Avaya Solution & Interoperability Test Lab

Application Notes for Global BHS FLAvoice 9.4.13 with Avaya IP Office 11.1 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Global BHS FLAvoice to interoperate with Avaya IP Office. Global BHS FLAvoice is a hospitality solution.

In the compliance testing, Global BHS FLAvoice used the SIP User and Configuration Web Service interfaces from Avaya IP Office to provide hospitality features including voicemail, wakeup call, room status, minibar, name and user profile template change.

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 Global BHS FLAvoice to interoperate with Avaya IP Office. FLAvoice is a hospitality solution. In the compliance testing, FLAvoice used the SIP User and Configuration Web Service interfaces from IP Office to provide hospitality features including voicemail, wakeup call, room status, minibar, name and user profile template change.

The SIP User interface is used by FLAvoice to provide hospitality features including voicemail, wakeup call, room status, and minibar. In the compliance testing, FLAvoice emulated four virtual SIP users on IP Office. All virtual SIP users were registered with IP Office, and with the first three virtual SIP users configured as members of three hospitality groups. Incoming calls to the hospitality groups were delivered over an available virtual SIP user to FLAvoice. The calling and called information from the SIP packets were used by FLAvoice to determine the type of call and hence the service to provide. FLAvoice used the Abto VoIP SIP SDK for Windows to support all SIP communications.

For the voicemail coverage scenarios, voicemail messages were recorded and saved on FLAvoice. Two short codes were configured on IP Office and dialed by a dedicated virtual SIP user to activate/deactivate Message Waiting Indicator (MWI). In the compliance testing, the fourth virtual SIP user was configured for MWI activities. The Configuration Web Service is used by FLAvoice to send updates to IP Office on guest name and user rights template as part of check-in, check-out, and room change. Two user rights templates were set up on IP Office for association with check-in and check-out guests.

FLAvoice also supports the Property Management System (PMS) interface for integration with a third-party PMS system for initiation of other hospitality features such as check-in, check-out, and room change. In the compliance testing, the FLAvoice CHECK-INS AND CHECK-OUTS MANAGER VIA IP tool was used for setting of necessary check-in, check-out, and room change status to facilitate testing of voicemail, wakeup call, room status, minibar, name and user profile template change features.

2. General Test Approach and Test Results

The feature test cases were performed manually. Calls were made from the PSTN and local users to various hospitality groups for testing of various features. The PMS tool was used to manually initiate check-in, check-out, and room change requests. The serviceability test cases were performed manually by disconnecting and reconnecting the Ethernet connection to FLAvoice.

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.

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Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interfaces between IP Office and FLAvoice included the encrypted Configuration Web Service and non-encrypted SIP user connections as requested by Global BHS.

2.1. Interoperability Compliance Testing

The compliance testing included feature and serviceability areas. The feature testing focused on verifying the following on FLAvoice.

- Registration of virtual SIP users.
- Voicemail recording, logging, and retrieval, with proper MWI activation/deactivation for users with SIP, digital, and analog telephone types.
- Scheduling and delivering of wake-up calls, including retried attempts and escalation to staff.
- Proper handling of room status and minibar calls.
- Use of Configuration Web Service to update guest name and user rights template associated with check-in, check-out, and room change requests.

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

2.2. Test Results

All test cases were executed and verified. The following is an observation on FLAvoice from the compliance testing.

- For guests with English as the chosen language, FLAvoice expects scheduled time for the wakeup call to be entered without any leading zero. For example, 2:30 is expected to be entered as “230”. When entered as “0230” with a leading zero, then the wakeup call was scheduled for 2:23.

2.3. Support

Technical support on FLAvoice can be obtained through the following:

- **Phone:** +1 (407) 501-7500
- **Email:** support@globalbhs.com
- **Web :** http://globalbhs.com/support

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3. Reference Configuration

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

The IP Office resources used in the compliance testing are shown in the table below.

Users	Extensions
Staff	20021 (Digital)
Guests	20001 (Analog), 20041 (SIP)

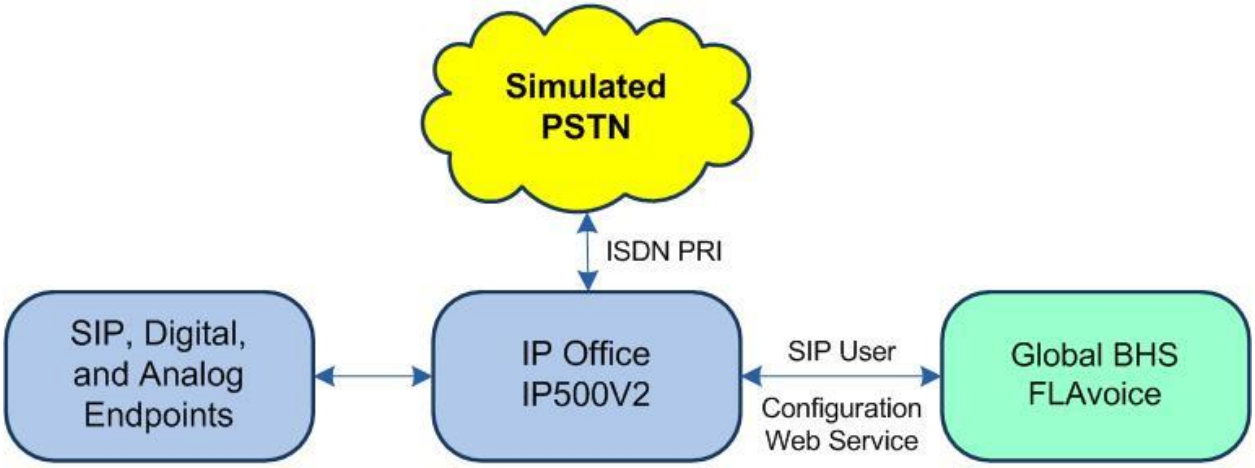

Figure 1: Compliance Testing Configuration

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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	11.1.0.1.0
Avaya J129 IP Deskphone (SIP)	4.0.6.0.8
Avaya 1408 Digital Deskphone	48.02
2500YMGK Analog Phone	NA
Global BHS FLAvoice • Abto VoIP SIP SDK for Windows (SIPVoipSDK.dll)	9.4.13 4.11.406.1

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

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5. Configure Avaya IP Office

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

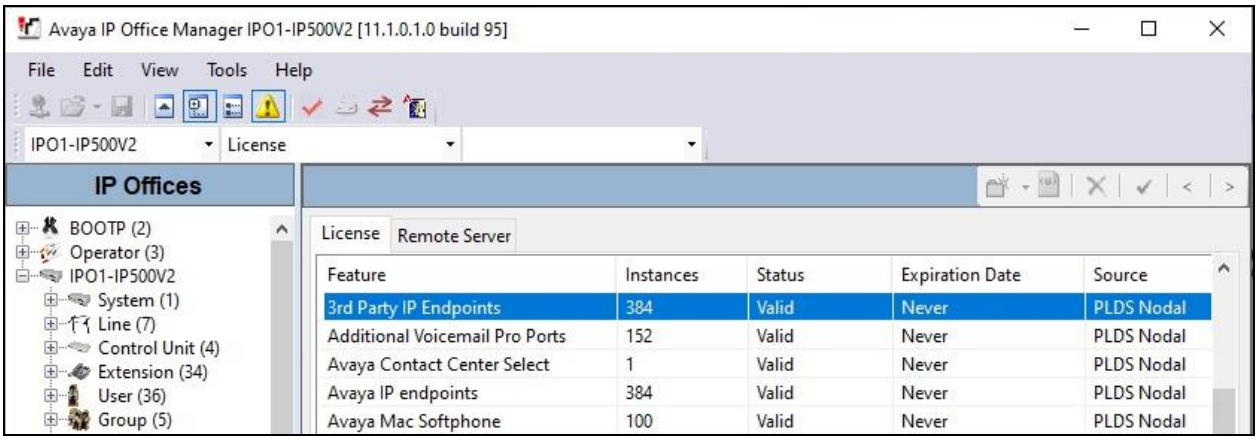
- Verify license
- Administer system LAN
- Administer SIP extensions
- Administer SIP users
- Administer hospitality groups
- Administer incoming call route
- Administer short codes
- Administer voicemail users
- Administer analog extensions
- Administer user rights
- Administer security settings

5.1. Verify License

From a PC running the IP Office Manager application, select **Start → 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 IPO1-IP500V2** screen is displayed, where **IPO1-IP500V2** is the name of the IP Office system.

From the configuration tree in the left pane, select **License** (not shown) to display a list of licenses in the right pane. Verify that there is sufficient license for **3rd Party IP Endpoints** and with license **Status** being "Valid", as shown below.



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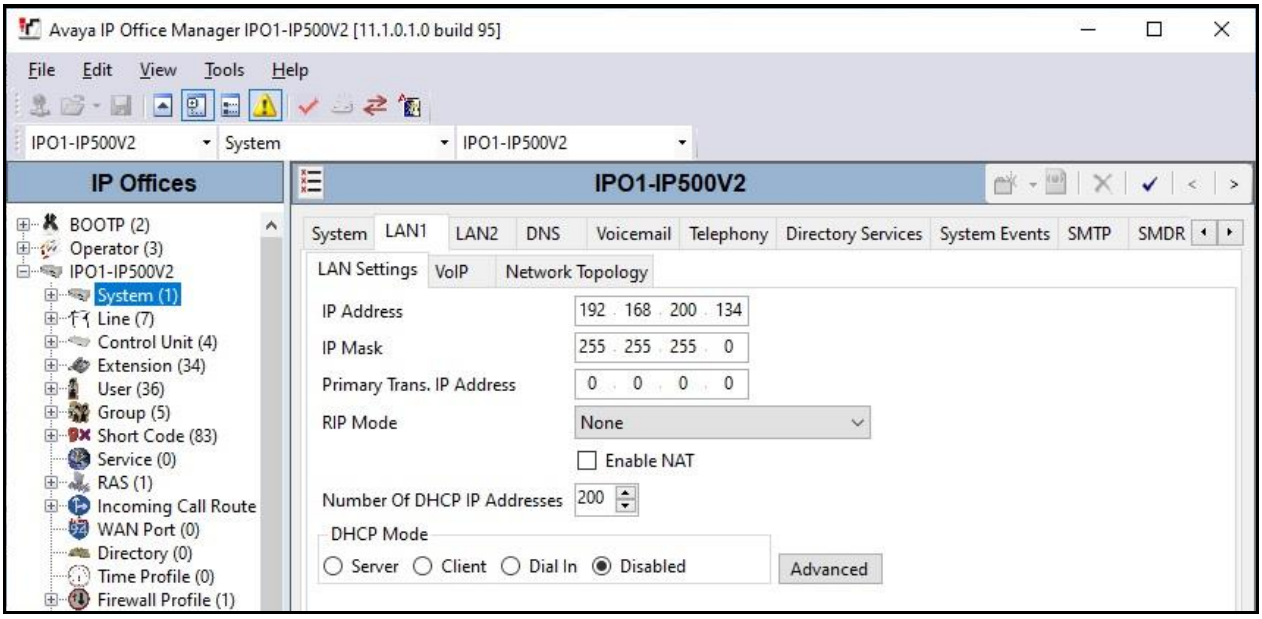
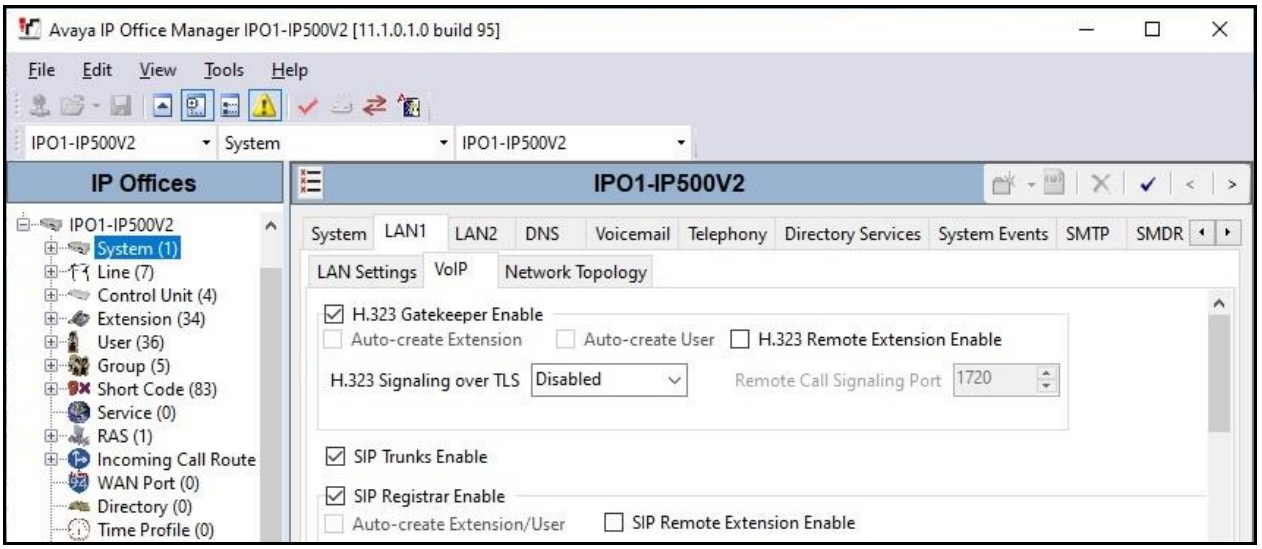
5.2. Administer System LAN

From the configuration tree in the left pane, select **System** to display the **IPO1-IP500V2** screen in the right pane.

Select the **LAN1** tab, followed by the **LAN Settings** sub-tab in the right pane. Make a note of the **IP Address**, which will be used later to configure FLAvoice. Note that IP Office can support SIP on the LAN1 and/or LAN2 interfaces, and the compliance testing used the LAN1 interface.



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



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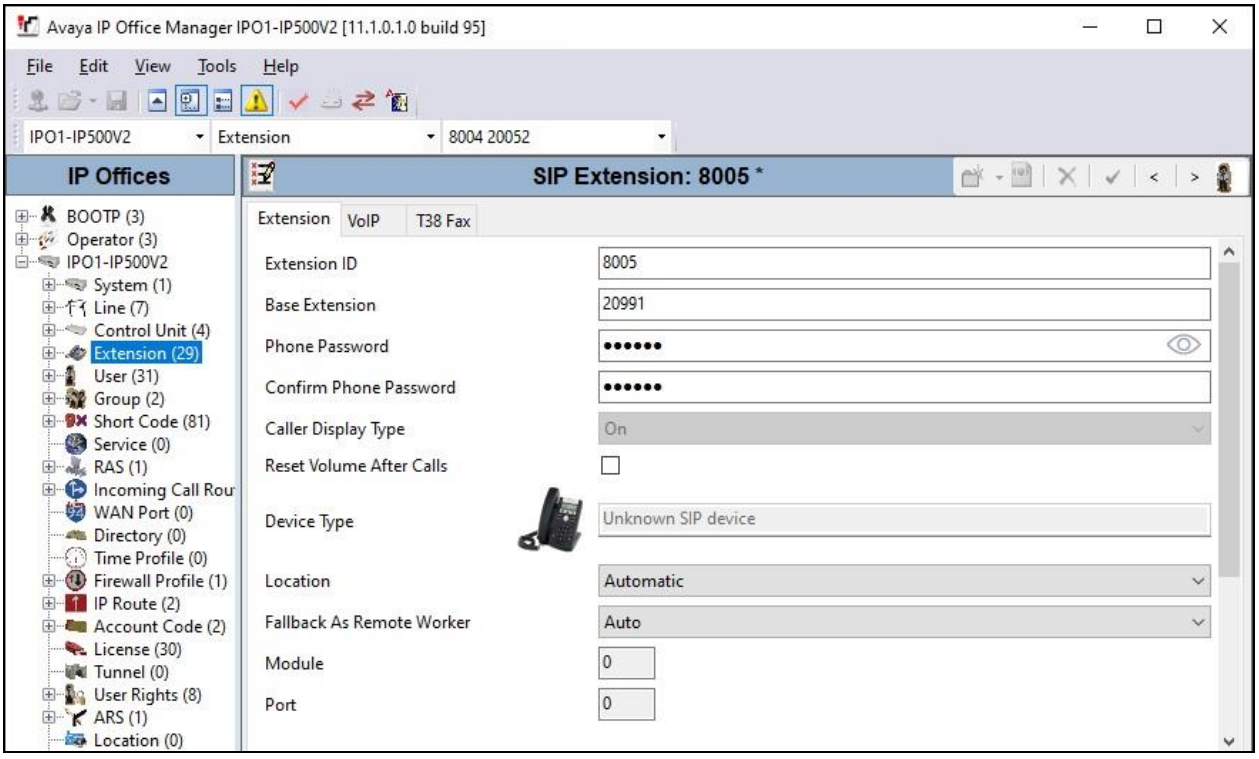
5.3. Administer SIP Extensions

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. Enter the following values for the specified fields and retain the default values for the remaining fields.

- **Base Extension:** An available extension number, in this case "20991".
- **Phone Password:** A desired password for authentication.
- **Confirm Phone Password:** The same desired password.



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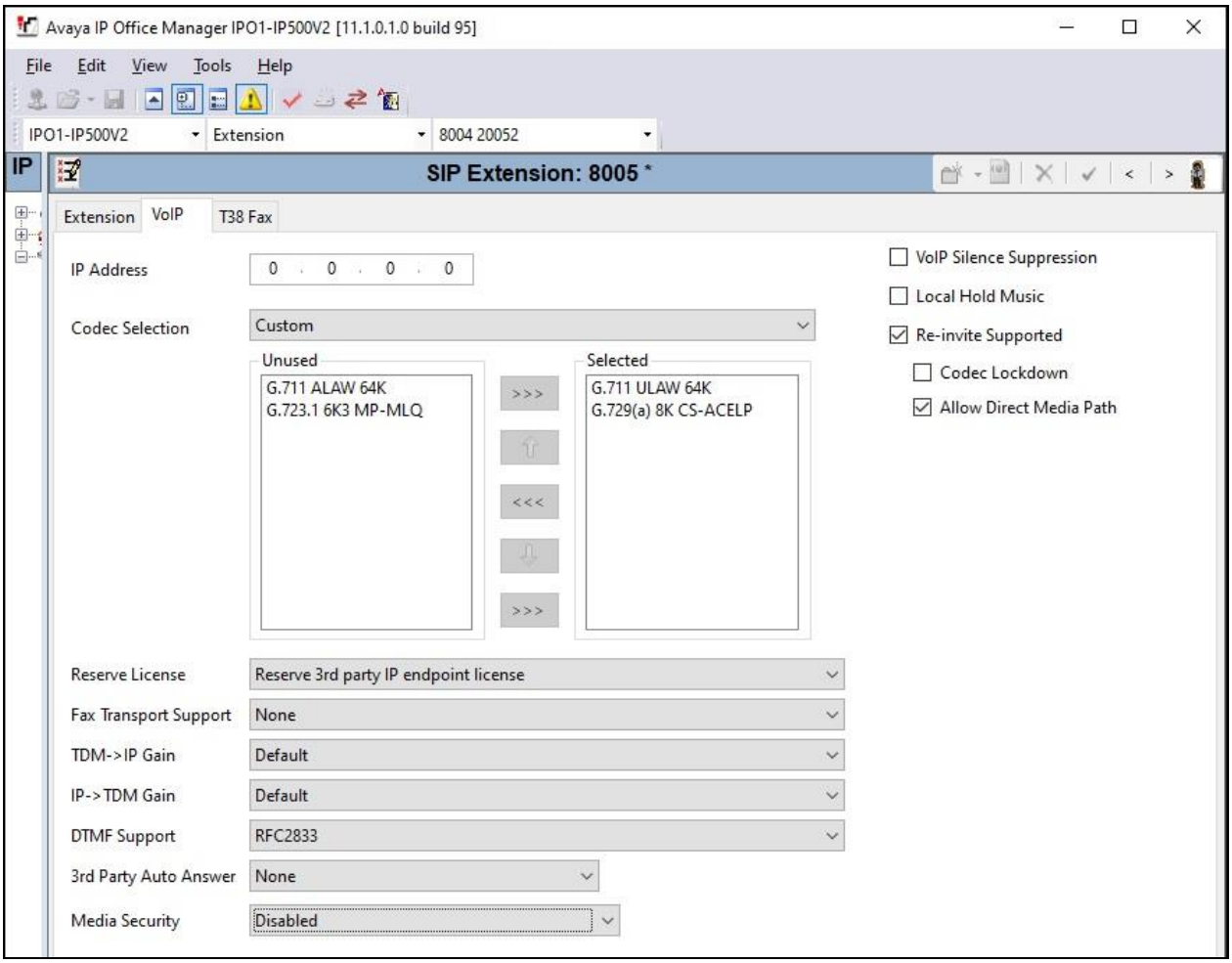
Select the **VoIP** tab. Enter the following values for the specified fields and retain the default values for the remaining fields.

- **Codec Selection:** "Custom"
- **Selected:** Retain G.729 and applicable G.711 codec variants.
- **Reserve License:** "Reserve 3rd party IP endpoint license"
- **Media Security:** "Disabled"

Repeat this section to add the desired number of SIP extensions. In the compliance testing, four SIP extensions with base extensions of 20991-20994 were created.



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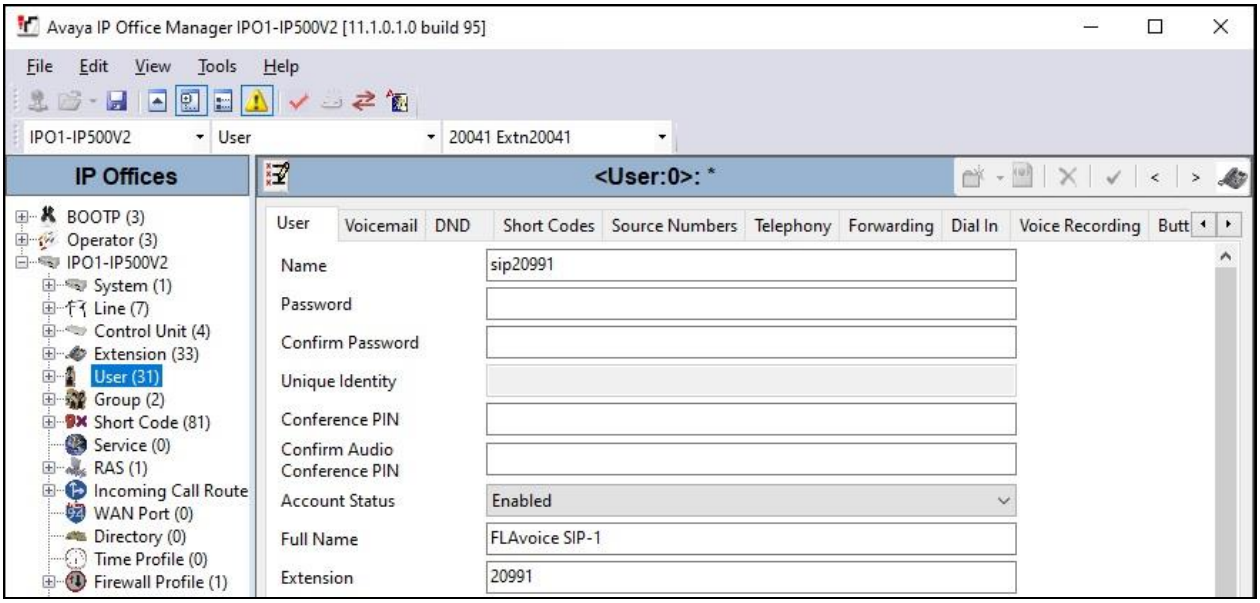
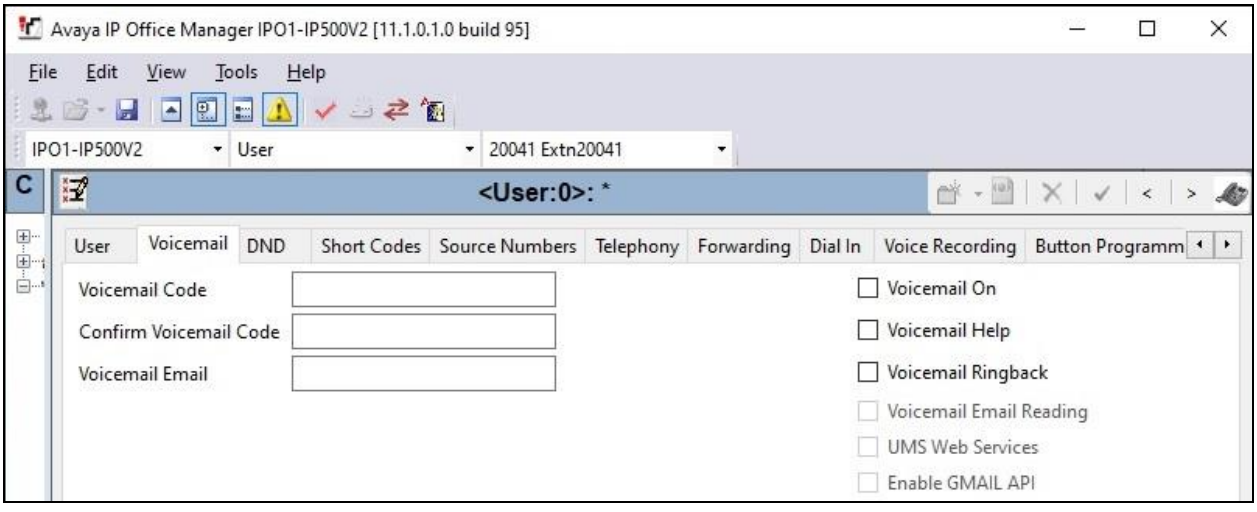
5.4. Administer SIP Users

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.

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.



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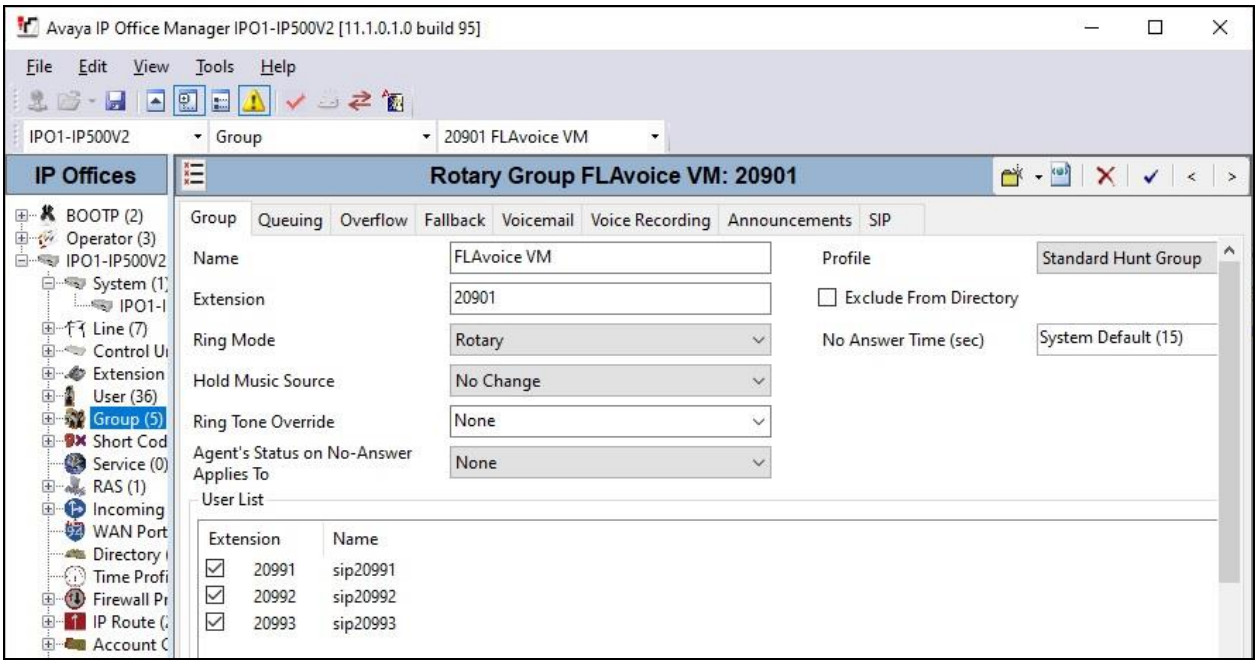
5.5. Administer Hospitality Groups

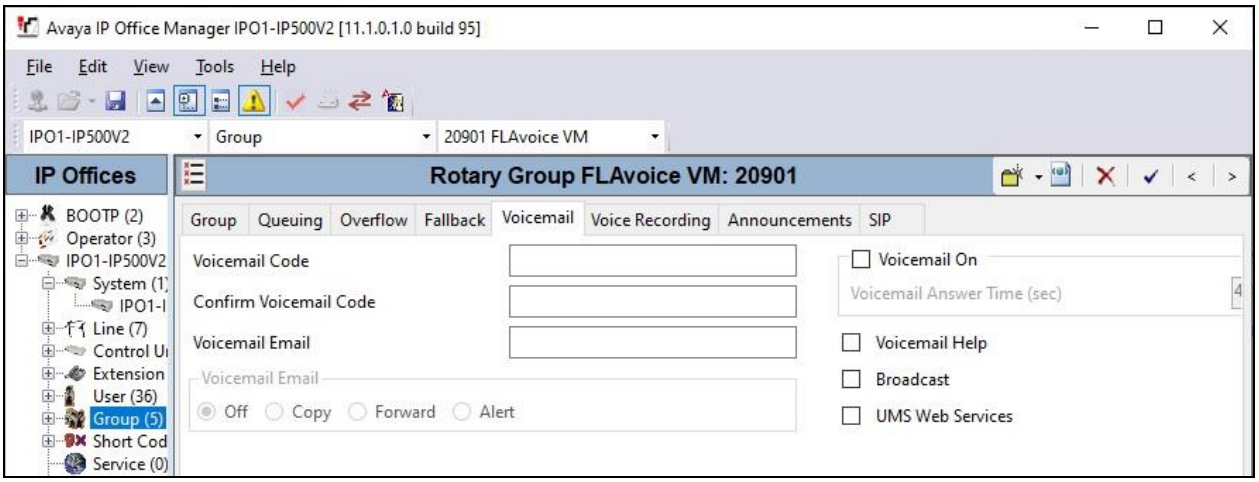
From the configuration tree in the left pane, right-click on **Group** and select **New** from the pop-up list to add a new group. This group will be used to deliver voicemail calls to FLAvoice.

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** sub-section, add the desired SIP users from **Section 5.4** as members, as shown below. In the compliance testing, three SIP users were configured as members.



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



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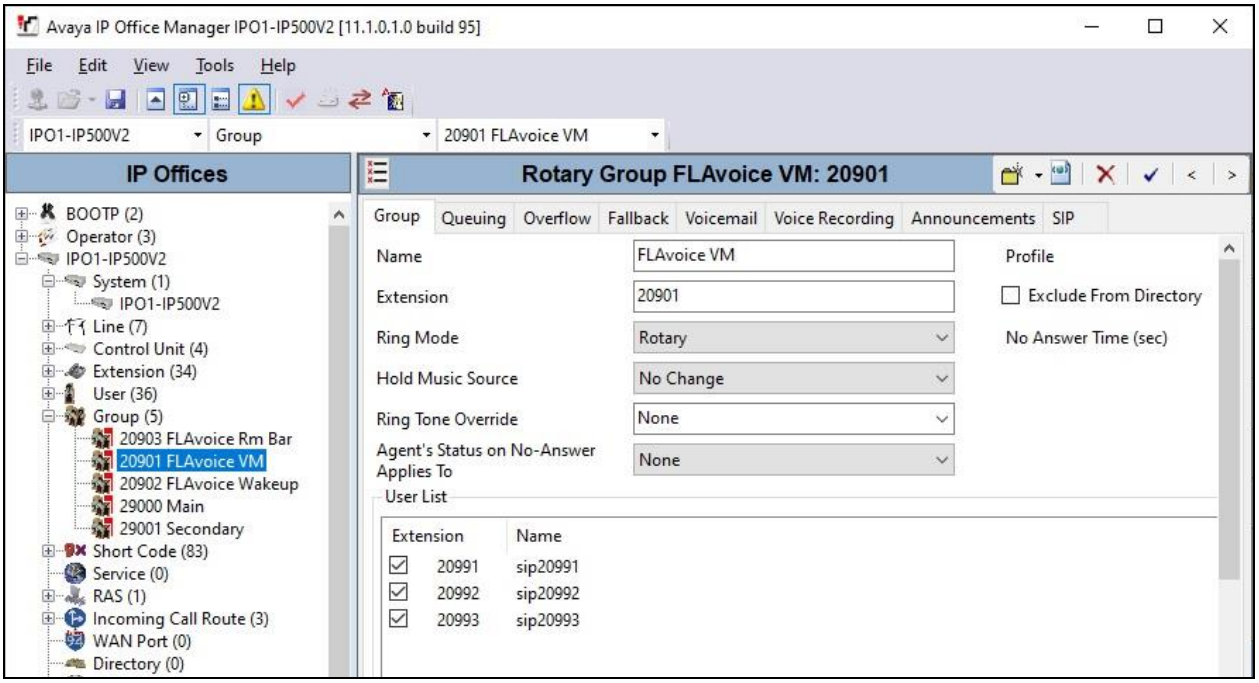
Repeat this section to create the groups shown below. In the compliance testing, these groups were configured with the same three SIP users and were used for delivering calls to FLAvoice for various hospitality features.

Extension	Name	Hospitality Feature
20901	FLAvoice VM	Voicemail
20902	FLAvoice Wakeup	Wakeup Call
20903	FLAvoice Rm Bar	Room Status and Minibar

The created groups are shown in the left pane of the screenshot below.



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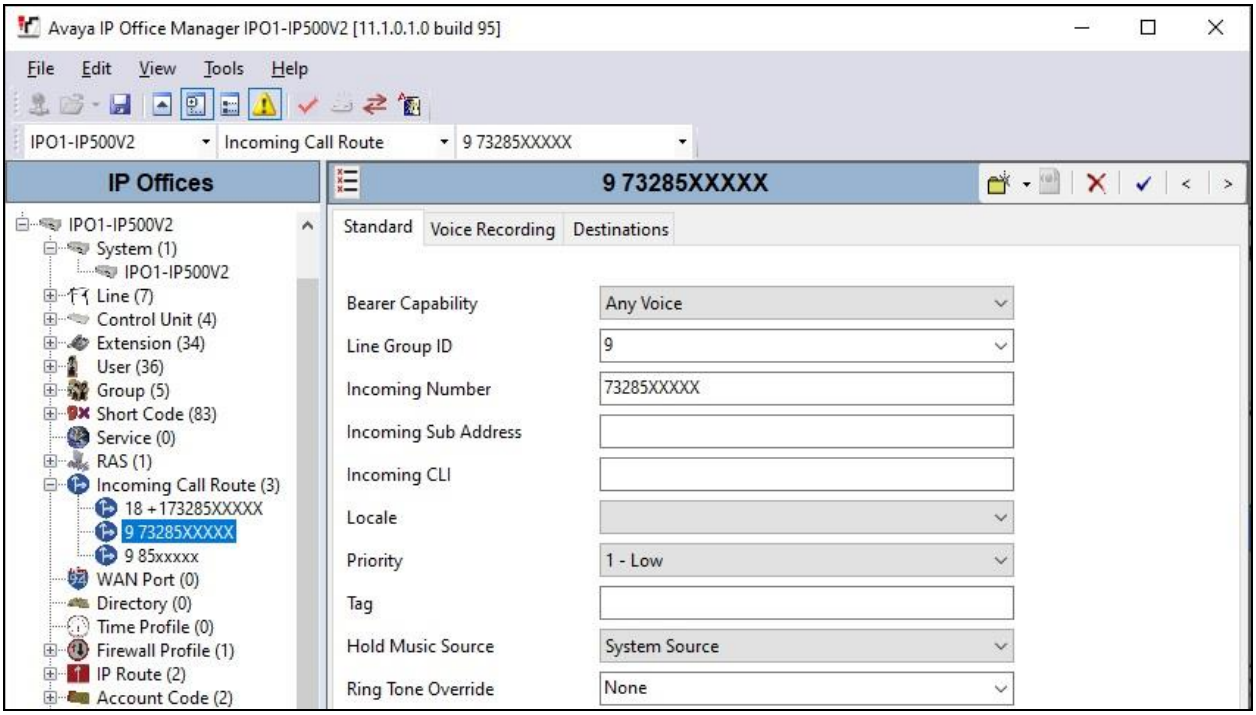
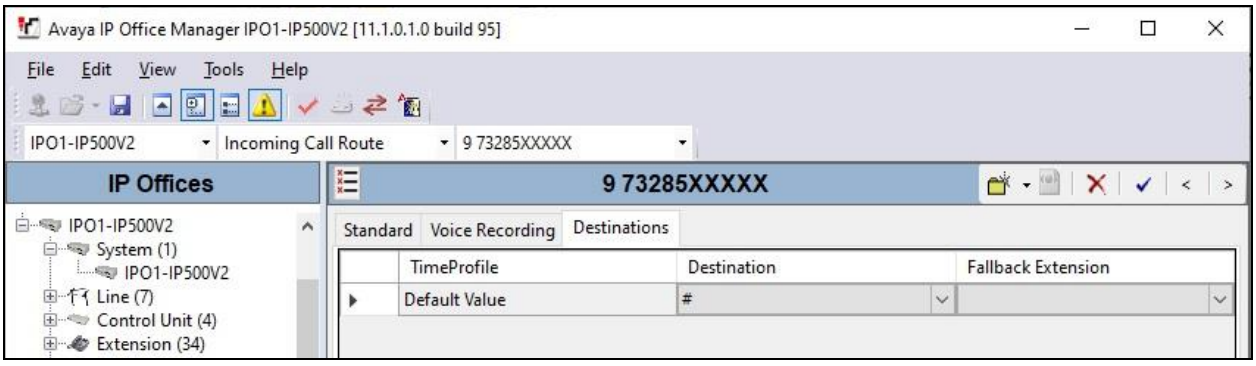
5.6. Administer Incoming Call Route

If necessary, create an incoming call route to route incoming calls to the hospitality groups. In the compliance testing, the pre-existing incoming call route for ISDN PRI line with the PSTN can route to any five-digits extension on IP Office.

As shown in the screen below, the **Incoming Number** for ISDN PRI line "9" was "73285XXXXX", which used five single digit wildcards "X" to allow the last five digits to be any number.



In the **Destinations** tab, the use of "#" in the **Destination** field enables routing to be based on "XXXXX" from the **Incoming Number** field above. Therefore, incoming calls to 7328520901 gets routed to the FLAvoice VM group with extension 20901 configured in **Section 5.5**.



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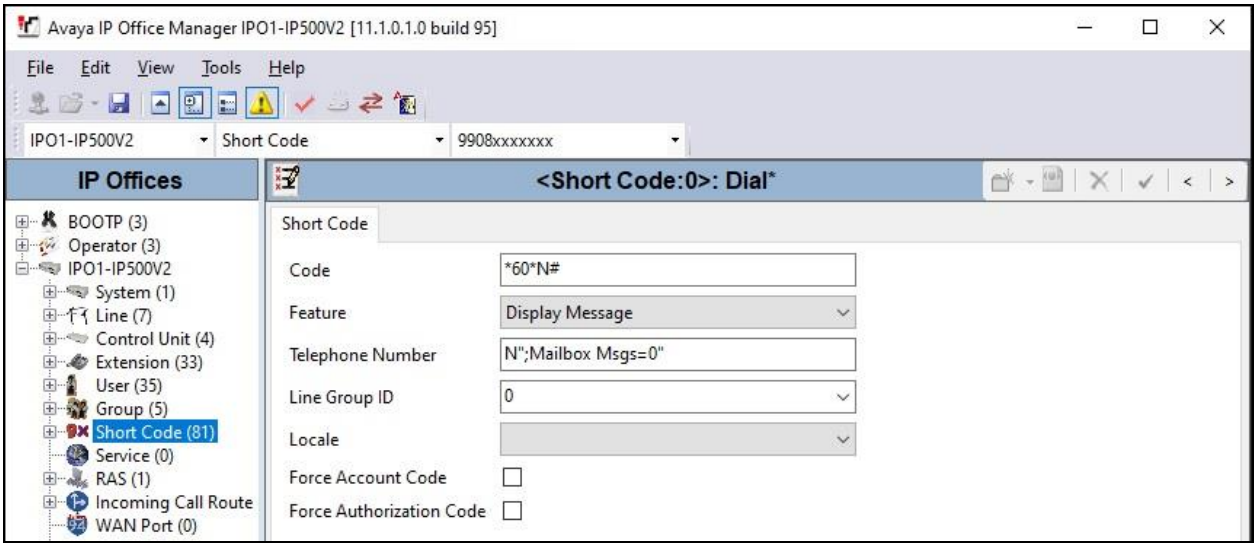
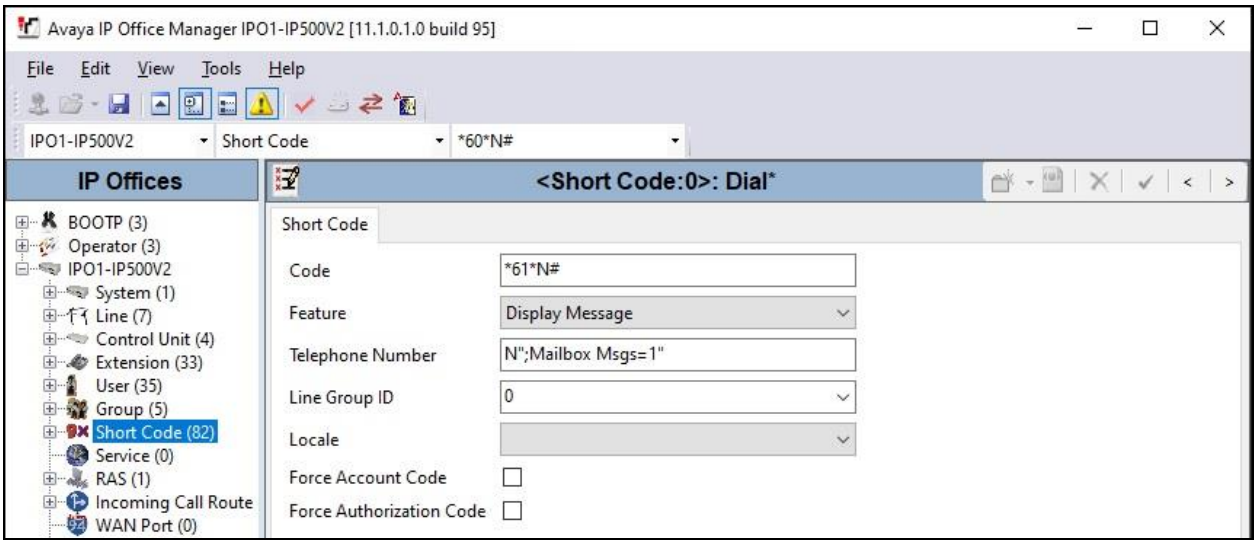
5.7. Administer Short Codes

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

For **Code** and **Telephone Number**, enter the values exactly as shown below, as required by FLAvoice. For **Feature**, select "Display Message". Retain the default values in the remaining fields.



Repeat this section to add another short code for activation of MWI, with values exactly as shown below. In the compliance testing, these two short codes are dialed by the fourth virtual SIP user dedicated for MWI activities.



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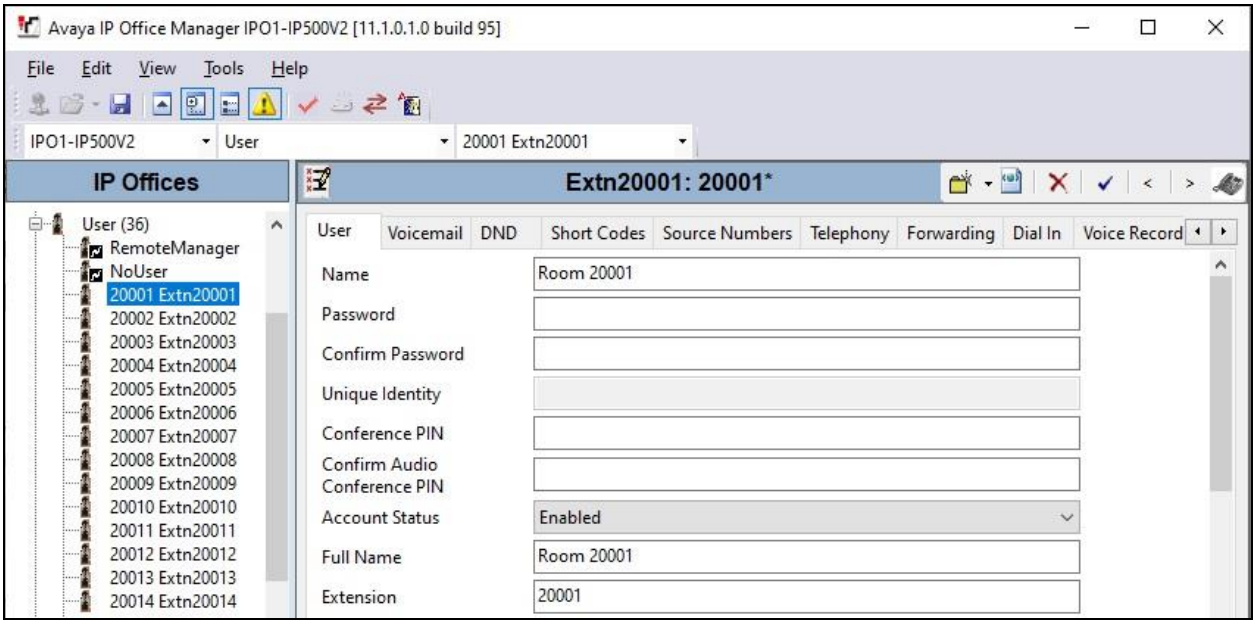
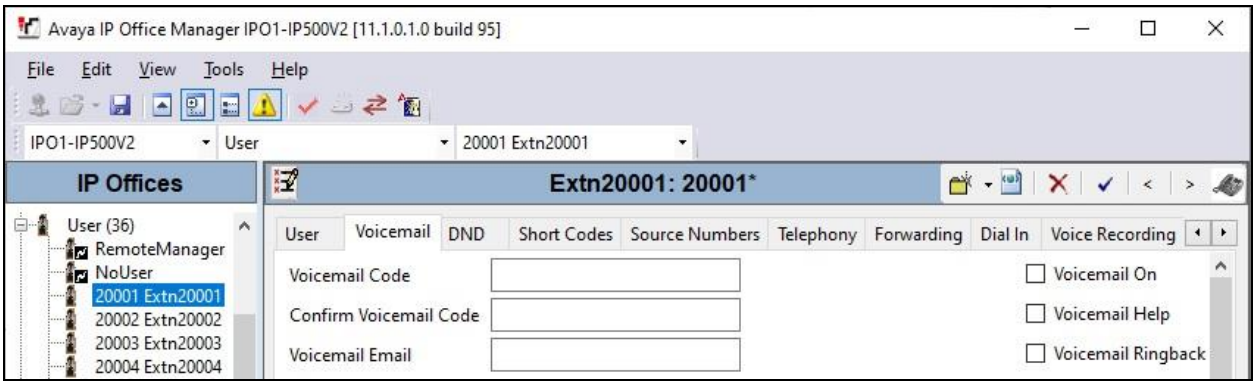
5.8. Administer Voicemail Users

From the configuration tree in the left pane, select the first user that will be using FLAvoice for voicemail, in this case "20001". Enter desired **Name** and **Full Name**. Retain the default values in the remaining fields.



Select the **Voicemail** tab. Uncheck **Voicemail On**, as shown below.



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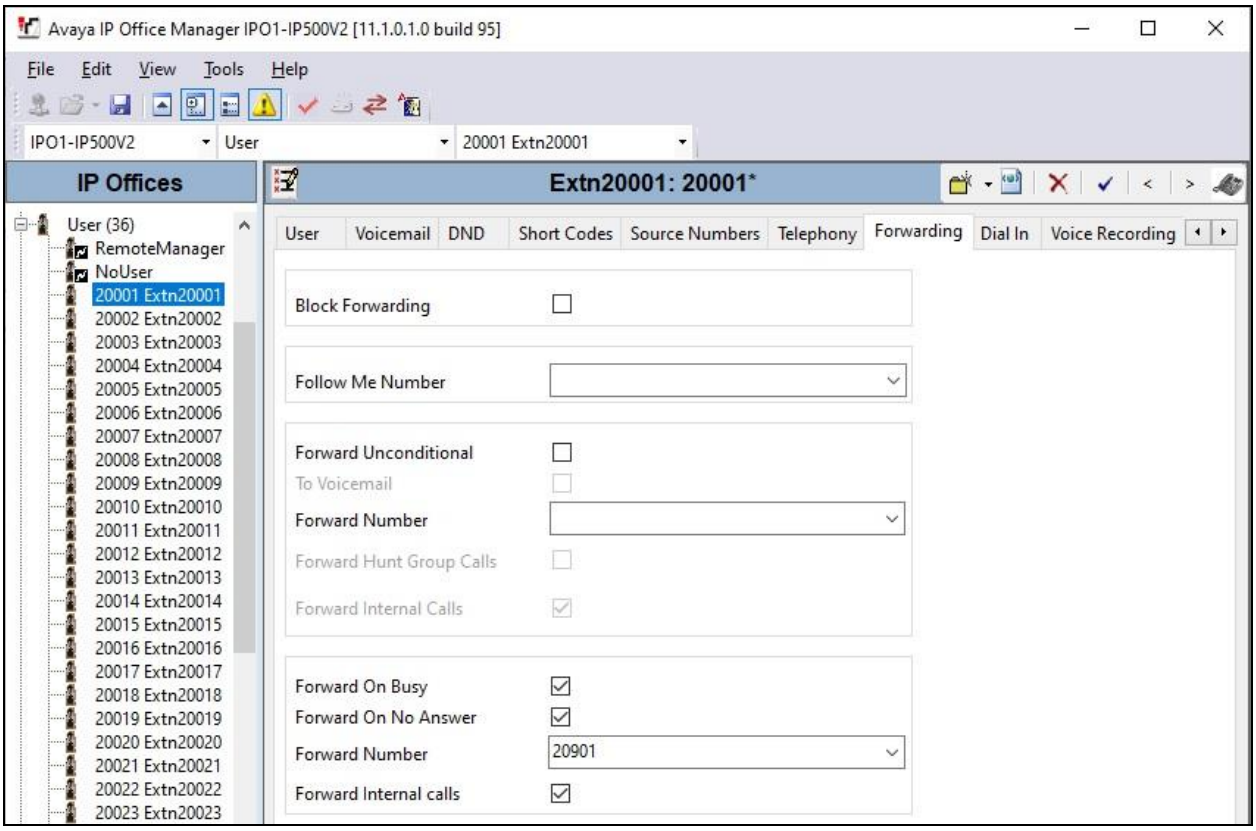
Select the **Forwarding** tab. Check **Forward On Busy**, **Forward On No Answer**, and **Forward Internal Calls**. For **Forward Number**, select the FLAvoice VM group extension from **Section 5.5**. Retain the default values in the remaining fields.

Repeat this section for all users using FLAvoice for voicemail. In the compliance testing, the voicemail users consisted of two guests with extensions 20001 and 20041, and one staff with extension 20021.



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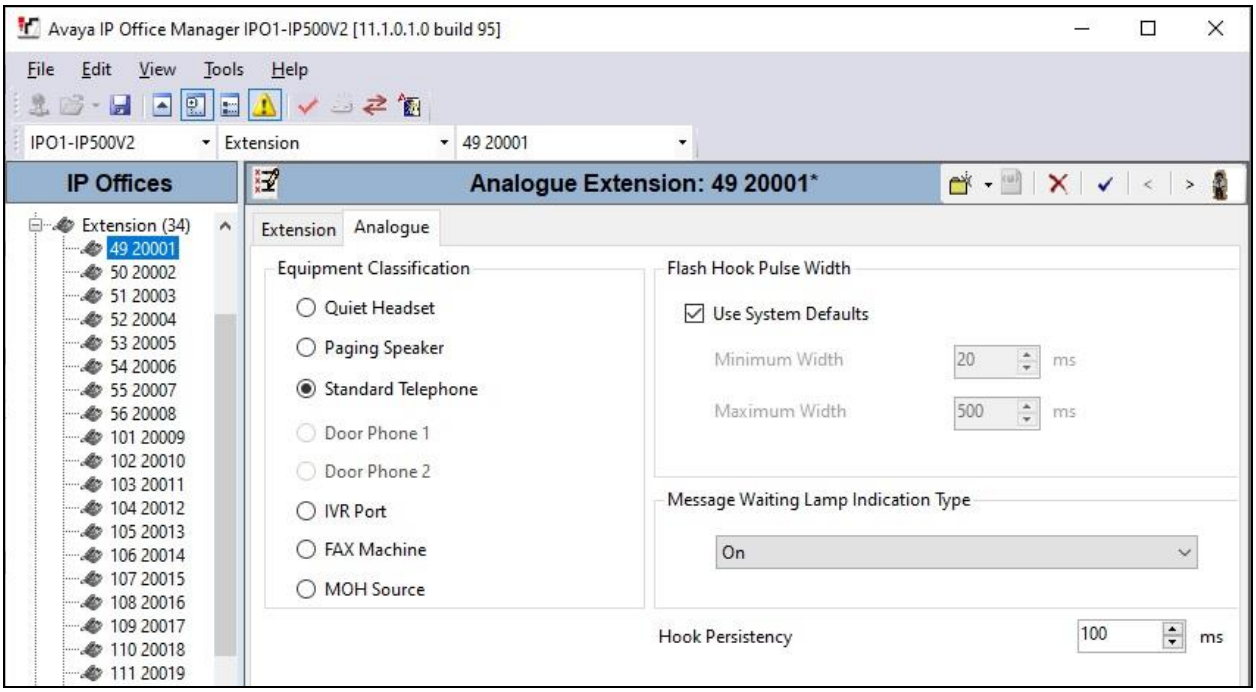
5.9. Administer Analog Extensions

For voicemail users with analog telephones, the MWI setting on the analog extension may need modification, depending on the type of the analog telephone. In the compliance testing, one analog telephone with type 2500YMGK was used, which required change to the default MWI setting.

From the configuration tree in the left pane, select **Extension**, followed by the extension corresponding to the analog telephone. In this case, the extension is "20001". Select the **Analogue** tab.

For **Message Waiting Lamp Indication Type**, select the proper MWI mode for the analog telephone, in this case "On".

Repeat this section to configure all analog extensions as necessary.



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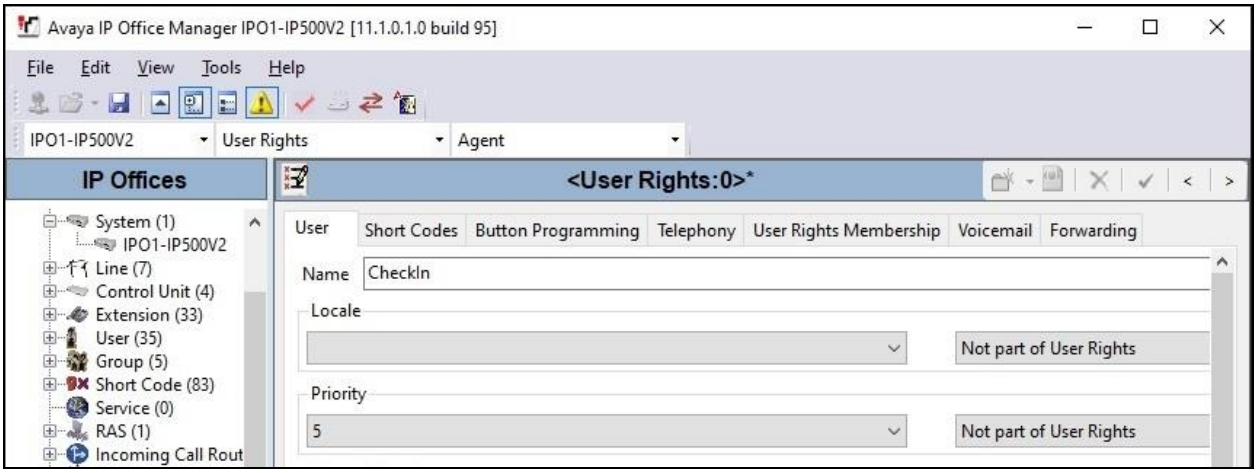
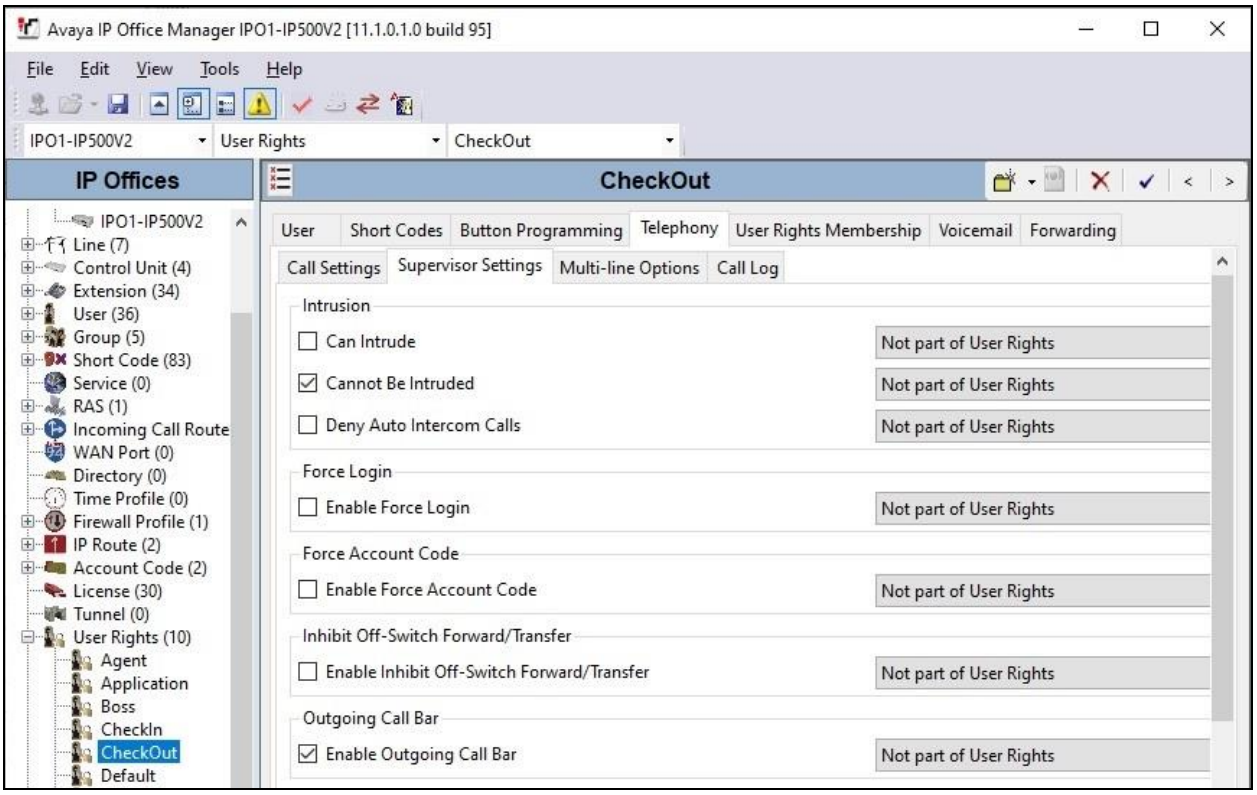
5.10. Administer User Rights

From the configuration tree in the left pane, right-click on **User Rights** (not shown) and select **New** to create a new user rights template. Enter a desired **Name** to designate user rights for guests in the check-in state and retain the default values in the remaining fields.



Create another user rights template to designate guests in the check-out state. For the check-out template, also select the **Telephony** tab and check **Enable outgoing call bar**, as shown below.



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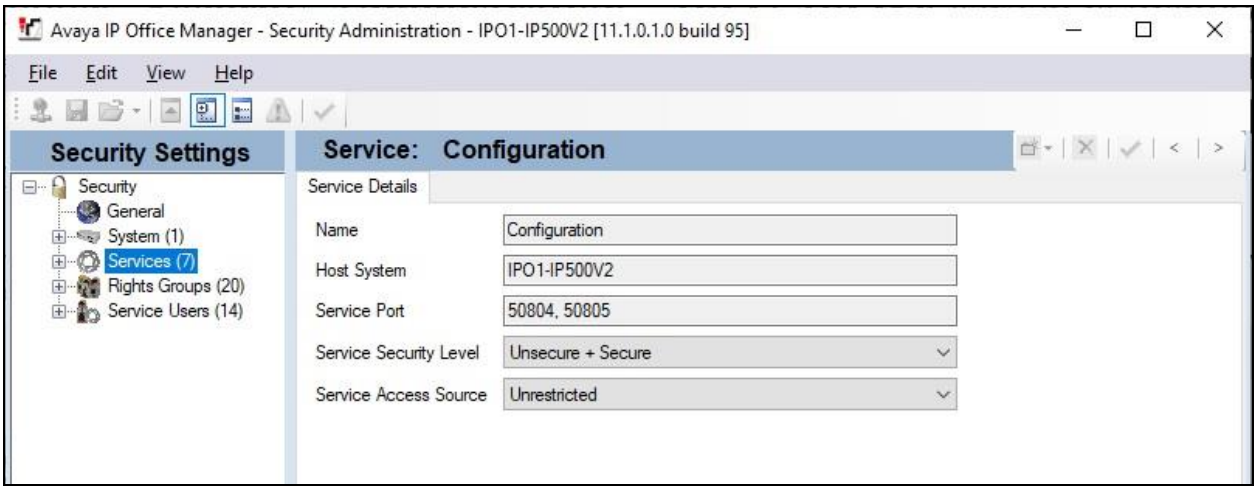
5.11. Administer Security Settings

Select **File → Advanced → Security Settings** from the top menu.

The **Avaya IP Office Manager– Security Administration** screen is displayed. From the configuration tree in the left pane, select **Security → Services** to display the **Service: Configuration** screen in the right pane.

For **Service Security Level**, select "Unsecure + Secure" as shown below. The additional "Secure" level is needed for the Configuration Web Service interface.



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6. Configure Global BHS FLAvoice

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

- Launch FLAvoice
- Administer PBX
- Administer channel functions
- Administer mailboxes
- Administer wakeup call
- Administer room status and minibar
- Administer integration with PMS
- Administer messages and notification settings

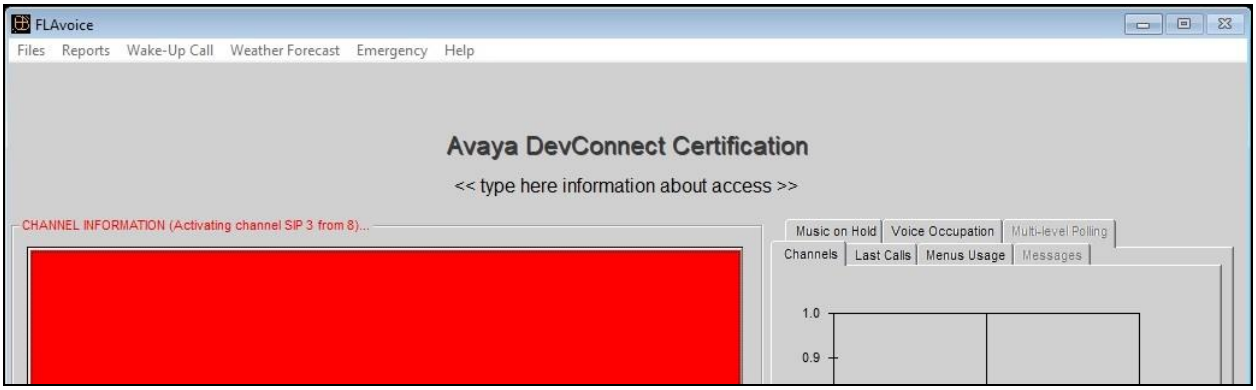
6.1. Launch FLAvoice

From the FLAvoice server, double-click on the **FLAvoice** icon shown below, which was created as part of installation.

The **FLAvoice** screen below is displayed, where "Avaya DevConnect Certification" is the customer name picked up from the applied license file as part of installation.

Select **Files → Unlock Access to Settings** from the top menu and enter the appropriate credentials in the subsequent screen (not shown) to unlock settings. The **FLAvoice** screen is displayed again and updated to allow access to settings.

Select **File → Settings** from the top menu.



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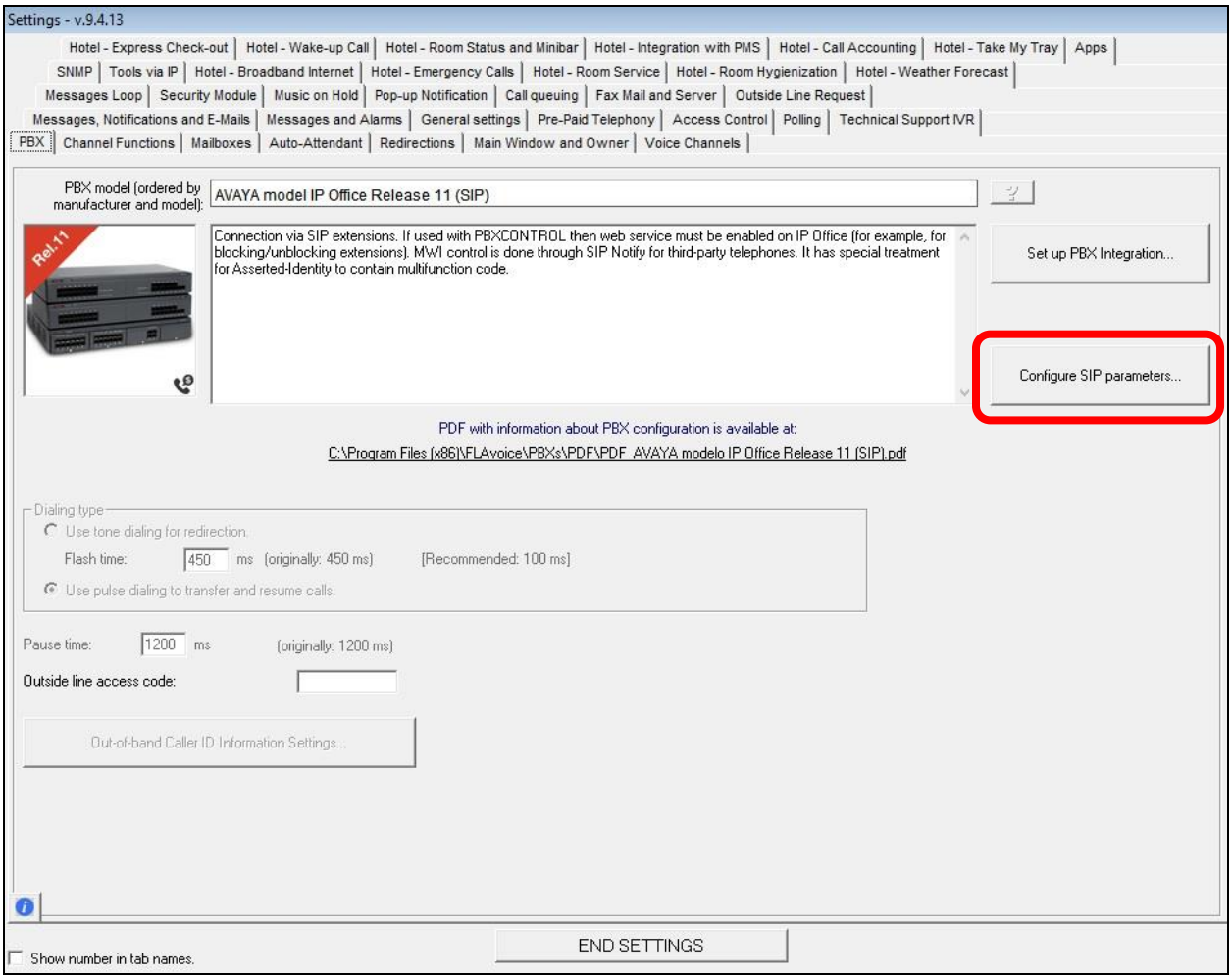
6.2. Administer PBX

The **Settings** screen is displayed. Select the **PBX** tab. For **PBX model**, select the value shown below. Retain the default values in the remaining fields and click **Configure SIP parameters**.



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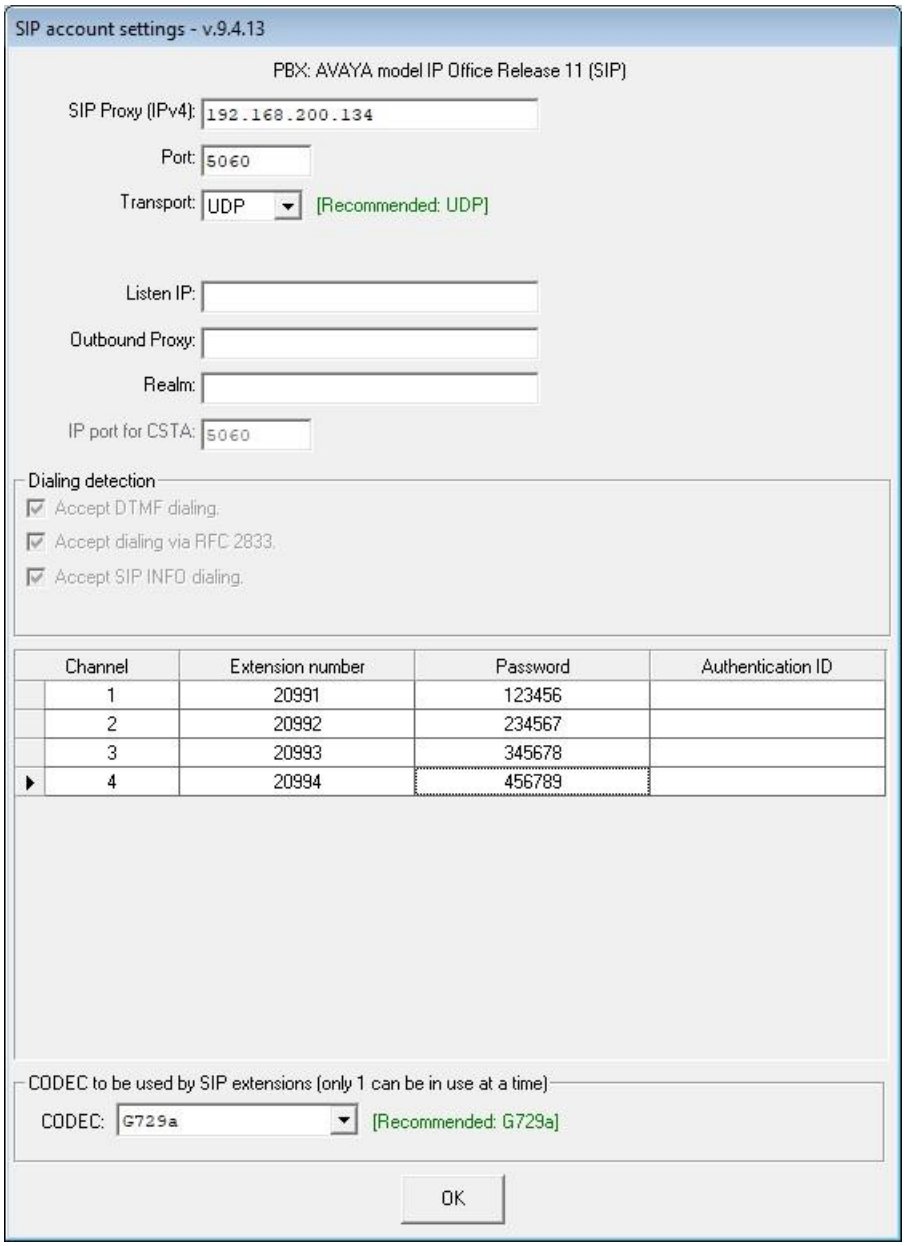
The **SIP account settings** screen is displayed. For **SIP Proxy**, enter the pertinent LAN IP address of IP Office from **Section 5.2**. For **UDP Port**, enter "5060". In the channel entries sub-section, enter the extension and password of each SIP extension from **Section 5.3**. Retain the default values in the remaining fields.



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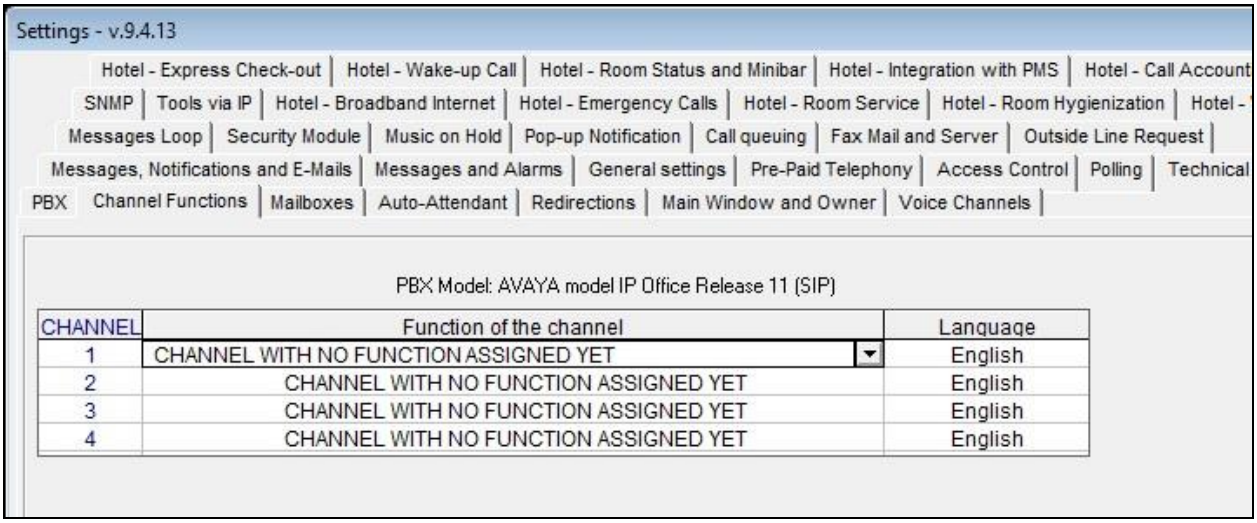
6.3. Administer Channel Functions

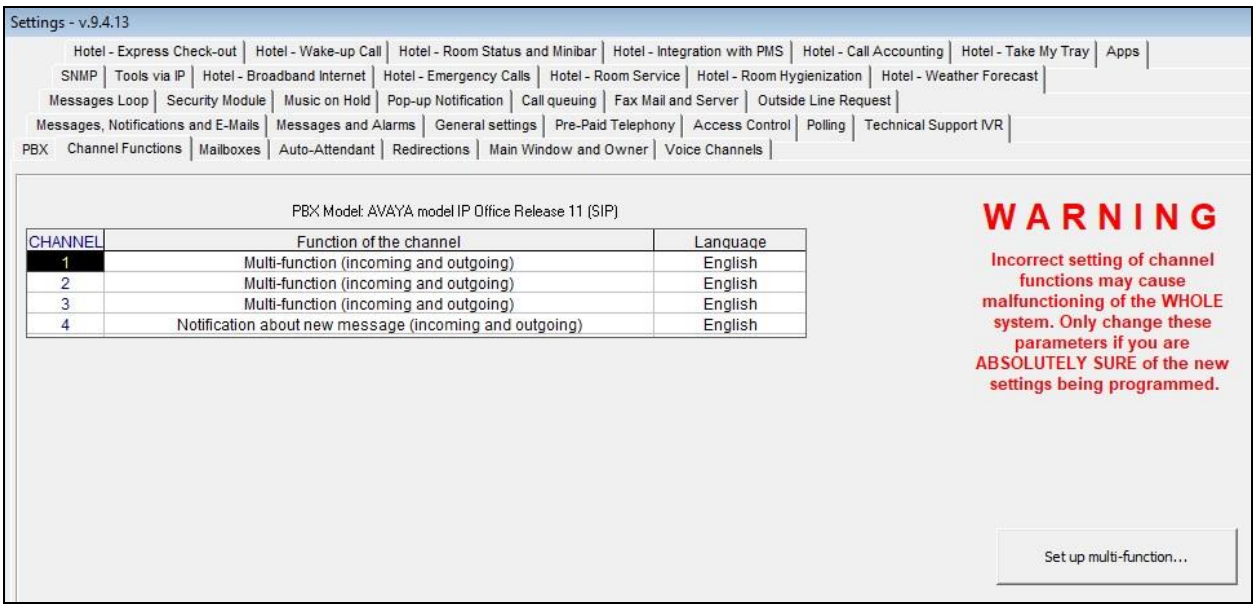
The **Settings** screen is displayed again. Select the **Channel Functions** tab to display the screen shown below.

Click the **Function of the channel** field for the first channel and select pertinent function value from the drop-down list. Repeat as necessary for remaining channels.



In the compliance testing, the first three channels correspond to the first three SIP extensions in **Section 5.3** and were configured for multi-function; the fourth channel corresponds to the fourth SIP extension in **Section 5.3** and was configured for MWI activities.

Click **Set up Multi-function**.



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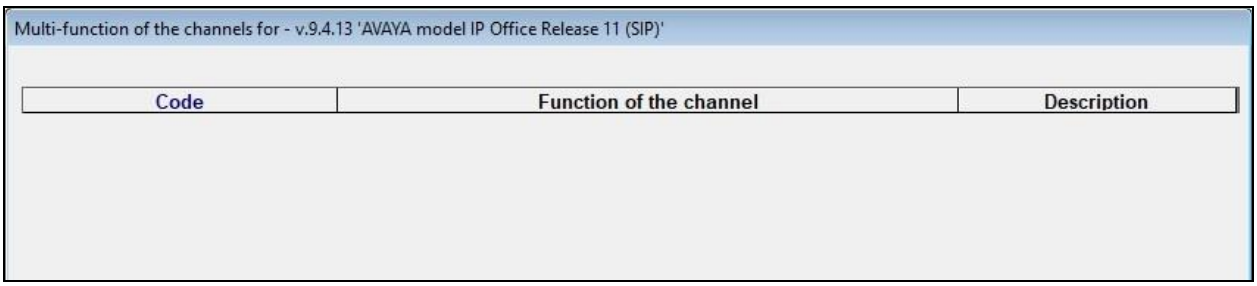
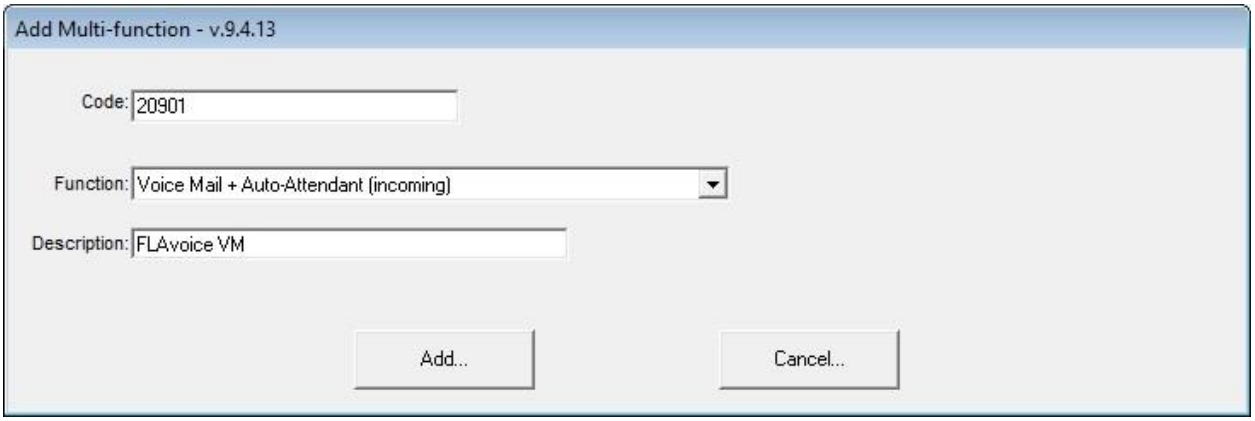
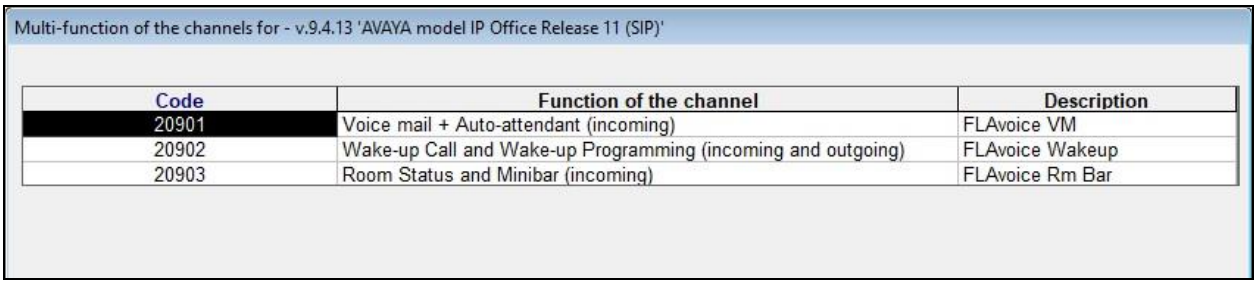
The **Multi-function of the channels for** screen is displayed. Click **Include** (not shown).



The **Add Multi-function** screen is displayed next. For **Code**, enter the first hospitality group extension from **Section 5.5**. For **Function**, select the applicable function. For **Description**, enter the first hospitality group name from **Section 5.5**. Note that the group name must match exactly, as required by FLAvoice.



Repeat and add a multi-function for each hospitality group extension from **Section 5.5**. In the compliance testing, three entries were created as shown below.



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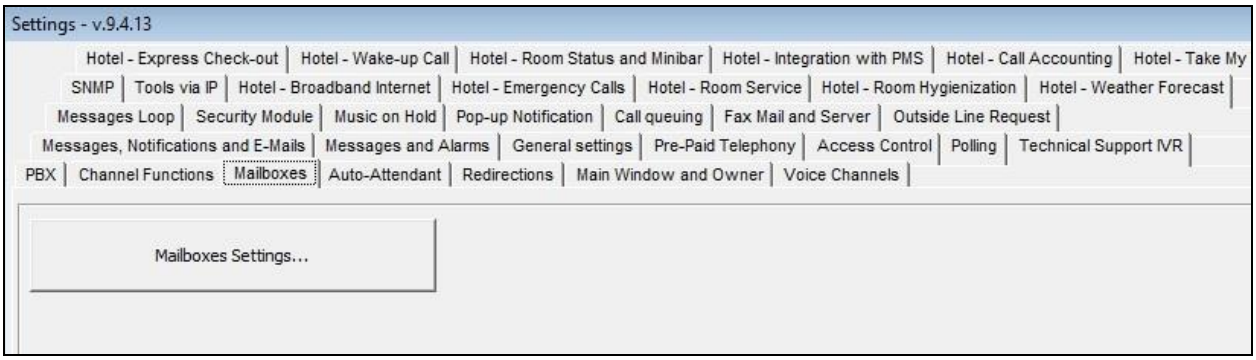
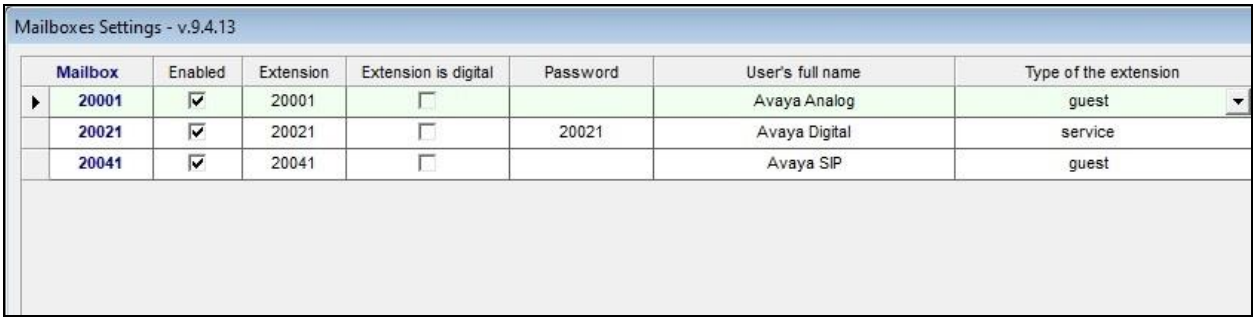
6.4. Administer Mailboxes

From the **Settings** screen, select the **Mailboxes** tab to display the screen below. Click **Mailboxes Settings**.



Follow reference **[2]** to create a mailbox for each staff and guest extension from **Section 3**. Set **Type of the extension** to "guest" for guest mailboxes and to "service" for staff mailbox, as shown below.



Mailbox	Enabled	Extension	Extension is digital	Password	User's full name	Type of the extension
20001	☑	20001	☐		Avaya Analog	guest
20021	☑	20021	☐	20021	Avaya Digital	service
20041	☑	20041	☐		Avaya SIP	guest

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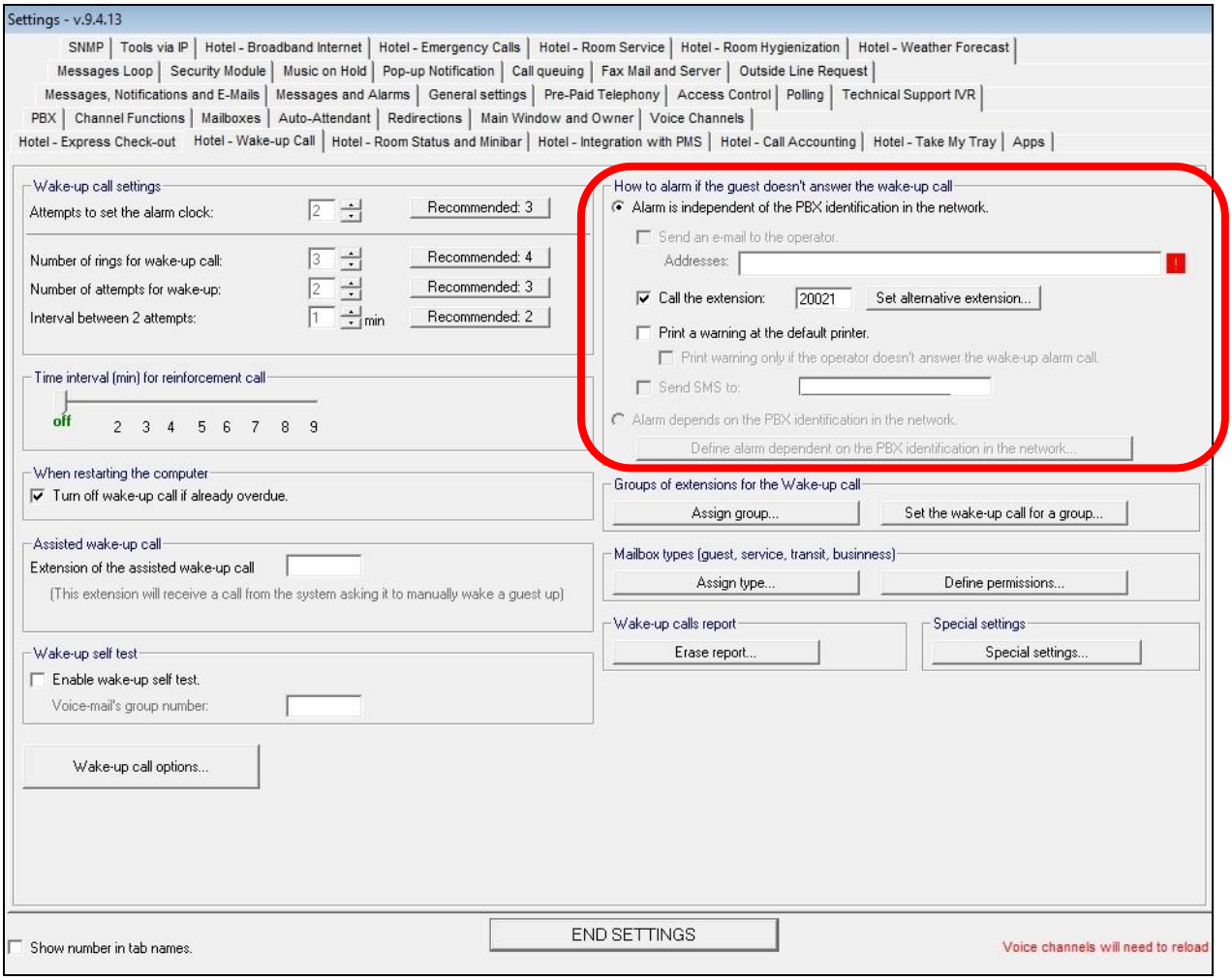
6.5. Administer Wakeup Call

From the **Settings** screen, select the **Hotel – Wake-up Call** tab to display the screen below. Configure the **Wake-up call settings** sub-section as desired.

In the **How to alarm if the guest doesn't answer the wake-up call** sub-section, check **Call the extension**, and enter the staff extension from **Section 3** as shown below. Retain the default values in the remaining fields.



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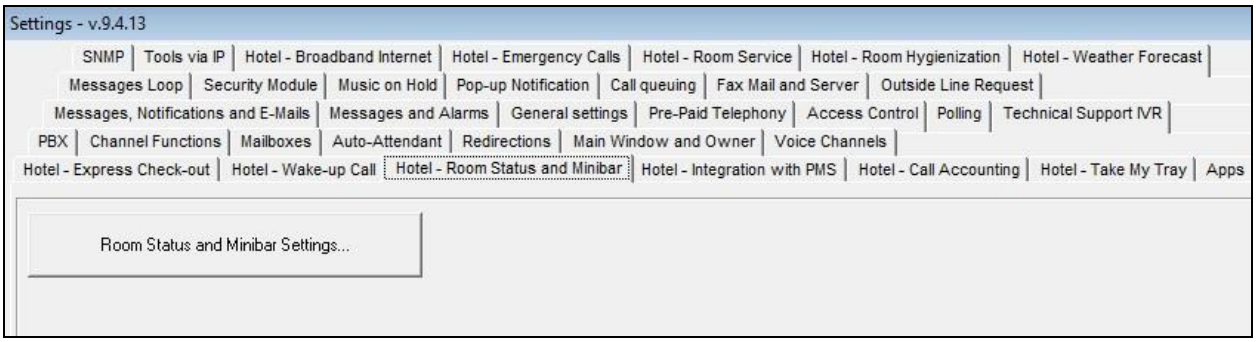
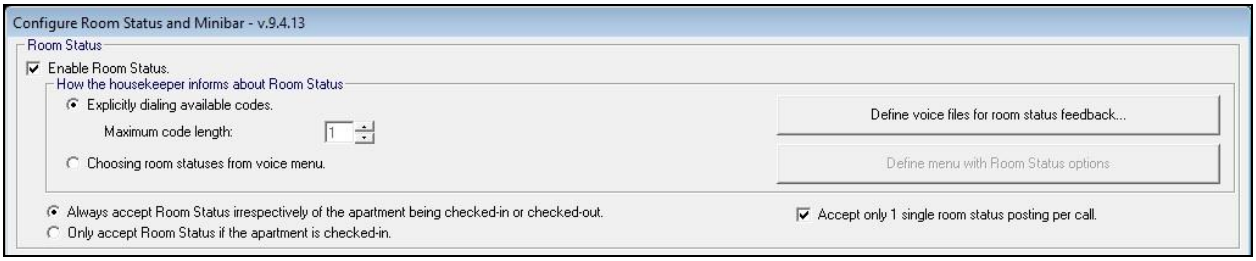
6.6. Administer Room Status and Minibar

From the **Settings** screen, select the **Hotel – Room Status and Minibar** tab to display the screen below. Click **Room Status and Minibar Settings**.

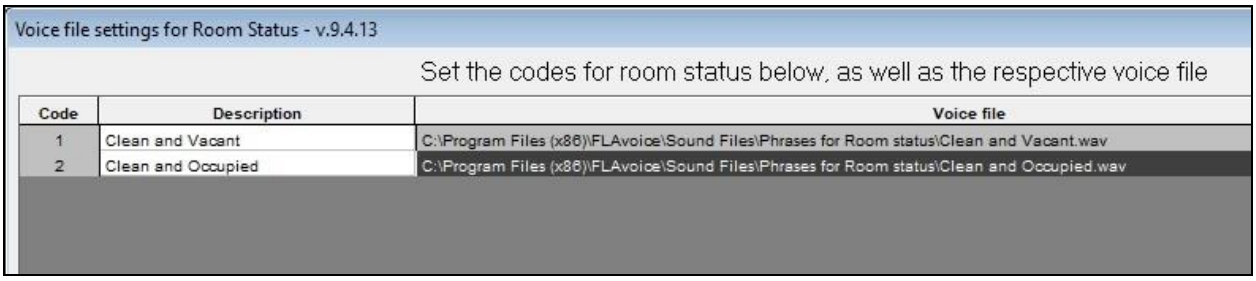


6.6.1. Room Status

The **Configure Room Status and Minibar** screen is displayed. In the **Room Status** sub-section, check **Enable Room Status** and retain the default values in the remaining fields. Select **Define voice files for room status feedback**.



The **Voice file settings for Room Status** screen is displayed next. Follow reference **[2]** to create desired room status and corresponding voice files. In the compliance testing, two room status entries were created as shown below.



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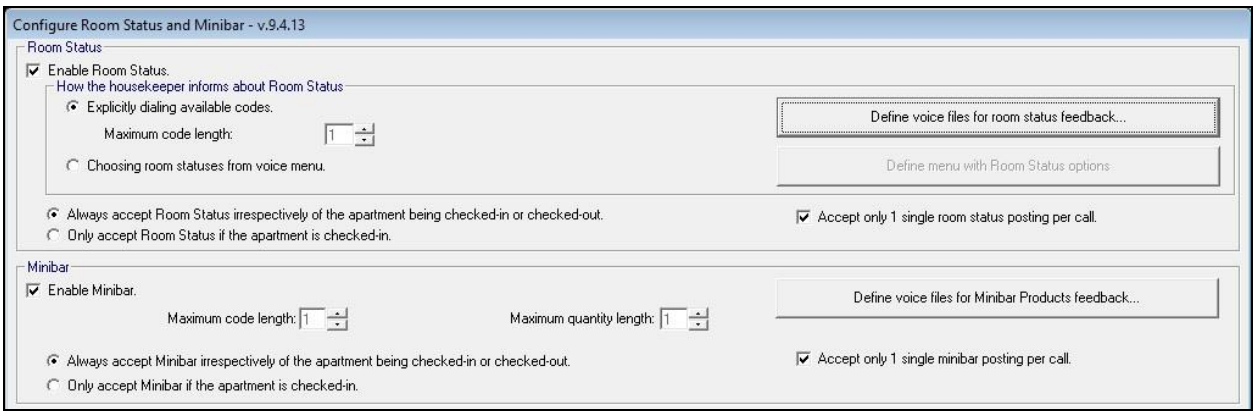
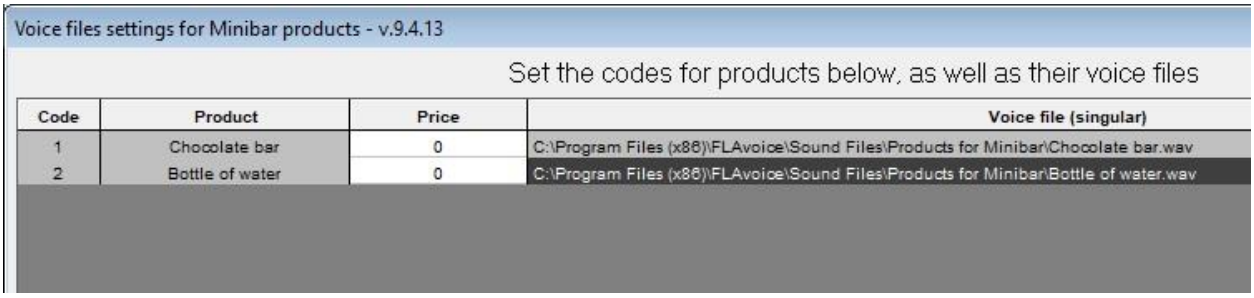
6.6.2. Minibar

The **Configure Room Status and Minibar** screen is displayed again. In the **Minibar** sub-section, check **Enable Minibar** and retain the default values in the remaining fields. Select **Define voice files for Minibar Products feedback**.



The **Voice file settings for Minibar products** screen is displayed next. Follow reference **[2]** to create desired minibar products and corresponding voice files. In the compliance testing, two minibar entries were created as shown below.



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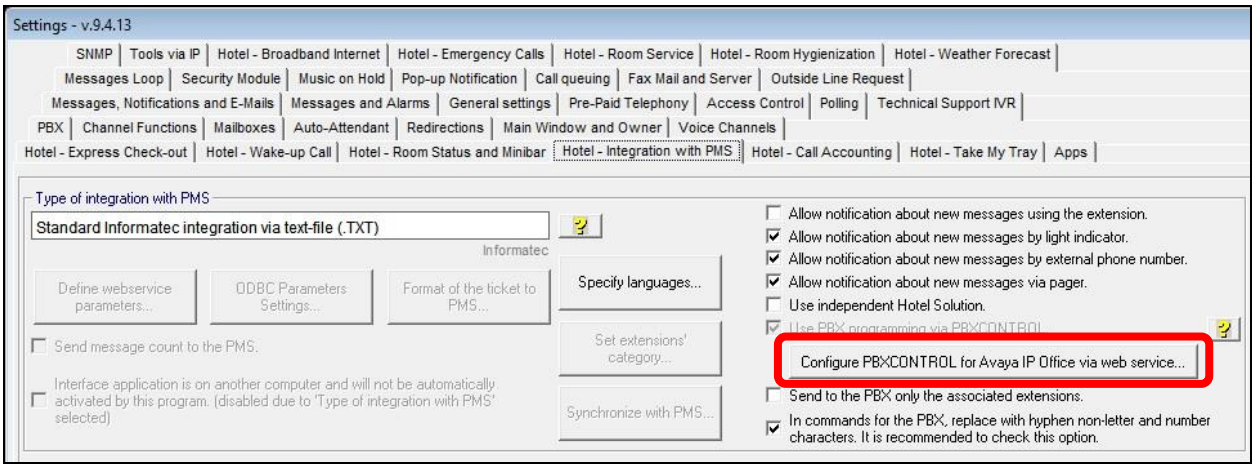
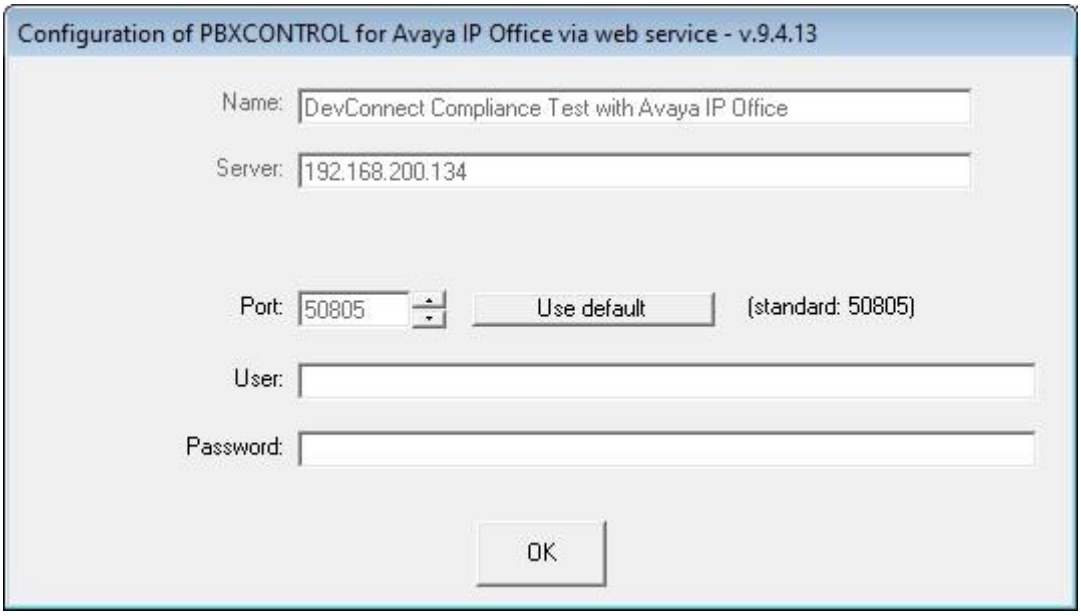
6.7. Administer Integration with PMS

From the **Settings** screen, select the **Hotel – Integration with PMS** tab to display the screen below. Select **Configure PBXCONTROL for Avaya IP Office via web service**.



The pop-up screen below is displayed. For **User** and **Password**, enter the pertinent administrative credentials for IP Office.



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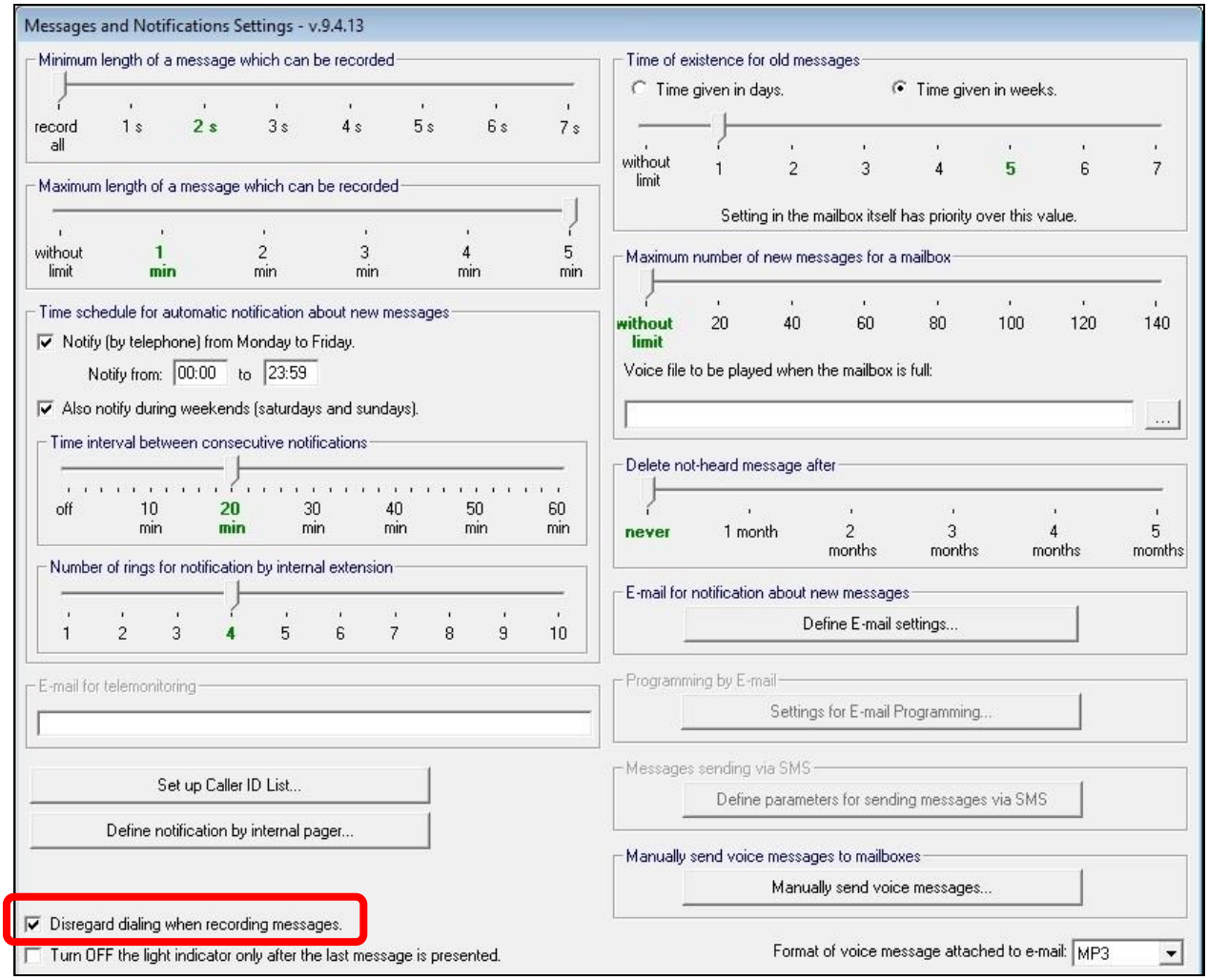
6.8. Administer Messages and Notification Settings

From the **Settings** screen, select the **Messages, Notifications and E-Mails** tab to display the screen below. Click on **Messages, Notifications and E-Mails Settings**.

The **Messages and Notifications Settings** screen is displayed. Check **Disregard dialing when recording messages** as shown below.



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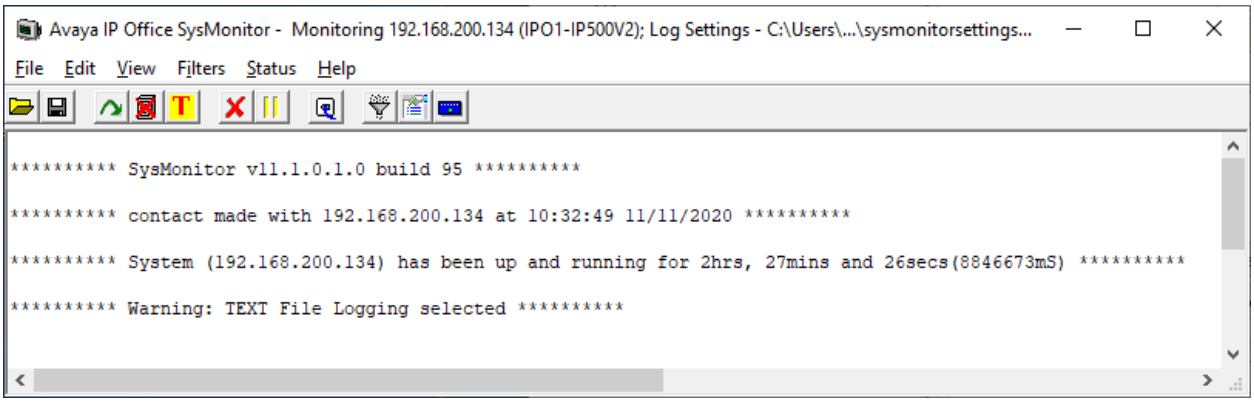
7. Verification Steps

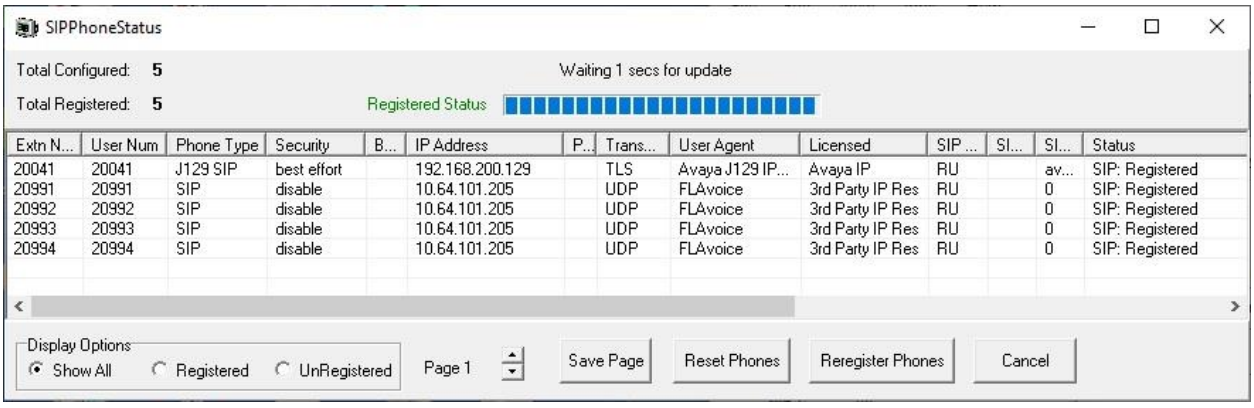
This section provides the tests that can be performed to verify proper configuration of IP Office and FLAvoice.

7.1. Verify SIP User Integration

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. Select **Status → SIP Phone Status** from the top menu.



The **SIPPhoneStatus** screen is displayed. Verify that there is an entry for each SIP user from **Section 5.4**, that the **User Agent** is "FLAvoice", and that the **Status** is "SIP: Registered", as shown below. Place a call from a guest room to any hospitality groups in **Section 5.5**. Verify that the calling party hears the proper announcement from FLAvoice.



7.2. Verify Configuration Web Service Integration

Use the FLAvoice PMS tool to perform a guest check-in. Verify that the guest name and user rights template is updated properly on IP Office.

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8. Conclusion

These Application Notes describe the configuration steps required for Global BHS FLAvoice 9.4.13 to successfully interoperate with Avaya IP Office 11.1. 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 11.1, Issue 1, April 2020, available at http://support.avaya.com.

2. *FLAvoice USER'S MANUAL*, 9.3.1, available from http://www.globalbhs.com/suporte/.

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