Avaya Solution & Interoperability Test Lab

Application Notes for Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations with Avaya IP Office - Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate the Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations with Avaya IP Office. Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations registered with Avaya IP Office via SIP. Although not explicitly tested, these Application Notes would also apply to the Talkaphone Wide-Area Emergency Broadcast System (WEBS®) Series Devices, which leverage the same electronics and firmware with a similar subset of features (e.g. paging only with no two-way communication) as the VOIP-500 Series and VOIP-600 Series Phones but differ in form factor and packaging.

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 to integrate the Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations with Avaya IP Office. Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations registered with Avaya IP Office via SIP. Although not explicitly tested, these Application Notes would also apply to the Talkaphone Wide-Area Emergency Broadcast System (WEBS®) Series Devices, which leverage the same electronics and firmware with a similar subset of features (e.g. paging only with no two-way communication) as the VOIP-500 Series and VOIP-600 Series Phones but differ in form factor and packaging.

2. General Test Approach and Test Results

The interoperability compliance test included feature and serviceability testing. The feature testing focused on establishing calls between Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations, Avaya SIP and H.323 telephones, and the PSTN, and exercising basic telephony features, such as hold, mute, transfer, and conference, from the Avaya IP phones. Additional telephony features, such as call forward and call coverage, were also verified.

The serviceability testing focused on verifying that the Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations come back into service after re-connecting the Ethernet cable or rebooting the IP Call Station.

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

Interoperability compliance testing covered the following features and functionality:

- SIP registration of Talkaphone IP Call Station with Avaya IP Office.
- Inbound and outbound calls between Talkaphone IP Call Station and Avaya SIP and H.323 telephones with Direct IP Media (Shuffling) enabled and disabled.
- Inbound and outbound calls between the Talkaphone IP Call Station and the PSTN.
- G.711 and G.729 codec support.
- Proper recognition of DTMF tones.
- Basic telephony features, including hold, mute, redial, transfer, and 3-way conference, initiated from the Avaya IP phone.
- Use of paging, speed-dial buttons, and number lists on the Talkaphone IP Call Station.
- Proper system recovery after a restart of the Talkaphone IP Call Station and loss of IP connectivity.

2.2. Test Results

All test cases passed with the following observation(s):

- Emergency calls cannot be terminated from the Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations. The calls can only be disconnected by the destination phone or upon expiration of the Call Conversation Timer. The Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations dial a list of programmed numbers in a round-robin fashion. If the first number in the list does not answer (i.e., Busy, Out of Order, Invalid number), it will call the next number in line and will keep doing so until the destination answers the call or until the 'Call Conversation Timer' expires.

- Dialing Short codes starting with the wildcard * to activate telephony features is not applicable to Talkaphone IP Call Stations.

- Talkaphone VOIP-500 and VOIP-600 responded "486 Busy Here" to OPTIONs message kept alive from Avaya IP Office during an active call. This did not impact on the active call but is listed here as observation for reference.

2.3. Support

For technical support and information on Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations, contact Talkaphone support at:

Address	: 7530 North Natchez Ave.
	Niles, IL 60714
Telephone	: (773) 539-1100
Fax	: (773) 539-1241
Email	: info@talkaphone.com
Web	: www.talkaphone.com

3. Reference Configuration

Figure 1 illustrates a sample configuration with an Avaya SIP-based network that includes the following products:

- Avaya IP Office Primary Linux Server Edition running in a virtualized environment with a 500V2 Expansion.
- Avaya IP Office Primary connected to simulated PSTN via SIP trunk.
- Avaya IP Office 500V2 Expansion connected to simulated PSTN via PRI trunk.
- Avaya 96x1 Series H.323 Deskphone and Avaya 1140E SIP Deskphone.
- Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations.

Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations registered with Avaya IP Office Primary Linux server.

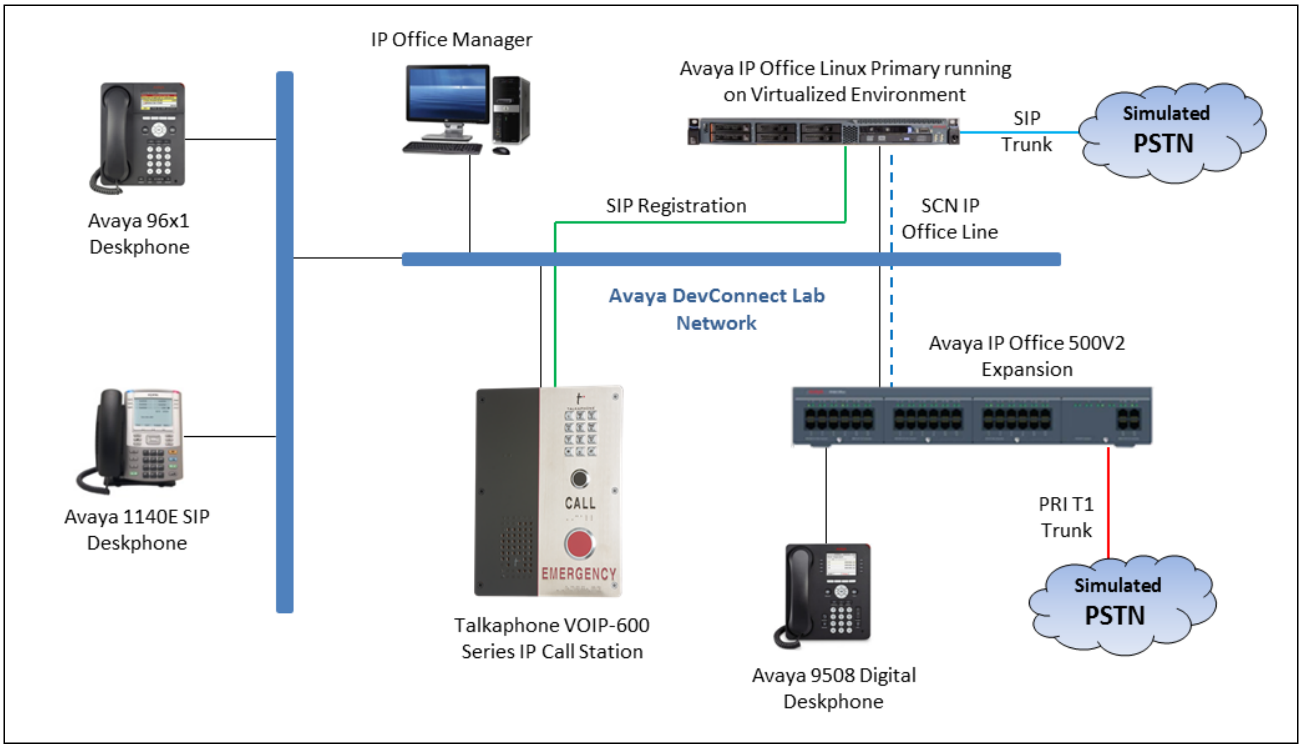


Figure 1: Avaya SIP Network with Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office Primary Server Edition running on a Virtual Environment	10.0.0.1.0 Build 53
Avaya IP Office 500V2 Expansion	10.0.0.1.0 Build 53
Avaya IP Office Manager running on Microsoft Windows 7	10.0.0.1.0 Build 53
Avaya 96x1 H323 Deskphone	6.629
Avaya 1140E SIP Deskphone	4.0.4.23
Avaya 9508 Digital Deskphone	R45
Talkaphone VOIP-500 Series IP Call Stations	Firmware Version : 1.0.2.7j Bootloader Version : 1.1.9
Talkaphone VOIP-600 Series IP Call Stations	Firmware Version : 1.0.2.7j Bootloader Version : 1.1.9

5. Configure Avaya IP Office

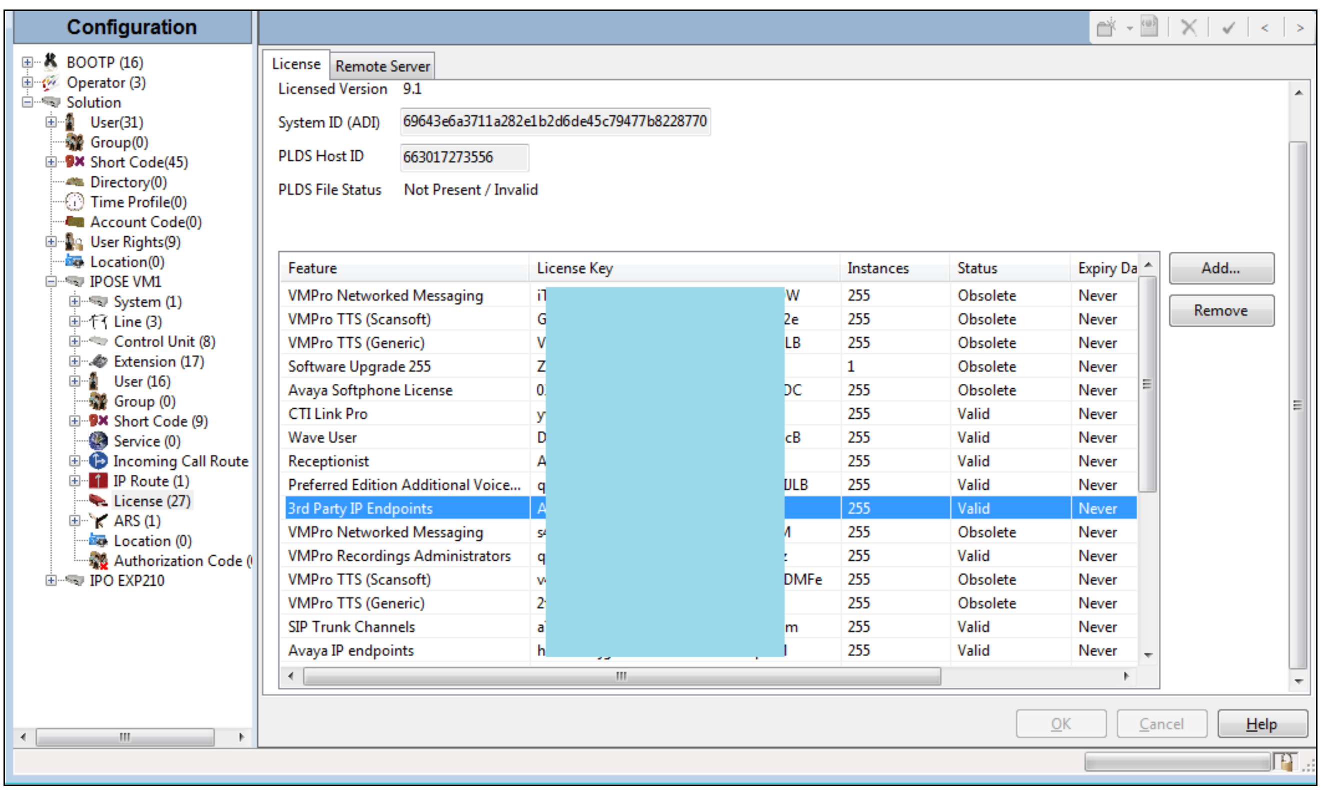
This section provides the procedures for configuring Avaya IP Office. The procedures include the following areas:

- Verify IP Office license.
- Obtain LAN IP address.
- Administer SIP registrar.
- Administer SIP extensions.
- Administer SIP users.
- Administer Internal Twinning.

5.1. Verify IP Office License

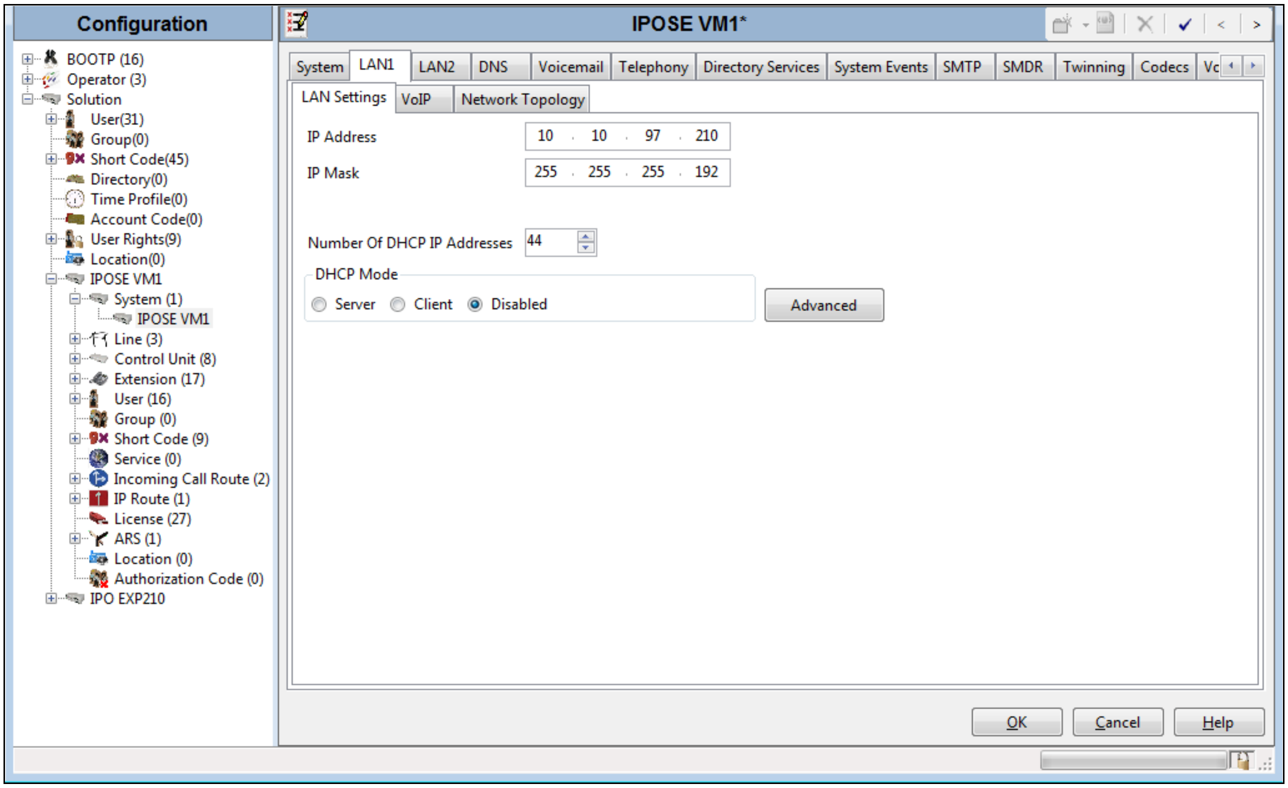
From a PC running the Avaya IP Office Manager application, select **Start → Programs → IP Office → Manager** to launch the Manager application (not shown). Select the proper IP Office system, and log in using the appropriate credentials.

The **Avaya IP Office Manager** screen is displayed. From the configuration tree in the left pane, select **License**, the list of license displayed in the right panel. Verify that the **3rd Party IP Endpoints** status is "**Valid**".



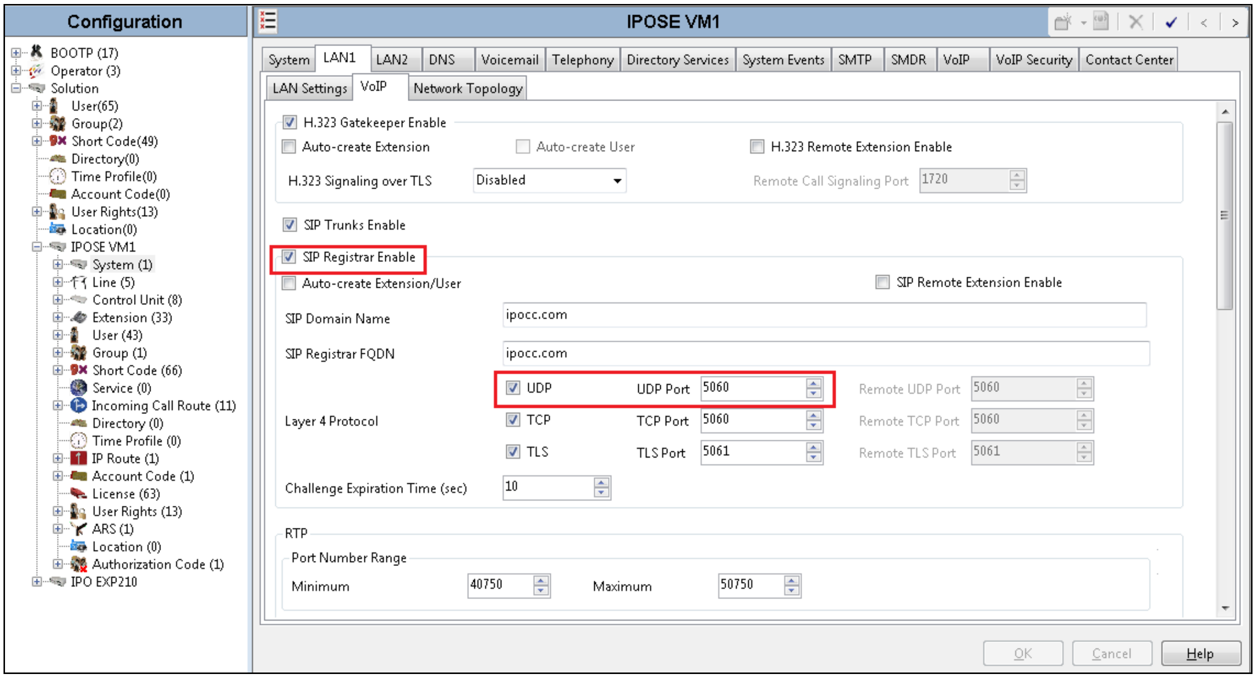
5.2. Obtain LAN IP Address

From the configuration tree in the left pane, select **System** to display the **IPOSE VM1** 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 Talkaphone VOIP station. Note that IP Office can support SIP extensions on the **LAN1** and/or **LAN2** interfaces, and the compliance testing used the **LAN1** interface.



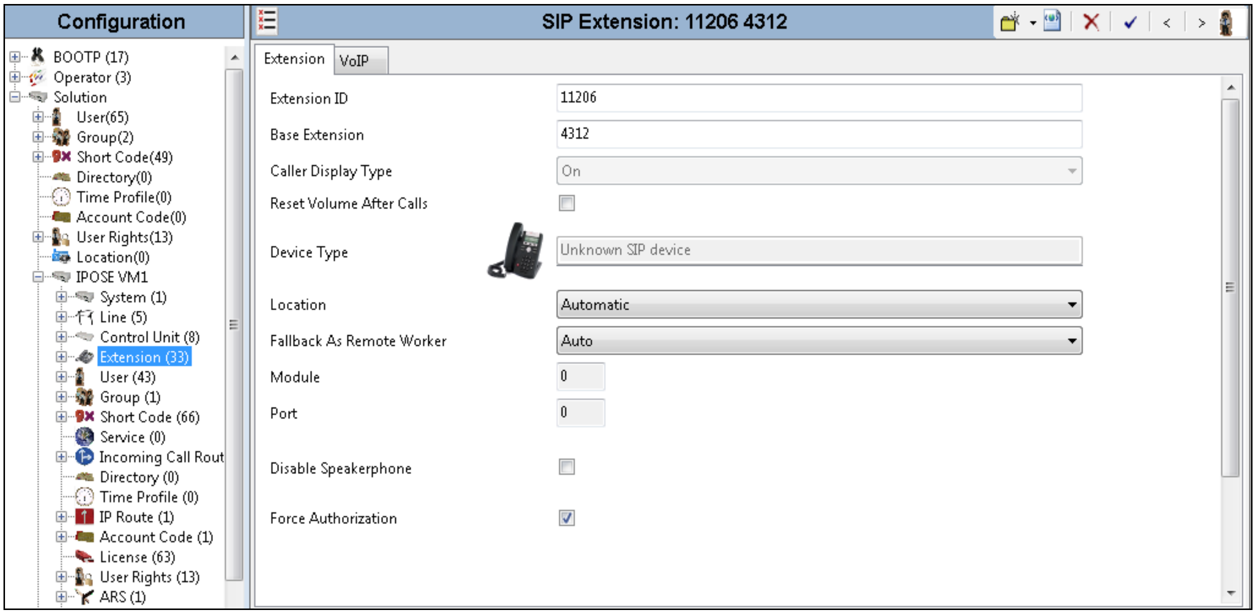
5.3. Administer SIP Registrar

Continuing from **Section 5.2,** select the **VoIP** sub-tab. Make certain that **SIP Registrar Enable** is checked, as shown below. SIP endpoint can use either SIP domain or IP address of LAN1 to register Avaya IP Office, in the compliance a SIP domain was configured in **Domain Name** field but Talkaphone VOIP station used IP address of LAN1 to register. Check **UDP checkbox** and enter the default port 5060 in UDP Port since Talkaphone VOIP station supports UDP protocol.

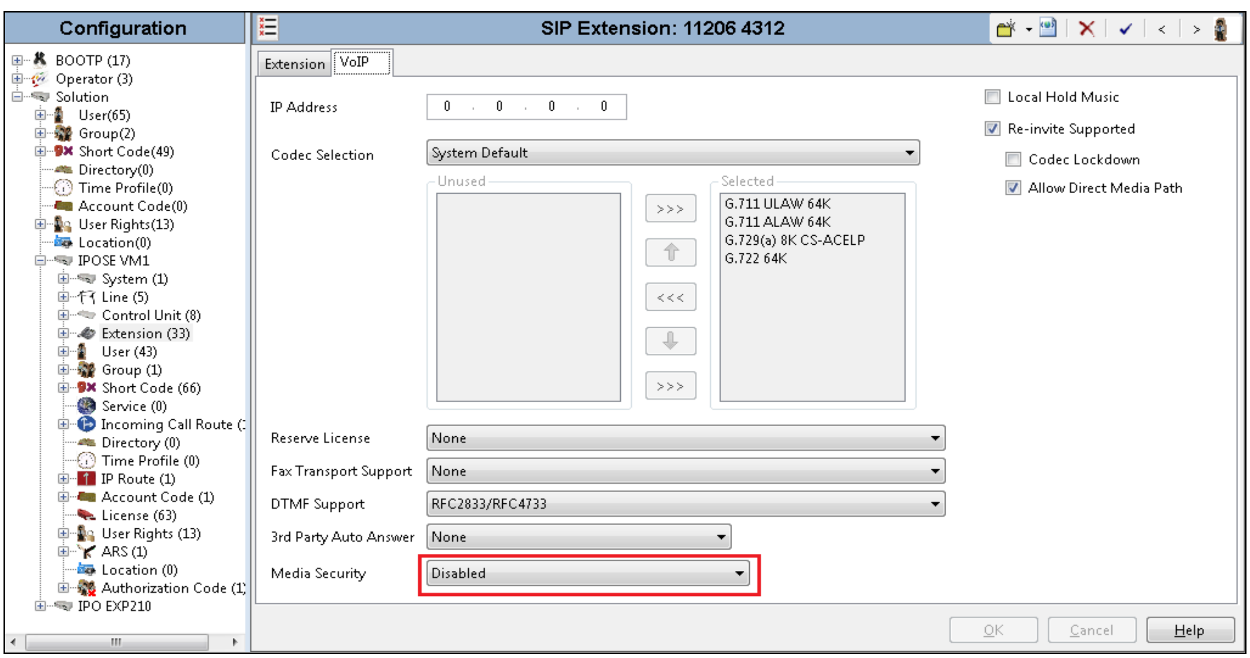


5.4. Administer SIP Extensions

From the configuration tree in the left pane, right-click on **Extension**, and select **New → SIP Extension** (not shown) from the pop-up list to add a new SIP extension. For **Base Extension**, enter the extension **4312**. Retain the default values in the remaining fields.



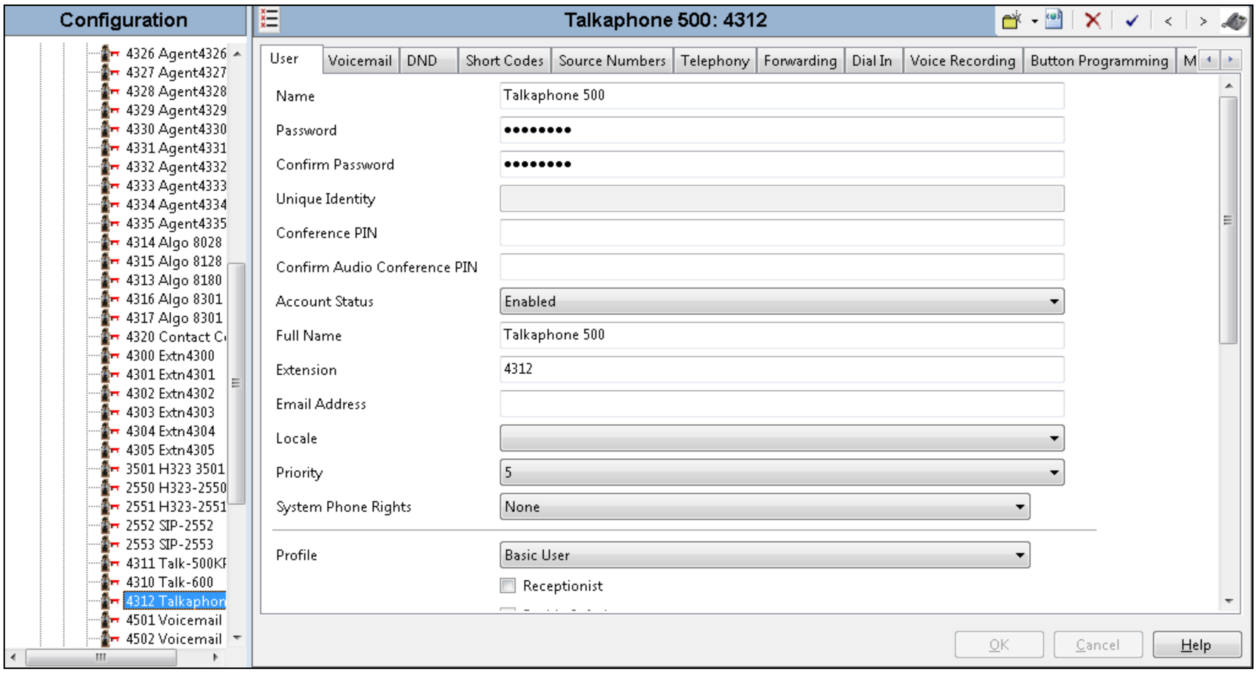
Select the **VoIP** tab, select *Disable* in the **Media Security** dropdown menu and retain the default values in all fields. Note that if Media Security is enabled in IP Office System it should be disabled for 3rd party endpoint that is not supporting Media Security to avoid audio issue.



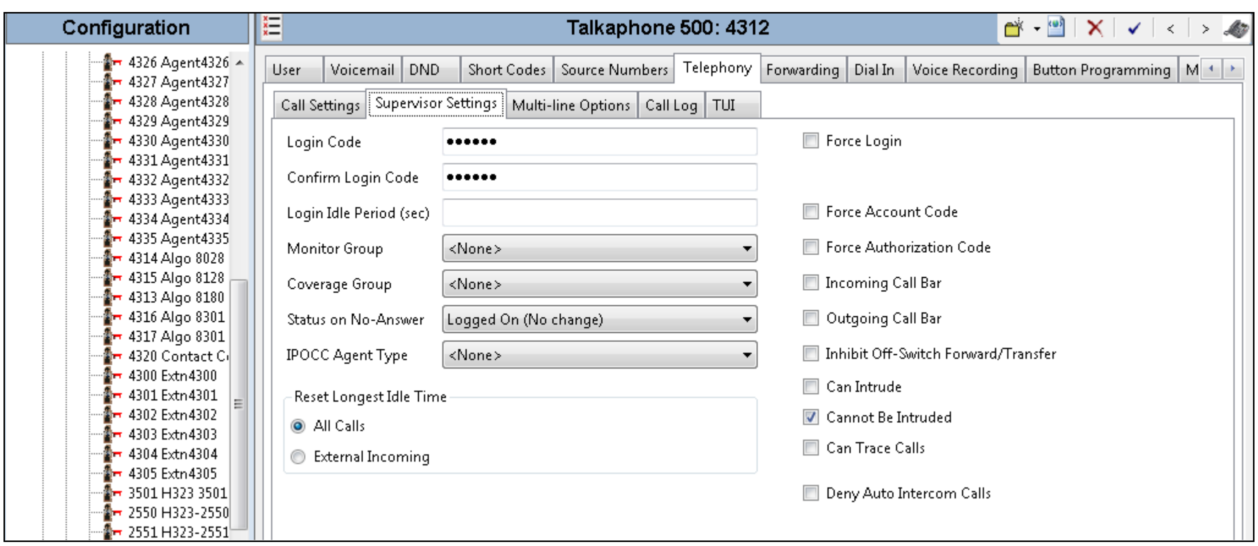
5.5. Administer SIP User

From the configuration tree in the left pane; right-click on **User tab** and select **New** (not shown) from the pop-up list. Enter desired values for **Name**. For **Extension**, enter the extension from **Section 5.4**. Remember these values as they will be needed to register Talkaphone VOIP station to IP Office.

Enter desired values for **Password**, this password is used when user want to login IP Office Softphone.



Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab, and enter a desired **Login Code**. This **Login Code** is needed to register Talkaphone VOIP station to IP Office.



6. Configure Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations

This section covers the configuration of the Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations. The following procedures are covered:

1. Launching the Web Administration Interface
2. Network Configuration
3. SIP Configuration
4. Configure Audio Settings
5. Configure Call Parameters
6. Configure Buttons

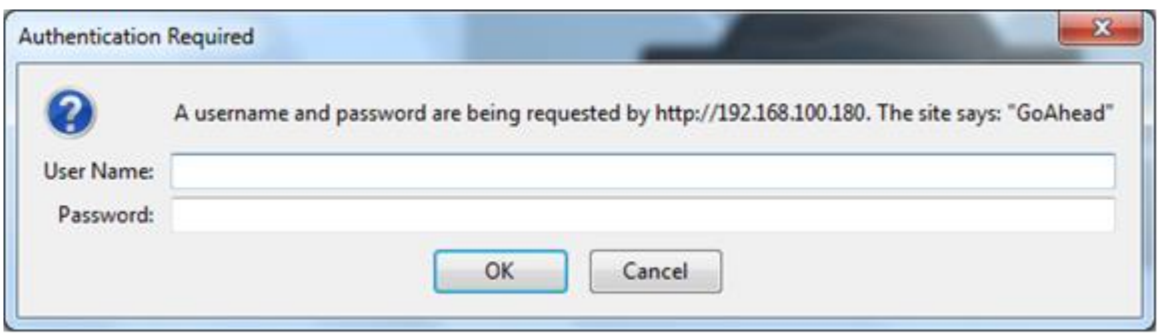
For more information on configuring other features of the Talkaphone IP Call Stations, refer to **[3].**

6.1. Launching the Web Administration Interface

The Talkaphone IP Call Stations are pre-configured with the following default values:

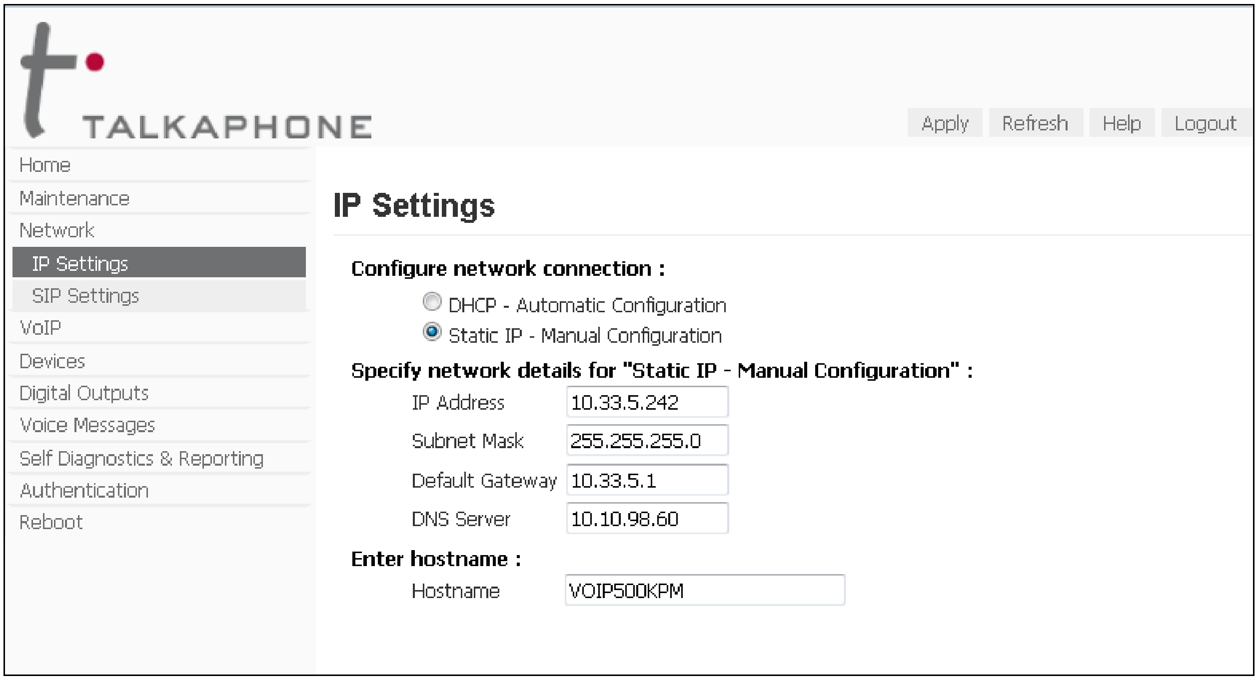
- **IP Address:** 192.168.1.10
- **Username:** admin
- **Password:** admin@123

Ensure that the administration PC and Talkaphone VOIP Call Station are connected to the LAN. Open a web browser and enter the IP address of the Talkaphone VOIP Call Station in the URL field. The browser prompts for authentication. Log in with the appropriate credentials.



6.2. Network Configuration

To modify the IP network configuration of the Talkaphone VOIP Call Station, navigate to the **Network → IP Settings** page. Configure the IP settings so that it conforms to the customer network requirements. Click **Apply** when done.



6.3. SIP Configuration

Navigate to **Network → SIP Settings** to configure the SIP setting of the Talkaphone VOIP Call Station. Configure the following parameters.

Under **Assign a phone number**:

- **Phone Number:** Specify the SIP number (e.g., *4312*) configured in **Section 5.4**

Under **Specify SIP Server FQDN/IP Address**:

- **Primary SIP Server FQDN/IP Address:** Specify the IP address of LAN1 of IP Office (e.g., *10.10.97.210*) or the SIP domain (e.g., *ipocc.com*). For the compliance test, the LAN1 IP address was used.

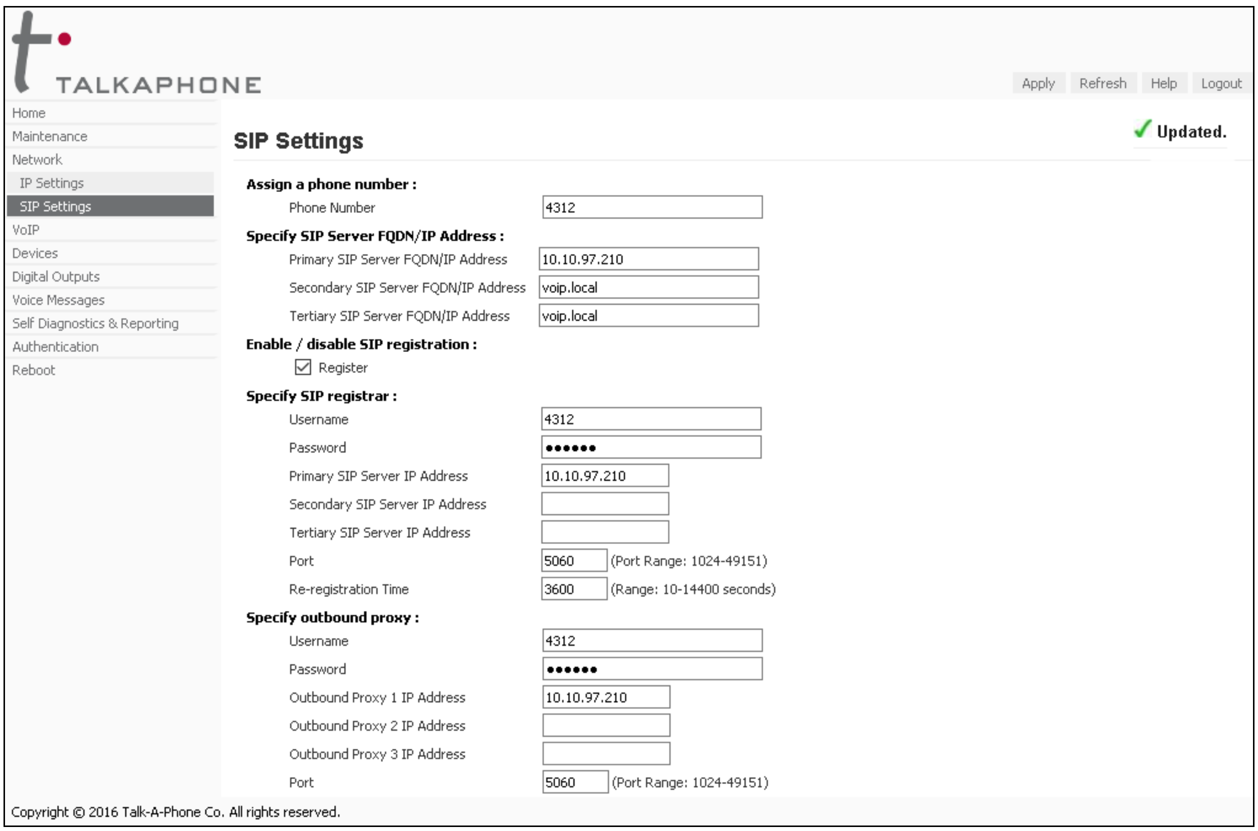
Under **Enable / disable SIP registration**:

- **Register:** Select the checkbox.

Under **Specify SIP registrar** and **Specify outbound proxy**:

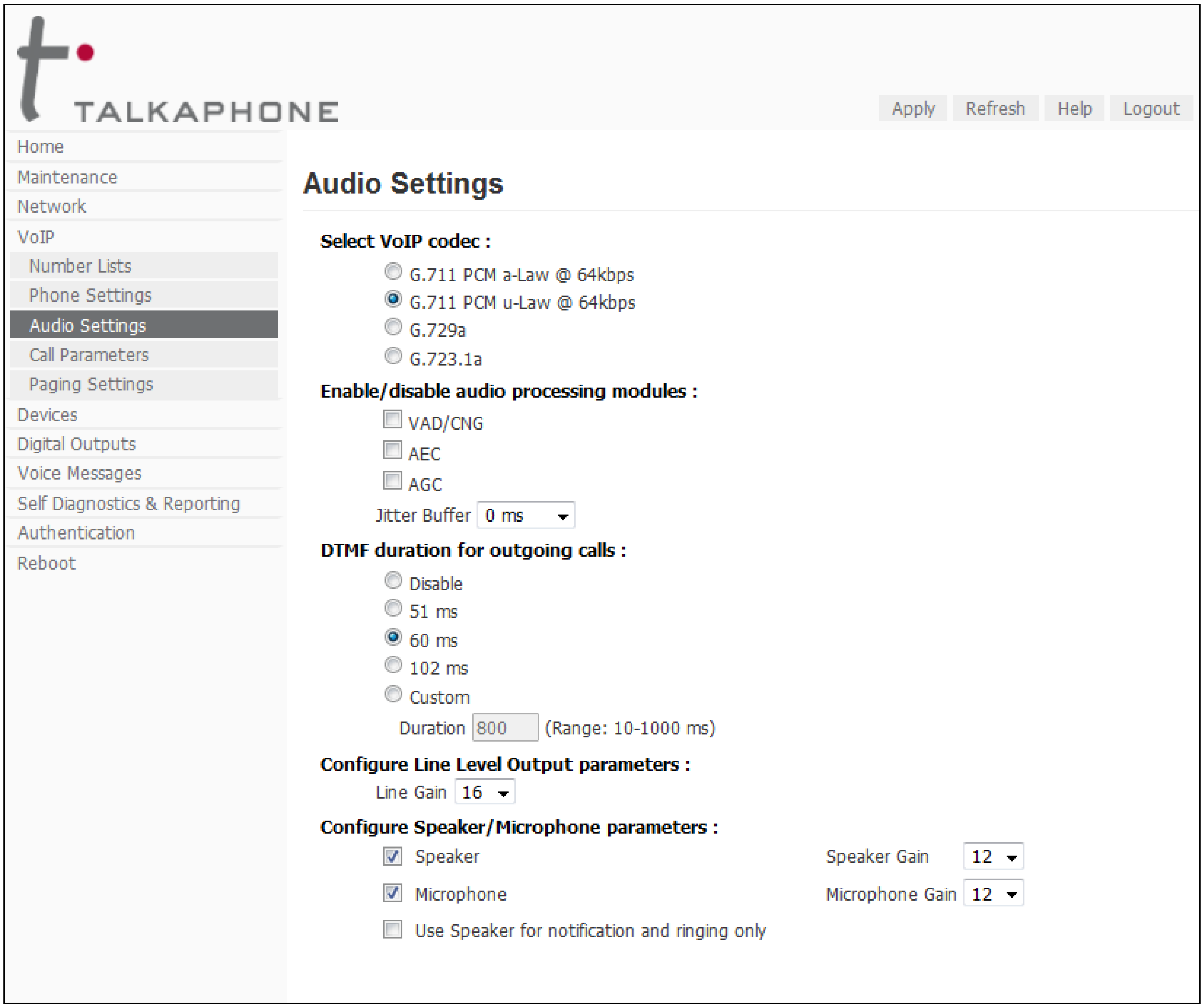
- **Username:** Specify the SIP number of the Talkaphone IP Call Station (e.g. *4312)*.
- **Password:** Specify the SIP password configured in **Section 5.5**.
- **Primary SIP Server IP Address:** Specify the LAN IP address of Avaya IP Office (e.g., *10.10.97.210)*
- **Port:** Specify the SIP (UDP)port (e.g., *5060*).

Accept the default values for the remaining fields and click **Apply** when done.



6.4. Configure Audio Settings

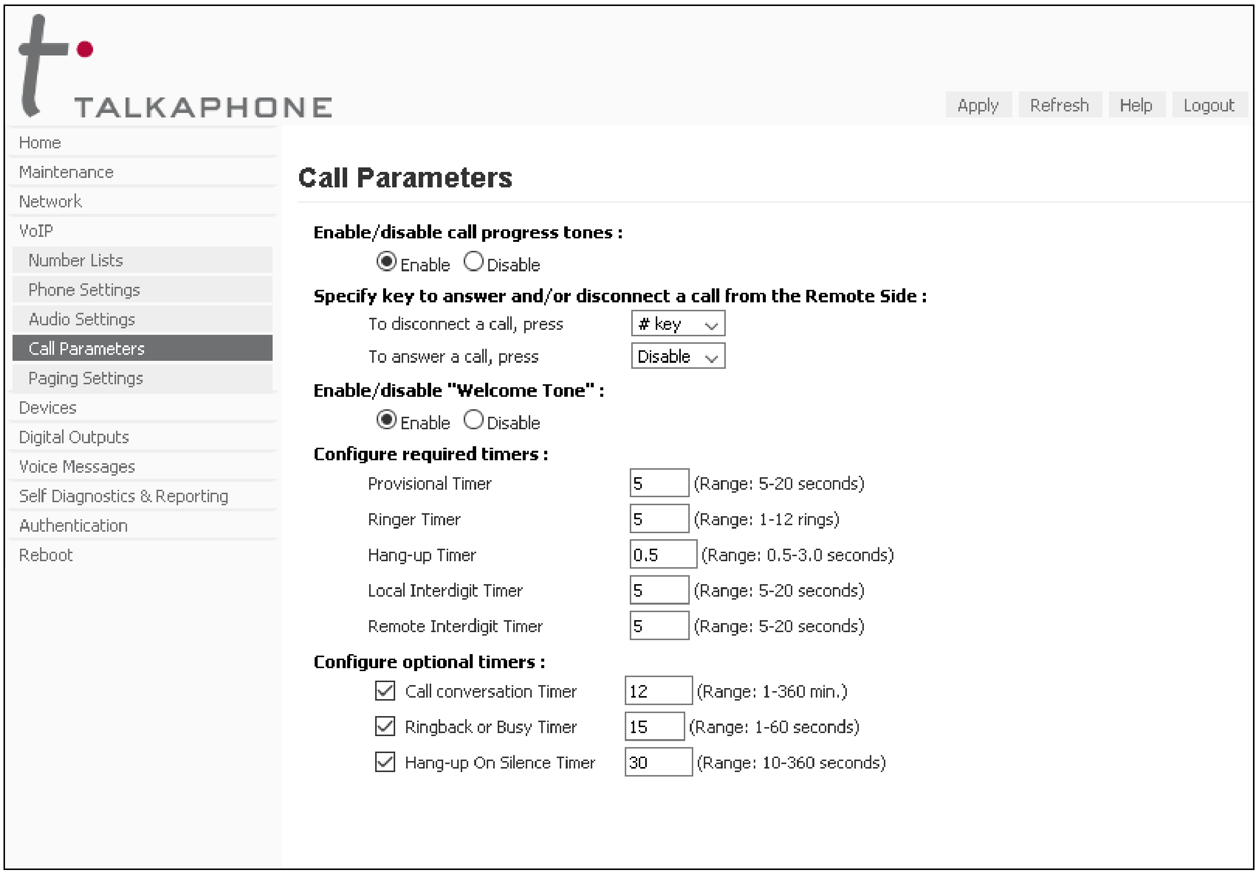
Navigate to **VoIP → Audio Settings** to configure the preferred codec, outbound DTMF duration, and microphone and speaker parameters. All other fields were left at the default values. Click **Apply** when done.



6.5. Configure Call Parameters

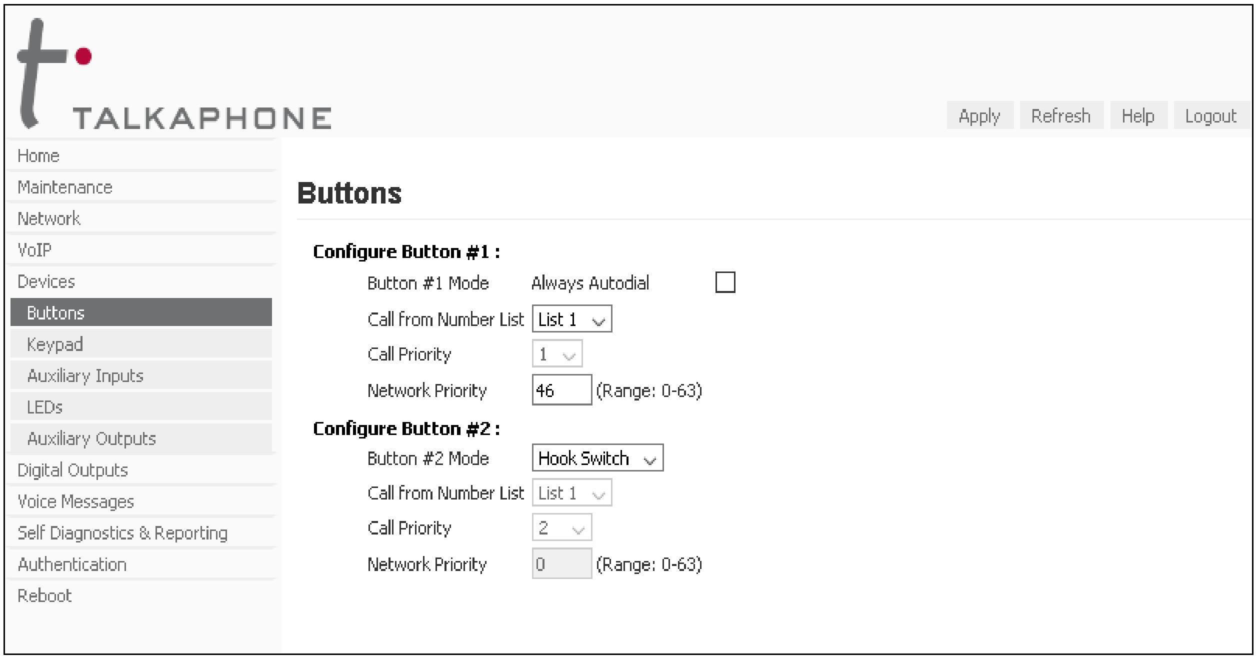
Navigate to **VoIP → Call Parameters** to view and customize any of the call parameters, such as **Local Interdigit Timer**, which dictates how long to wait before initiating a call after the user dials the digits, or the **Call conversation Timer**, which specifies how long an emergency call should remain active, unless the far-end drops the call. The following screen shows the default values for the call parameters.

Note: After a number is dialed on the Talkaphone IP Call Station, the **Local Interdigit Timer** must expire before the call is initiated. The minimum value for the **Local Interdigit Timer** is 5 secs.



6.6. Configure Buttons

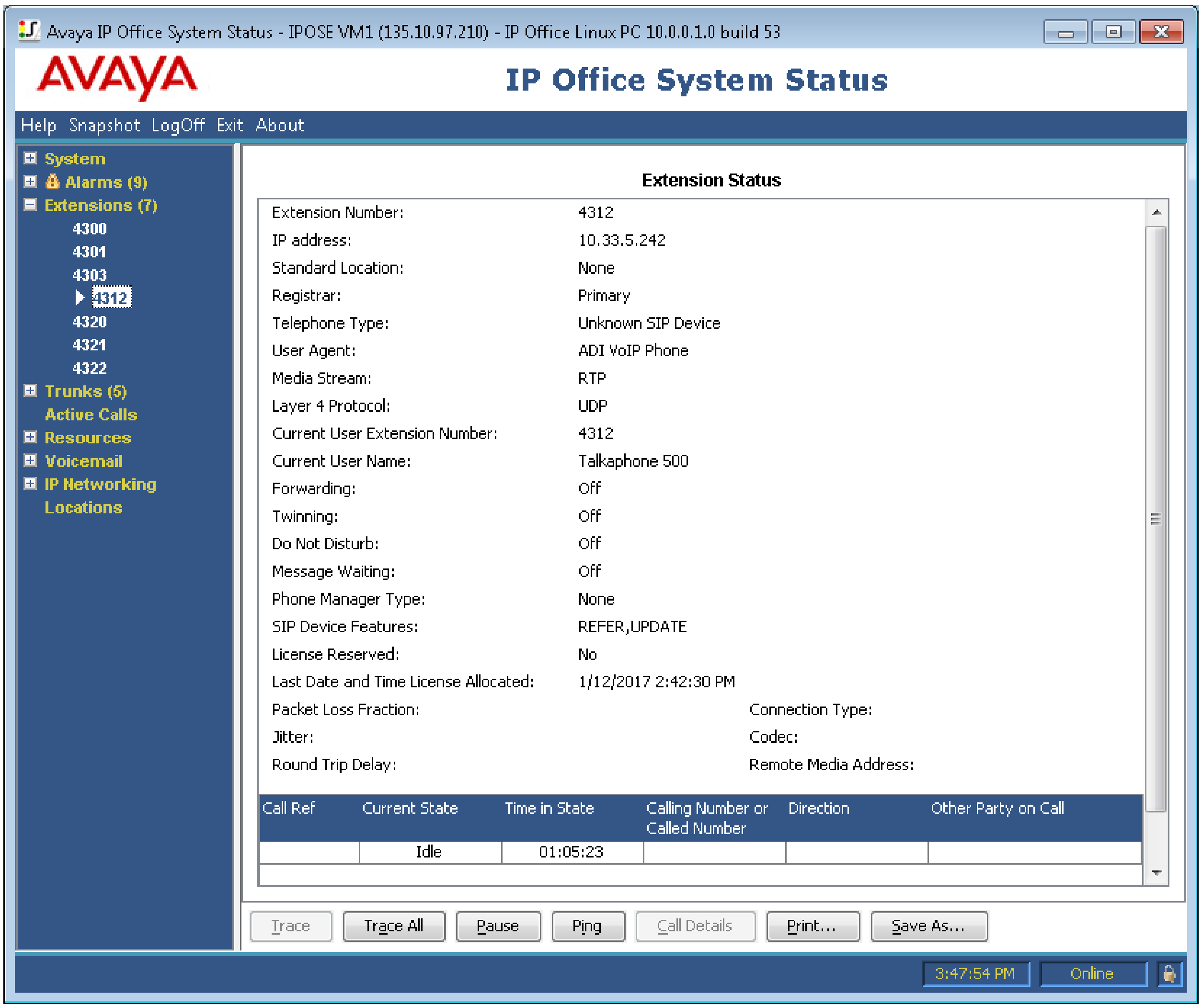
Navigate to **Devices → Buttons** to verify the appropriate settings. For the compliance test, the **Buttons** were configured as shown below.



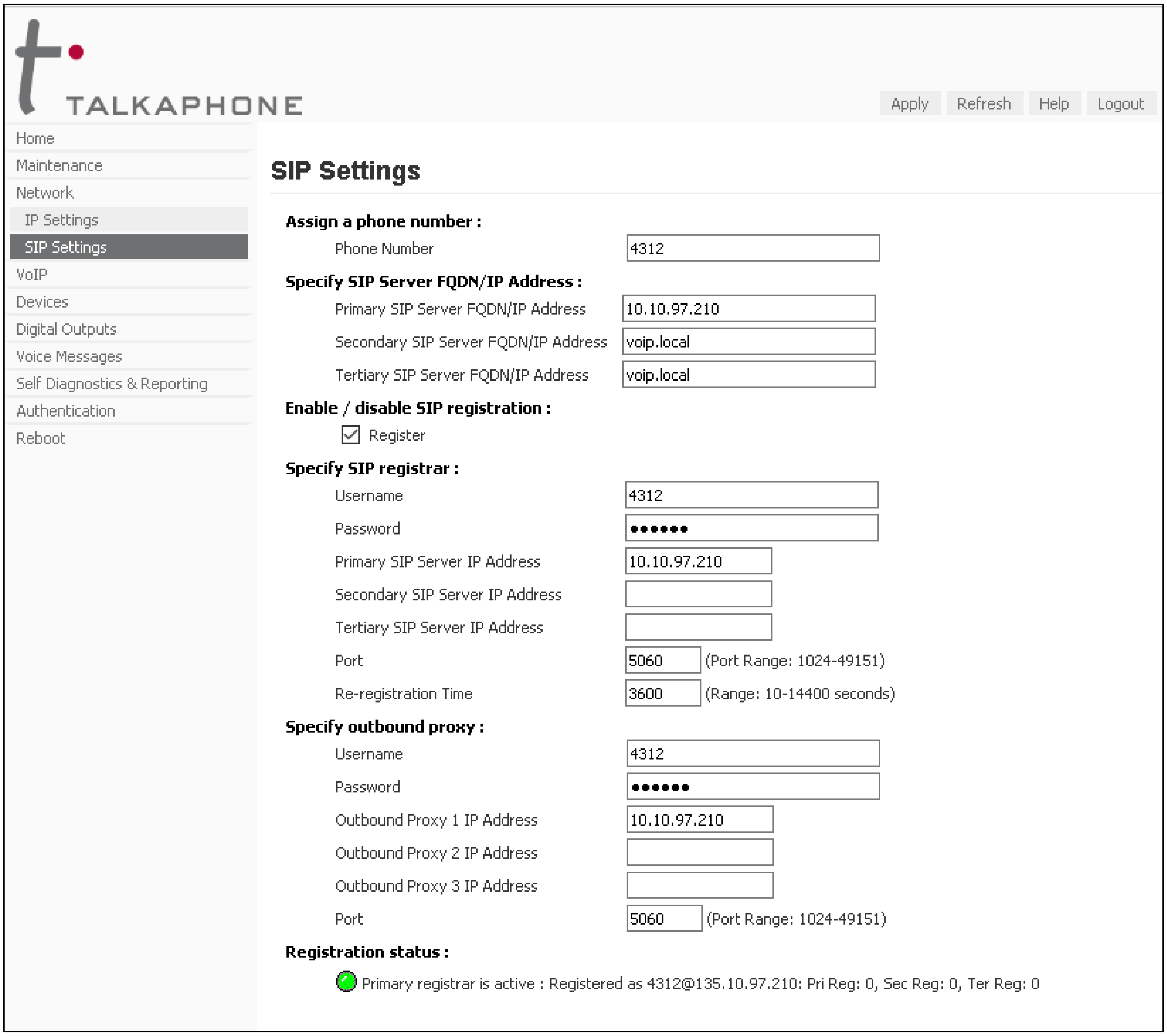
7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of the Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations with Avaya IP Office.

1. Verify that the Talkaphone IP Call Station has successfully registered with Avaya IP Office. In IP Office, use IP Office System Status to check the registration status.



Alternatively, the **SIP Settings** screen on the Talkaphone IP Call Station also shows the **Registration Status** with the green circle to indicate the registration status successfully.



2. Verify 2-way audio and proper call termination.

8. Conclusion

These Application Notes have described the administration steps required to integrate the Talkaphone VOIP-500 Series and VOIP-600 Series IP Call Stations with Avaya IP Office Server Edition Solution. Talkaphone IP Call Stations successfully registered with Avaya IP Office and basic telephony features were verified. All test cases passed with observations noted in **Section 2.2.**

9. Additional References

This section references the Avaya and Talkaphone documentation relevant to these Application Notes. The following Avaya product documentation is available at support.avaya.com.

Avaya IP Office Documents:

[1] Administering Avaya IP Office™ Platform with Manager, Release 10, Issue 10.33, October 2016.

[2] Deploying Avaya IP Office™ Platform Servers as Virtual Machines, Release 10, November 20156.

[3] IP Office™ Platform 9.1 Using IP Office System Monitor, Release 10, September 2016.

[4] Administering Avaya IP Office with Manager, Release 10, September 2016.

The following Talkaphone documentation may be found at www.talkaphone.com.

[5] *Talkaphone VOIP-500 Series Phone Configuration and Operation Manual v3.0.2*, Rev 7/31/2012.

[6] *Talkaphone VOIP-600 Series Configuration and Operation Manual v1.0.1*, Rev 9/17/2014.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.