



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for DuVoice Emergency Alert System with Avaya IP Office 9.0 – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required for the DuVoice Emergency Alert System to interoperate with Avaya IP Office 9.0. In the compliance testing, DuVoice generated Emergency Alerts when an Emergency Phone number is dialed.

Readers should pay attention to section 2, in particular the scope of testing as outlined in Section 2.1 as well as the 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.

# 1. Introduction

These Application Notes describe the configuration steps required for the DuVoice Emergency Alert System (EAS) to interoperate with Avaya IP Office.

DuVoice EAS utilizes Avaya IP Office CTI Pro (P/N 171988) and DevLink to monitor outbound call traffic on IP Office and identifies all calls made to Emergency Numbers in real time. Any calls to Emergency Numbers trigger a series of immediate alarms. Using IP Office 3<sup>rd</sup> Party SIP Endpoints the DuVoice EAS places a call to a specified IP Office extension. Upon answer, the system announces the fact that an emergency call has been made and identifies the calling extension.

## 2. General Test Approach and Test Results

The feature test cases were performed manually. Various call scenarios were tested to ensure that when a call to an Emergency Number is placed, DuVoice EAS generates an Emergency Alert.

The serviceability test cases were performed manually by disconnecting and reconnecting the network connection to DuVoice.

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 features that executed DuVoice EAS' ability to generate Emergency Alerts.

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

### 2.2. Test Results

Interoperability testing of the sample configuration was completed with successful results for DuVoice EAS.

## 2.3. Support

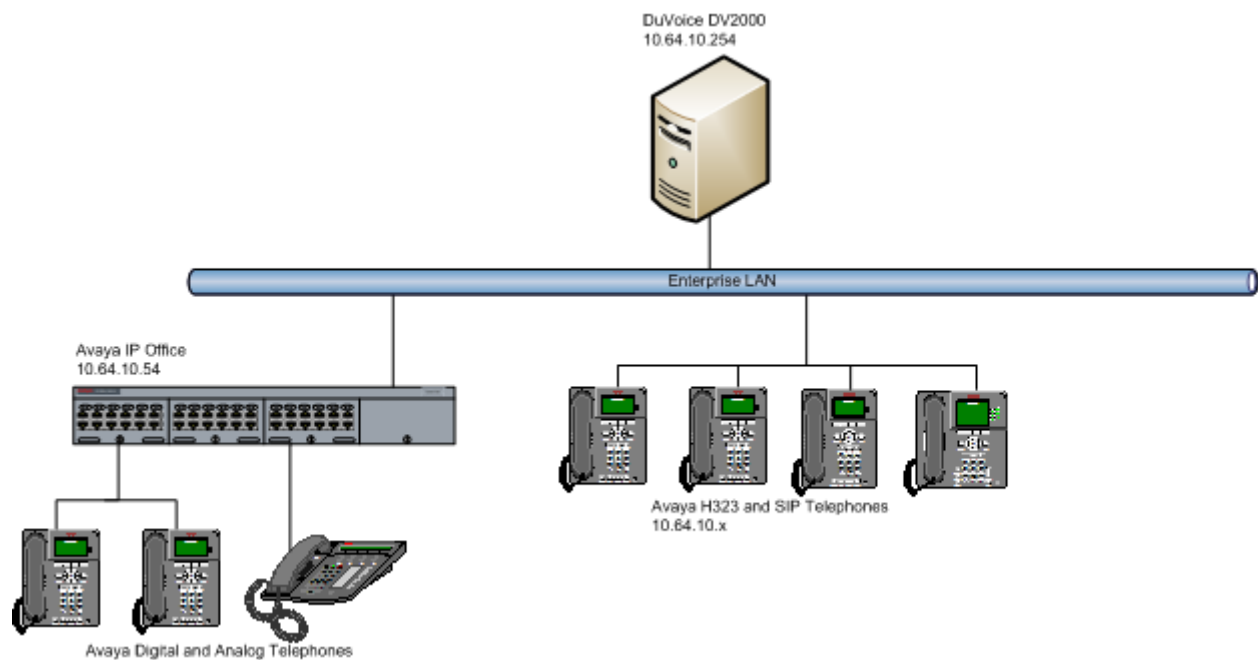
Technical support on DuVoice can be obtained through the following:

- **Phone:** (425) 250-2393
- **Email:** [support@duvoice.com](mailto:support@duvoice.com)

## 3. Reference Configuration

**Figure 1:** Test configuration used during compliance testing consisted of following:

- Avaya IP Office 500v2
- Avaya 9600 Series IP Deskphones
- Avaya 1100 and 1200 Series IP Deskphones
- DuVoice DV2000 running on Windows 7 Enterprise



**Figure 1: Compliance Testing Configuration**

## 4. Equipment and Software Validated

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

Equipment	Software
Avaya IP Office on IP500 V2	0
Avaya 1608 IP Deskphone (H.323)	1.302S
Avaya 9630 IP Deskphone (H.323)	3.104S
Avaya 9621G IP Deskphone (H.323)	6.2209
Avaya 1408 Digital Deskphone	NA
Avaya 6211 Analog Deskphone	NA
DuVoice	5.2.0

**Note:** Testing was performed with IP Office 500 v2 R9.0, but it also applies to IP Office Server Edition R9.0. Note that IP Office Server Edition requires an Expansion IP Office 500 v2 R9.0 to support analog or digital endpoints or trunks. IP Office Server Edition does not support TAPI Wave or Group Voicemail.

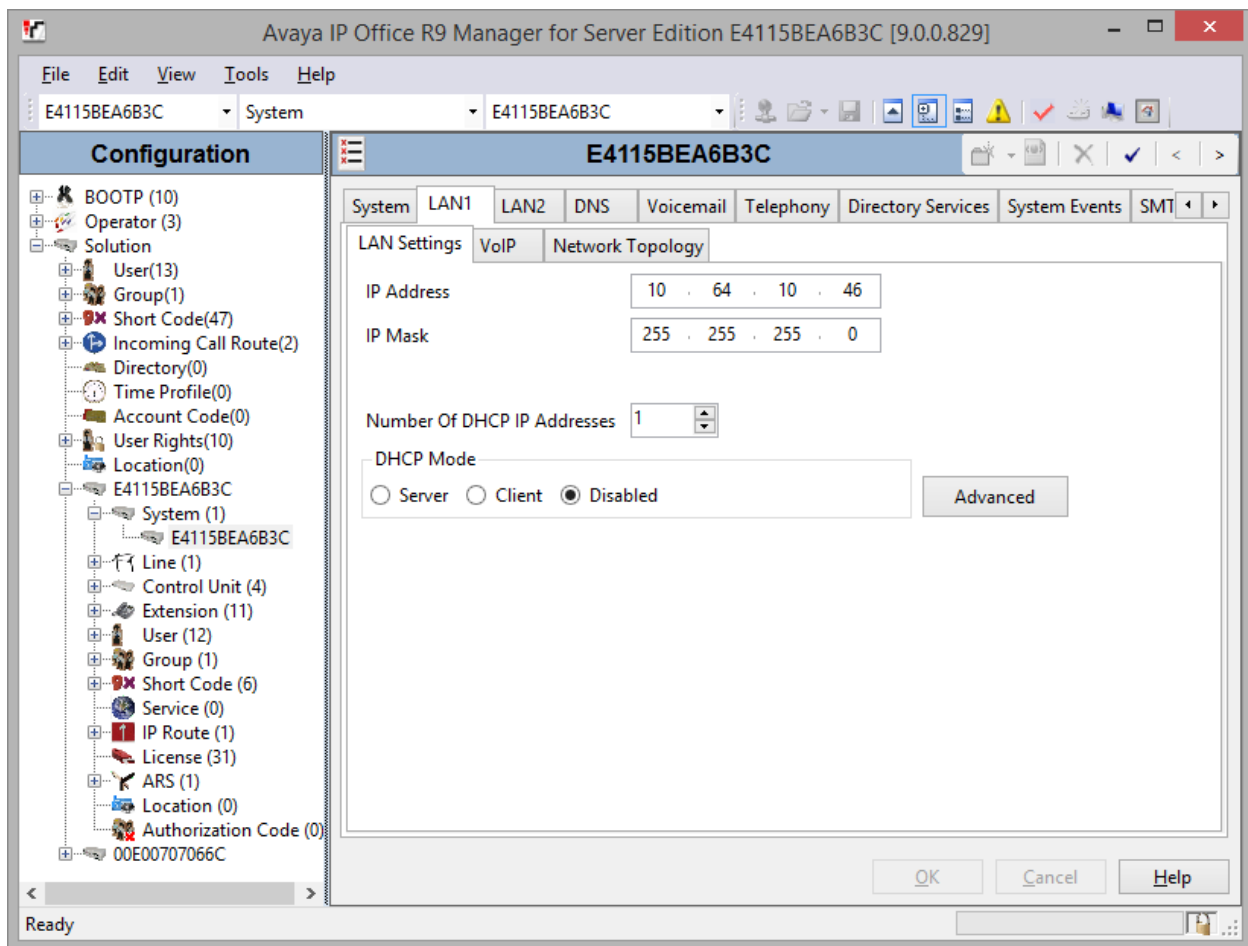
## 5. Configure Avaya IP Office

This section provides the procedures for configuring IP Office.

### 5.1. Obtain LAN IP Address

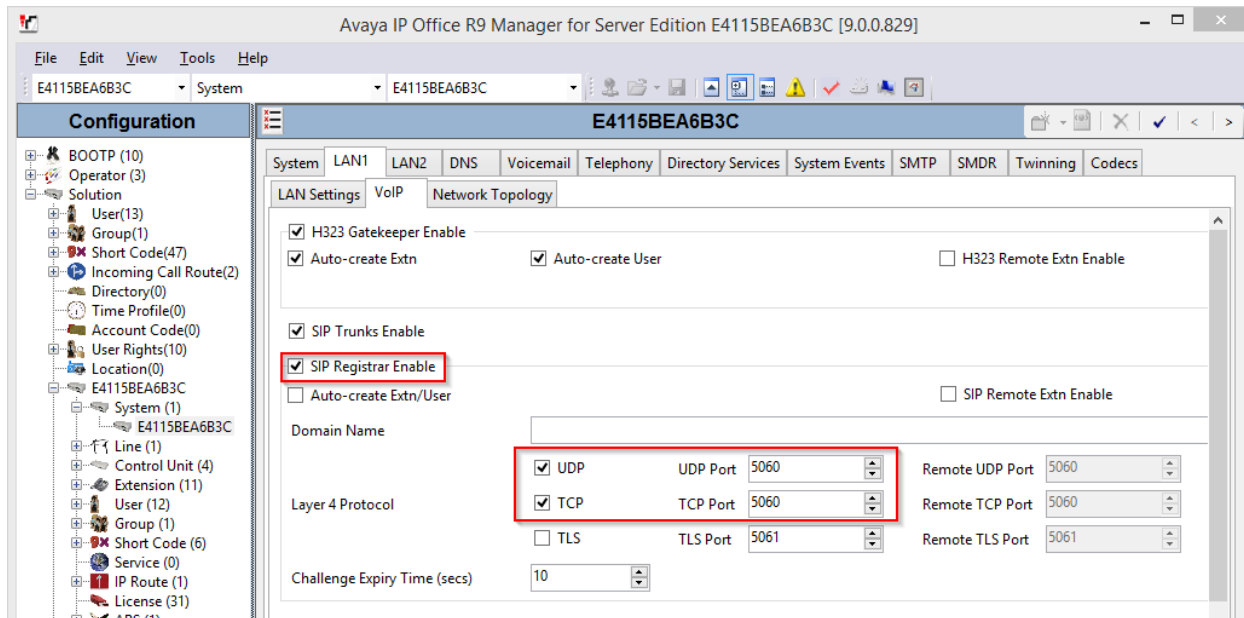
From the configuration tree in the left pane, select **System** to display the screen in the right pane, where **E4115BEA6B3C** is the name of the IP Office system.

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 DuVoice. Note that IP Office can support SIP on the LAN1 and/or LAN2 interfaces, and the compliance testing used the LAN1 interface.



## 5.2. Administer SIP Registrar

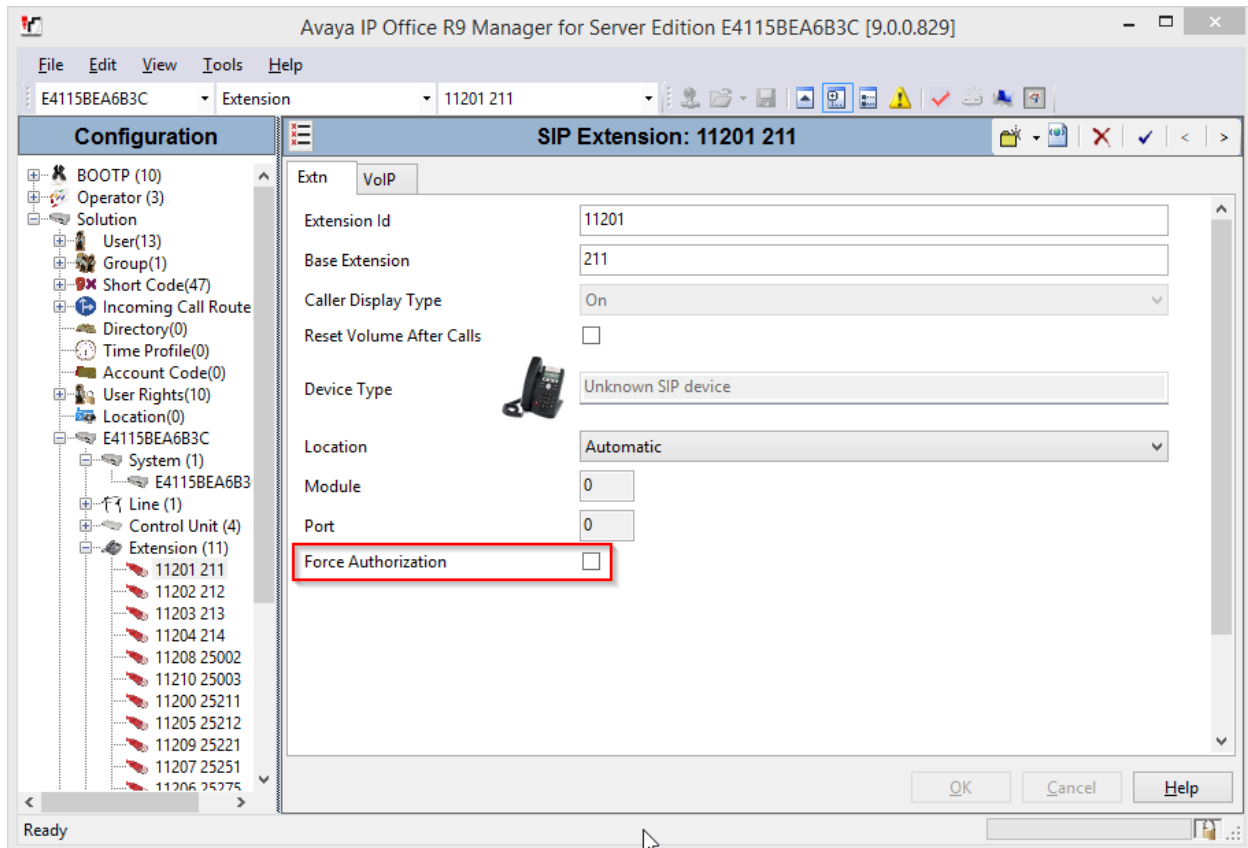
Select the **VoIP** sub-tab. Make certain that **SIP Registrar Enable** is checked, as shown below. Select the **SIP Registrar** sub-tab, and enter a valid **Domain Name** for SIP endpoints to use for registration with IP Office. In the compliance testing, the **Domain Name** was left blank, so the LAN IP address was used for registration. Also, ensure that depending on the setup either **UDP** or **TCP** are enabled. During Compliance Testing, DuVoice registered with IP Office using UDP.



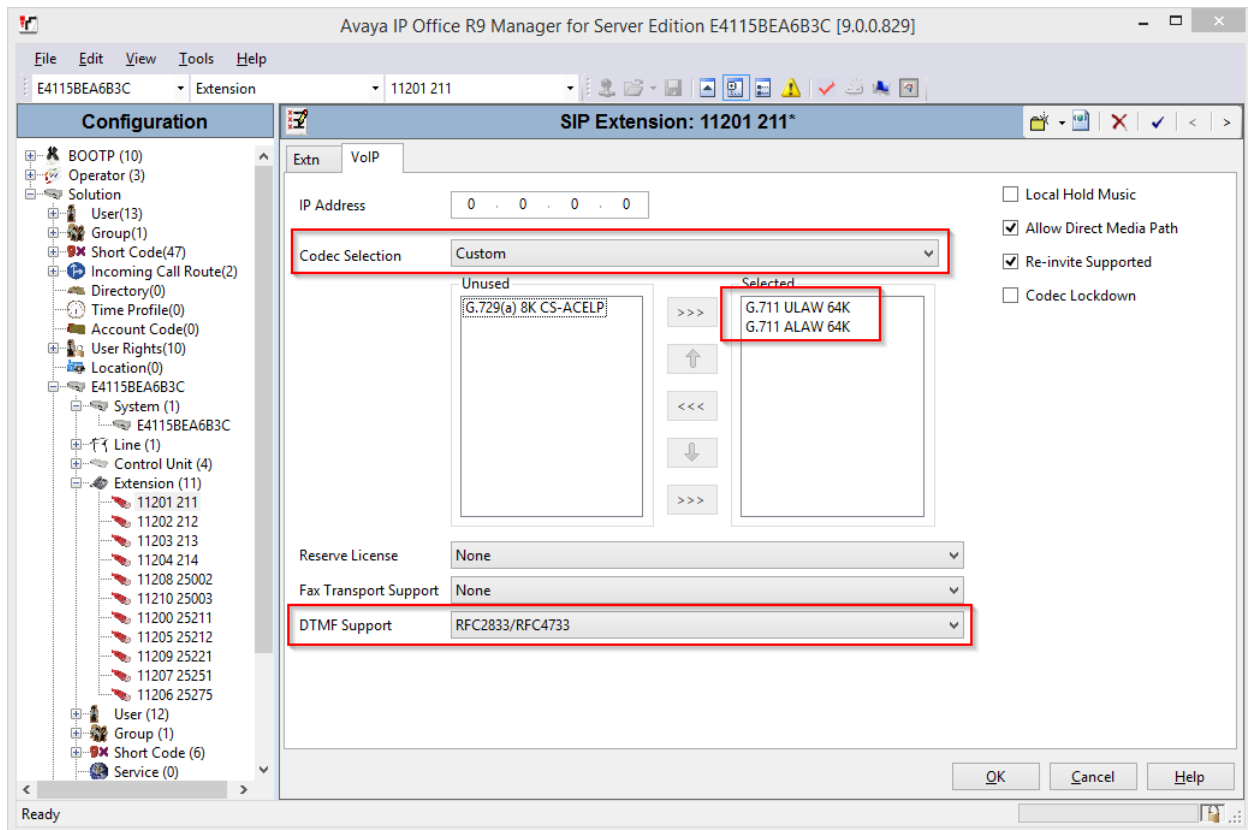
### 5.3. Administer SIP Extensions

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 (not shown). Under the **Extn** tab, enter the desired digits for **Base Extension**, and uncheck **Force Authorization**, as shown below. Retain the default values in the remaining fields.

Repeat this section to add the desired number of SIP extensions. In the compliance testing, four SIP extensions, 211-214, were created.



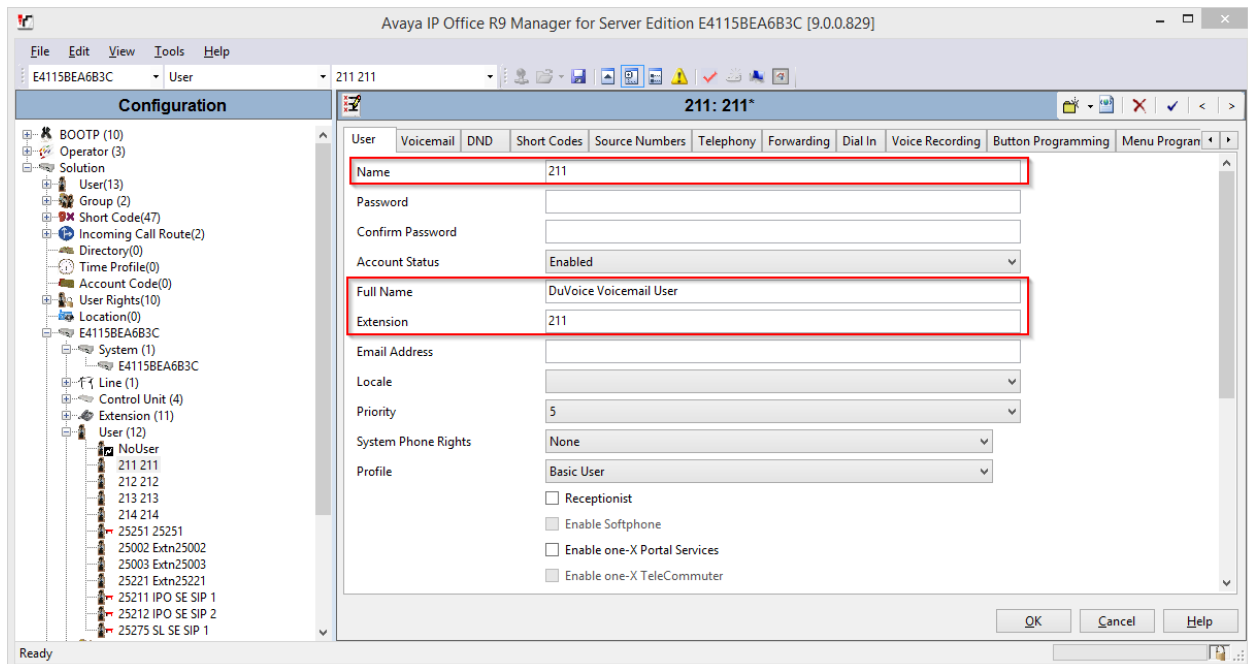
Select the **VoIP** tab. For **Codec Selection**, select **Custom** and move **G.711 ULAW 64K** and **G.711 ALAW 64K** to **Selected** box, as shown in the screen capture. Set the **DTMF Support** to **RFC2833/RFC4733**.



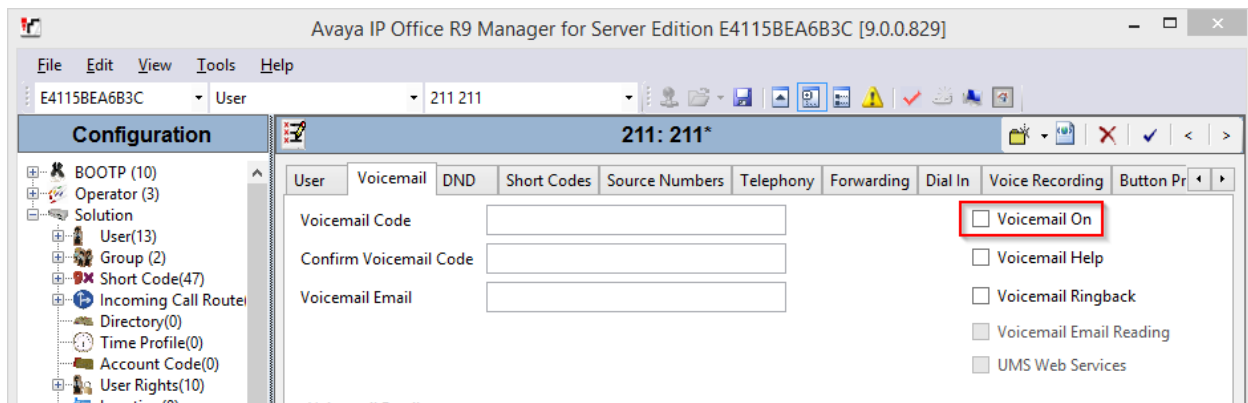


## 5.4. Administer SIP Users

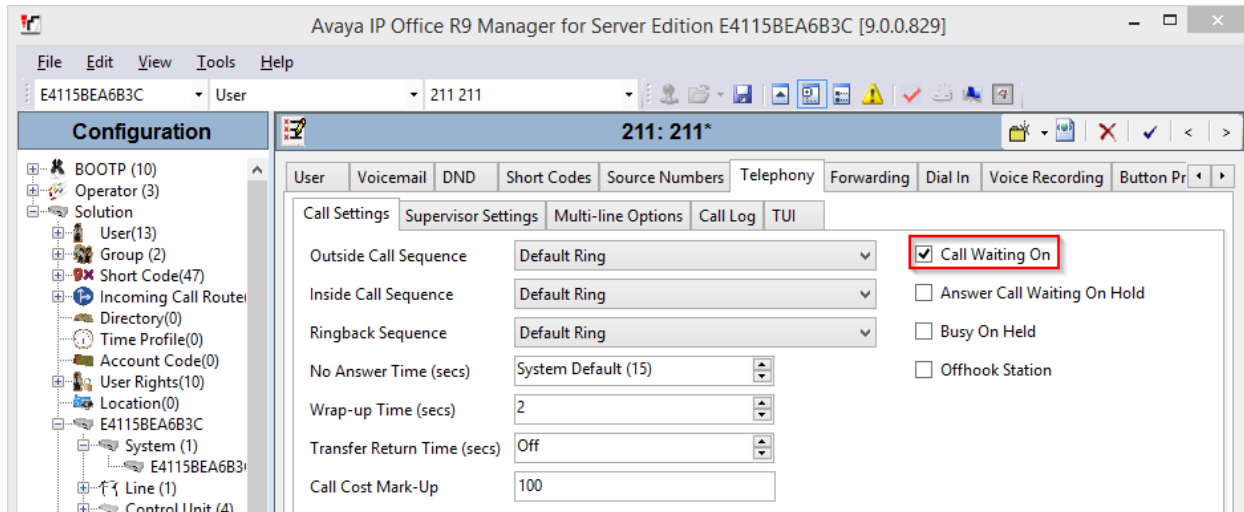
From the configuration tree in the left pane, right-click on **User**, and select **New** from the pop-up list to add a new user (not shown). Enter desired values for **Name** and **Full Name**. For **Extension**, enter the first SIP base extension from **Section 5.3**. Retain the default values in the remaining fields.



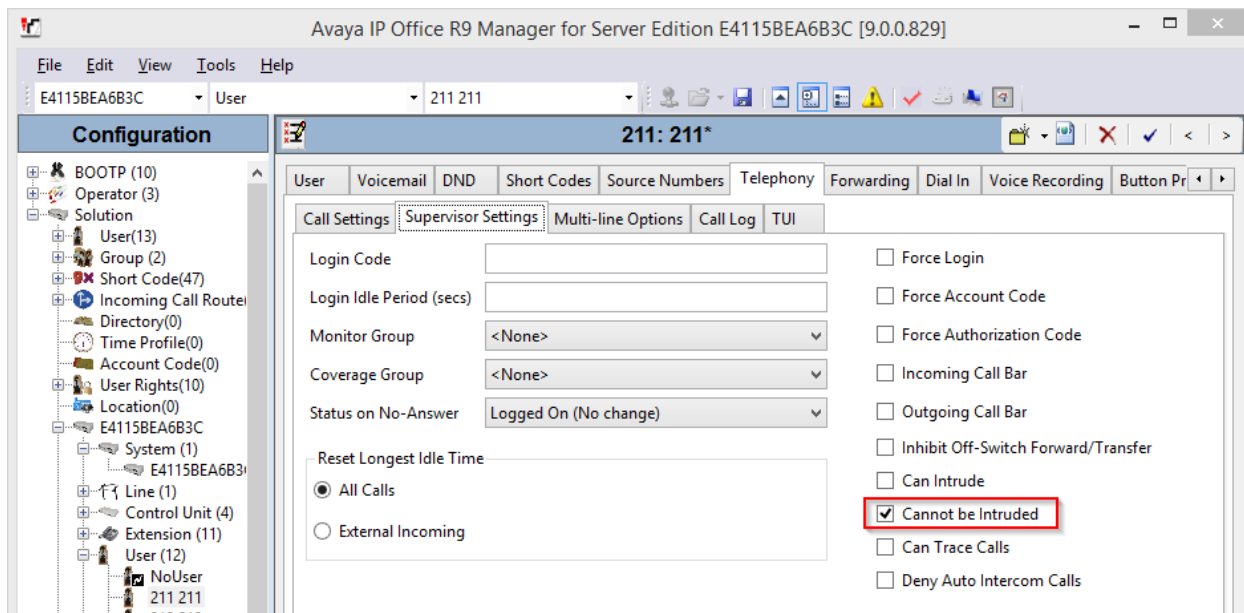
Select the **Voicemail** tab, and uncheck **Voicemail On**, as shown below.



Select the **Telephony** tab, followed by the **Call Settings** sub-tab. Check **Call Waiting On**, as shown below. Retain the default values in the remaining fields.

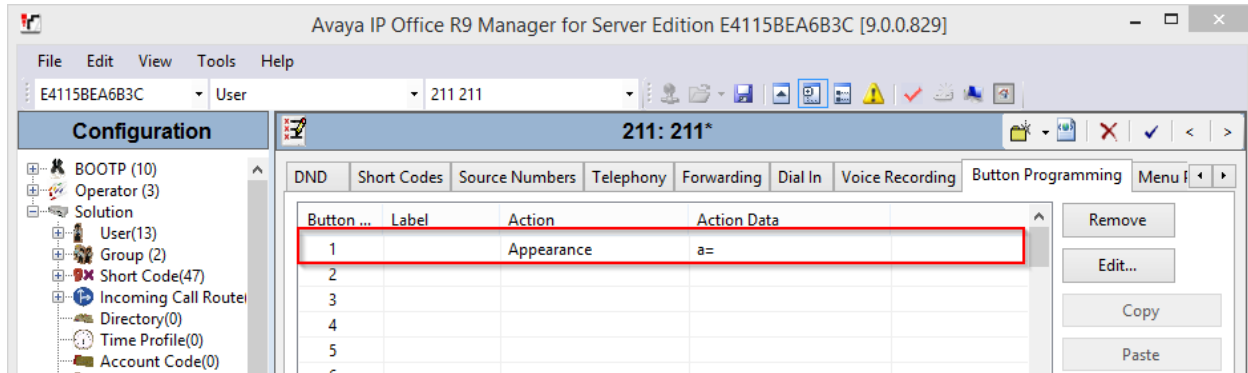


Select the **Supervisor Settings** sub-tab. Check the **Cannot be Intruded** field, as shown below. Retain the default values in the remaining fields.



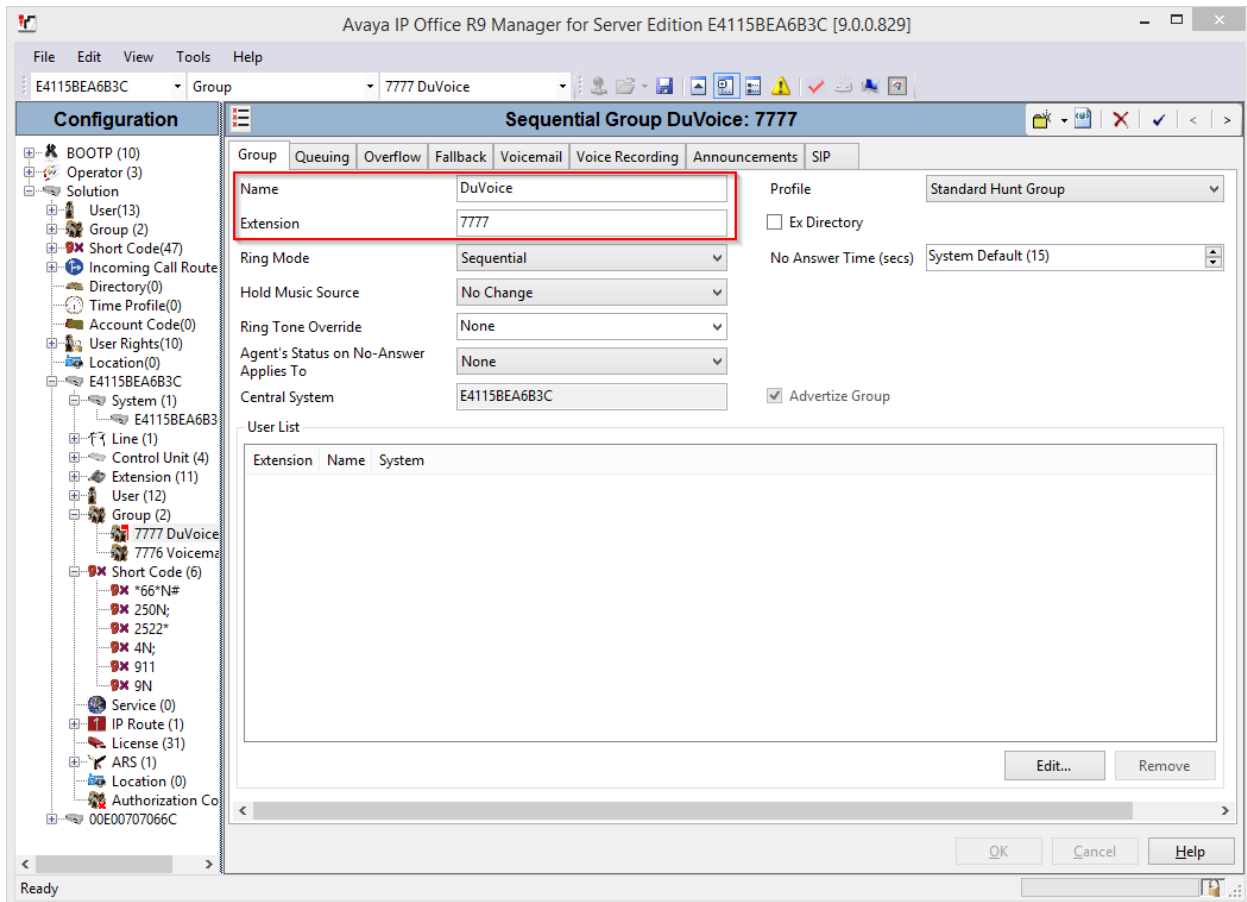
Select the **Button Programming** tab. Retain only the first **Appearance** button and remove all others as shown below.

Repeat this section to add a new user for each SIP extension from **Section 3**.



## 5.5. Administer Hunt Group

From the configuration tree in the left pane, right-click on **Group** and select **New** from the pop-up list to add a new hunt group (not shown). This hunt group will be used to deliver calls to DuVoice for hospitality features. Under the **Group** tab, enter desired values for the **Name** and **Extension** fields, and retain the default values in the remaining fields. Click on **Edit** in the **User List** section to add members.



The **Sequential | Hunt Group** screen is displayed. Select all SIP users created earlier in this document, and click the **Append** button to move the selected entries to the right.

Sequential | Hunt Group | 7777 DuVoice - Select Members

Filters  
 Extn Name:  Extn Number:  PBX Name:  PBX Address:

Available Users (13/13)

Name	Extn	PBX Name	PBX Address
211	211	E4115BEA6B3C	10.64.10.46
212	212	E4115BEA6B3C	10.64.10.46
213	213	E4115BEA6B3C	10.64.10.46
214	214	E4115BEA6B3C	10.64.10.46
25251	25251	E4115BEA6B3C	10.64.10.46
35251	35251	00E00707066C	10.64.10.54
Digital	1	00E00707066C	10.64.10.54
Extn25002	25002	E4115BEA6B3C	10.64.10.46
Extn25003	25003	E4115BEA6B3C	10.64.10.46
Extn25221	25221	E4115BEA6B3C	10.64.10.46
IPO SE SIP 1	25211	E4115BEA6B3C	10.64.10.46
IPO SE SIP 2	25212	E4115BEA6B3C	10.64.10.46
SL SE SIP 1	25275	E4115BEA6B3C	10.64.10.46

Members (0/0)

Order	Enabled	Name	Extn	PBX Name	PBX Address
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The **Sequential Group** screen is displayed again and updated with the selected members.

Avaya IP Office R9 Manager for Server Edition E4115BEA6B3C [9.0.0.829]

File Edit View Tools Help

E4115BEA6B3C Group 7777 DuVoice

**Configuration**

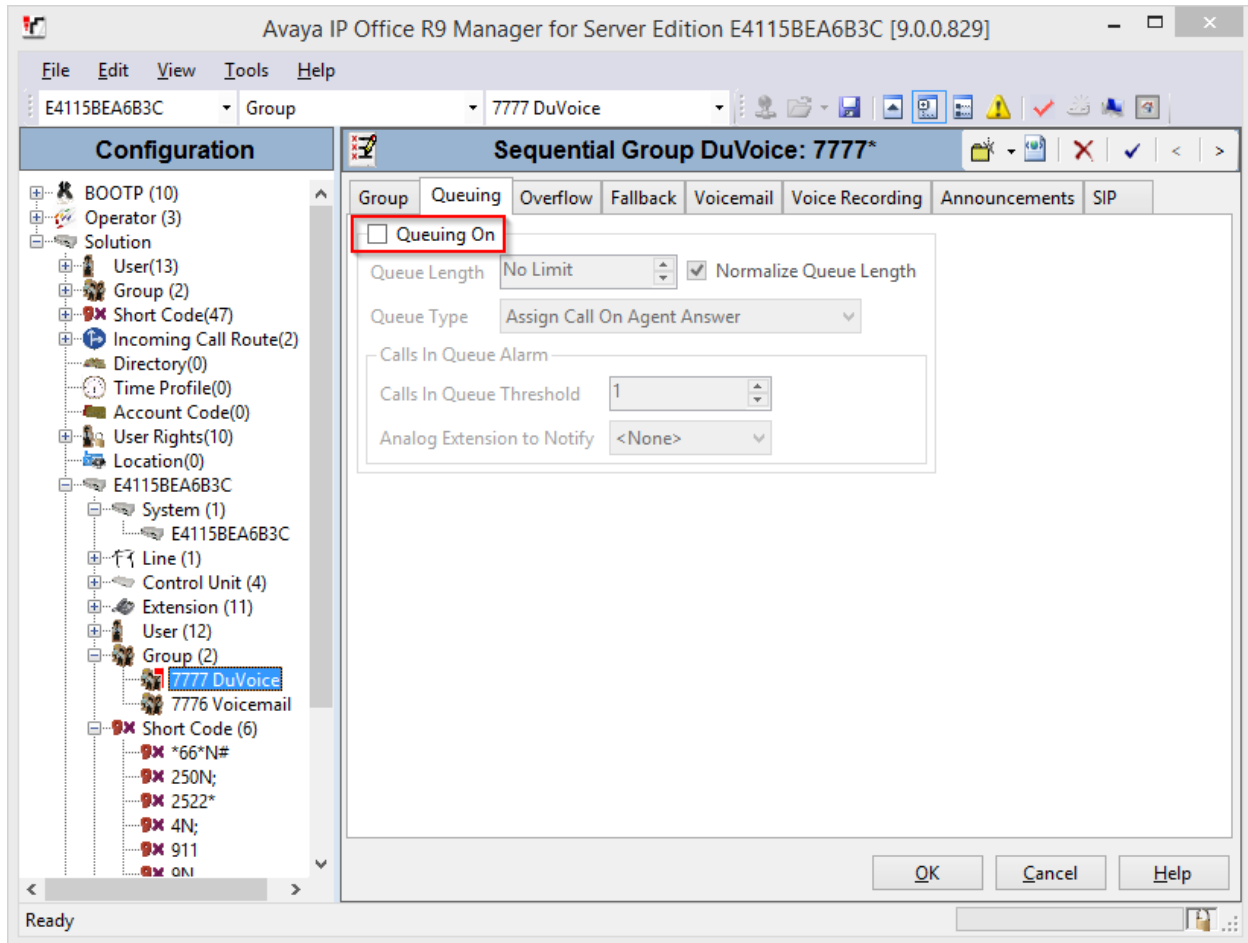
**Sequential Group DuVoice: 7777**

Group:  Profile:   
 Extension:  ☐ Ex Directory  
 Ring Mode:  No Answer Time (secs):   
 Hold Music Source:   
 Ring Tone Override:   
 Agent's Status on No-Answer Applies To:   
 Central System:  ☒ Advertise Group

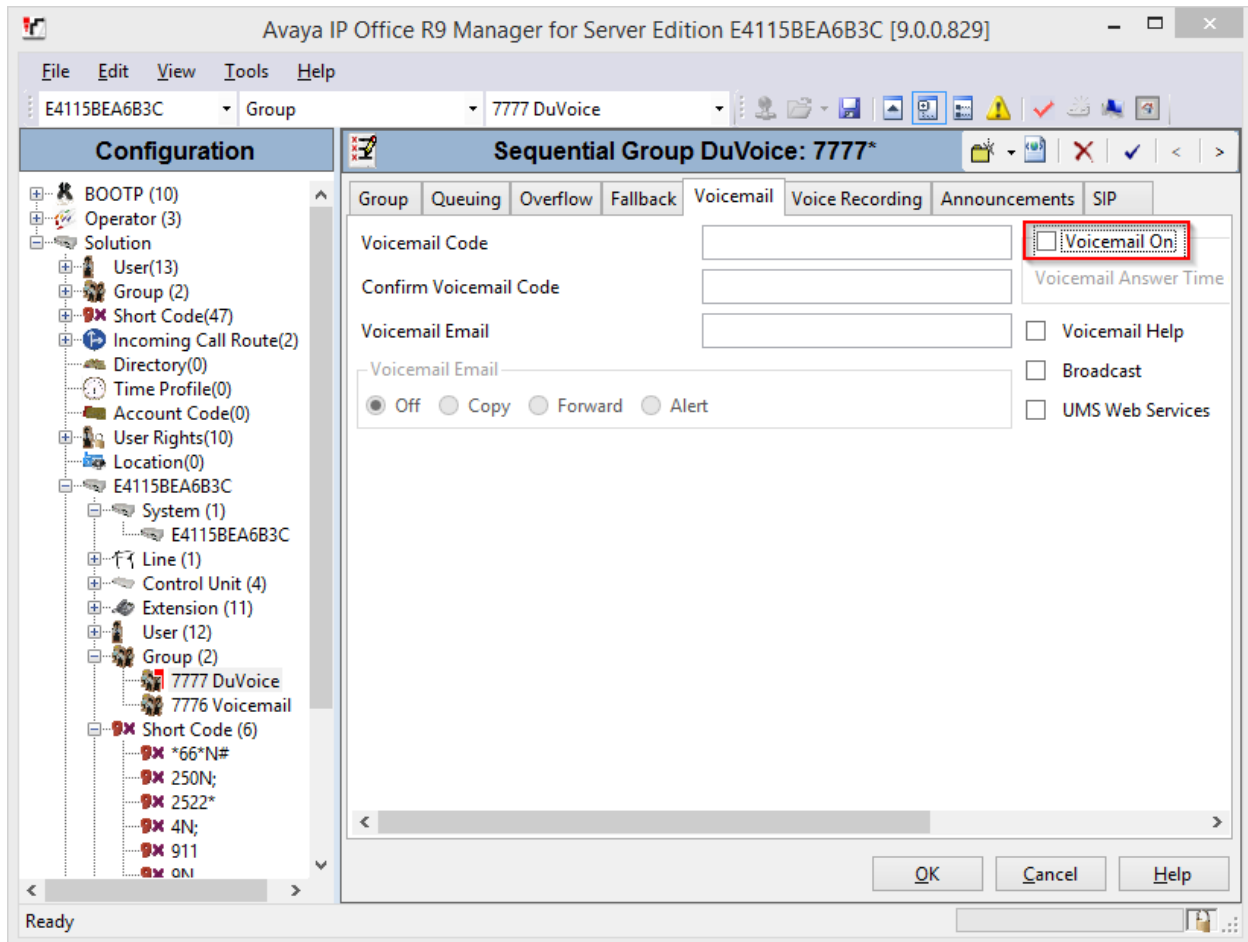
User List

Extension	Name	System
<input checked="" type="checkbox"/> 211	211	E4115BEA6B3C
<input checked="" type="checkbox"/> 212	212	E4115BEA6B3C
<input checked="" type="checkbox"/> 213	213	E4115BEA6B3C
<input checked="" type="checkbox"/> 214	214	E4115BEA6B3C

Under the **Queuing** tab, uncheck box for **Queuing On**.



Under the **Voicemail** tab, uncheck box for **Voicemail On**.

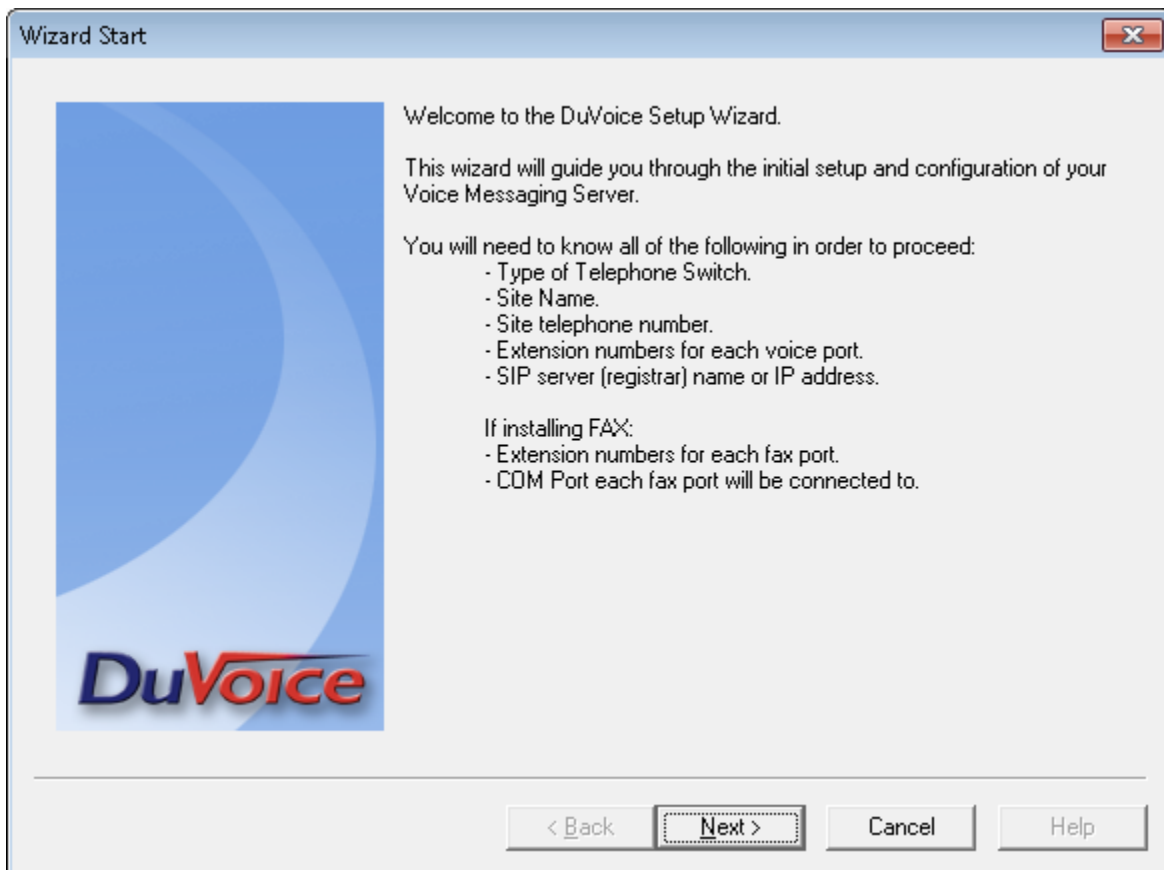


## 6. Configure DuVoice

This section provides the procedures for configuring DuVoice.

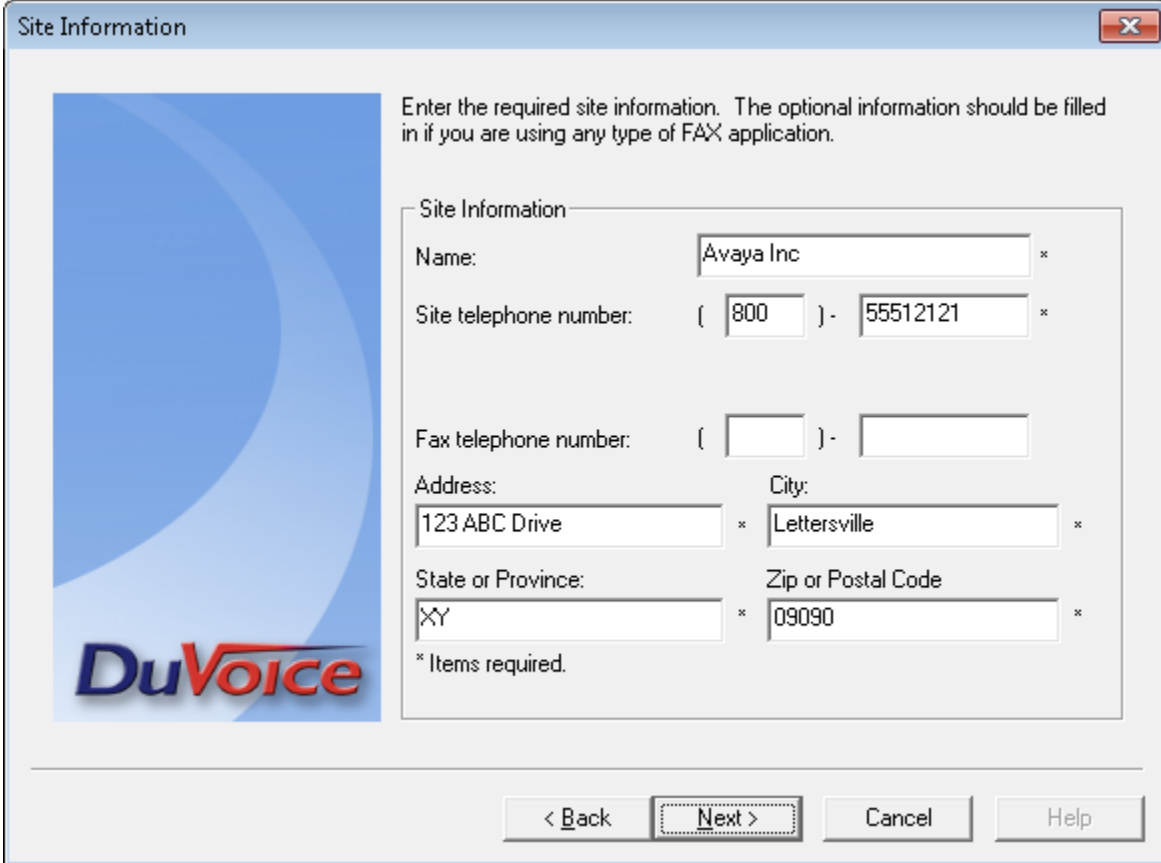
### 6.1. Administer Setup Wizard

From the DuVoice server, select **Start → All Programs → DuVoice → System Configuration** (not shown). The **Wizard Start** screen is displayed upon initial access. Click **Next**.





The **Site Information** screen is displayed next. Enter desired values for the required fields, and click **Next**.

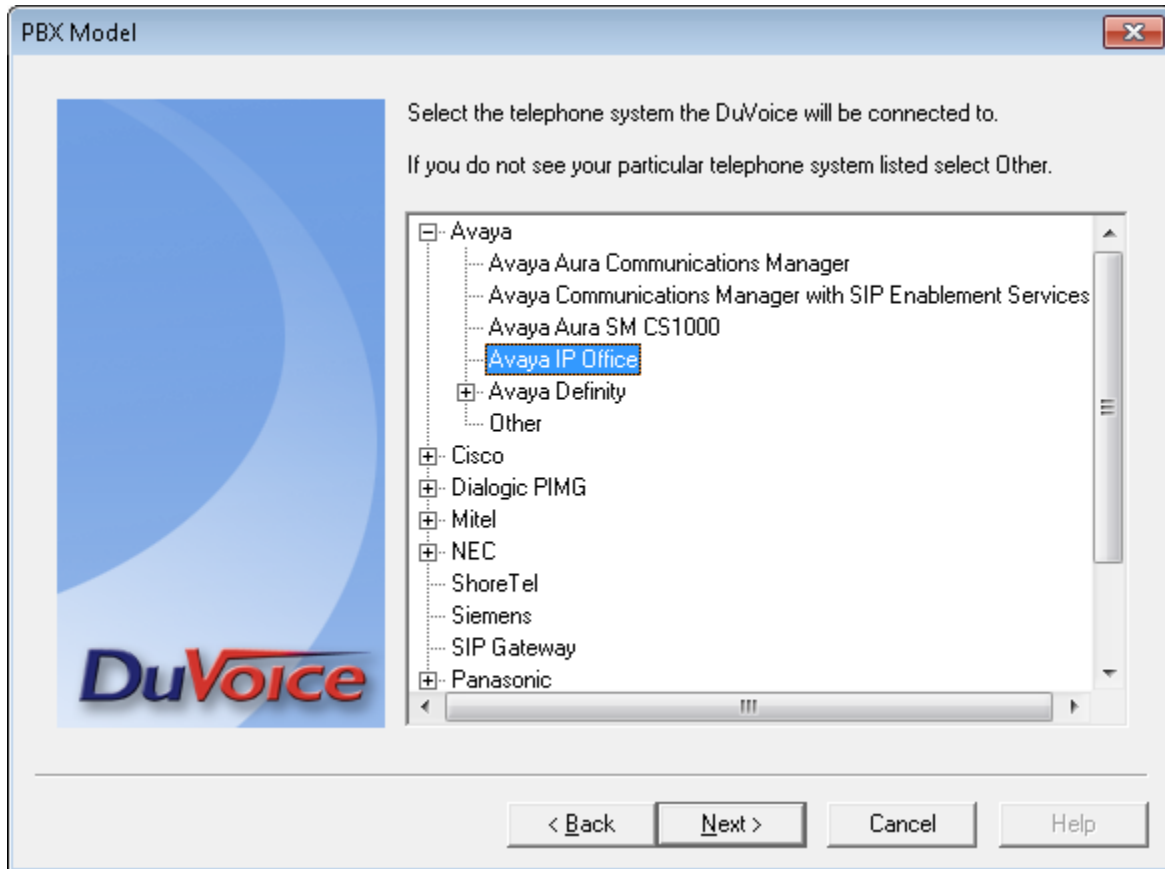


The image shows a Windows-style dialog box titled "Site Information". On the left is a blue graphic with the "DuVoice" logo. The main area contains a form with the following fields:

- Name:** A text box containing "Avaya Inc" with an asterisk (\*) indicating it is required.
- Site telephone number:** A form with a dropdown menu showing "800", followed by a hyphen and a text box containing "55512121", with an asterisk (\*) indicating it is required.
- Fax telephone number:** A form with a dropdown menu (empty), followed by a hyphen and a text box (empty).
- Address:** A text box containing "123 ABC Drive" with an asterisk (\*) indicating it is required.
- City:** A text box containing "Lettersville" with an asterisk (\*) indicating it is required.
- State or Province:** A text box containing "XY" with an asterisk (\*) indicating it is required.
- Zip or Postal Code:** A text box containing "09090" with an asterisk (\*) indicating it is required.

Below the form, there is a note: "\* Items required." At the bottom of the dialog are four buttons: "< Back", "Next >" (which is highlighted with a dashed border), "Cancel", and "Help".

The **PBX Model** screen is displayed next. Select **Avaya → Avaya IP Office** from the listing, and click **Next**.



The **MWI Method** screen is displayed. Select **TAPI** and retain rest of the default values. Click **Next** to continue.

MWI Method

Choose the method by which message waiting lights will be set and cleared.

☐ SIP Notify

☒ TAPI

☐ SMDI

☐ Inband using a feature or shortcode

☐ HTTP

Inband codes

Enter the code used to set and clear the message waiting lights. Enter an E for the extension number. If an E is not specified it will be automatically added to the end of the code.

For example: \*81\*E\* or \*4E

Set code

Clear code

\*81\*E\*

\*80\*E\*

< Back

Next >

Cancel

Help

The **SIP Information** screen is displayed next. For **Server IP Address or DNS name**, enter the IP address or DNS name of IP Office, and click **Next**.

SIP Information

Enter the server name or IP address of the SIP registrar with which the SIP ports will be registered; this is optional but recommended. Typically, this will be the server name or IP address of the IP PBX.

Server IP Address or DNS name: 10.64.10.46

DuVoice

< Back Next > Cancel Help

The **Voice Ports** screen is displayed. For **Voicemail Huntgroup**, enter the hospitality hunt group extension from **Section 5.5**. Assign each SIP base extension from **Section 5.3** to an available **Port**, as shown below.

In the compliance testing, four DuVoice ports were configured to correspond to the four SIP extensions created on IP Office.

Click **Next**, followed by **Finish** (not shown) in the subsequent screen to complete the wizard.

Voice Ports

This system will be configured for 4 voice mail ports. If you know the extension of each port enter it in the space provided by clicking the ports extension field below. Entering the extension numbers is required for some integrations and will help with resolving integration issues.

If You do not know the extensions leave them blank, they can be entered later in System Configuration.

Voicemail Huntgroup: 7777

☒ Auto increment extension numbers based on line 1.

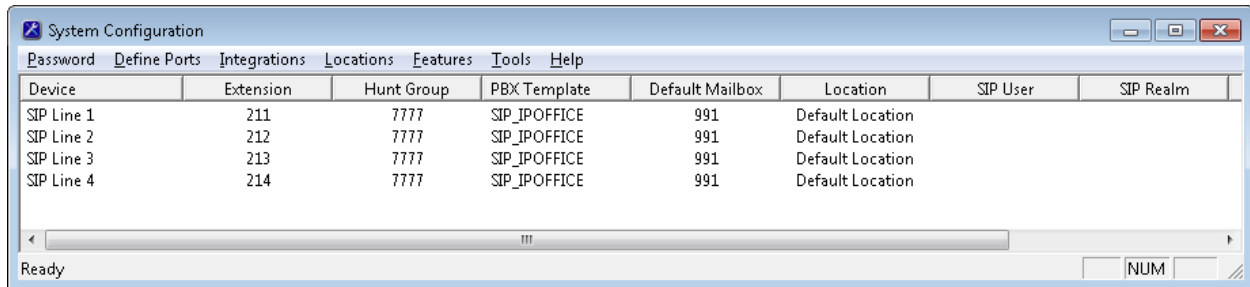
Number	Extension
Port 1	211
Port 2	
Port 3	
Port 4	

< Back Next > Cancel Help

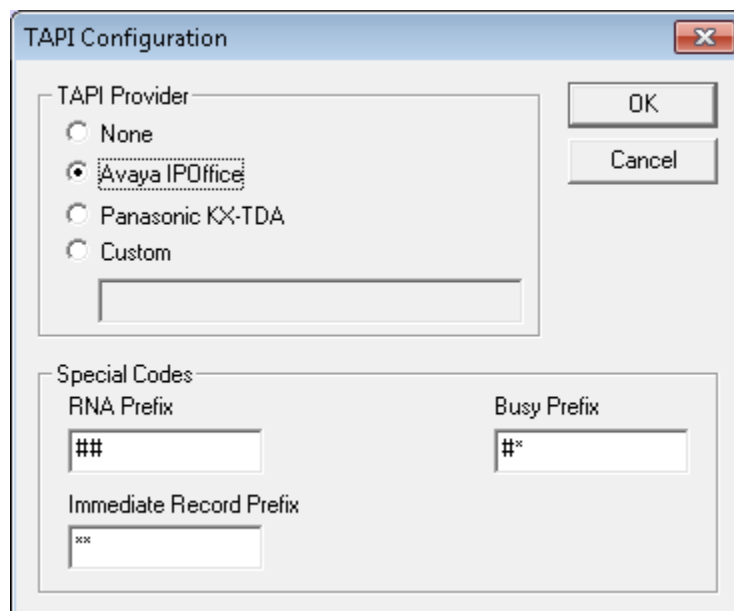
## 6.2. Administer TAPI Integration

From the DuVoice server, select **Start → All Programs → DuVoice → System Configuration** (not shown).

The **System Configuration** screen is displayed. Select **Integrations → TAPI Integration** (not shown) from the top menu.

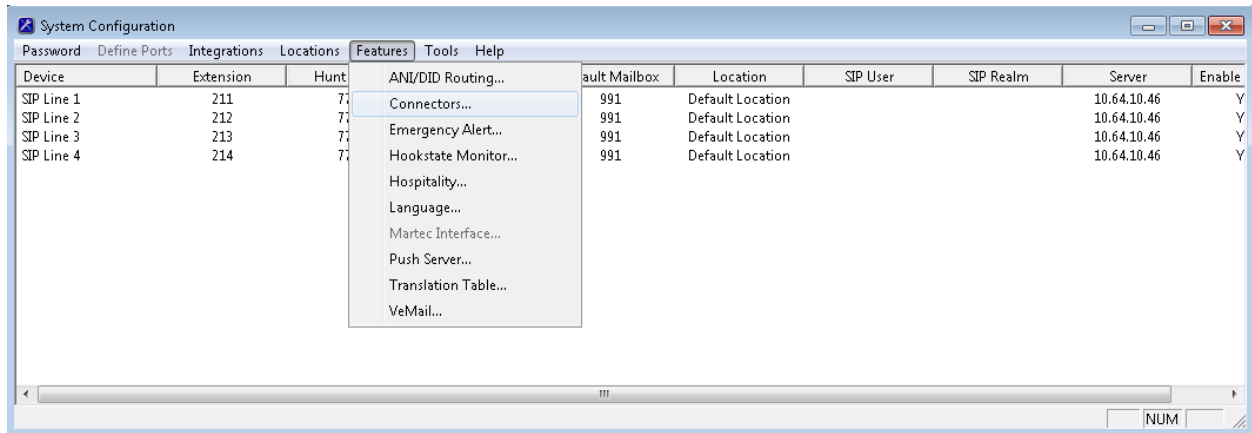


The **TAPI Configuration** screen is displayed next. For **TAPI Provider**, select **Avaya IPOffice**. Retain the default values in the remaining fields. Click **OK**, to save changes.



### 6.3. Administer Connectors

The **System Configuration** screen is displayed again. Select **Features** → **Connectors** from the top menu.



The **Connectors** screen is displayed. Select **IP Office** → **Devlink** from the left pane, to display the **Devlink** screen in the right pane. Check **Enabled**. For **IP address**, enter the IP address of IP Office. Enter the IP Office administrator credentials for **Password**. Click **OK**, to save changes.

The screenshot shows the 'Connectors' window with a tree view on the left and a configuration pane on the right. The tree view includes 'System Details', 'Cisco', 'CONTROL', 'HTNG Server', 'HTTP Name Service', 'Inventory Server', 'IP Office' (expanded), 'LDAP', 'PMS Pass-through', 'Room Status Server', 'ShoreTel', 'SIEMENS', 'SIP', and 'UNIVERGE 3C'. Under 'IP Office', 'User Configuration' and 'Devlink' are listed. The 'Devlink' configuration pane has the following fields:

- Password:** A text box containing 'password'.
- IP address:** A text box containing '10 . 64 . 10 . 46'.
- Enabled:** A checked checkbox.
- Additional servers (optional):** A section containing four sets of 'Password' and 'IP address' text boxes, each followed by a 'Password' and 'IP address' text box.

At the bottom right of the window are 'OK', 'Cancel', and 'Apply' buttons.

From the **System Configuration** windows, select **Connectors** → **Emergency Alerts**.

The screenshot shows the 'System Configuration' window with a menu bar (Password, Define Ports, Integrations, Locations, Features, Tools, Help) and a table of configurations. The 'Features' menu is open, showing a list of options including 'ANI/DID Routing...', 'Connectors...', 'Emergency Alert...', 'Hookstate Monitor...', 'Hospitality...', 'Language...', 'Martec Interface...', 'Push Server...', 'Translation Table...', and 'VeMail...'. The 'Emergency Alert...' option is highlighted. The table below shows the configuration for Emergency Alerts:

Device	Extension	Hunt	Mailbox	Location	SIP User	SIP Realm	Server	Enable
SIP Line 1	211	77	991	Default Location			10.64.10.46	Y
SIP Line 2	212	77	991	Default Location			10.64.10.46	Y
SIP Line 3	213	77	991	Default Location			10.64.10.46	Y
SIP Line 4	214	77	991	Default Location			10.64.10.46	Y

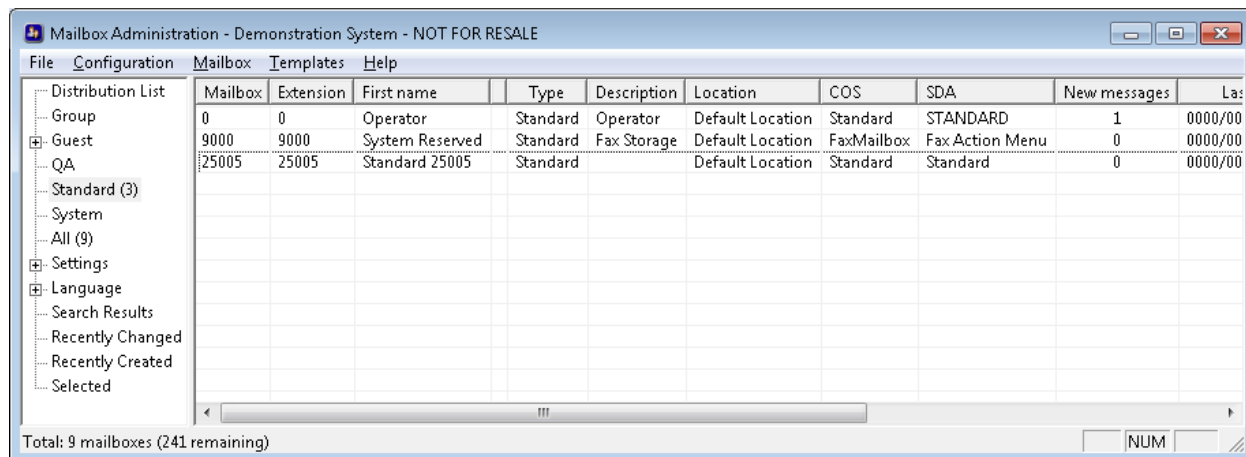


Type in a number that is considered as an Emergency Number in **Emergency Numbers** box, and click **Add**. Click **OK**, to save changes.

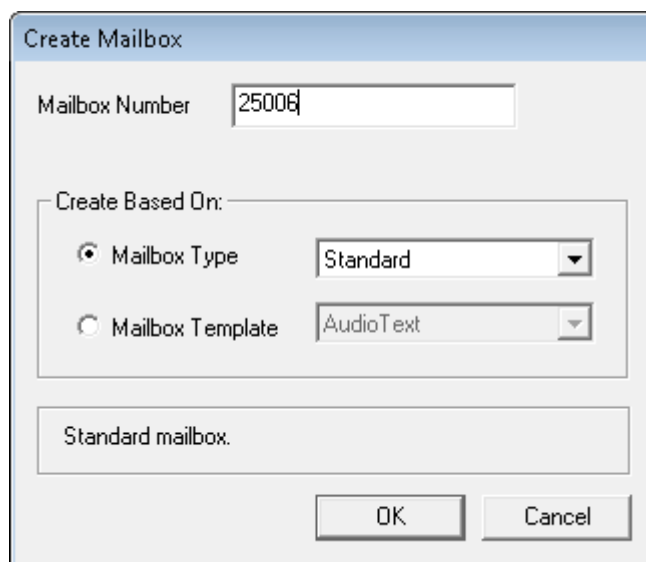
The screenshot shows a Windows-style dialog box titled "Emergency Alerts". It features a tab labeled "Emergency Alert". Below the tab, there is a section titled "Emergency numbers" which contains a list box. The list box currently contains two entries: "911" and "9911". To the right of the list box are three buttons: "Add", "Cancel", and "Delete". At the bottom of the dialog, there are three buttons: "OK", "Cancel", and "Apply".

## 6.4. Administer Emergency Alerts

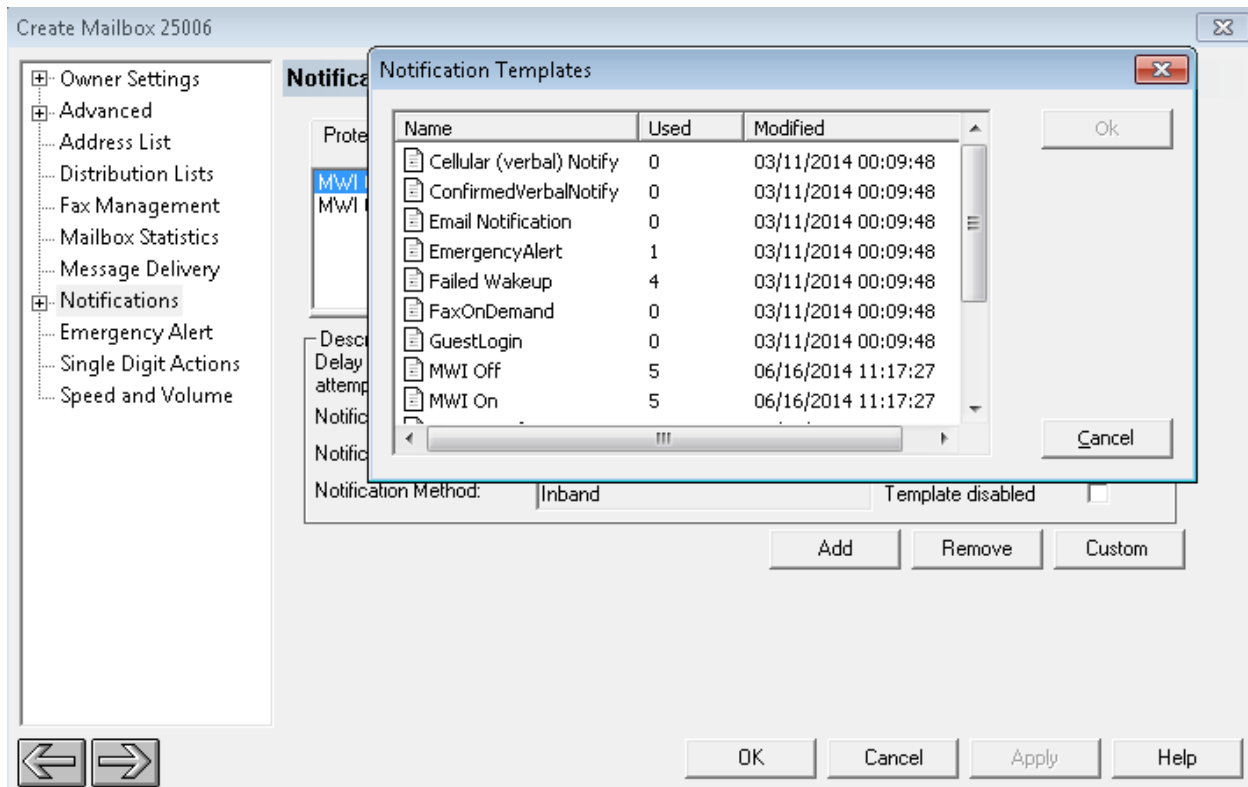
From the DuVoice server, select **Start → All Programs → DuVoice → Mailbox Administration** (not shown). Select **Standard** in the left pane.



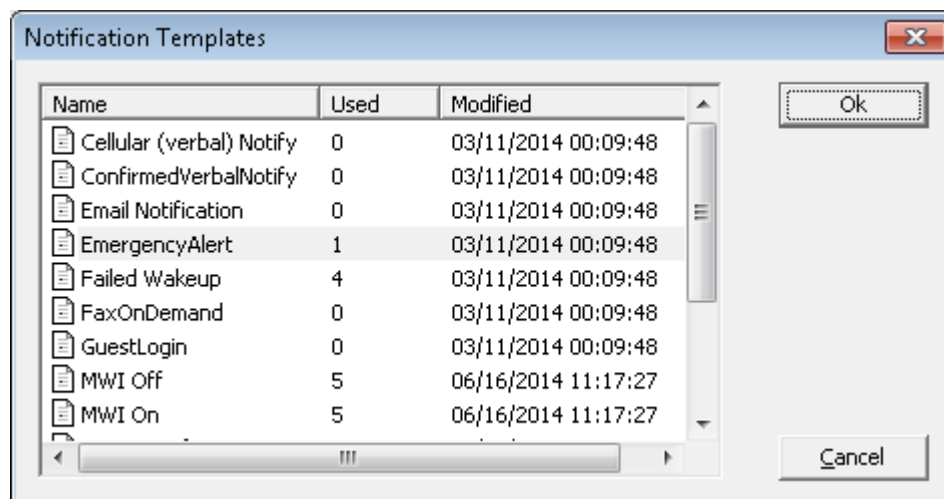
Right click and select **New** to add an extension that will receive Emergency Alerts (not shown). On the **Create Mailbox** window, type in the extension number that will receive Emergency Alerts, in **Mailbox Number** field. Select **Standard** for **Mailbox Type** and click **Ok**.



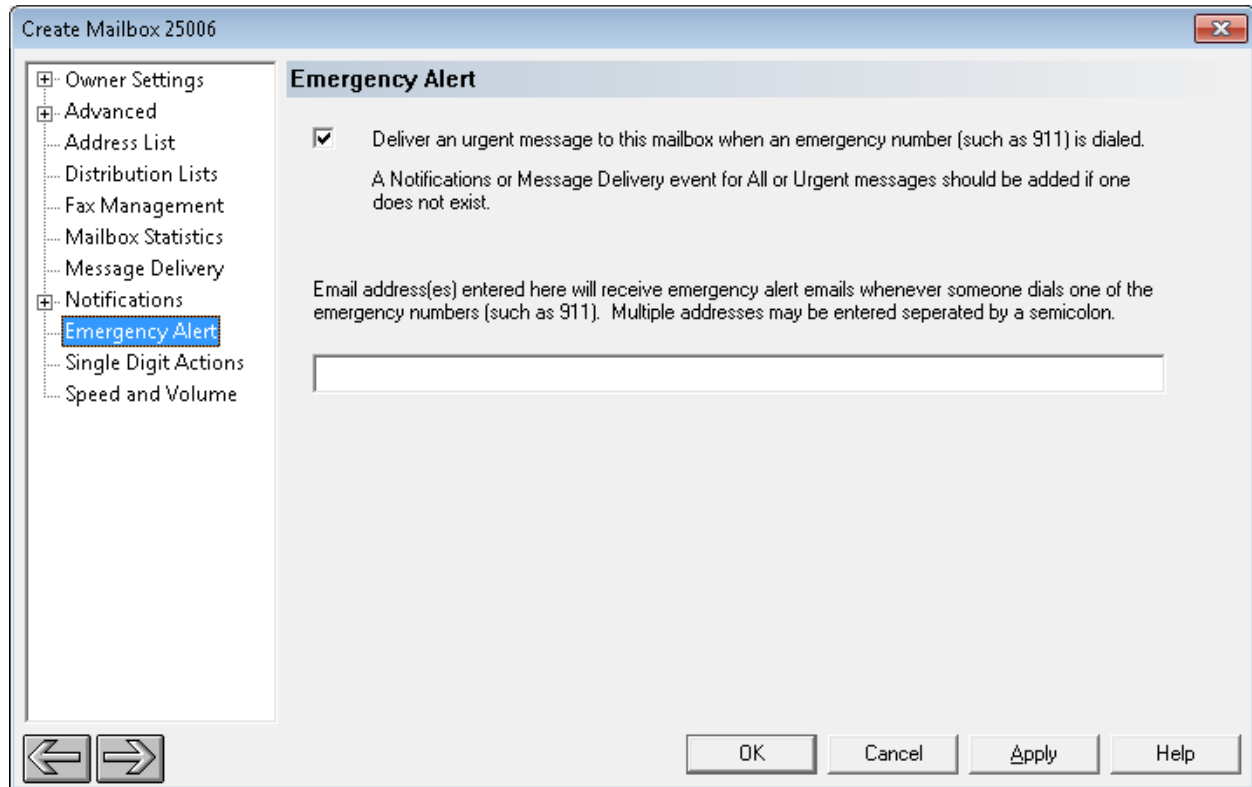
On the **Create Mailbox** *N* window, select **Notifications** in the left pane and select **Add** (not shown).



On the **Notification Template** window, select **EmergencyAlert** and click **Add** (not shown). Click **OK**, to save changes.

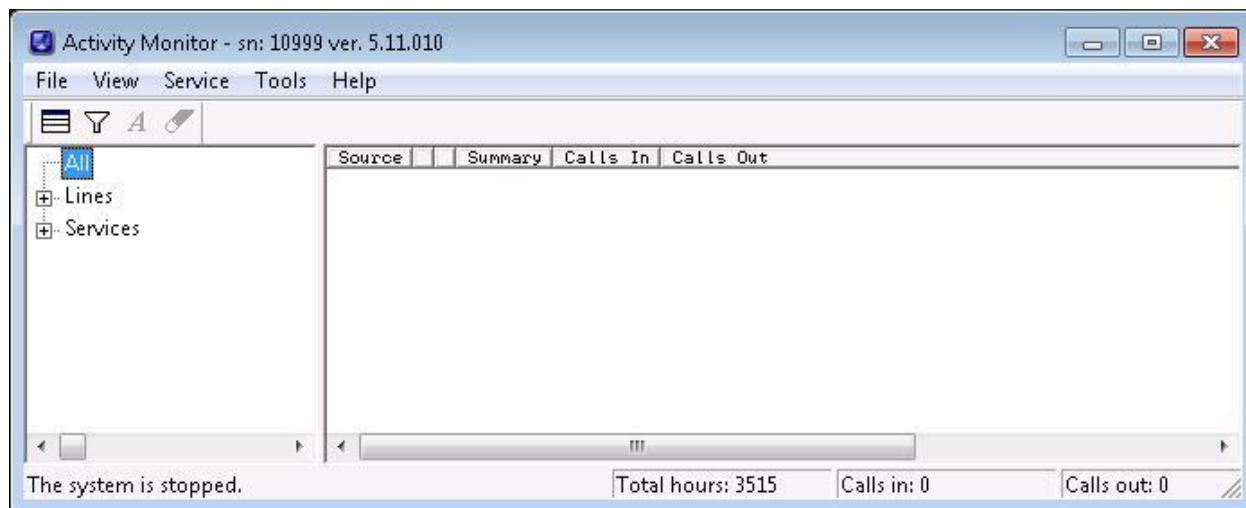


Select **Emergency Alert** in the left pane, and enable Emergency alerts by checking the box as shown in the screen capture below. Click **OK**, to save changes.



## 6.5. Startup Server

From the DuVoice server, select **Start → All Programs → DuVoice → Activity Monitor** (not shown). The **Activity Monitor** screen is displayed. Select **Service → Start** (not shown) from the top menu to start all services.



## 7. Verification Steps

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

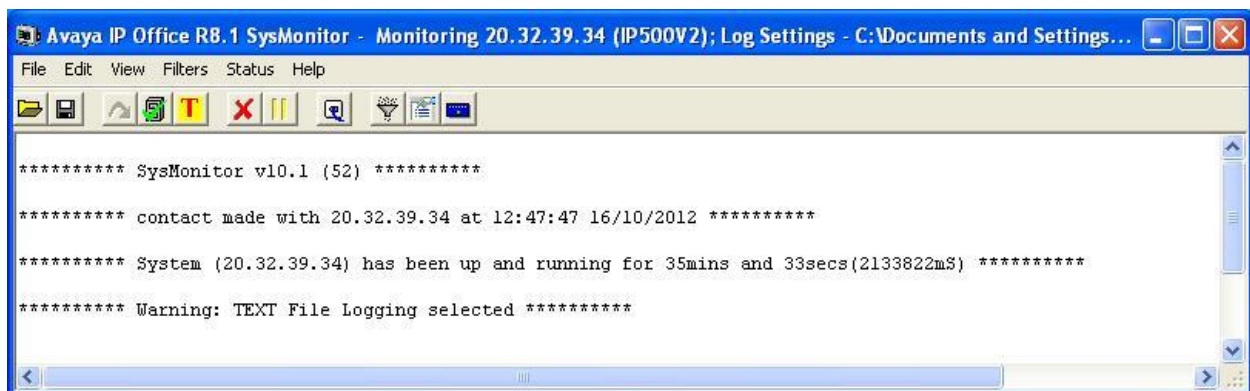
### 7.1. Verify DuVoice Activity Monitor

Follow the procedures in **Section 5** to display the **Activity Monitor** screen. Verify that ports **1-2, IPOffice**, and **IPOSRVR** are all in the “Idle” state, as shown below. Verify that **PUSH** is in the “Started” state.

Source	Date	Time	Summary	Calls In	Calls Out
1	2012/10/16	09:43:31	Idle	0	0
2	2012/10/16	09:43:31	Idle	0	0
System	2012/10/16	09:44:40	Running.		
Vemail send	2012/10/16	09:45:05	Disabled		
Vemail reply	2012/10/16	09:44:45	Not enabled. Next check...		
IPOffice	2012/10/16	09:44:58	Idle		
ISI	2012/10/16	09:44:39	Next check in 60 seconds.		
RSI	2012/10/16	09:45:11	Idle		
IPOSVR	2012/10/16	09:43:39	Idle		
PUSH	2012/10/16	09:43:23	Started		

### 7.2. Verify SIP User Integration

From a PC running the Avaya IP Office Monitor application, select **Start → Programs → IP Office → Monitor** (not shown) to launch the application. The **Avaya IP Office R9 SysMonitor** screen is displayed. Select **Status > SIP Phone Status** (not shown) from the top menu.



The **SIPPhoneStatus** screen is displayed. Verify that there is an entry for each SIP extension from **Section 5.3**, that the **User Agent** is “DuVoice”, and that the **Status** is “SIP: Registered”, as shown below.

**SIPPhoneStatus**

Total Configured: 2

Total Registered: 2

Registered Status

Waiting 3 secs for update

Extn Num	IP Address	Transport	User Agent	SIP Options	SIP Events	Status	LastAv...	LastIPendp
29001	10.32.39.180	UDP	DuVoice	R		SIP: Registered		10/16/2012 12:43:29 PM
29002	10.32.39.180	UDP	DuVoice	R		SIP: Registered		10/16/2012 12:43:29 PM

Display Options: ☒ Show All ☐ Registered ☐ UnRegistered

Print Reset Phones Cancel

Place an incoming call from the PSTN to the hospitality hunt group. Verify that the calling party hears the greeting announcement from DuVoice. Enter the extension of a guest user, and verify that the call is transferred to the guest user.

### 7.3. Verify DevLink Integration

Dial “911” from any guest user on IP Office. Verify that a 911 alerting voice message is sent to the configured staff user mailbox.

## 8. Conclusion

These Application Notes describe the configuration steps required for DuVoice to successfully interoperate with Avaya IP Office 9.0. All feature and serviceability test cases were passed.

## 9. Additional References

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

1. *IP Office Manager 9*, Document 15-601011, Issue 27o, April 2014, available at <http://support.avaya.com>.

Product documentation for DuVoice EAS may be directly obtained from DuVoice.



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