.