



Avaya Solution & Interoperability Test Lab

Application Notes for Zeacom Communications Center with Avaya IP Office – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Zeacom Communications Center 5.0 to interoperate with Avaya IP Office 6.0. Zeacom 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 Analog interfaces.

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

Zeacom 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 Analog interfaces.

The TAPI in third party mode interface is used by Zeacom Communications Center to monitor hunt groups and users on Avaya IP Office. Incoming calls are routed by Zeacom Communications Center using the TAPI line redirect capability to an available agent.

The agents are configured as users on Avaya IP Office, with the ACD functionality provided by Zeacom Communications Center. The agents have desktop computers running the Zeacom Executive Desktop client software. Upon notified of an incoming hunt group call via TAPI events, Zeacom Communications Center 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 telephone, or via the agent desktop. The call related actions from the agent desktops are supported by Zeacom Communications Center using TAPI line control capabilities.

The Analog interface is used by Zeacom Communications Center to support the voicemail and announcement features. There is a physical connection between each used Dialogic port on Zeacom Communications Center with Avaya IP Office. The analog ports are configured as analog users on Avaya IP Office, with Zeacom Communications Center monitoring the ports via TAPI. Voicemail and announcement calls are redirected to route over an available analog port to Zeacom Communications Center.

1.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on Zeacom Communications Center:

- Use of TAPI functions to monitor users and hunt groups, route incoming calls, support call control via agent desktops, set call forwarding and message waiting indicator (MWI).
- Proper handling of call scenarios including incoming call to different hunt groups, hold, reconnect, blind/attended transfer, conference, park, voicemail, announcement, call forwarding, MWI, supervisor monitor, outgoing call, and outpulse of DTMF digits.

The serviceability testing focused on verifying the ability of Zeacom Communications Center to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet cable to Zeacom Communications Center.

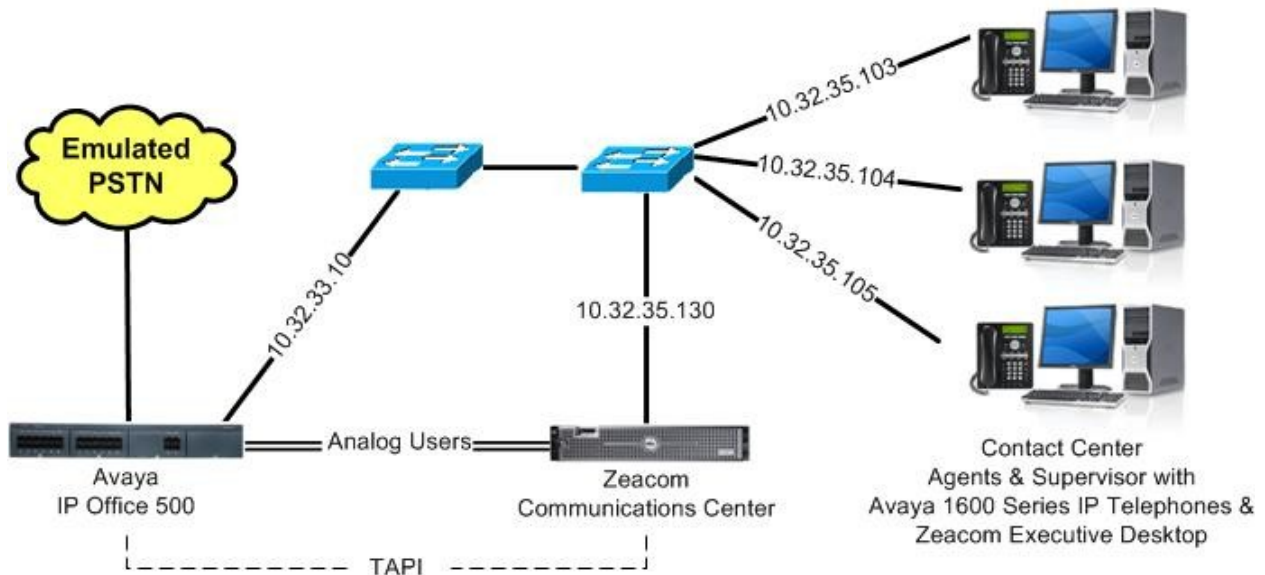
1.2. Support

Technical support on Zeacom Communications Center can be obtained through the following:

- **Phone:** (800) 513-9002
- **Web:** www.zeacom.com
- **Email:** usasupport@zeacom.com

2. Reference Configuration

The configuration used for the compliance testing is shown below.



3. Equipment and Software Validated

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

Equipment	Software
Avaya IP Office IP500	6.0 (8)
Avaya 1600 Series IP Telephones (H.323)	1.21
Zeacom Communications Center <ul style="list-style-type: none">Dialogic 120JCT-LS-Rev Analog CardAvaya IP Office TAPI2 Driver (tspi2w)	5.0 SP4 6.0 1.0.0.35
Zeacom Executive Desktop	5.0 SP4

4. Configure Avaya IP Office

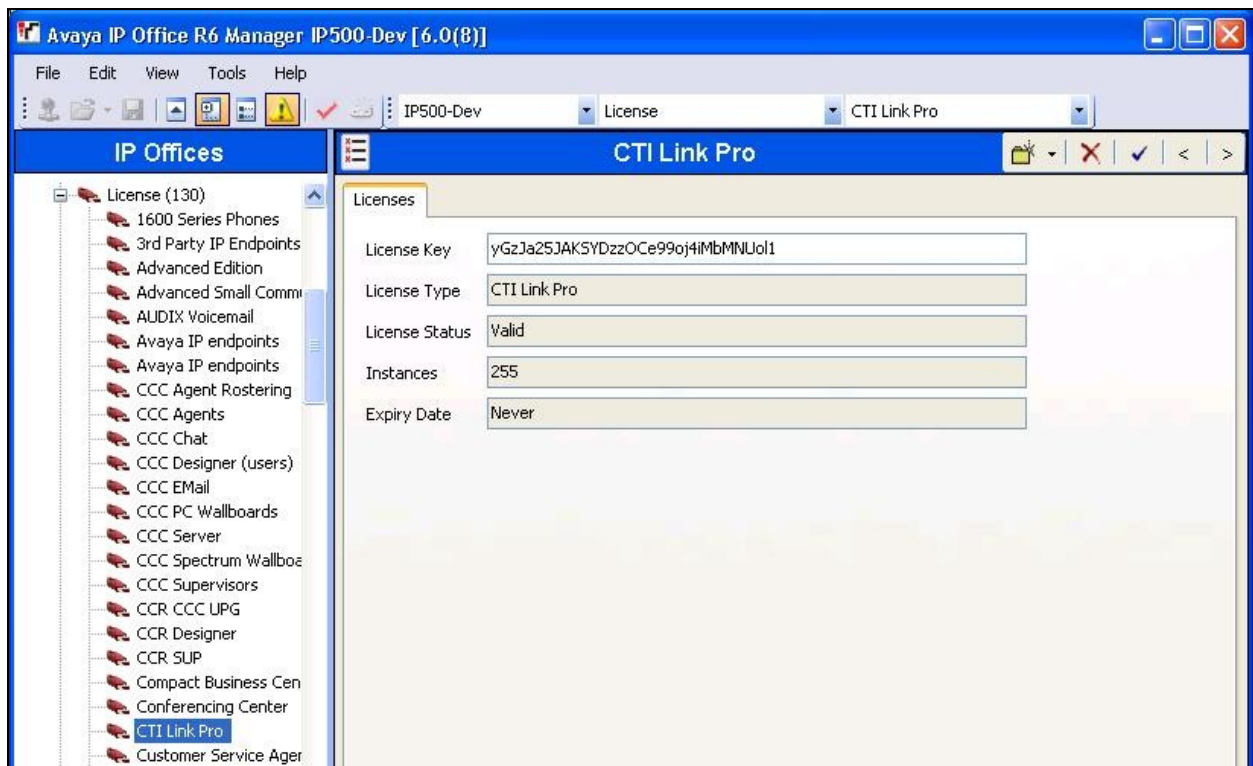
This section provides the procedures for configuring Avaya IP Office. The procedures include the following areas:

- Verify IP Office license
- Administer short code
- Administer hunt groups
- Administer agents
- Assign agents to monitor hunt group
- Administer supervisors
- Administer analog extensions

4.1. Verify IP Office License

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

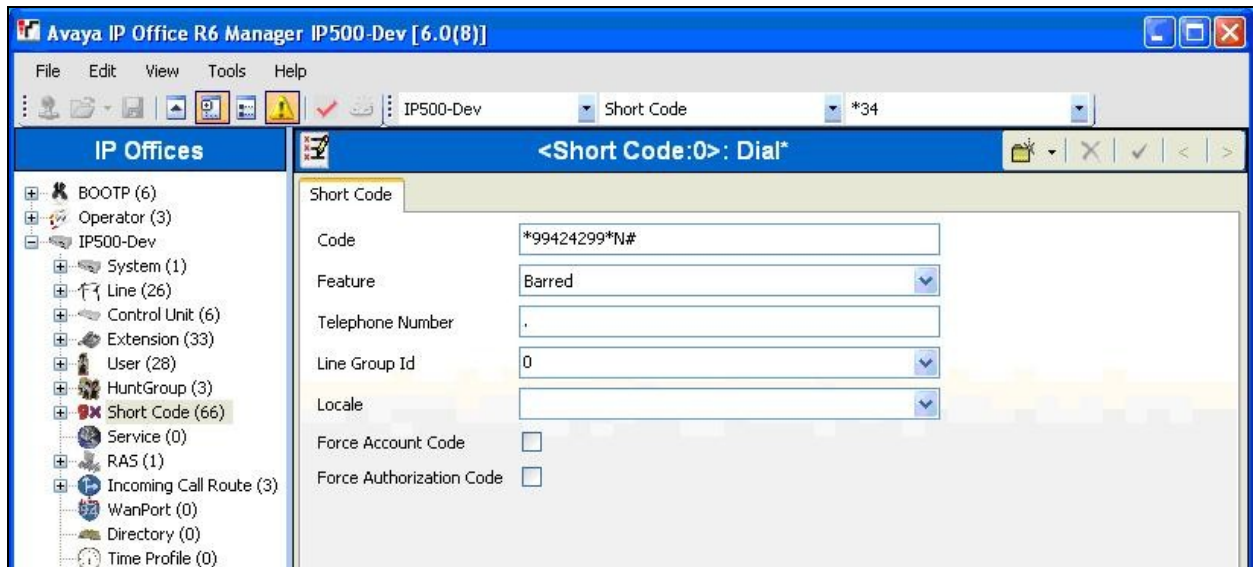
The **Avaya IP Office R6 Manager** screen is displayed. From the configuration tree in the left pane, select **License > CTI Link Pro** to display the **CTI Link Pro** screen in the right pane. Verify that the **License Status** is “Valid”.



4.2. Administer Short Code

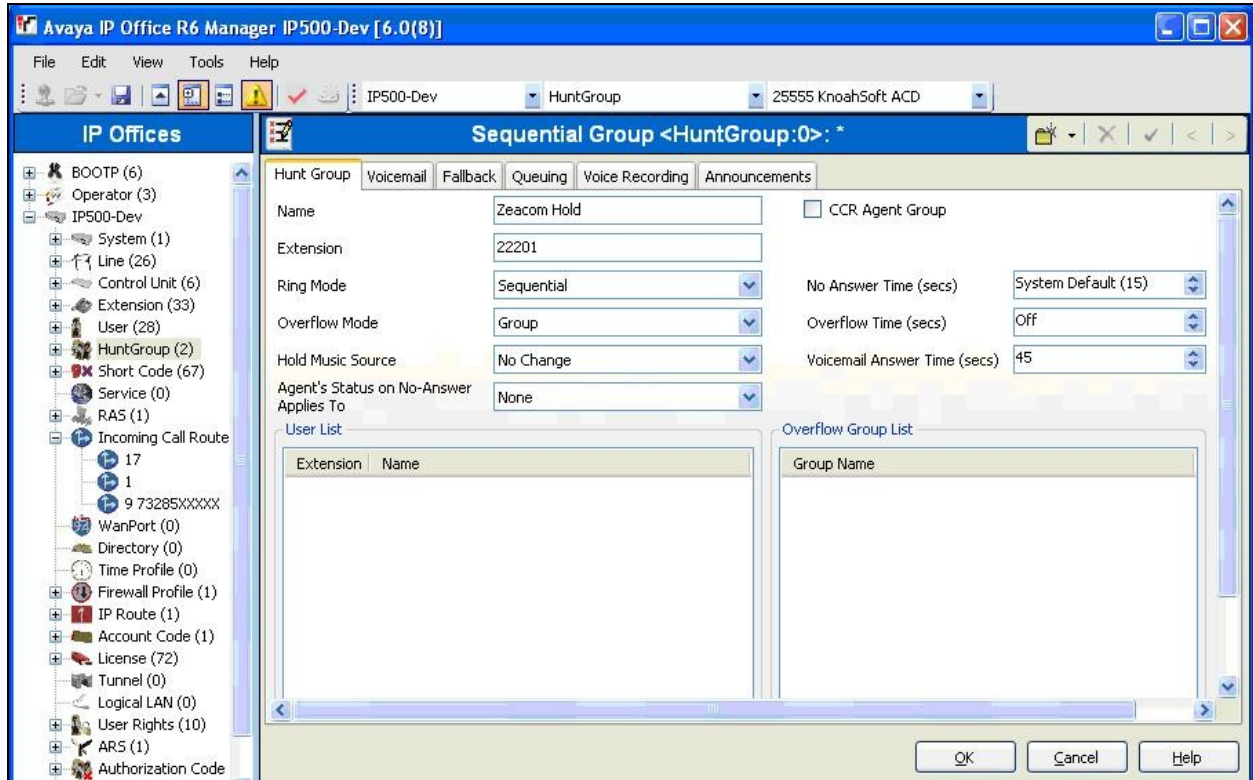
From the configuration tree in the left pane, right-click on **Short Code** and select **New** from the pop-up list to add a new short code.

Configure the fields as shown below in the right pane. Note that this short code will be dialed by each Dialogic port as part of application start up, to enable Zeacom Communications Center to automatically learn the extension numbers associated with the analog ports. The actual **Code** value may vary, and should consist of a string that human users are not likely to dial.



4.3. Administer Hunt Groups

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. Enter desired values for the **Name** and **Extension** fields.

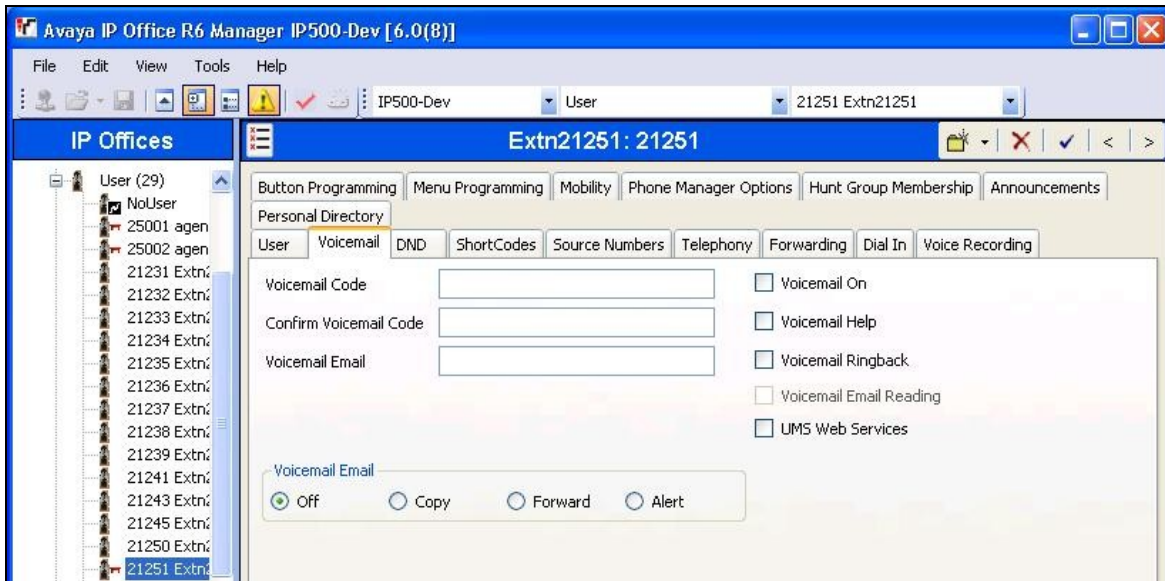


Repeat this section to create the hunt groups shown below. These hunt groups are used to provide routing and handling of incoming calls.

Extension	Name
22201	Zeacom Hold
22202	Zeacom Voicemail
22203	Zeacom Operator
22204	Zeacom Monitor
22205	Zeacom Fallback
22206	Zeacom Sales
22207	Zeacom Support

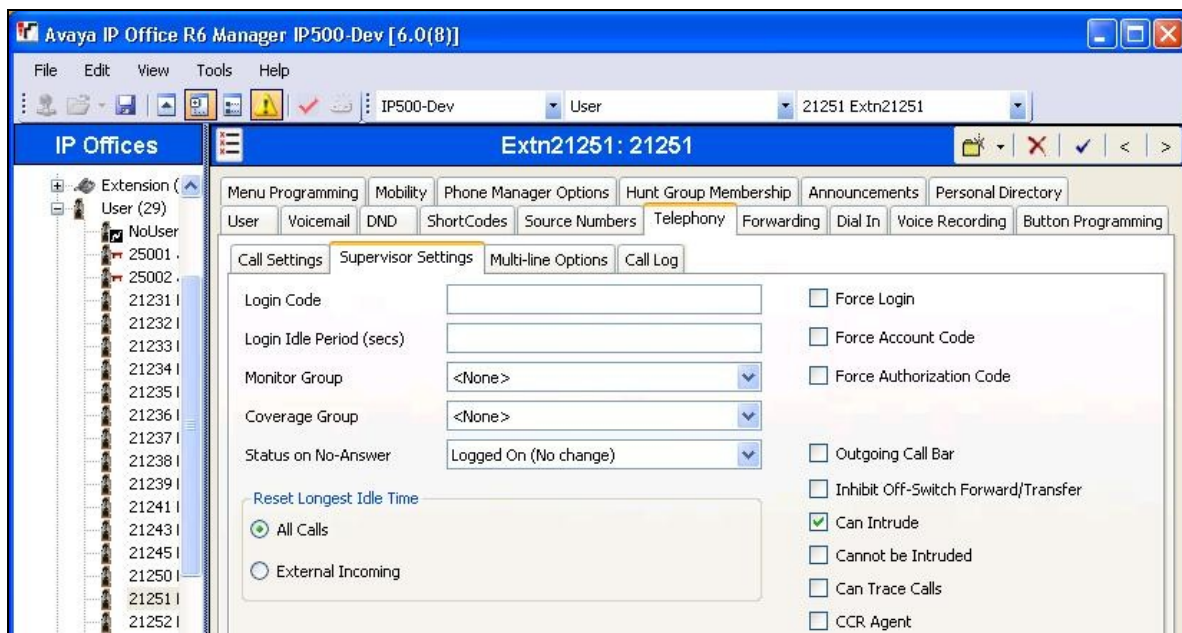
4.4. Administer Agents

From the configuration tree in the left pane, select the first user that will be answering calls, in this case “21251”. Select the **Voicemail** tab, and uncheck **Voicemail On**, as shown below.



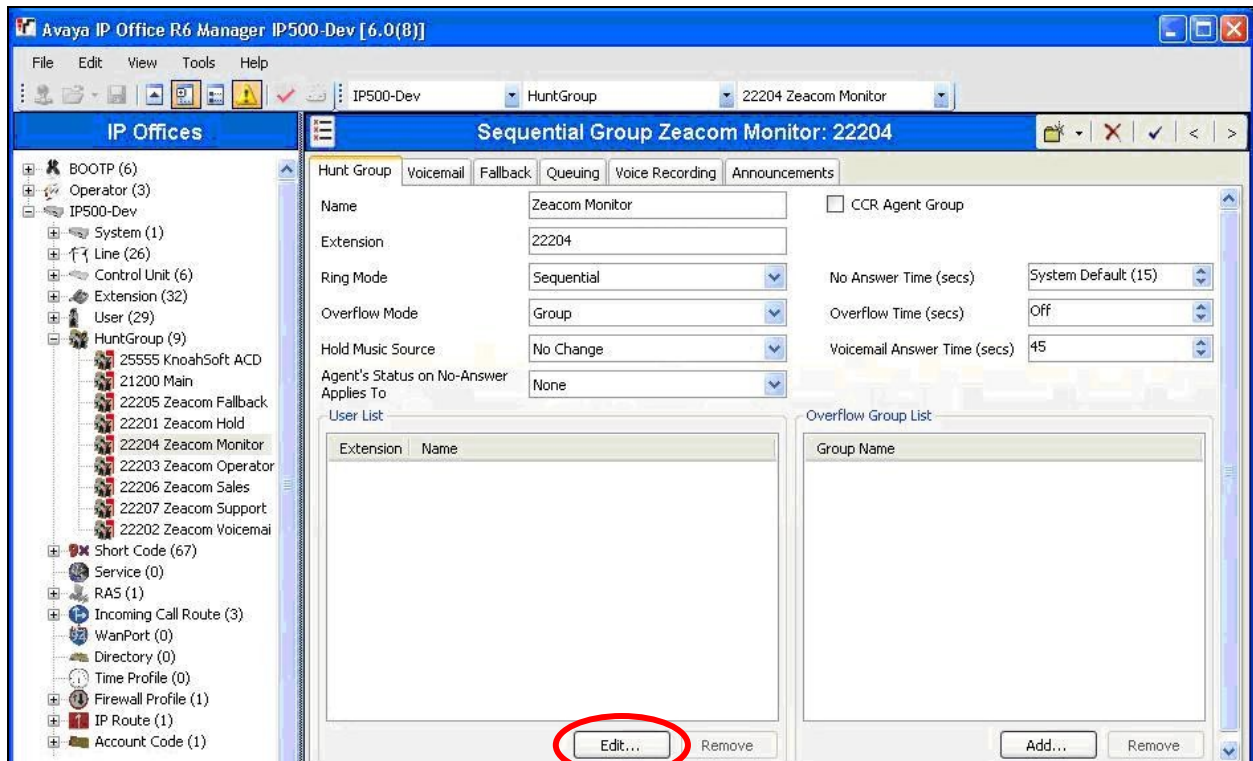
Select the **Telephony** tab, followed by **Supervisor Settings**. Check **Can Intrude**, and uncheck **Cannot be Intruded**, as shown below.

Repeat this section for all users that will be answering calls. In the compliance testing, two users with extensions 21251 and 21252 were configured.

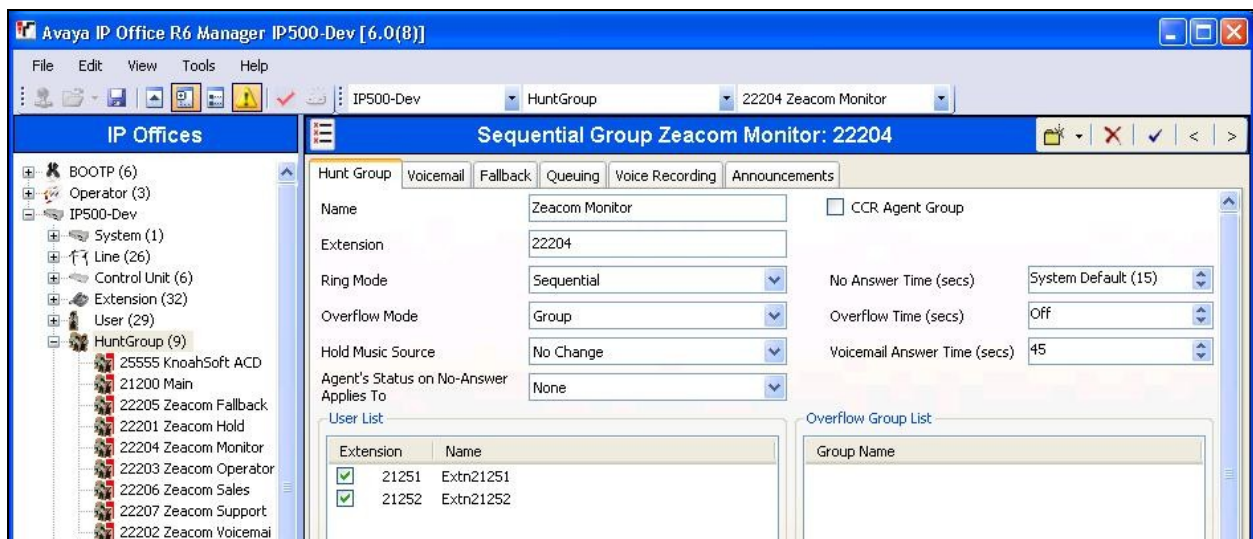


4.5. Assign Agents to Monitor Hunt Group

From the configuration tree in the left pane, select the Zeacom Monitor hunt group, in this case “22204”. Click on **Edit** in the **User List** section to add members. In the next screen (not shown below), select all agent users from **Section 4.4**.



The resultant screen is shown below.

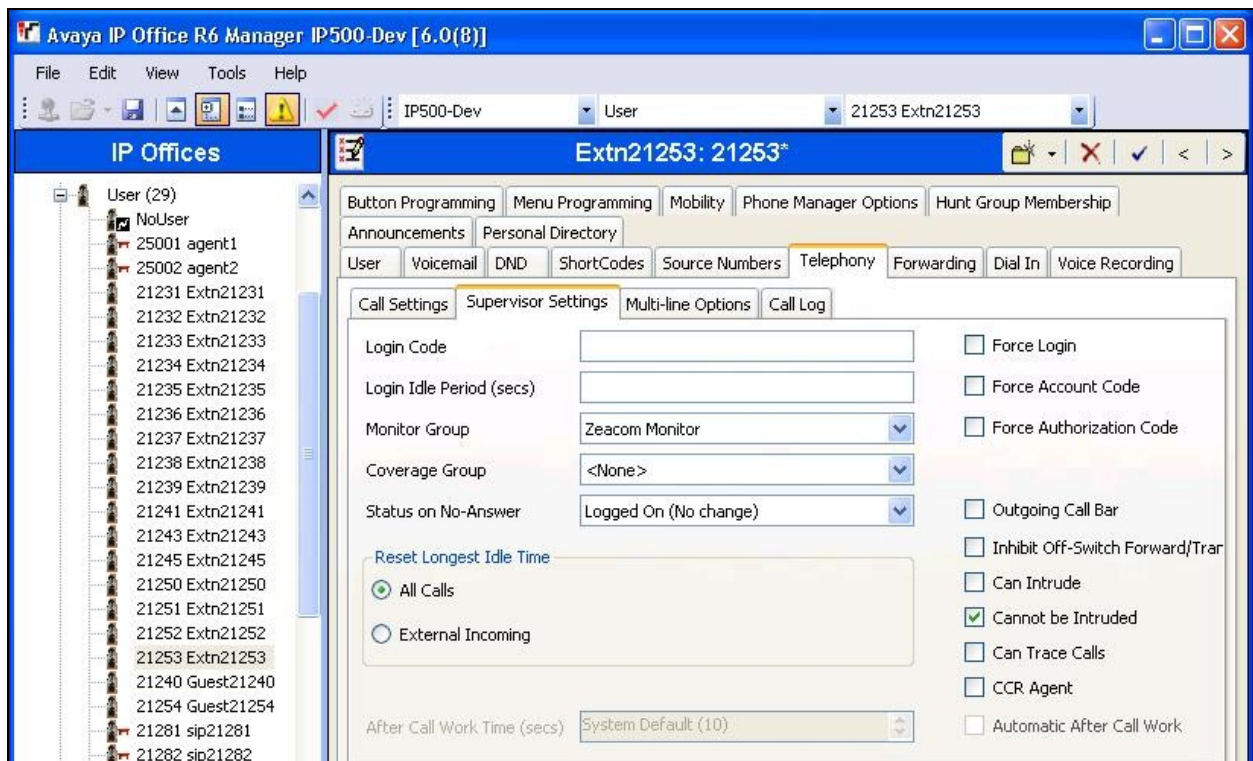


4.6. Administer Supervisors

From the configuration tree in the left pane, select the supervisor user that will be monitoring agents, in this case “21253”.

Select the **Telephony** tab, followed by **Supervisor Settings**. Check **Can Intrude**, and uncheck **Cannot be Intruded**. For **Monitor Group**, select the Zeacom Monitor hunt group from **Section 4.5**.

Repeat this section for all supervisors that will be monitoring agents. In the compliance testing, one supervisor user with extension 21253 was configured, as shown below.

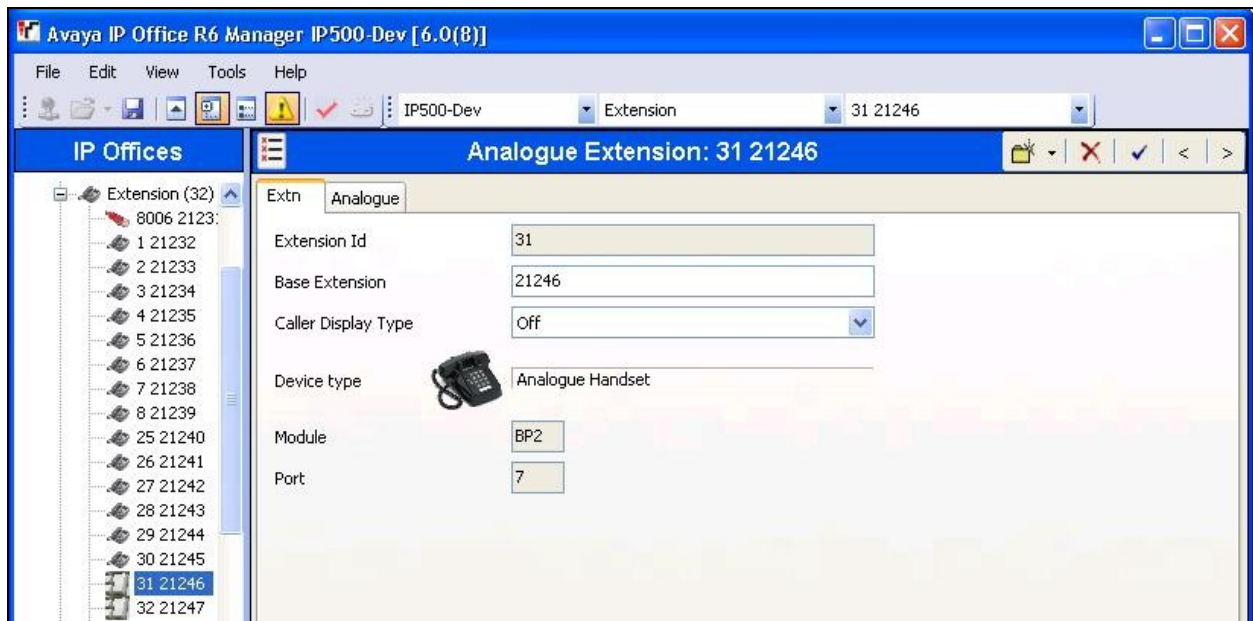


4.7. Administer Analog Extensions

From the configuration tree in the left pane, select the first analog extension that is physically connected to the Dialogic card in Zeacom Communications Center, in this case “21246”.

Select the **Extn** tab, and set **Caller Display Type** to “Off”, as shown below.

Repeat this section for all analog extensions physically connected to Zeacom Communications Center. In the compliance testing, two analog extensions of “21246” and “21247” were modified.



5. Configure Zeacom Communications Center

This section provides the procedures for configuring the Zeacom Communications Center server. The procedures include the following areas:

- Launch Administrator application
- Verify Zeacom license
- Administer PBX
- Administer Application Manager
- Administer TAPI driver
- Administer lines
- Administer queues
- Administer phonebook

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

5.1. Launch Administrator Application

From the Zeacom Communications Center server, launch the Administrator application by double-clicking the **Administrator** icon shown below, which was created as part of installation.



The **administrator** login screen is displayed. Enter the administrator credentials, and click **OK**.

The login screen has a blue gradient background. At the top, the word 'administrator' is written in white. In the center is a white circle containing the Zeacom logo (a stylized 'Z') and the text 'zeacom communications center'. To the left of the circle is the text 'unified communications' and to the right is 'connect. as one'. At the bottom, there are two input fields: 'Login Name:' and 'PIN:'. Below the 'Login Name:' field is a checkbox labeled 'Remember me next time'. At the bottom right are three buttons: 'OK', 'Cancel', and 'Help'.

5.2. Verify Zeacom License

The **Administrator** screen is displayed. Select **General > Licenses** from the left pane, to display **All Licenses** in the right pane. Verify that the following licenses are in place: **Agent Desktop**, **CT Control**, **Executive Desktop**, **IPOfficePBX**, and **UCUL (UC User License)**.

Administrator - [Licenses]

File Edit Window Help

Language: English

Voice Messaging

Console

Queuing

Announce

General

Companies

Holidays

Licenses

Security

Lines

Phonebook

System Prompts

Dialing Rules

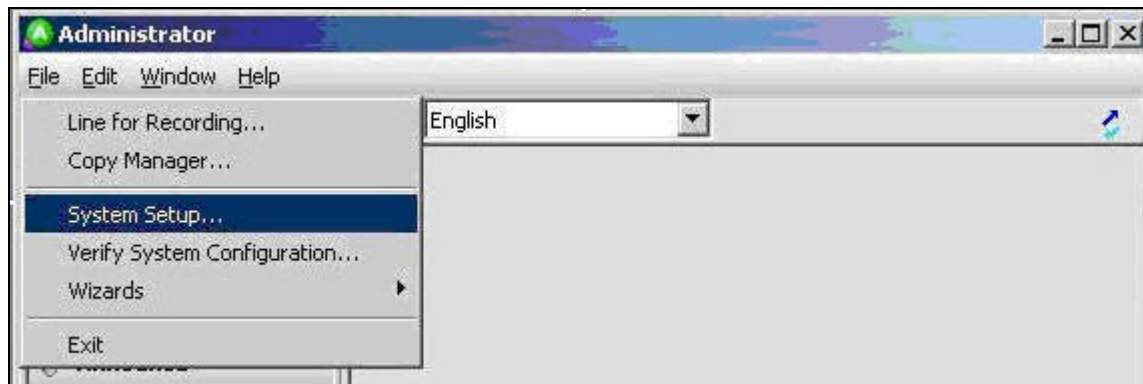
All Licenses Import/Register Licenses... Product Key: JKBN-MXDE-IE2X-LBFI-J18J

Description	Licenses	Units	Start Date	End Date	Days Left
Agent Desktop	5	User	6/2/2010	6/2/2011	360
Alert Notification	1	site	6/2/2010	6/2/2011	360
Callback	1	Site	6/2/2010	6/2/2011	360
Console	1	User	6/2/2010	6/2/2011	360
CT Control	5	User	6/2/2010	6/2/2011	360
Custom Announce	12	Port	6/2/2010	6/2/2011	360
Custom Reporting	1	Single	6/2/2010	6/2/2011	360
Dashboard	5	User	6/2/2010	6/2/2011	360
DefinityPBX	1	Single	6/2/2010	6/2/2011	360
Email Queuing Desktop SMTP	5	User	6/2/2010	6/2/2011	360
Executive Conference	8	units	6/2/2010	6/2/2011	360
Executive Desktop	5	User	6/2/2010	6/2/2011	360
Executive Insight	5	user	6/2/2010	6/2/2011	360
Executive Mobile	5	units	6/2/2010	6/2/2011	360
Fax Messaging	4	Port	6/2/2010	6/2/2011	360
Fax Queuing	5	User	6/2/2010	6/2/2011	360
IPOfficePBX	1	Single	6/2/2010	6/2/2011	360
UCUL (UC User License)	1	units	6/2/2010	6/2/2011	360
UCUL (UC User License)	9	units	6/2/2010	6/2/2011	360
Unified Messaging for Excha...	5	User	6/2/2010	6/2/2011	360
Web Callback Queuing	5	User	6/2/2010	6/2/2011	360
Web Chat Queuing	5	User	6/2/2010	6/2/2011	360

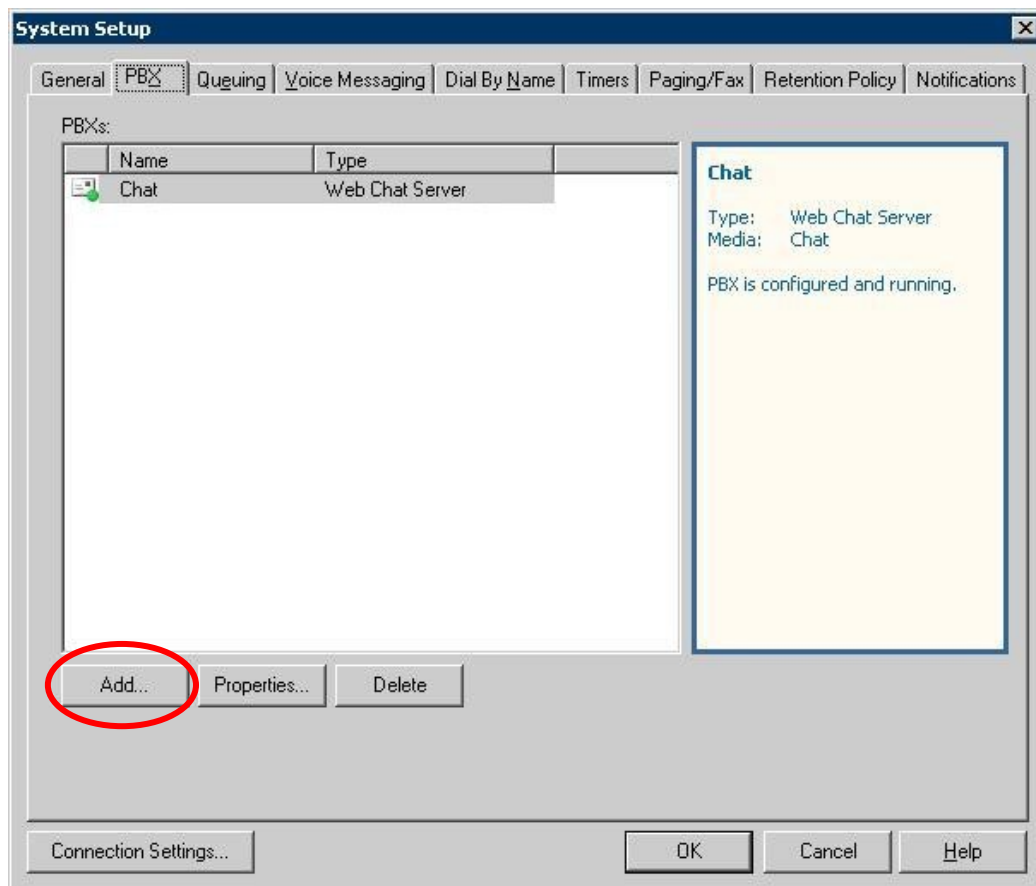
Licenses: 22/1

5.3. Administer PBX

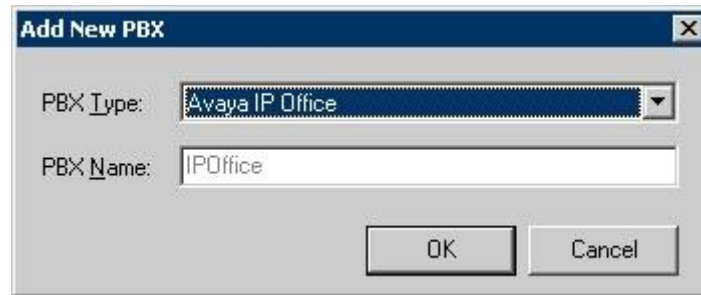
From the **Administrator** screen, select **File > System Setup** from the top menu.



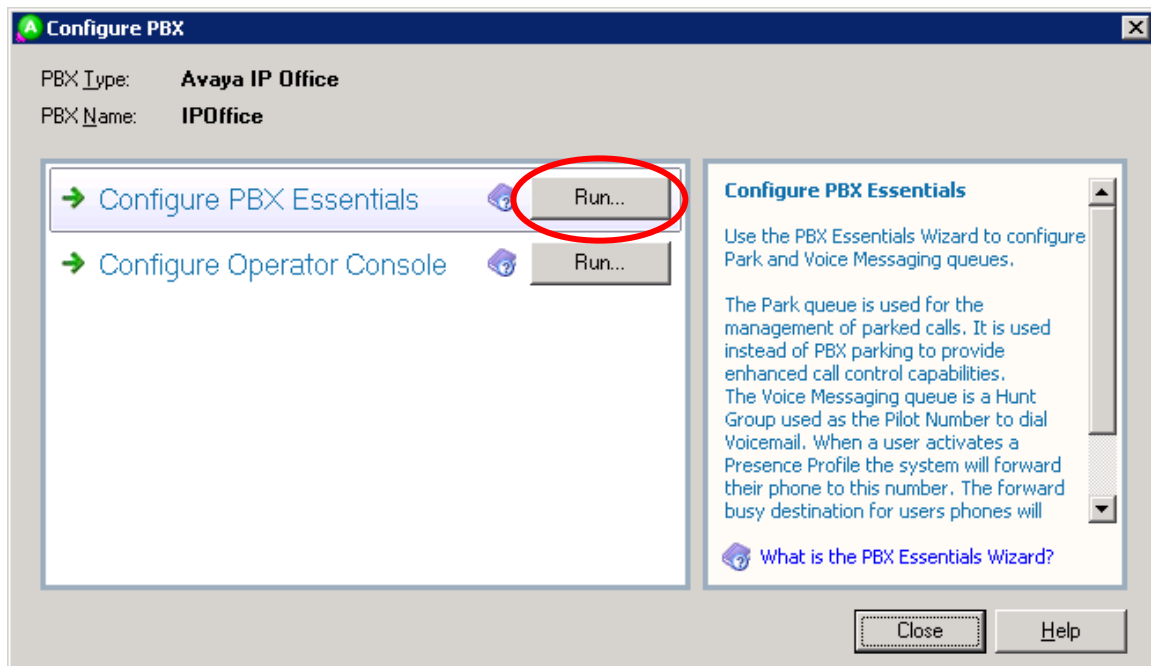
The **System Setup** screen is displayed. Select the **PBX** tab, and click **Add**.



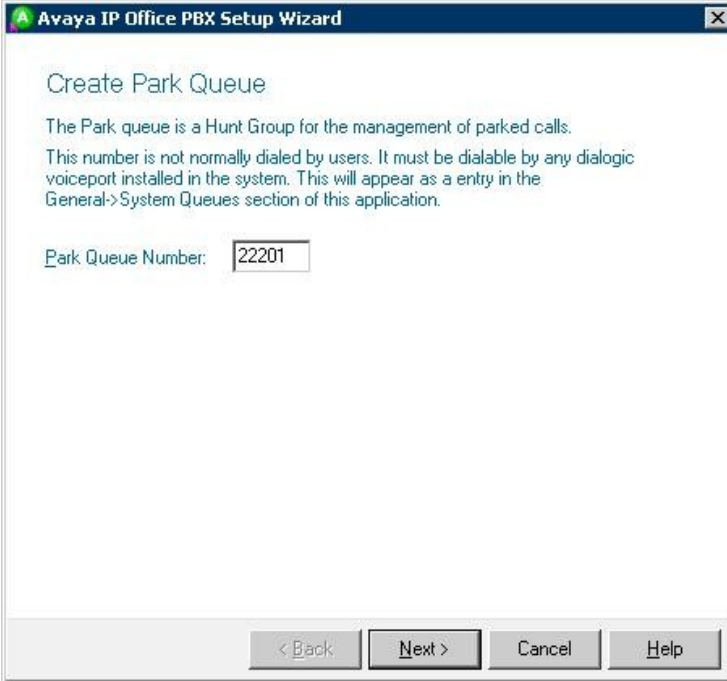
The **Add New PBX** screen is displayed. For **PBX Type**, select “Avaya IP Office” from the drop-down list. Retain the default value in the remaining field.



The **Configure PBX** screen is displayed next. Click the **Run** button for **Configure PBX Essentials**, as shown below.



The **Avaya IP Office PBX Setup Wizard** screen is displayed. For **Park Queue Number**, enter the Zeacom Hold hunt group extension from **Section 4.3**.



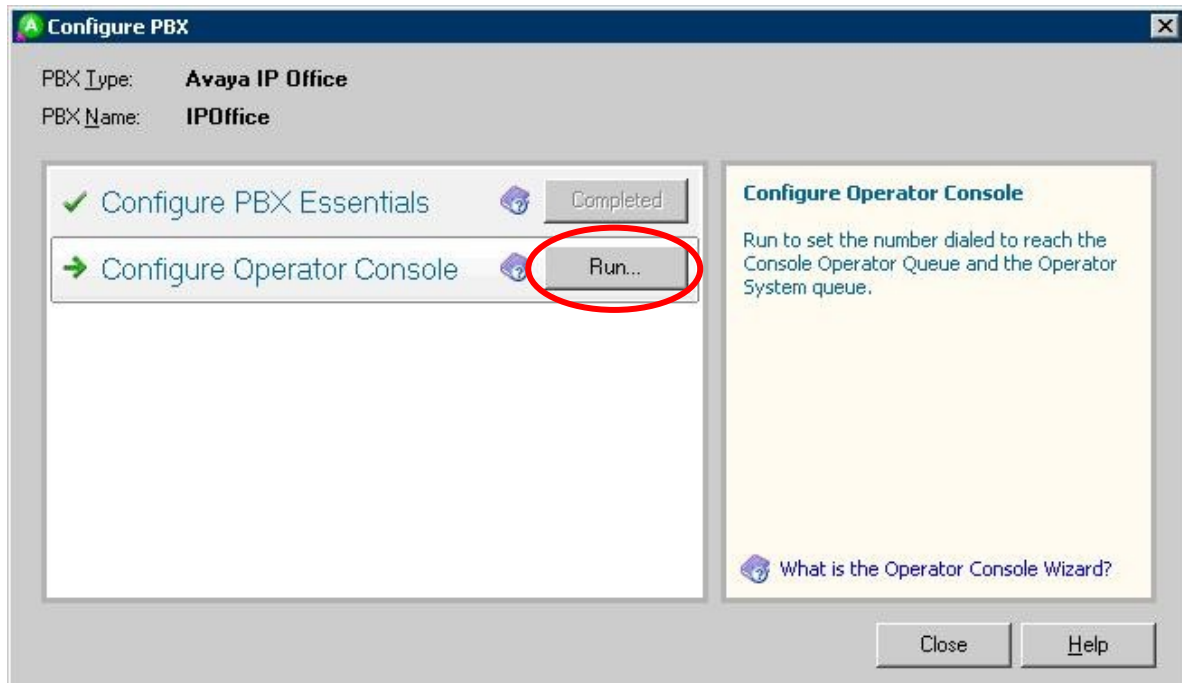
The screenshot shows the 'Create Park Queue' screen of the Avaya IP Office PBX Setup Wizard. The title bar reads 'Avaya IP Office PBX Setup Wizard'. The main heading is 'Create Park Queue'. Below it, a paragraph explains: 'The Park queue is a Hunt Group for the management of parked calls. This number is not normally dialed by users. It must be dialable by any dialogic voiceport installed in the system. This will appear as a entry in the General->System Queues section of this application.' Below this text is a label 'Park Queue Number:' followed by a text input field containing the value '22201'. At the bottom of the window, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

The screen below is displayed next. For **Voice Messaging Queue Number**, enter the Zeacom Voicemail hunt group extension from **Section 4.3**. Retain the default value in the next screen, and click **Finish** in the subsequent screen to complete the wizard.



The screenshot shows the 'Create Voice Messaging Queue' screen of the Avaya IP Office PBX Setup Wizard. The title bar reads 'Avaya IP Office PBX Setup Wizard'. The main heading is 'Create Voice Messaging Queue'. Below it, a paragraph explains: 'The Voice Messaging Queue is a Hunt Group used as the Pilot Number to dial Voicemail. When a user activates a Presence Profile the system will forward their phone to this number. The forward busy destination for users phones will need to be set manually or via the PBX Maintenance interface. This number is dialed by all users, and is normally an easily remembered number. This will appear as a entry in the General->System Queues section of this application.' Below this text is a label 'Voice Messaging Queue Number:' followed by a text input field containing the value '22202'. At the bottom of the window, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

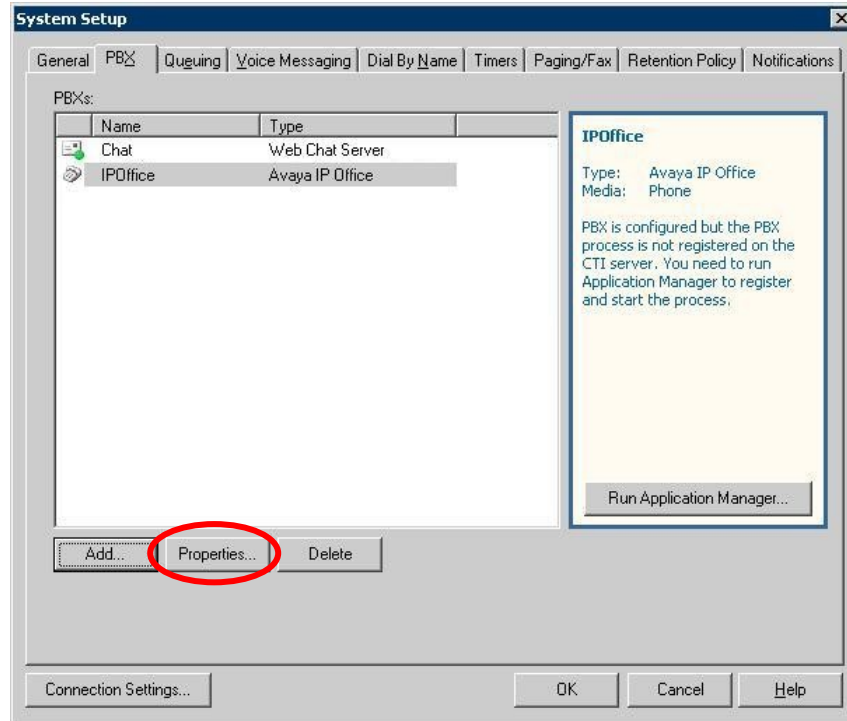
The **Configure PBX** screen is displayed again. Click the **Run** button for **Configure Operator Console**, as shown below.



The **Configure Operator Console** screen is displayed. For **Console Operator Queue Number**, enter the Zeacom Operator hunt group extension from **Section 4.3**.



The **System Setup** screen is displayed, click **Properties**.

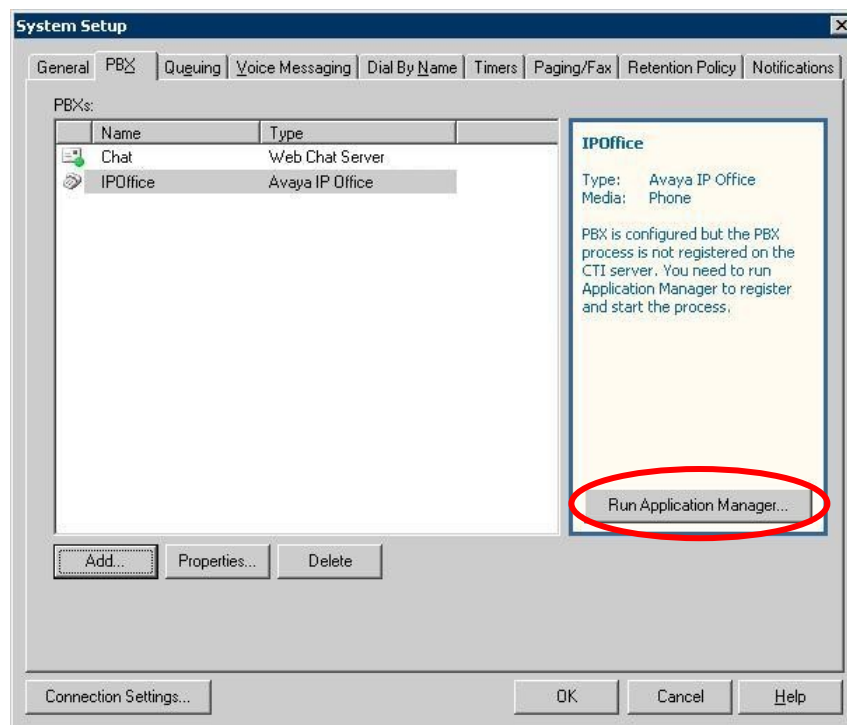


The **IP Office PBX Setup** screen is displayed. Check **Music on hold**, and retain the default values in the remaining fields. Make certain that the **Voicemail port auto learn code** matches the short code from **Section 4.2**.

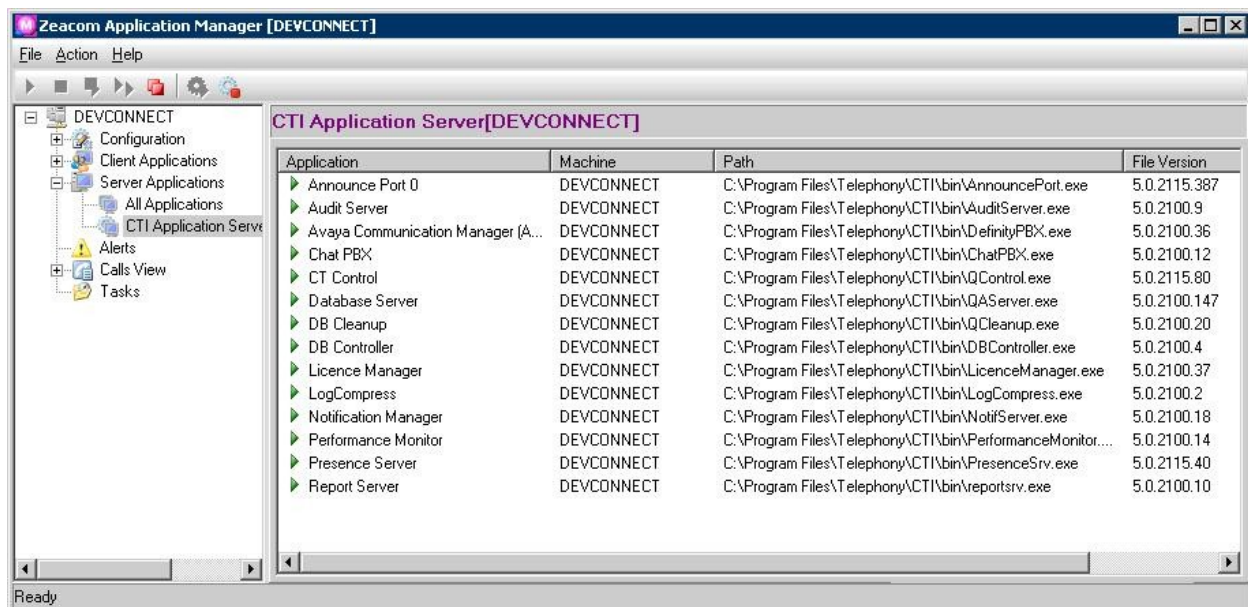


5.4. Administer Application Manager

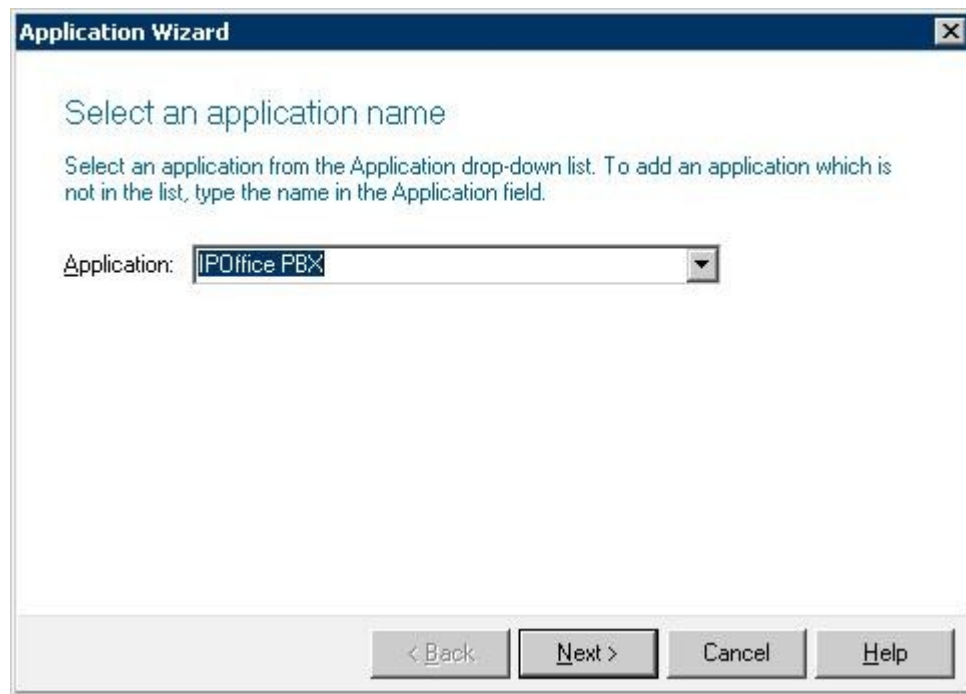
The **System Setup** screen is displayed again, click **Run Application Manager**.



The **Zeacom Application Manager** screen is displayed next. Select **DEVCONNECT > Server Applications > CTI Application Server** in the left pane, where **DEVCONNECT** is the local computer name. Right click in the right-pane, and select **Add Application** in the pop-up list (not shown below).

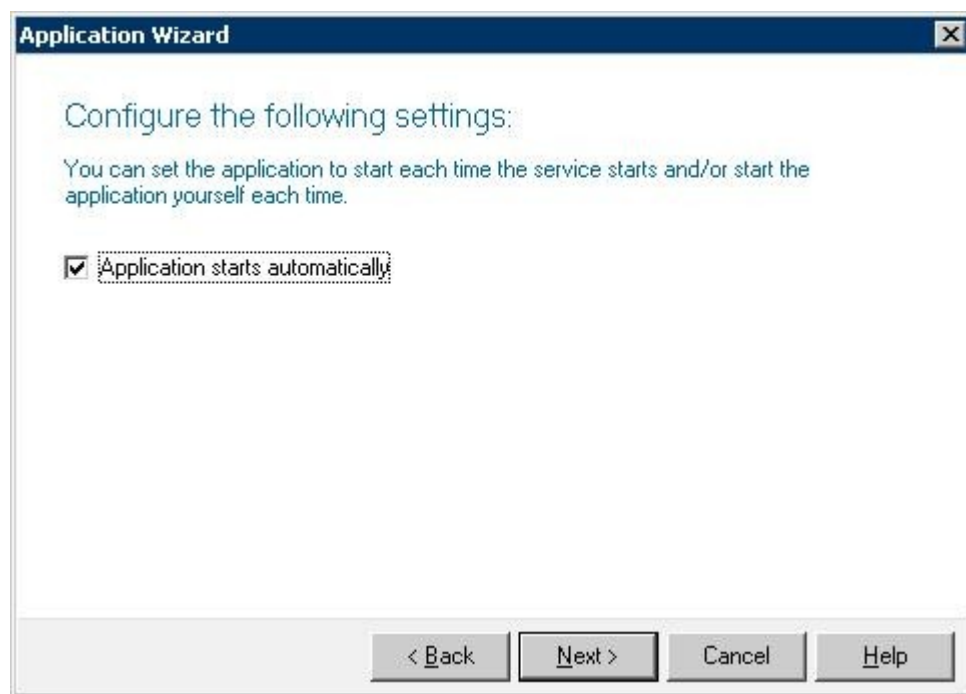


The **Application Wizard** screen is displayed. For **Application**, select “IPOffice PBX” from the drop-down list. Retain the default value in the next screen (not shown below).



The screenshot shows the 'Application Wizard' window with the title bar 'Application Wizard' and a close button. The main text reads 'Select an application name' followed by instructions: 'Select an application from the Application drop-down list. To add an application which is not in the list, type the name in the Application field.' Below this is a label 'Application:' and a drop-down menu currently showing 'IPOffice PBX'. At the bottom are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

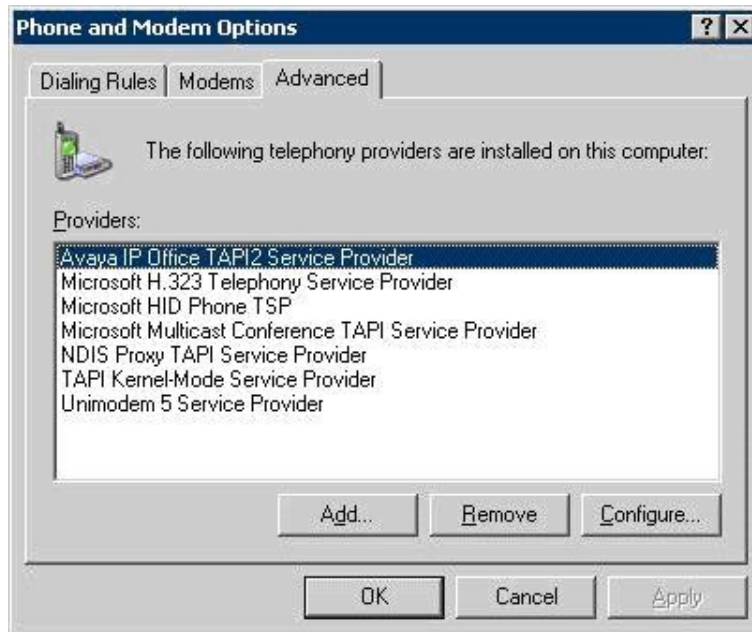
The screen below is displayed next. Check **Application starts automatically**, and click **Finish** in the subsequent screen to complete the wizard.



The screenshot shows the 'Application Wizard' window with the title bar 'Application Wizard' and a close button. The main text reads 'Configure the following settings:' followed by instructions: 'You can set the application to start each time the service starts and/or start the application yourself each time.' Below this is a checkbox labeled 'Application starts automatically' which is checked. At the bottom are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

5.5. Administer TAPI Driver

From the Zeacom Communications Center server, select **Start > Control Panel > Phone and Modem Options**, to display the **Phone and Modem Options** screen. Select the **Avaya IP Office TAPI2 Service Provider** entry under the **Advanced** tab, 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. Check **ACD Queues**, as shown below. Reboot the Zeacom Communications Center server.

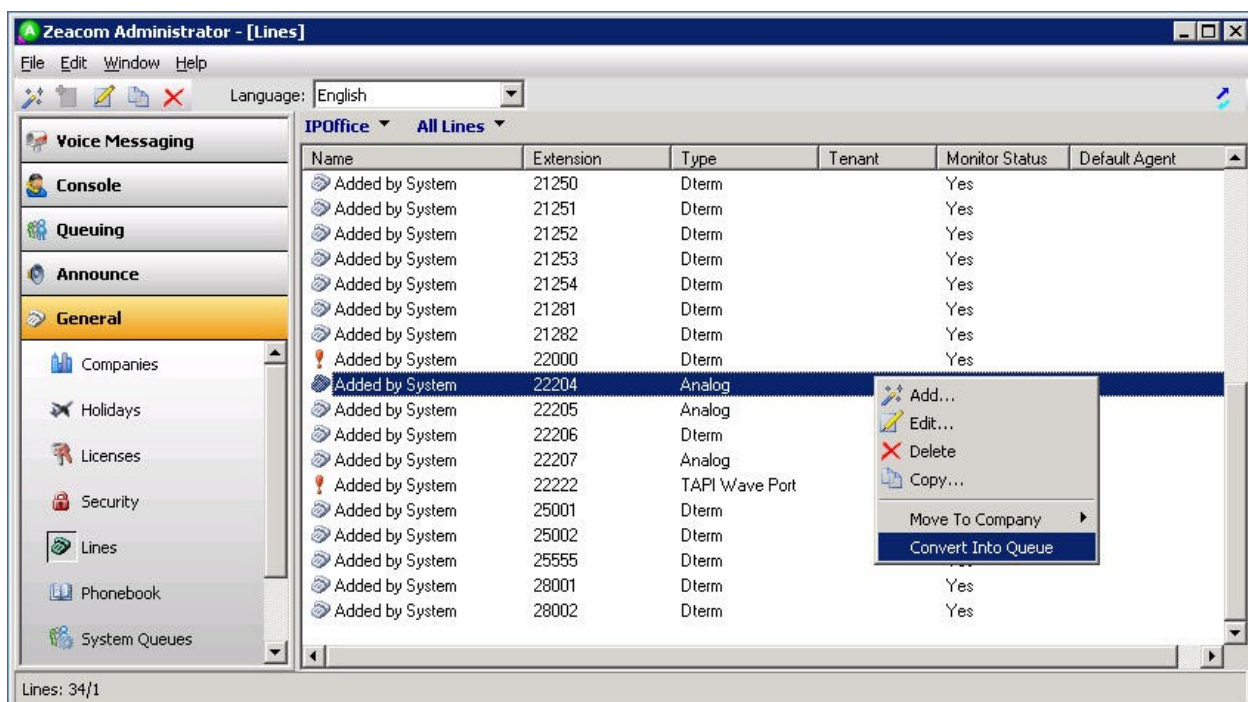


5.6. Administer Lines

From the Zeacom Communications Center server, follow the procedures in **Section 5.1** to launch the Administrator application. The **Zeacom Administrator** screen is displayed. Select **General** > **Lines** from the left pane, to display a list of extensions obtained automatically from Avaya IP Office.

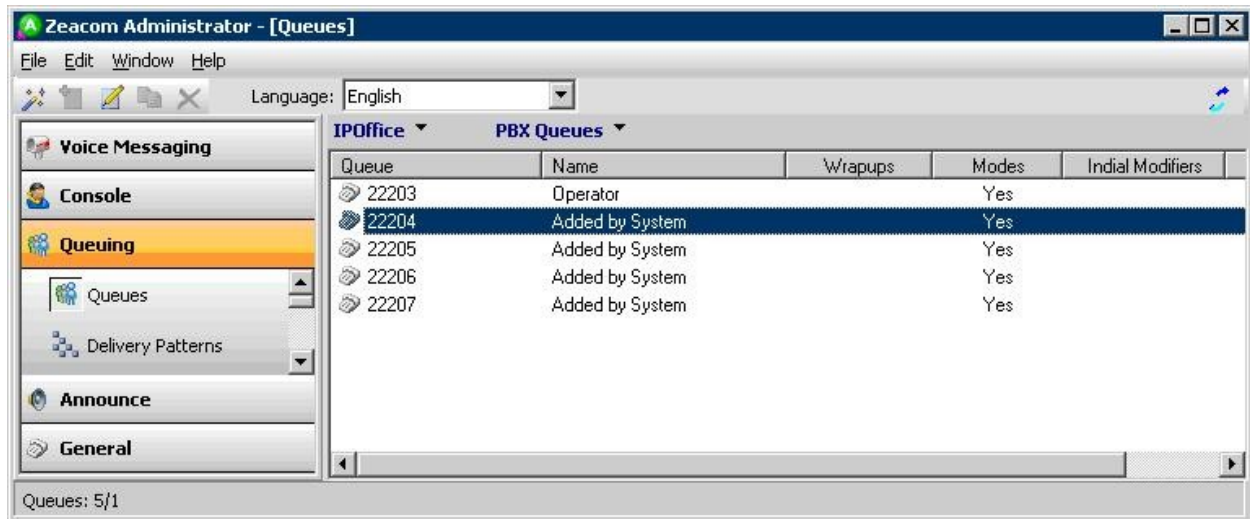
Right click on the entry associated with the Zeacom Monitor hunt group from **Section 4.3**, in this case “22204”, and select **Convert Into Queue** from the pop-up list.

Repeat and convert entries associated with the Zeacom Fallback hunt group “22205”, Zeacom Sales hunt group “22206”, and the Zeacom Support hunt group “22207”.

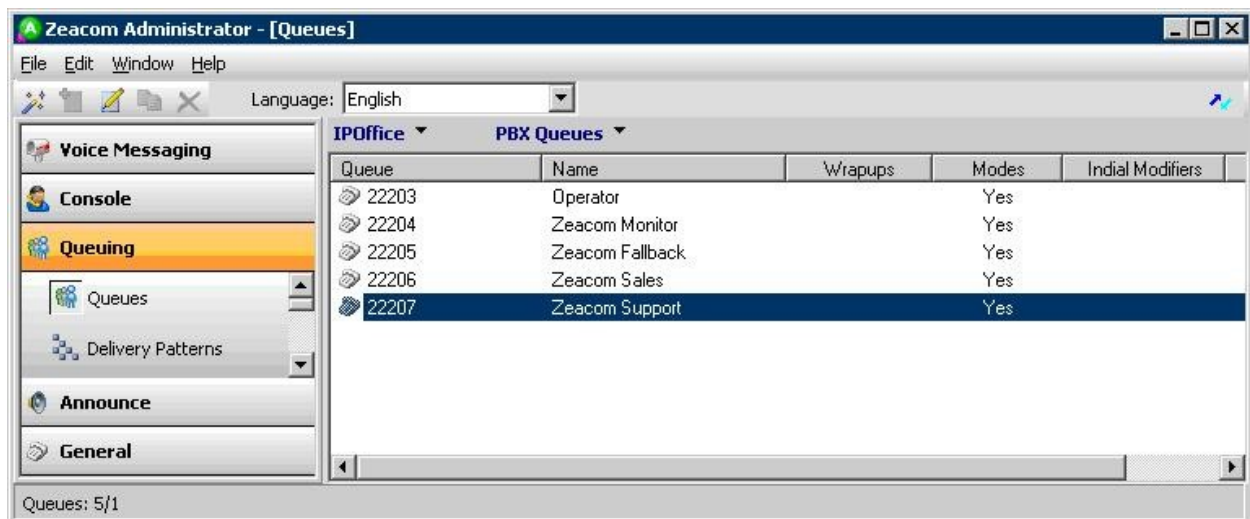


5.7. Administer Queues

Select **Queuing > Queues** from the left pane, to display a list of queues. Double click on the entry corresponding to the Zeacom Monitor hunt group from **Section 4.3**, in this case “22204”. In the subsequent screen (not shown below), modify the queue name to match the hunt group name from **Section 4.3**.

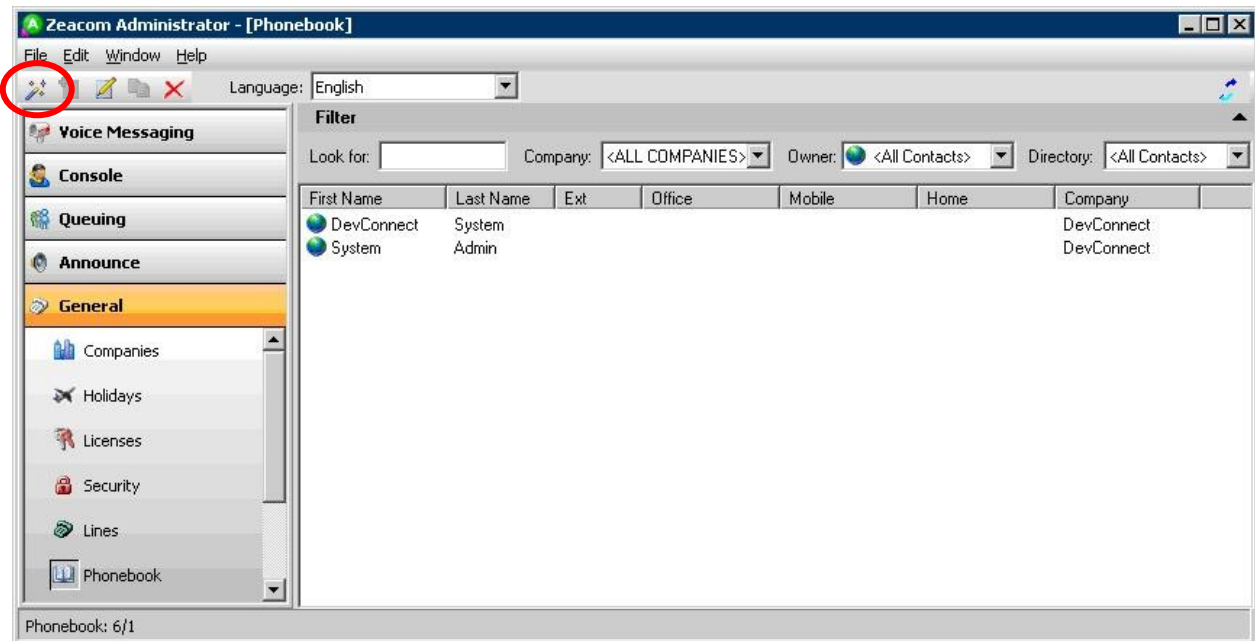


Repeat this section for all queues converted from **Section 5.6**. In the compliance testing, the names of four queues were modified, as shown in the screenshot below.



5.8. Administer Phonebook

From the **Administrator** screen, select **General > Phonebook** from the left pane, to display a list of phonebook entries. Click the **Add Wizard** icon, to add a contact.



The **Adding Phonebook Contact** screen is displayed. Enter desired values for **First Name** and **Last Name**, and click **Next**. Retain the default values in the next screen (not shown below).

Adding Phonebook Contact

Enter the Contact Name

Enter the first and last name of the new contact to add to the Phonebook .

First Name:

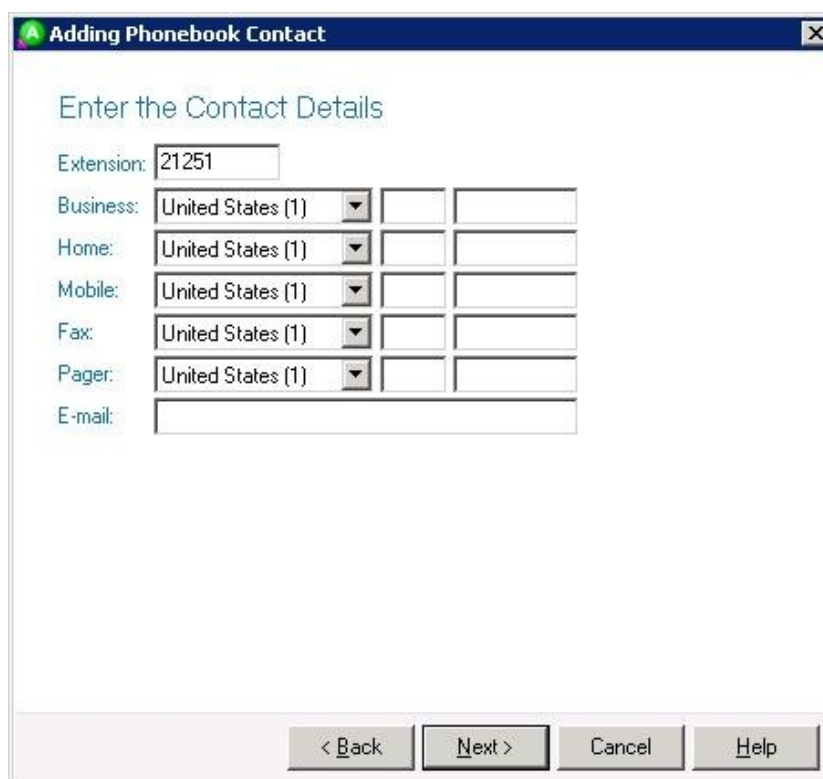
Last Name:

Enter an alias or quick search name for the contact. A QuickSearch allows the user to quickly find the contact in the Phonebook (Optional) .

Quick Search:

< Back Next > Cancel Help

The screen below is displayed. For **Extension**, enter the first agent extension from **Section 4.4**. In the subsequent screens, follow [2] to select the proper security class, mailbox creation, mailbox class, and contact registration.



Adding Phonebook Contact

Enter the Contact Details

Extension: 21251

Business: United States (1) [] [] []

Home: United States (1) [] [] []

Mobile: United States (1) [] [] []

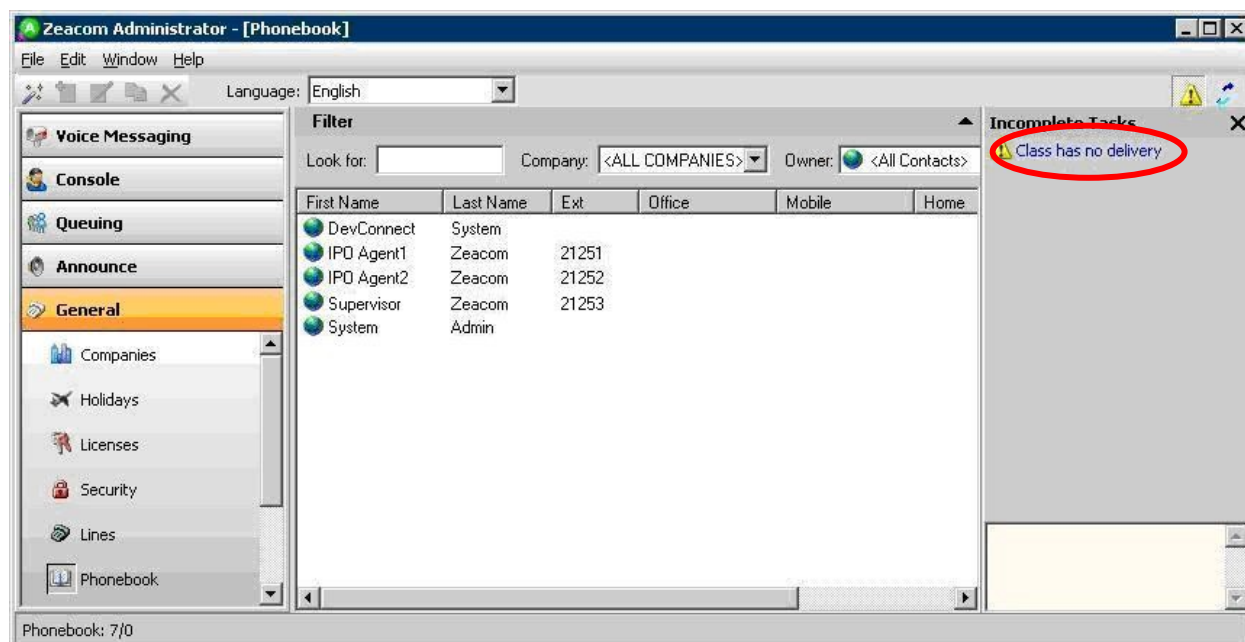
Fax: United States (1) [] [] []

Pager: United States (1) [] [] []

E-mail: [] [] [] [] [] [] [] [] [] []

< Back Next > Cancel Help

Repeat this section to add all agents and supervisors. In the compliance testing, two agents and one supervisor with extensions “21251-21253” were added. Click on **Class has no delivery**.



Zeacom Administrator - [Phonebook]

File Edit Window Help

Language: English

Filter

Look for: [] Company: <ALL COMPANIES> Owner: <All Contacts>

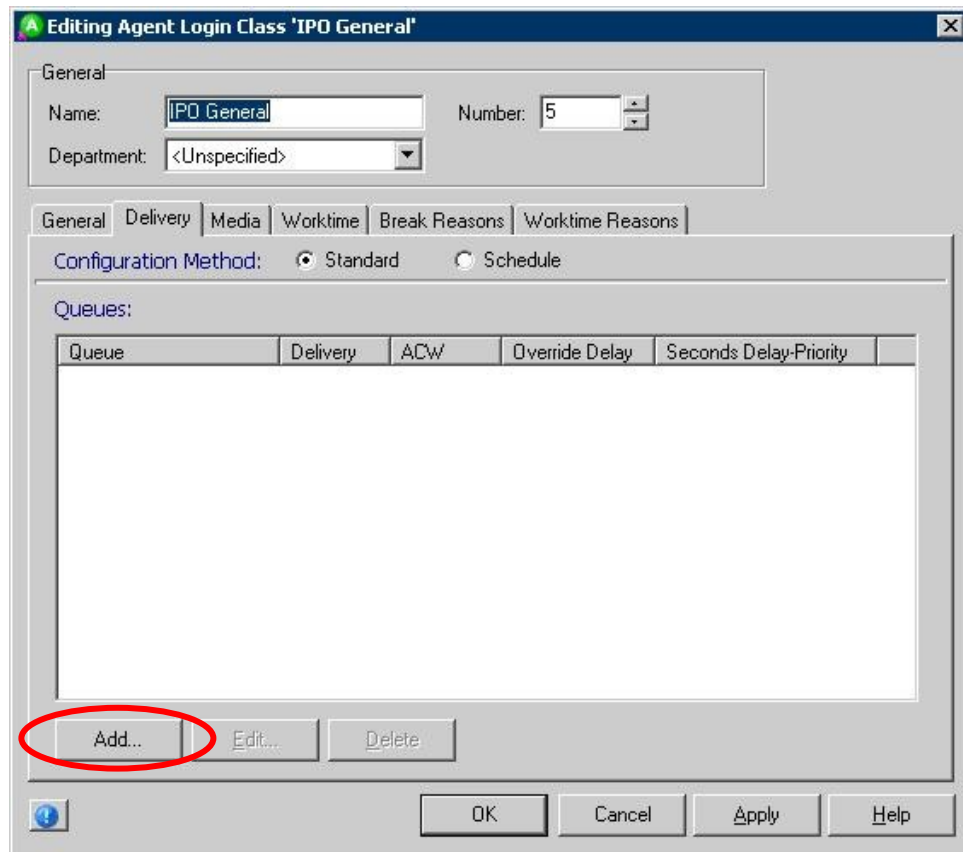
First Name	Last Name	Ext	Office	Mobile	Home
DevConnect	System				
IPO Agent1	Zeacom	21251			
IPO Agent2	Zeacom	21252			
Supervisor	Zeacom	21253			
System	Admin				

Incomplete Tasks

Class has no delivery

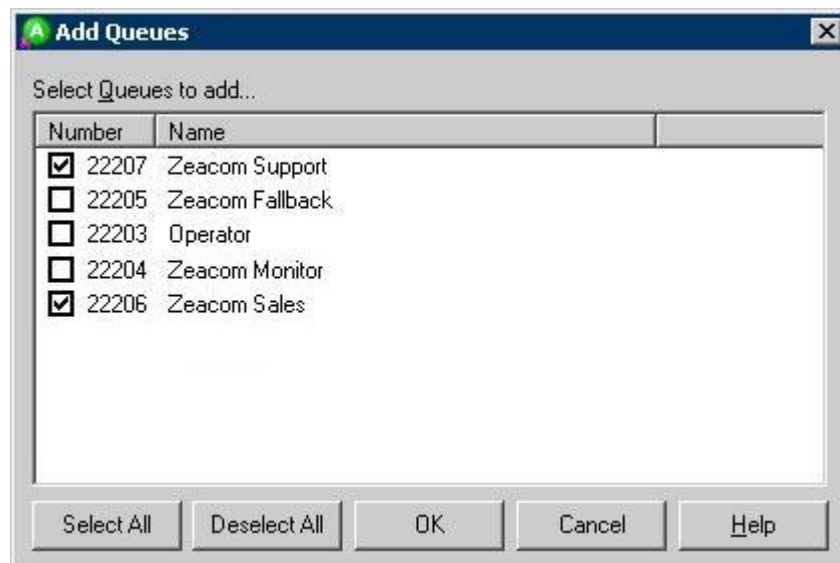
Phonebook: 7/0

The **Editing Agent Login Class** screen is displayed. Select the **Delivery** tab, and click **Add**.



The dialog box titled "Editing Agent Login Class 'IPO General'" has a "General" tab selected. It contains fields for "Name" (IPO General), "Number" (5), and "Department" (<Unspecified>). Below these are tabs for "General", "Delivery", "Media", "Worktime", "Break Reasons", and "Worktime Reasons". The "Configuration Method" section has radio buttons for "Standard" (selected) and "Schedule". A "Queues:" section contains a table with columns: Queue, Delivery, ACW, Override Delay, and Seconds Delay-Priority. At the bottom, there are buttons for "Add...", "Edit...", and "Delete". The "Add..." button is circled in red.

The **Add Queues** screen is displayed next. Check the **Zeacom Support** and **Zeacom Sales** entries, as shown below. This will enable calls to these hunt groups to be delivered to the agents.



The dialog box titled "Add Queues" has the text "Select Queues to add...". It contains a table with columns "Number" and "Name". The table lists five entries: 22207 Zeacom Support (checked), 22205 Zeacom Fallback (unchecked), 22203 Operator (unchecked), 22204 Zeacom Monitor (unchecked), and 22206 Zeacom Sales (checked). At the bottom, there are buttons for "Select All", "Deselect All", "OK", "Cancel", and "Help".

Number	Name
<input checked="" type="checkbox"/> 22207	Zeacom Support
<input type="checkbox"/> 22205	Zeacom Fallback
<input type="checkbox"/> 22203	Operator
<input type="checkbox"/> 22204	Zeacom Monitor
<input checked="" type="checkbox"/> 22206	Zeacom Sales

6. General Test Approach and Test Results

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

For the manual part of the testing, incoming calls were made to the general routing hunt groups. The Zeacom Communications Center server used the TAPI event messages to track agent states, and specified calls to be redirected to available agents. Manual call controls from both the agent telephones and the agent desktops 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 Zeacom Communications Center for proper leaving of voice message and activation of MWI. Manual call was then made from the agent to the Zeacom Voicemail hunt group for retrieval of the voice message and proper deactivation of MWI.

The serviceability test cases were performed manually by disconnecting and reconnecting the Ethernet cable to Zeacom Communications Center.

The verification of tests included human checking of proper states at the agent telephones and desktop screens, and of reviewing the TAPI log file from Zeacom Communications Center.

All test cases were executed and passed.

7. Verification Steps

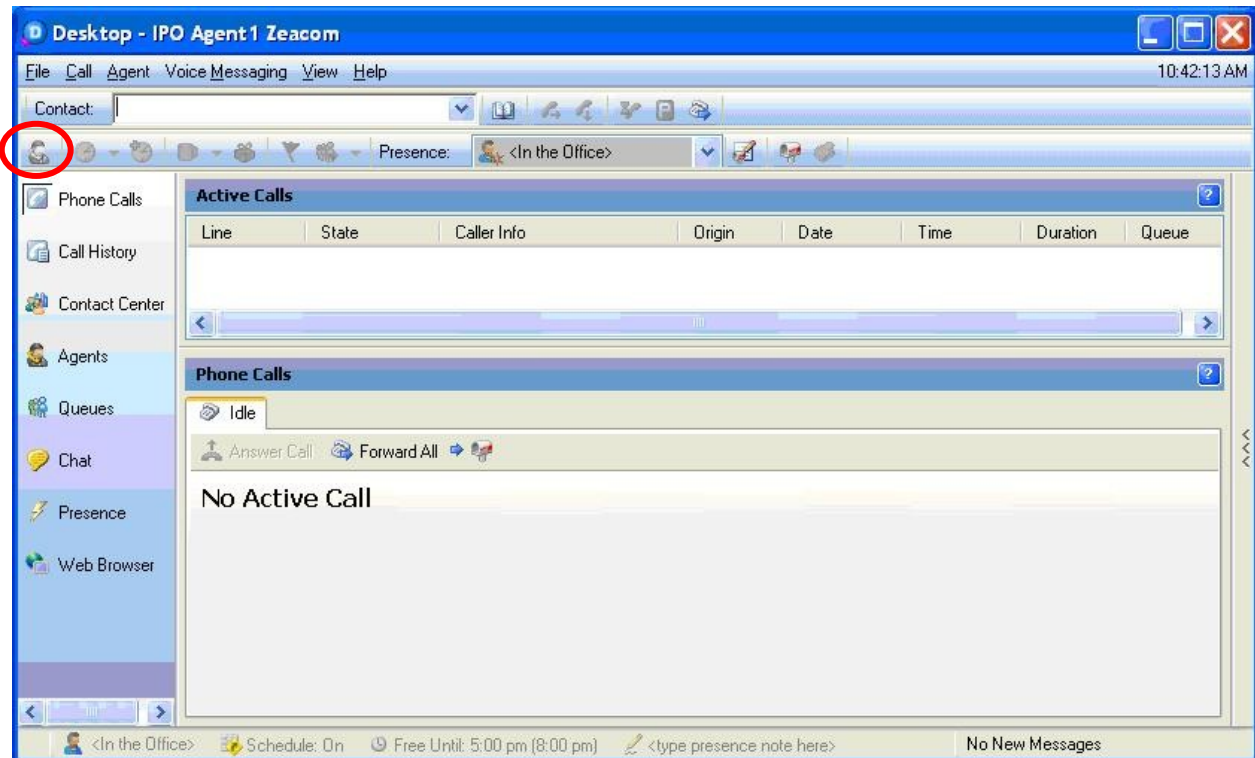
This section provides the tests that can be performed to verify proper configuration of Avaya IP Office and Zeacom Communications Center. From the agent desktop running the Zeacom Executive Desktop client software, double-click on the **Desktop** icon shown below, which was created as part of installation.



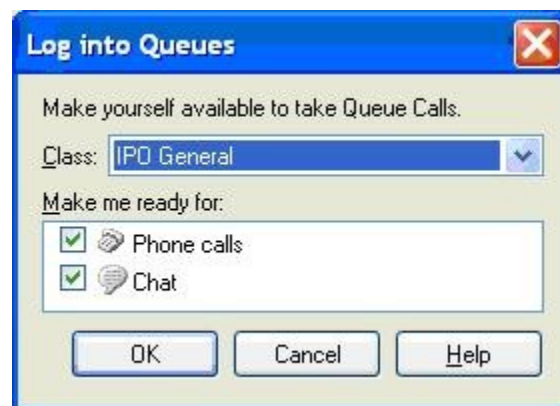
The **desktop** login screen is displayed. Log in with the proper agent credentials.

The login screen has a blue gradient background. At the top, the word 'desktop' is written in white. In the center is a large white circle containing the Zeacom logo, which consists of a stylized 'Z' and the text 'zeacom communications center'. To the left of the circle is the text 'unified communications' and to the right is 'connect. as one'. At the bottom, there are two input fields: 'Login Name:' with the text 'IPD Agent1 Zeacom' and 'PIN:' with the text 'XXXXXX'. Below the 'Login Name' field is a checkbox labeled 'Remember me next time' which is checked. At the bottom right are three buttons: 'OK', 'Cancel', and 'Help'.

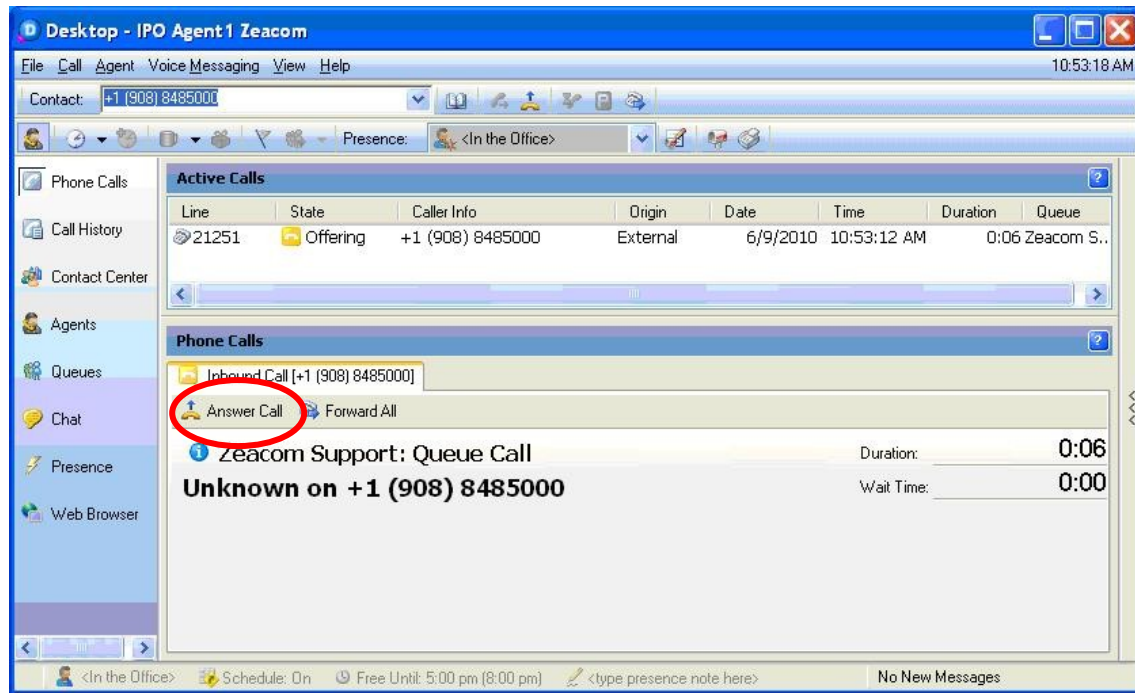
The **Desktop** screen is displayed. Click the **Log into Queues** icon, as shown below.



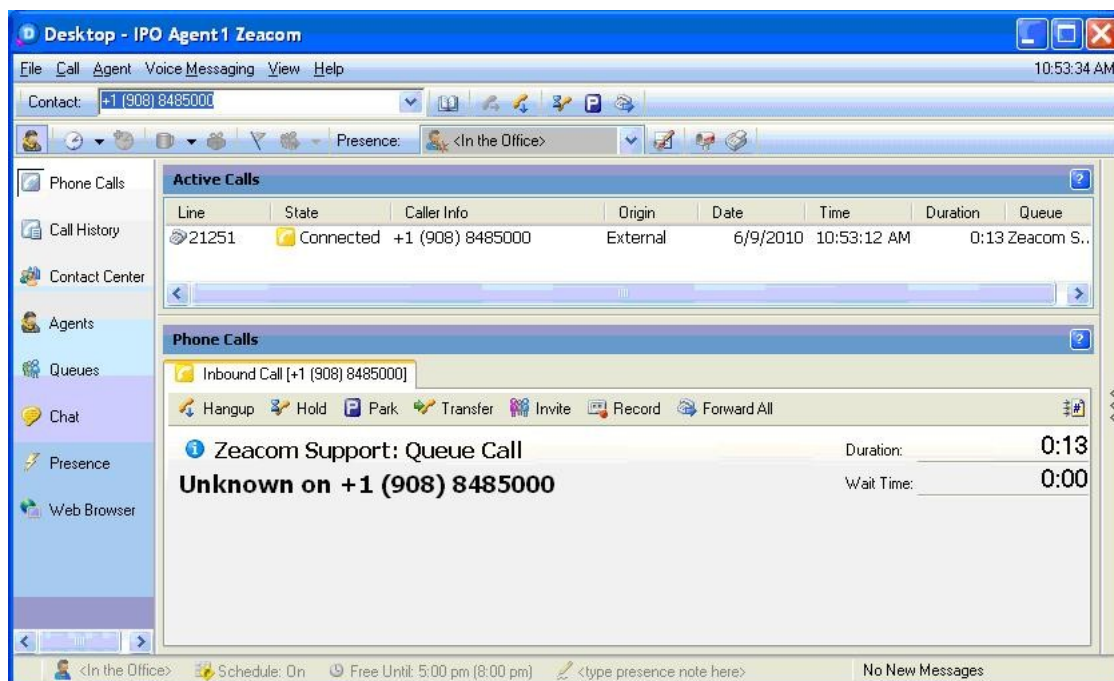
The **Log into Queues** dialog box is displayed next. Retain all default values.



Make an incoming call to the Zeacom Support hunt group, with an available agent. Verify that the answering agent's desktop is populated with a voice call entry, as shown below. Verify that the **State** is "Offering", and that the **Caller Info** displays the calling party number. Click on **Answer Call** to answer the call.



Verify that the **State** is updated to "Connected", and that the agent is connected to the caller with two-way talk paths.



8. Conclusion

These Application Notes describe the configuration steps required for Zeacom Communications Center 5.0 to successfully interoperate with Avaya IP Office 6.0 using the TAPI and Analog interfaces. All feature and serviceability test cases were completed.

9. Additional References

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

1. *IP Office 6.0 Documentation CD*, February 2010, available at <http://support.avaya.com>.
2. *IP Office Installation Manual*, Zeacom Library Version 5.0, available via IP Office training course provided by Zeacom.

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