



Avaya Solution & Interoperability Test Lab

Application Notes for Biamp Tesira SVC-2 with Avaya IP Office Server Edition 10.0 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate the Biamp Tesira SVC-2 with Avaya IP Office Server Edition. Biamp Tesira SVC-2 supports a range of telephony functions, including dial, hold, resume, transfer, and conference, and registers with Avaya IP Office Server Edition as a SIP endpoint. Biamp Tesira SVC-2 is a modular VoIP card for use with Biamp Tesira SERVER-IO, a conferencing platform. Biamp Tesira SVC-2 allows a Tesira system to connect directly to IP-based telephone systems.

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 Biamp Tesira SVC-2 with Avaya IP Office Server Edition. Biamp Tesira SVC-2 supports a range of telephony functions, including dial, hold, resume, transfer, and conference, and registers with Avaya IP Office Server Edition as a SIP endpoint. Biamp Tesira SVC-2 is a modular VoIP card for use with Biamp Tesira SERVER-IO, a conferencing platform. Biamp Tesira SVC-2 allows a Tesira system to connect directly to IP-based telephone systems.

With the Biamp Tesira SVC-2 card, Biamp Tesira SERVER-IO is able to establish or participate in an audio conference with local stations or PSTN users via Avaya IP Office Server Edition. Other participants in a meeting room or class room, where Biamp Tesira SERVER-IO is located, could then communicate with the conference participants via a microphone and speakerphone connected to Biamp Tesira SERVER-IO with the Biamp Tesira SVC-2.

2. General Test Approach and Test Results

The interoperability compliance test included feature and serviceability testing. The feature testing focused on establishing calls between Tesira SVC-2 card installed in Tesira SERVER-IO, Avaya SIP and H.323 IP Deskphones, and the PSTN, and exercising basic telephony features, such as hold, mute, transfer and conference. Additional telephony features, such as call forward, call coverage, and call pickup were also verified.

The serviceability testing focused on verifying that the Tesira SVC-2 card came back into service after re-connecting the Ethernet cable or rebooting the Tesira SERVER-IO.

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 Tesira SVC-2 card with IP Office Server Edition.
- Calls between Tesira SERVER-IO with Tesira SVC-2 card and Avaya SIP/H.323 IP Deskphones on IP Office Server Edition and IP Office 500 V2 Expansion System.
- Calls between Tesira SVC-2 and the PSTN.
- G.711 and G.729 codec support.
- Proper recognition of DTMF tones.
- Basic telephony features, including hold, mute, redial, multiple calls, blind and attended transfer calls, and 3-party conference.

- Extended telephony features using IP Office shortcodes for Call Forward and Call Pickup.
- Use of programmable buttons on Tesira SVC-2.
- Proper system recovery after a restart of Tesira SERVER-IO with Tesira SVC-2 and loss of IP connectivity.

2.2. Test Results

All test cases passed. Note that blind conference is not supported, but attended/supervised conference is supported.

2.3. Support

For technical support and information on Biamp Tesira SVC-2, contact Biamp customer support at:

- Phone: +1 (877) 242-6796
- Website: <https://www.biamp.com/how-to-get-help>
- Email: support@biamp.com

3. Reference Configuration

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

- Avaya IP Office Server Edition and Avaya IP Office 500 V2 Expansion configured via Avaya IP Office Manager.
- PSTN connectivity provided by a SIP trunk on Avaya IP Office Server Edition.
- Avaya 96x1 Series H.323 deskphones and Avaya 1100/1200 Series SIP deskphones registered to Avaya IP Office Server Edition and Avaya IP Office 500 V2 Expansion.
- Biamp Tesira SVC-2, installed in Biamp Tesira SERVER-IO, provided connectivity to Avaya IP Office Server Edition. Biamp Tesira SVC-2 registered with Avaya IP Office Server Edition as a SIP endpoint. Tesira Software application was used to configure Biamp Tesira products.

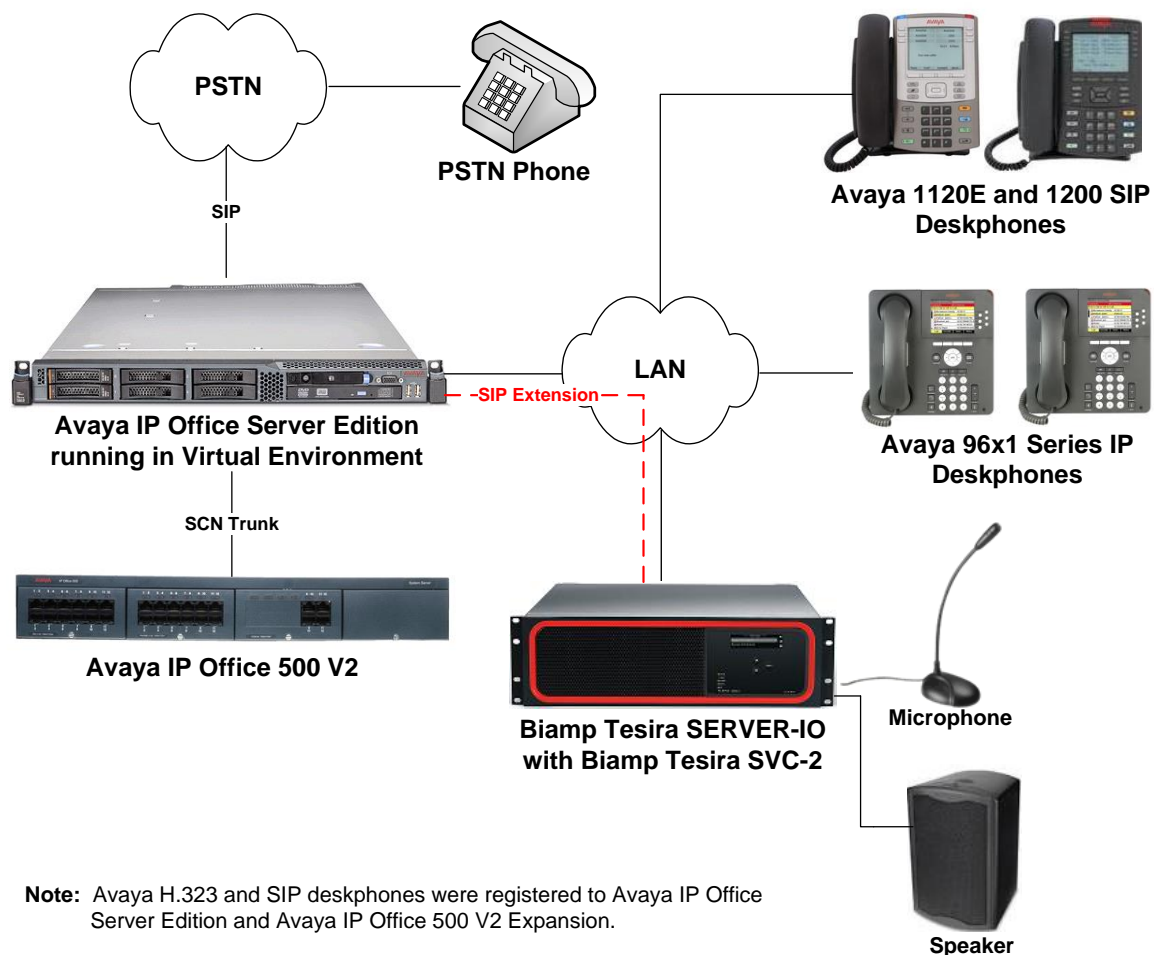


Figure 1: Avaya IP Office Server Edition with Biamp Tesira SVC-2 installed in Biamp Tesira SERVER-IO

4. Equipment and Software Validated

The following equipment and software were used for the test configuration.

Equipment/Software	Release/Version
Avaya IP Office Server Edition running on a Virtual Platform	10.0.0.1.0 Build 53
Avaya IP Office 500 V2	10.0.0.1.0 Build 53
Avaya 96x1 Series IP Deskphones	6.6302 (H.323)
Avaya 1100/1200 Series IP Deskphones	04.04.26.00 (SIP)
Biamp Tesira SVC-2 installed in Biamp Tesira SERVER-IO	Boot Loader ID 01.00.00 Application Loader ID 01.04.00.026
Biamp Tesira Software	2.6.0.24

5. Configure Avaya IP Office Server Edition

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

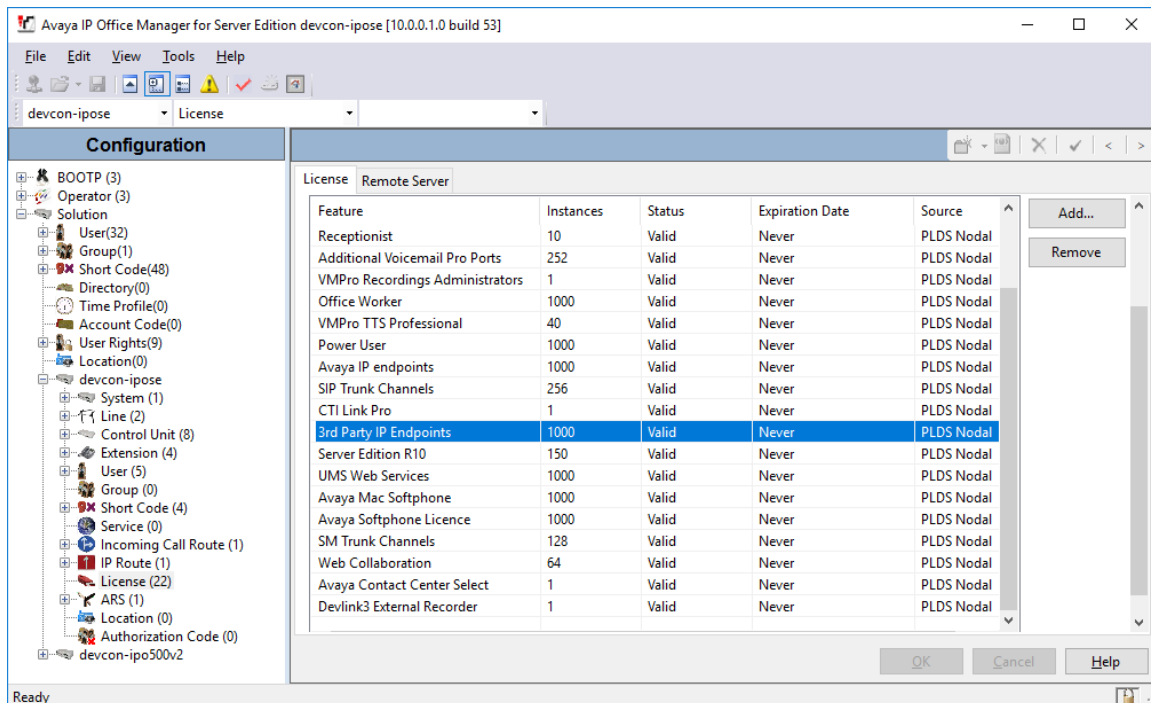
- Verify IP Office License
- Obtain LAN IP Address
- Administer SIP Registrar
- Administer SIP Extension
- Administer SIP User

Note: Integration of IP Office 500 V2 Expansion and call routing to the PSTN are outside the scope of these Application Notes.

5.1. Verify IP Office License

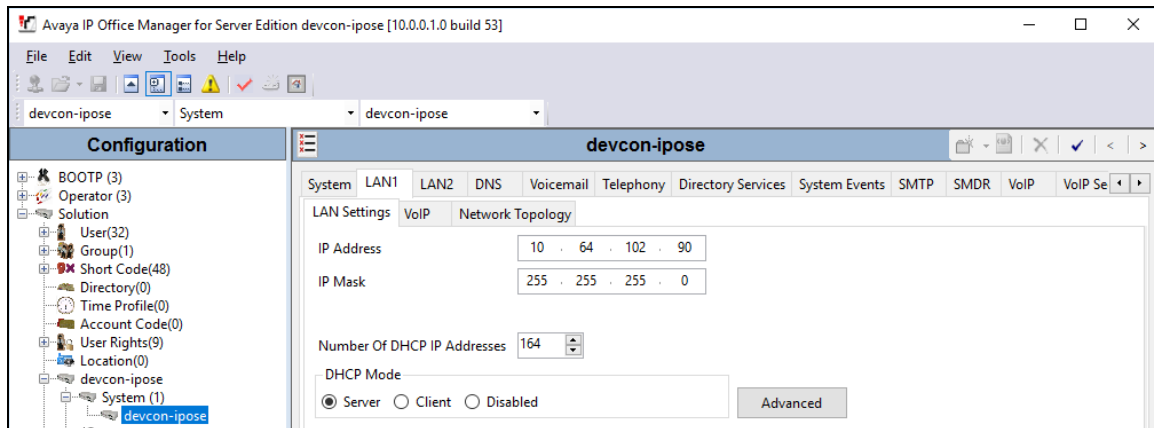
From a PC running the Avaya IP Office Manager application, select **Start → Programs → IP Office → Manager** to launch the Manager application. Select the required IP Office system and log in with the appropriate credentials.

The **Avaya IP Office Manager for Server Edition** screen is displayed. From the configuration tree in the left pane, select **Licence → 3rd Party IP Channels** to display the license screen in the right pane. Verify that the **Licence Status** is “Valid”.



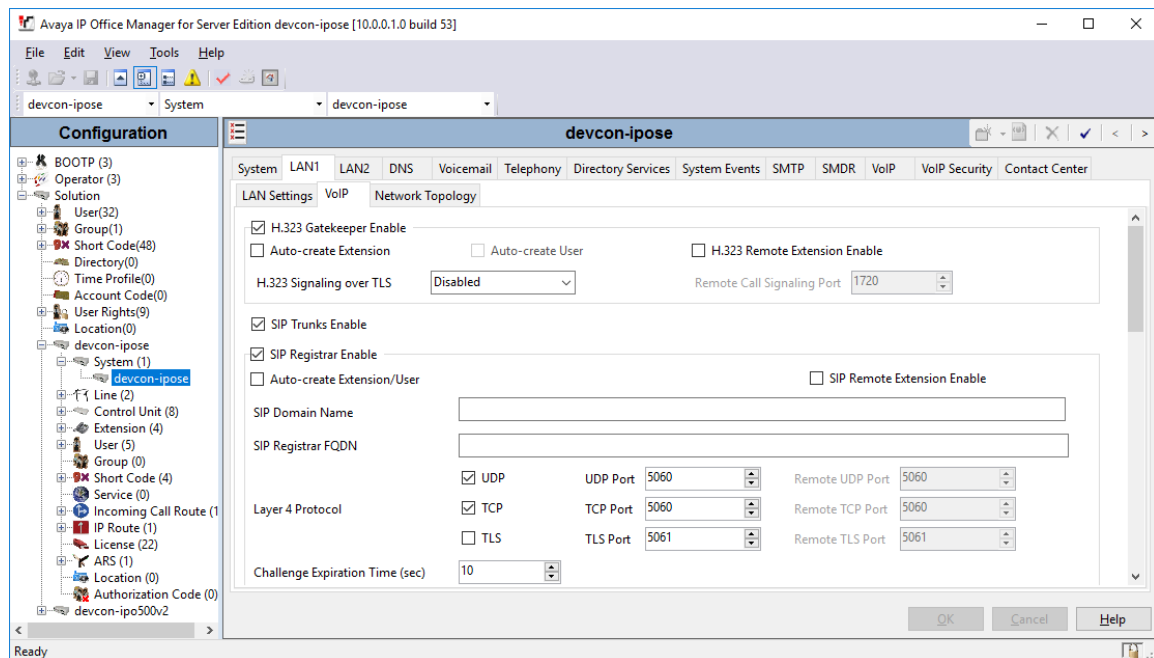
5.2. Obtain LAN IP Address

From the configuration tree in the left pane, select **System** to display the **System** screen for the IP Office Server Edition 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 Tesira SVC-2.

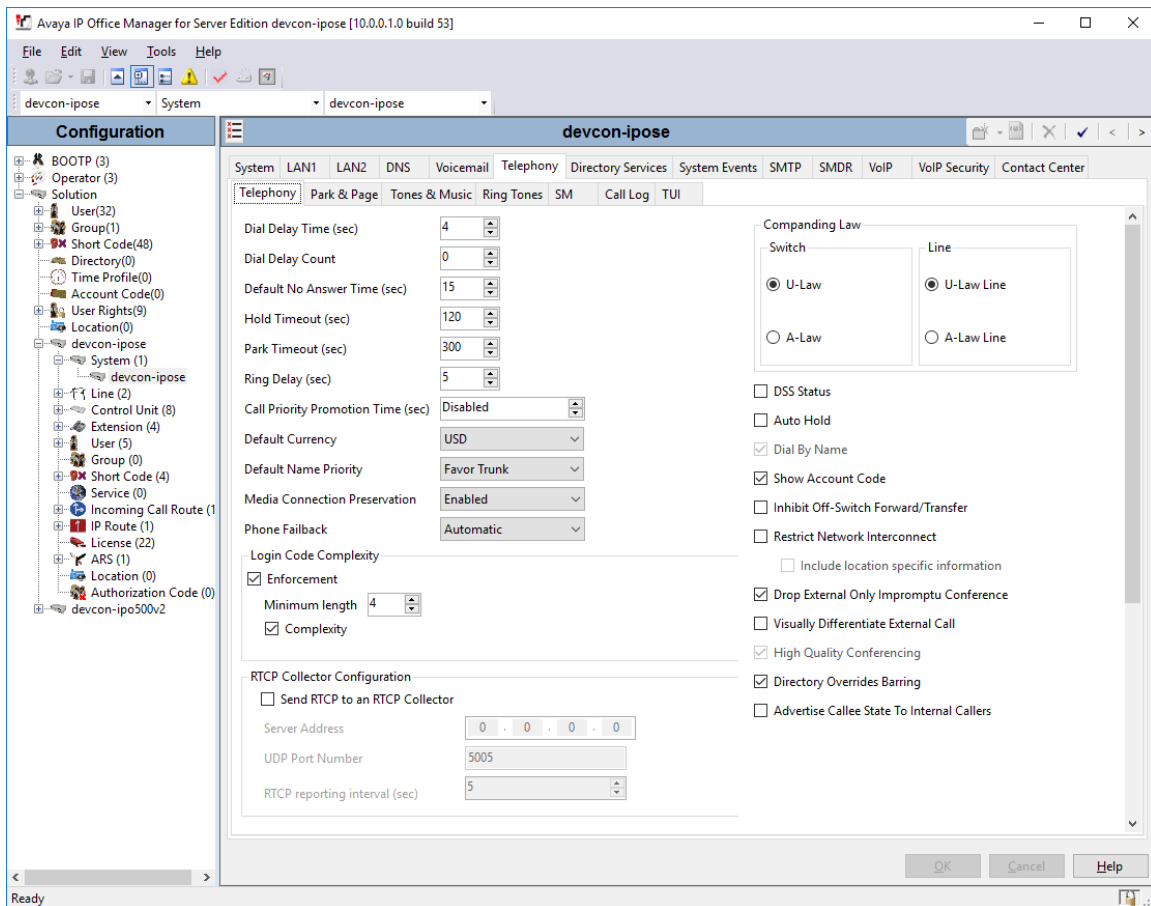


5.3. Administer SIP Registrar

Select the **VoIP** sub-tab. Ensure that **SIP Registrar Enable** and that UDP transport is selected, which will be used by Tesira SVC-2. Also, enter a valid **Domain Name**. In this configuration, the **SIP Domain Name** field was left blank so the LAN IP address was used.

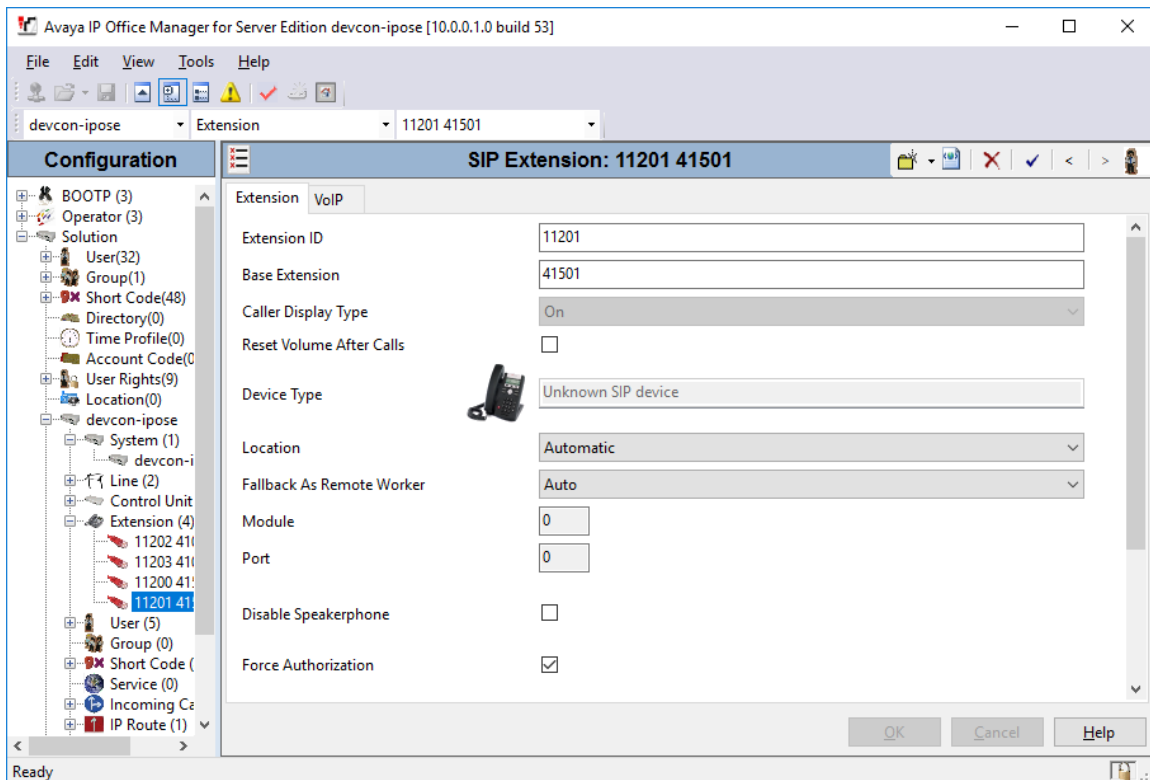


Select the **Telephony** tab followed by the **Telephony** sub-tab as shown below. Verify that **Inhibit Off-Switch Forward/Transfer** is not checked so that transfers and conferences with the PSTN is allowed.

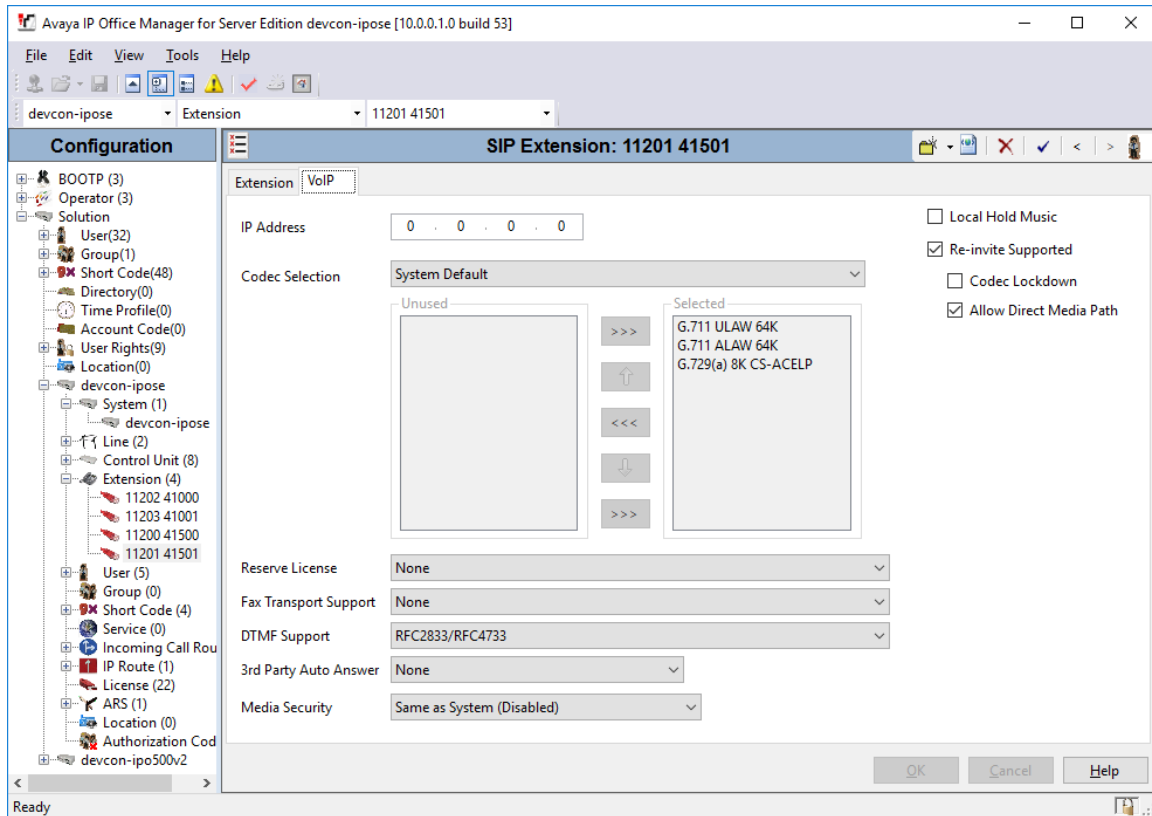


5.4. Administer SIP Extension

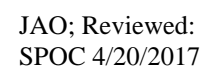
From the configuration tree in the left pane, right-click on **Extension** and select **New → SIP** from the pop-up list to add a new SIP extension. Enter the desired extension for the **Base Extension** field and retain the default check in the **Force Authorization** field as shown below. In this example, Tesira SVC-2 was assigned extension *41501*.



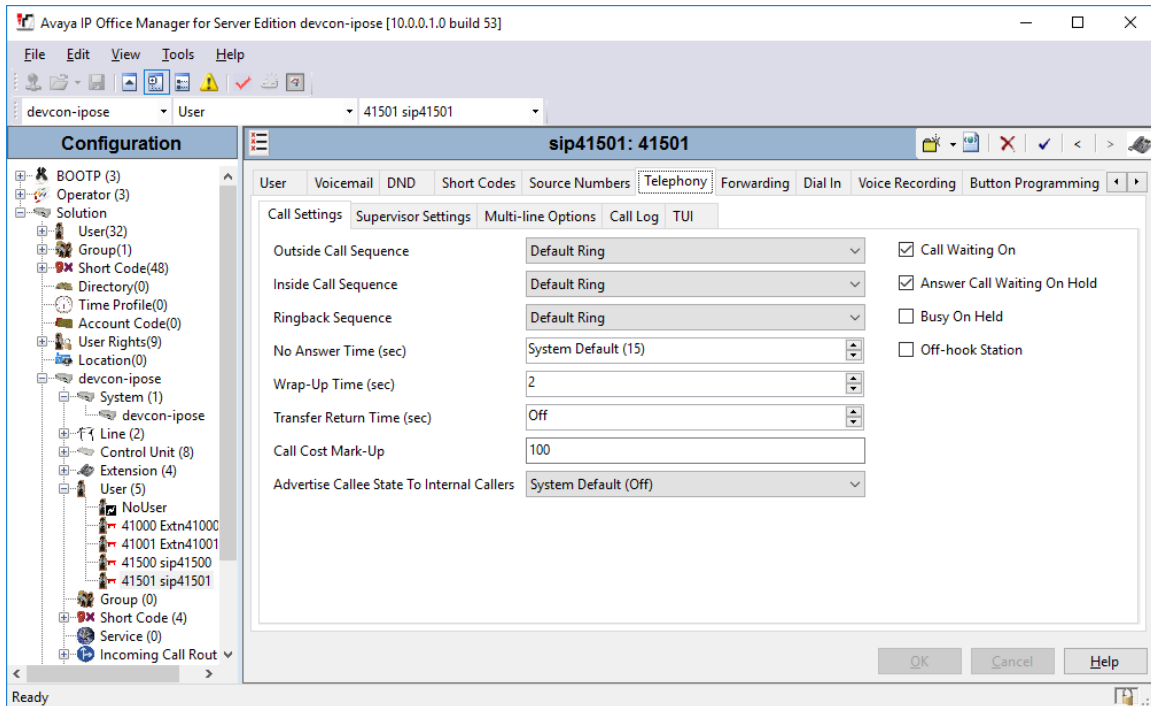
Select the **VoIP** tab and retain the default values in the all fields. During the compliance test, Tesira SVC-2 was configured to support G.711 and G.729 codecs.



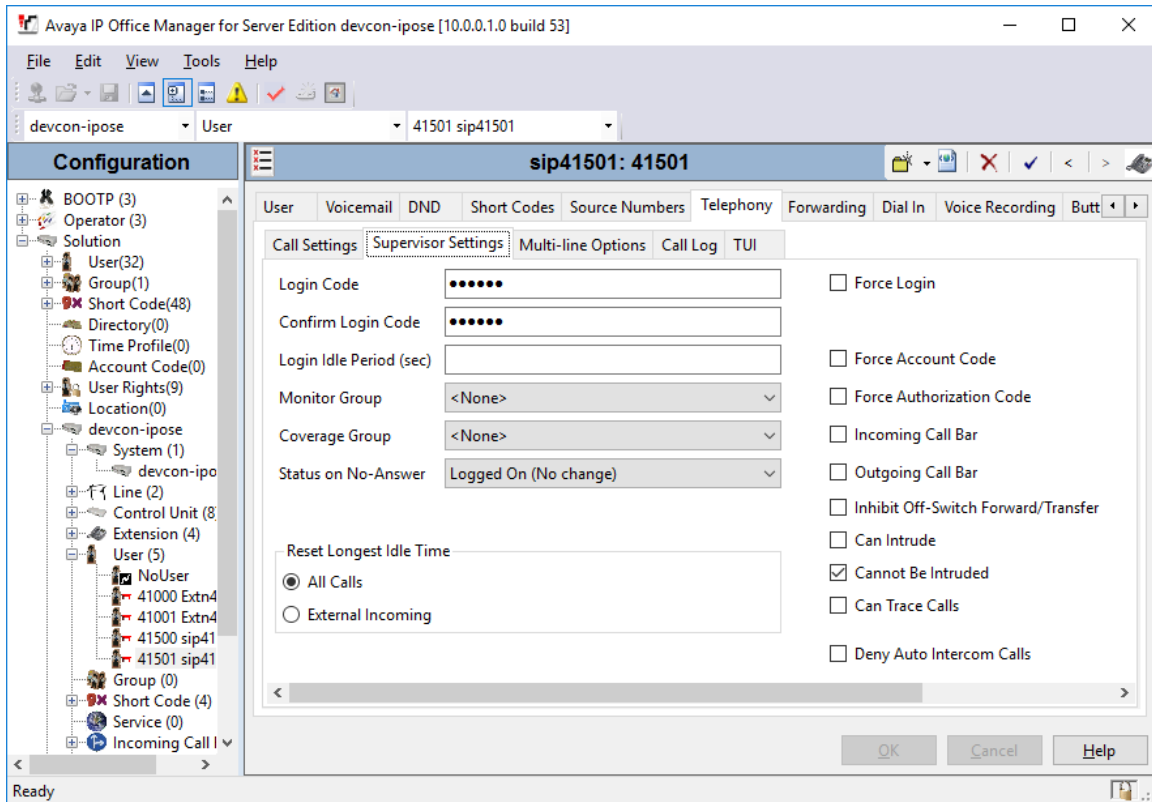
From the configuration tree in the left pane, right-click on **User** and select **New** from the pop-up list. Enter desired values for the **Name** and **Full Name** fields. For the **Extension** field, enter the SIP extension created in **Section 5.4**. The **Extension** field specifies the username that will be used by Tesira SVC-2 to register with IP Office Server Edition.



Select the **Telephony** tab followed by the **Call Settings** sub-tab. Note the settings below for the user.



Select the **Supervisor Settings** sub-tab and enter a desired **Login Code**. The Login Code is the password that will be used by Tesira SVC-2 to register with IP Office Server Edition.




6. Configure Biamp Tesira SVC-2

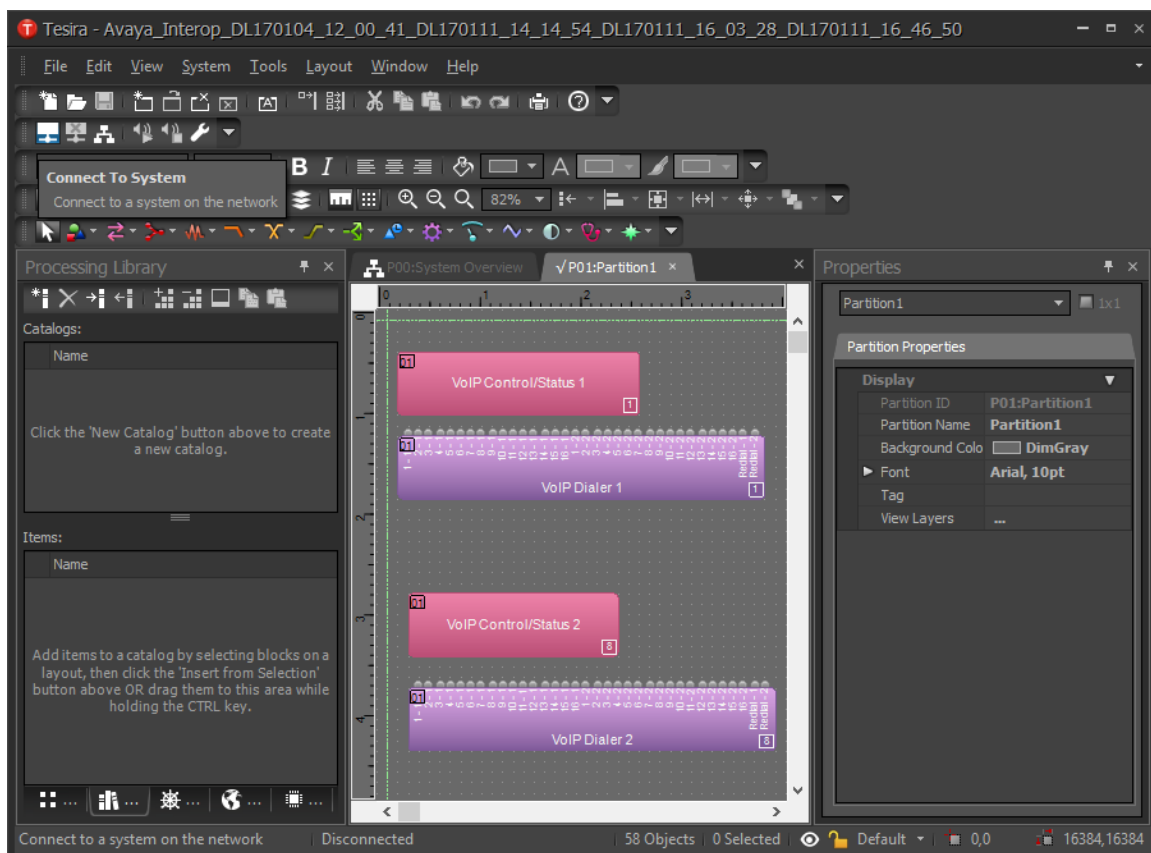
This section covers the configuration of the Tesira SVC-2 card using the Tesira Software application. The configuration covers the following areas:

- Launch the Tesira Software Application
- Modify the IP Network Settings of the Tesira SERVER-IO Control Network
- Modify the IP Network Settings of Tesira SVC-2
- Configure SIP Parameters of Tesira SVC-2
- Verify Codec Settings
- Save and Send the New Configuration to the System

6.1. Launch Tesira Software

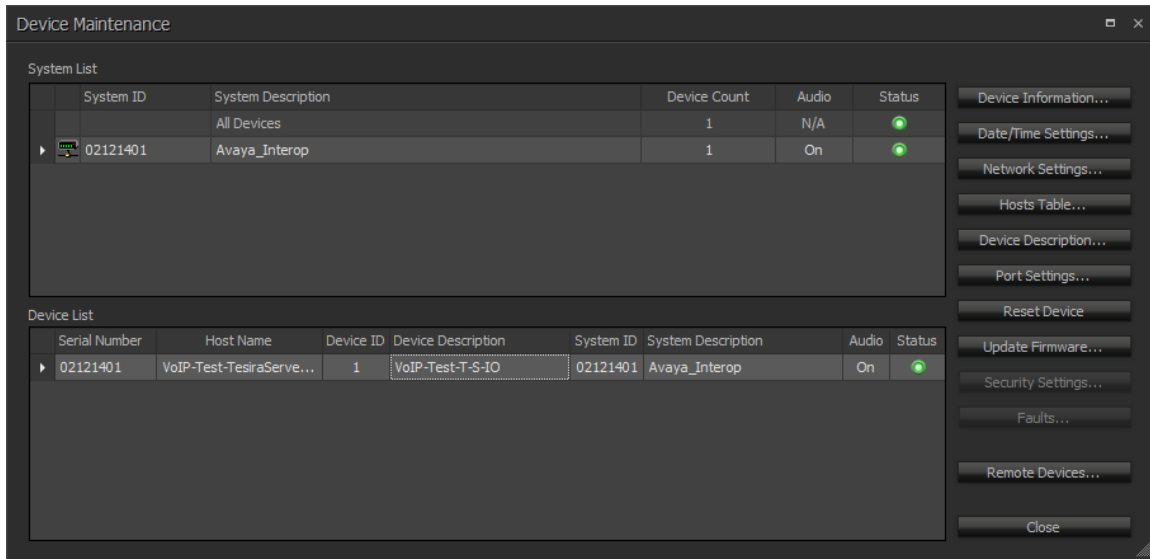


Launch the **Tesira Software** application by clicking on the  icon (not shown). The main window is displayed as shown below.



6.2. Modify the IP Network Settings of Biamp Tesira SERVER-IO

Click on the **Tools** icon to modify the network settings of the Tesira SERVER-IO control network. The **Device Maintenance** window shown below is displayed. Click on the **Network Settings** in the right pane.



The **Network Settings** window is displayed as shown below. Tesira SERVER-IO supports DHCP or a static IP address. For this configuration, a static IP address (i.e., *192.168.100.244*) was assigned to the system in the **Interface IP Configurations** section shown below. Click **OK**. Follow the procedure in **Section 6.6** to save and send the configuration to the system.

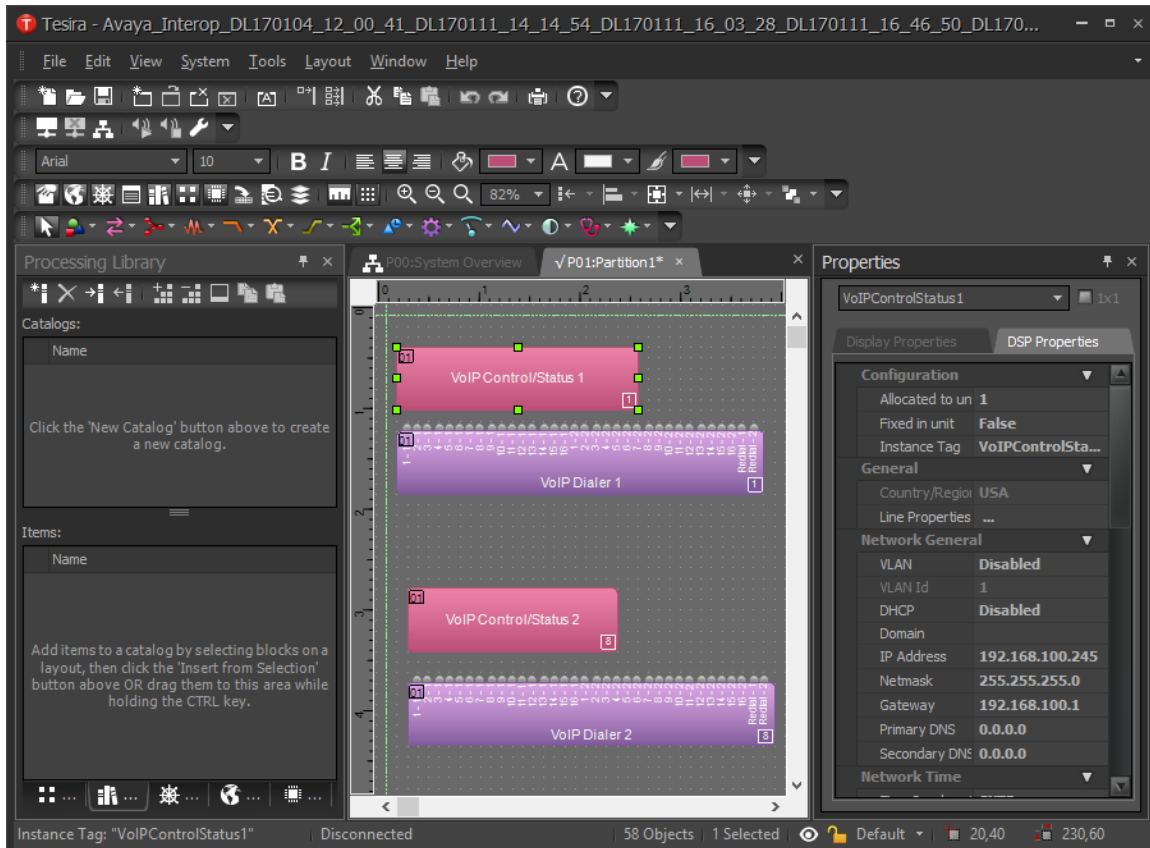
The screenshot shows the 'Network Settings' window with the following sections:

- Control Network**
 - Host Name**
 - Host Name: [Empty text box]
 - Current Host Name: VoIP-Test-TesiraServer02121401
 - DNS Configuration**
 - Primary DNS Server: 0 . 0 . 0 . 0
 - Current Primary DNS Server: 0.0.0.0
 - Alternate DNS Server: 0 . 0 . 0 . 0
 - Current Alternate DNS Server: 0.0.0.0
 - Domain: [Empty text box]
 - Current Domain: [Empty text box]
 - ☒ Enable Multicast DNS
 - Services**
 - ☒ Enable Telnet
 - Interface IP Configurations**
 - ☒ Enabled
 - Interface ID: control
 - ☐ Obtain an IP Address Automatically
 - ☒ Use the Following IP Address
 - IP Address:** 192 . 168 . 100 . 244
 - Current IP Address:** 192.168.100.244
 - Net Mask:** 255 . 255 . 255 . 0
 - Current Net Mask:** 255.255.255.0
 - Default Gateway:** 192 . 168 . 100 . 1
 - Current Default Gateway:** 192.168.100.1 (Active)
 - Interface Status... [Button]

At the bottom right are 'OK' and 'Cancel' buttons.

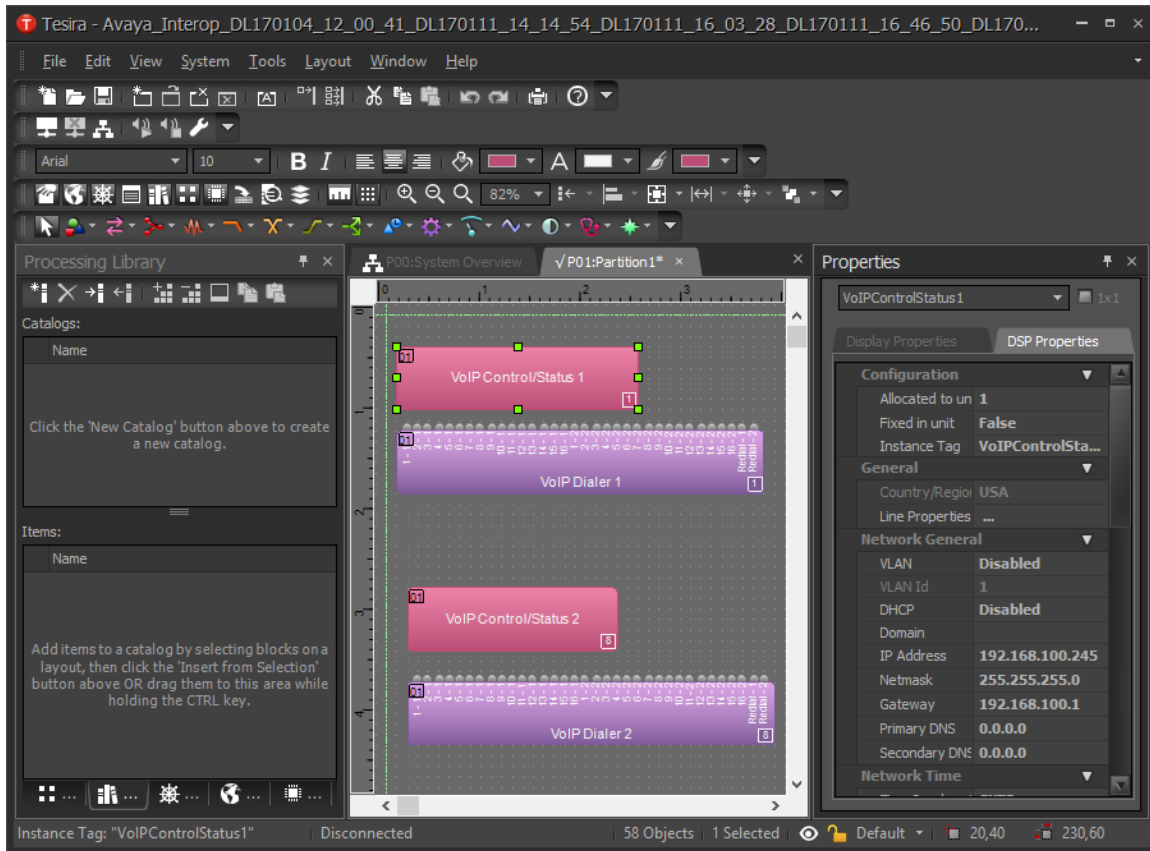
6.3. Modify the IP Network Settings of Biamp Tesira SVC-2

From the **Tesira Software**, right-mouse click on **VoIP Control Status 1** and select **Properties** from the menu (not shown). Select the **DSP Properties** tab and scroll down to the **Network General** section and configure the IP network settings (i.e., *192.168.100.245*) of the Tesira SVC-2 card. Follow the procedure in **Section 6.6** to save and send the configuration to the system.



6.4. Configure SIP Parameters of BiampTesira SVC-2

From the **Tesira Software**, right-mouse click on **VoIP Control/Status 1** and select **Properties** from the menu (not shown). From the **Properties** window on the right, click on **Line Properties** (under the **General** section).



The **VoIP Line Properties** window is displayed as shown below. Navigate to the **Protocol** tab and set the **SIP User Name** and **SIP Display Name** fields to desired values. In this configuration, the SIP extension was used. Next, set the **Authentication User Name** to the SIP extension and the **Authentication Password** to the password used to register Tesira SVC-2 with IP Office Server Edition. The SIP username and password were configured on IP Office Server Edition in **Section 5.5**. Set the **Proxy Vendor** to *Avaya IP Office* and specify the **Proxy Address** to the LAN1 IP address of IP Office Server Edition (i.e., *10.64.102.90*) noted in **Section 5.2**. Specify **Proxy Port 5060** configured on IP Office Server Edition in **Section 5.3**.

The screenshot shows the 'VoIP Line Properties' window with the 'Protocol' tab selected. The 'Line 1' tab is also active. The 'SIP' section contains the following fields and values:

Field	Value	Field	Value
SIP User Name	41501	Registration Expiration	3600 seconds
SIP Display Name	41501	Signaling Port	5060
SIP Domain Name		T1 Timer	500 ms
Authentication User Name	41501	Retransmit Timeout	32000 ms
Authentication Password	*****	Session Timer	Enabled
NetBIOS Domain Name		Session Refresher	Local
Proxy Vendor	Avaya IP Office	Session Expiration	90 seconds
Proxy Address	10.64.102.90	Minimum Session Expiration	90 seconds
Proxy Port	5060	Prack	None
Outbound Proxy Address		Outbound Proxy Port	5060

The 'RTP/SRTP' section contains the following fields and values:

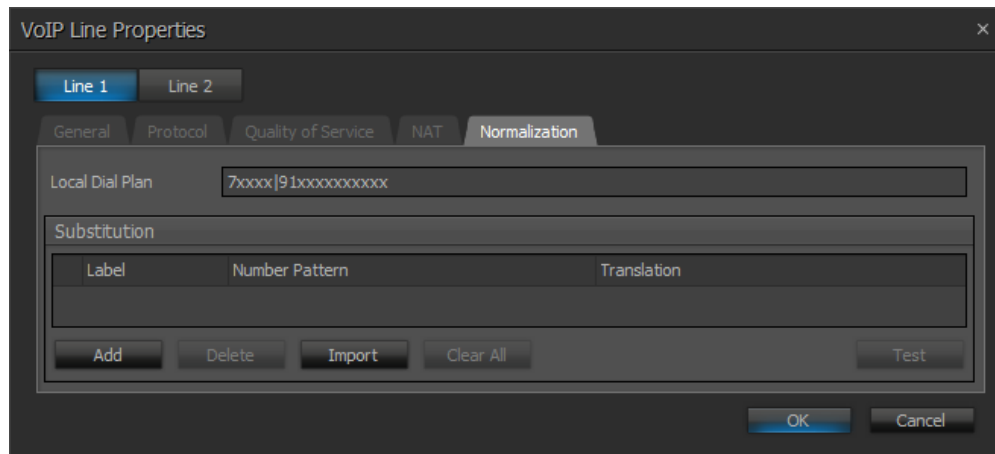
Field	Value
Port Start	10000
Port End	14999
Static RTP Port	Enable
SRTP	
G.723.1 Encoding Rate	5.3 kbps
Suppress RTCP On Hold	Enable

The 'SIPS' section contains the following fields and values:

Field	Value
Keyword	
SIPS URI	Enable

At the bottom right, there are 'OK' and 'Cancel' buttons.

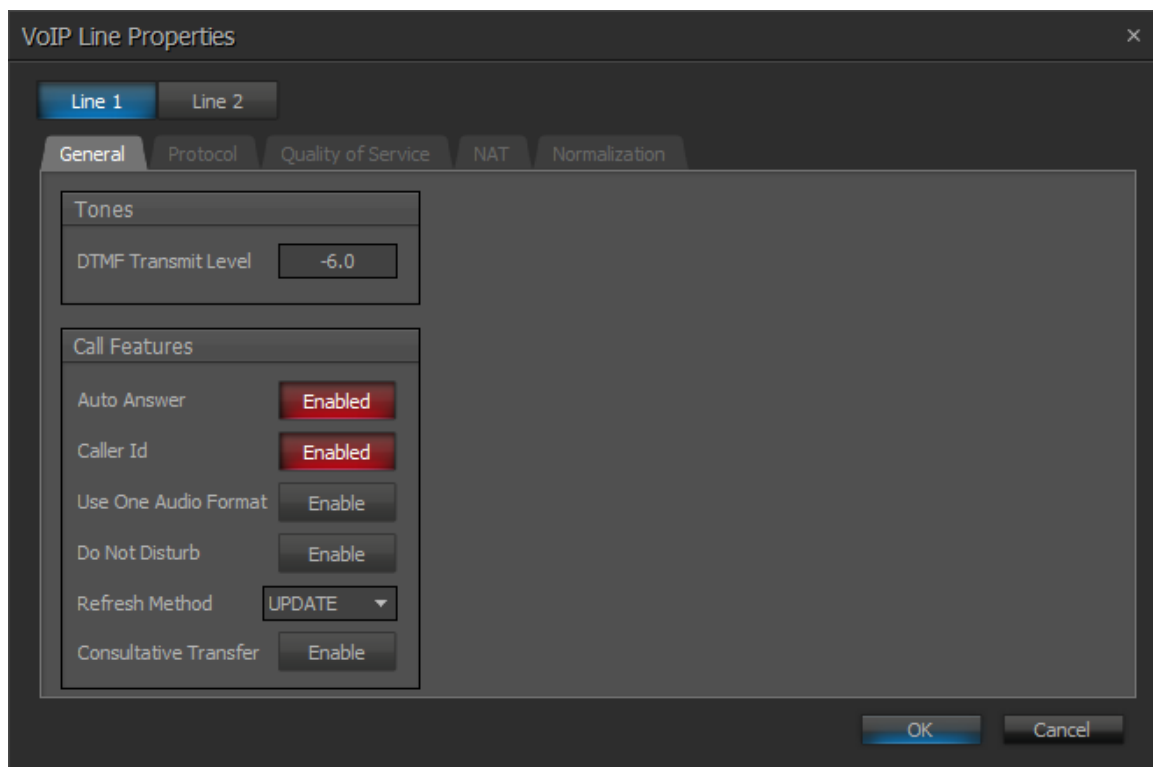
Navigate to the **Normalization** tab to set the dial plan. In this configuration, 5-digit extensions starting with '7' and 11-digit PSTN number prepended with a '9', the shortcode for routing external calls, were specified. If the dialed digit format is not specified in the dial plan, Tesira SVC-2 would have to wait for the inter-digit timeout to expire to determine when dialing has ended. The **Local Dial Plan** field was set to *7xxxx/91xxxxxxxxxx* as shown below.



The image shows the 'VoIP Line Properties' dialog box with the 'Normalization' tab selected. The 'Local Dial Plan' field contains the text '7xxxx|91xxxxxxxxxx'. Below this is a 'Substitution' table with columns 'Label', 'Number Pattern', and 'Translation'. At the bottom of the table are buttons for 'Add', 'Delete', 'Import', 'Clear All', and 'Test'. The 'OK' and 'Cancel' buttons are at the bottom right of the dialog.

Label	Number Pattern	Translation
-------	----------------	-------------

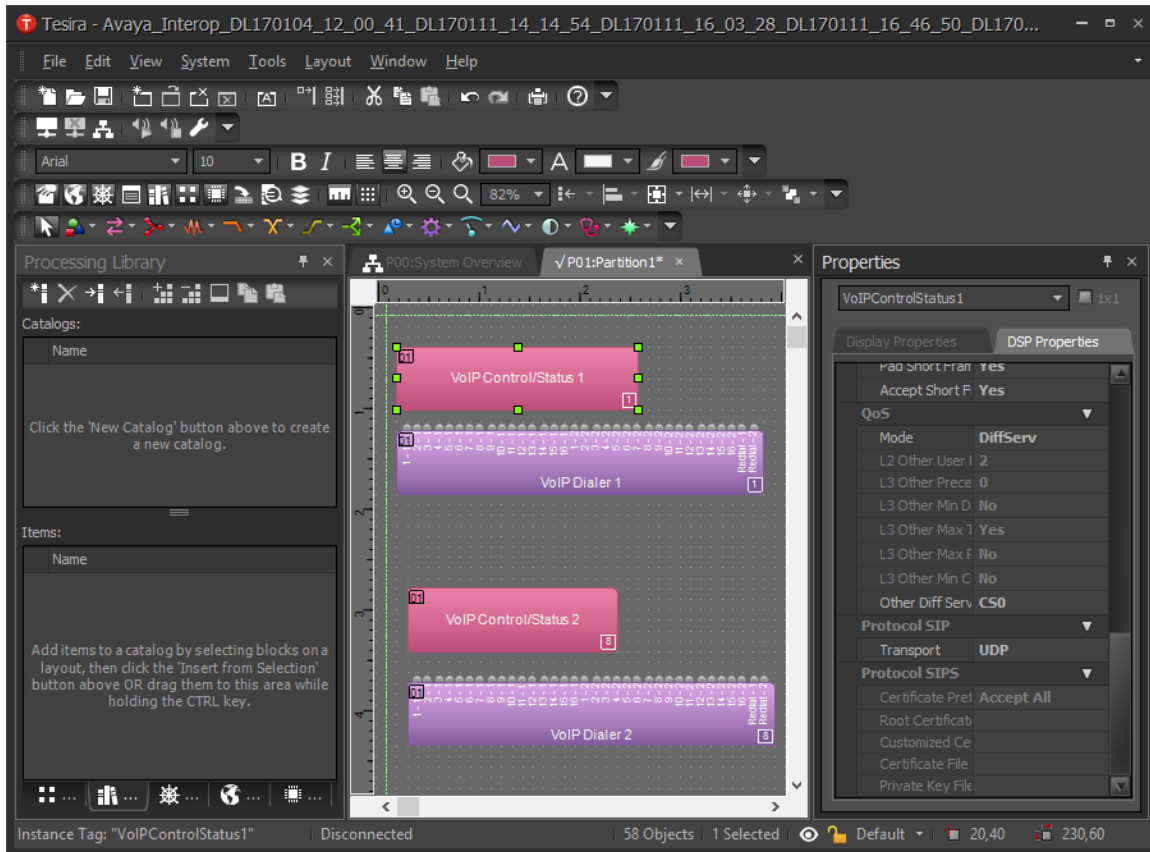
Navigate to the **General** tab and select whether blind or consultative transfers should be supported. In the configuration below, the **Consultative Transfer** field is not selected indicating that blind transfers are supported. Click **OK**.



The image shows the 'VoIP Line Properties' dialog box with the 'General' tab selected. The 'Tones' section has a 'DTMF Transmit Level' of '-6.0'. The 'Call Features' section includes 'Auto Answer' (Enabled), 'Caller Id' (Enabled), 'Use One Audio Format' (Enable), 'Do Not Disturb' (Enable), 'Refresh Method' (UPDATE), and 'Consultative Transfer' (Enable). The 'OK' and 'Cancel' buttons are at the bottom right of the dialog.

Feature	Setting
Auto Answer	Enabled
Caller Id	Enabled
Use One Audio Format	Enable
Do Not Disturb	Enable
Refresh Method	UPDATE
Consultative Transfer	Enable

The user is returned to the main window of the **Tesira Software**. Navigate to **Properties** → **Protocol SIP** and set the **Transport** to **UDP** as shown below.



6.5. Verify Codec Settings

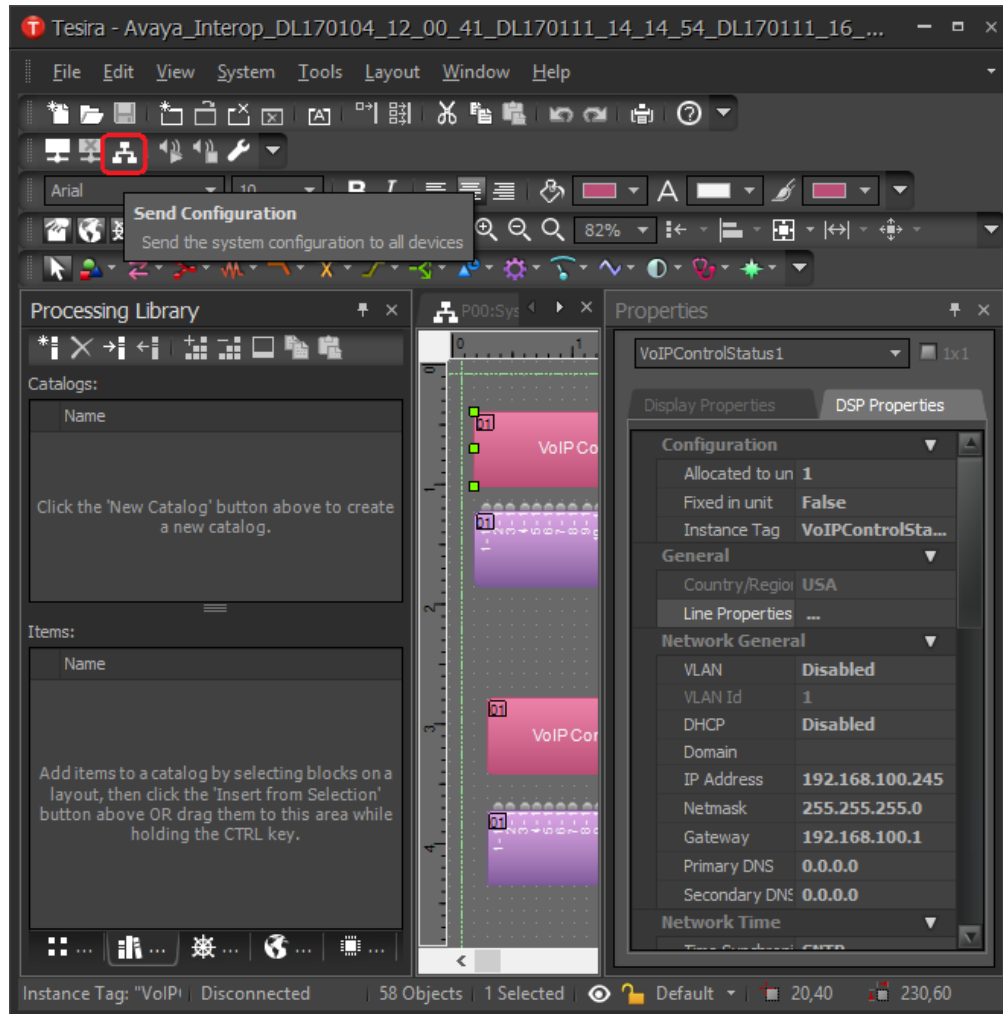
Double-click on **VoIP Control/Status 1** and navigate to the **General** tab shown below. In the **Voice Codec Priorities** section, select the codecs to be supported. IP Office Server Edition support G.711 and G.729, which were selected in the configuration as shown below. Close the window.

The screenshot shows the 'VoIP Control/Status 1' configuration window with the 'General' tab selected. The window is divided into several sections: 'Dial Plan', 'Tones', 'Network', 'Call Features', and 'Voice Features'. The 'Voice Codec Priorities' section is expanded, showing a table of supported codecs.

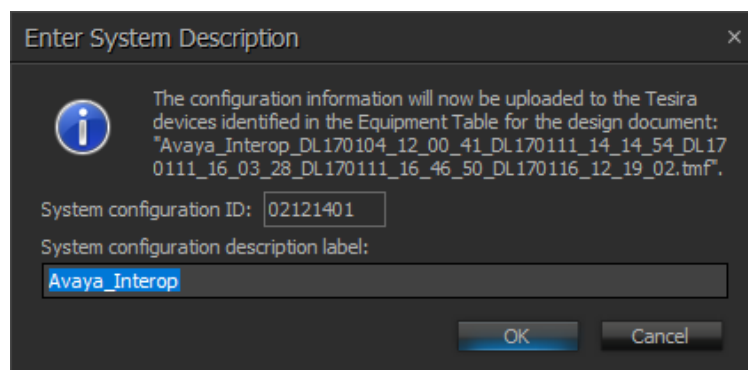
Use	Codec	Jitter Buffer Min	Jitter Buffer Max
<input type="checkbox"/>	G722	40	200
<input checked="" type="checkbox"/>	G711U	40	200
<input checked="" type="checkbox"/>	G711A	40	200
<input checked="" type="checkbox"/>	G729AB	40	200
<input type="checkbox"/>	G7231	40	200

6.6. Save and Send the New Configuration to the System

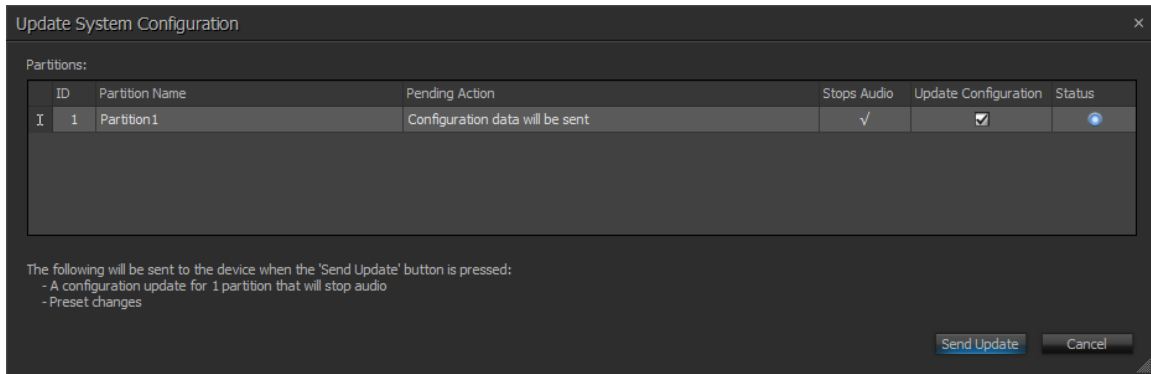
From the **Tesira Software**, save the configuration by clicking on **File → Save** and then send the configuration to the system by clicking on the **Send Configuration** icon shown below.



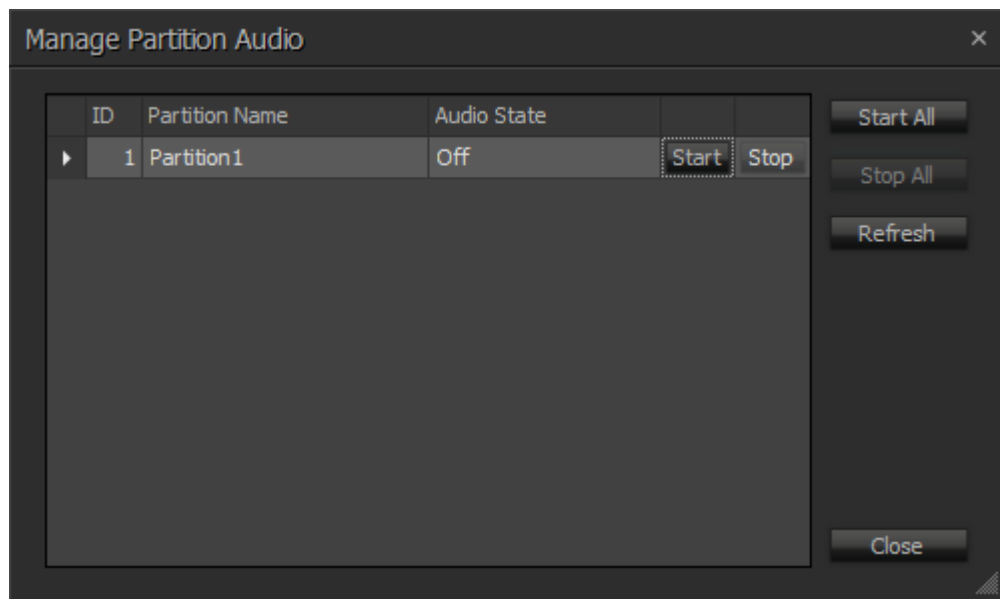
Click **OK** in the next window shown below.



In the **Update System Configuration** window shown below, select the **Update Configuration** checkbox and click the **Send Update** button.



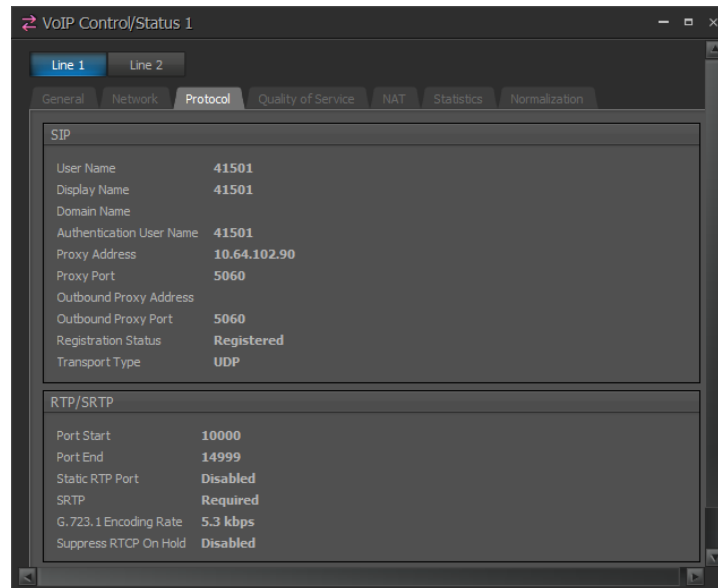
In the **Manage Partition Audio** window shown below, click on **Start All** and then click on the **Close** button.



7. Verification Steps

This section provides the tests that may be performed to verify proper configuration of the Biamp Tesira SVC-2 with Avaya IP Office Server Edition.

1. Verify that Tesira SVC-2 has successfully registered with IP Office Server Edition. Double-click on **VoIP Control/Status** in the Tesira Software and navigate to the Protocol tab. Note the **Registration Status**.



2. Verify basic telephony feature by establishing calls with Tesira SVC-2. Verify two-way audio, that the call can be placed on hold, and that a 3rd party can be joined into a conference.

8. Conclusion

These Application Notes have described the administration steps required to integrate the Biamp Tesira SVC-2 Card (installed in Biamp Tesira SERVER-IO) with Avaya IP Office Server Edition. Biamp Tesira SVC-2 successfully registered with Avaya IP Office Server Edition and basic and telephony features were verified. All test cases passed with observations noted in **Section 2.2**.

9. Additional References

This section references the documentation relevant to these Application Notes. The following Avaya product documentation is available at support.avaya.com and the Tesira product documentation is available at www.biamp.com/biamp-downloads.

- [1] *Administering Avaya IP Office Platform with Web Manager*, Release 10.0, September 2016.
- [2] *Tesira® Server IO Operation Manual*, 585.027890C, March 2016.

©2017 Avaya Inc. All Rights Reserved.

Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

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.