Avaya Solution & Interoperability Test Lab

Application Notes for Spectralink Versity Enterprise Wi-Fi Smartphones with Avaya IP Office Server Edition - Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate the Spectralink Versity Enterprise Wi-Fi Smartphones with Avaya IP Office Server Edition 11.1. The Spectralink Versity Enterprise Wi-Fi Smartphones registered with Avaya IP Office Server Edition via SIP, including the following Spectralink Versity series handsets: Versity 9240, Versity 9540, and Versity 9640. The Spectralink Versity Enterprise Wi-Fi Smartphones communicate with Avaya IP Office Server Edition over an 802.11 wireless network.

The Avaya IP Office Server Edition configuration consisted of two Avaya IP Office systems, a primary Linux server at the Main site and an expansion IP Office 500 V2 at the Remote site that were connected via Small Community Network (SCN) trunks. In the compliance test, Spectralink Versity Enterprise Wi-Fi Smartphones were registered at each site.

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.

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1. Introduction

These Application Notes describe the configuration steps required to integrate the Spectralink Versity Enterprise Wi-Fi Smartphones with Avaya IP Office Server Edition 11.1. The Spectralink Versity Enterprise Wi-Fi Smartphones registered with Avaya IP Office Server Edition via SIP using UDP transport, including the following Spectralink Versity series handsets: Versity 9240, Versity 9540, and Versity 9640. The Spectralink Versity Enterprise Wi-Fi Smartphones communicate with Avaya IP Office Server Edition over an 802.11 wireless network.

The Avaya IP Office Server Edition configuration consisted of two Avaya IP Office systems, a primary Linux server at the Main site and an expansion IP Office 500 V2 at the Remote site that were connected via Small Community Network (SCN) trunks. In the compliance test, Spectralink Versity Enterprise Wi-Fi Smartphones were registered at each site.

2. General Test Approach and Test Results

The interoperability compliance test included feature and serviceability testing. The feature testing focused on establishing calls between Spectralink Versity, Avaya SIP / H.323 deskphones, and the PSTN, and exercising basic telephony features, such as hold, mute, transfer and conference. In addition, calls were made between the primary and expansion IP Office systems. Additional telephony features, such as call forward, call coverage, call park/unpark, and call pickup were also verified using IP Office short codes.

The serviceability testing focused on verifying that the Spectralink Versity came back into service after re-connecting the access point and rebooting the phones.

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.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in this DevConnect Application Note 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.

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For the testing associated with this Application Note, the interface between Avaya systems and Spectralink Versity did not include use of any specific encryption features as requested by Spectralink.

2.1. Interoperability Compliance Testing

Interoperability compliance testing covered the following features and functionality:

- SIP registration of Spectralink Versity with IP Office Server Edition and IP Office 500 V2 Expansion System.
- Calls between Spectralink Versity and Avaya SIP / H.323 deskphones with Direct IP Media (Shuffling) enabled and disabled.
- Calls between Spectralink Versity and Avaya SIP / H.323 deskphones on IP Office Server Edition and IP Office 500 V2 Expansion System.
- Calls between the Spectralink Versity and the PSTN.
- G.711, G.729, and G.722 codec support.
- UDP transport protocol.
- Proper recognition of DTMF tones.
- Basic telephony features, including hold, mute, redial, multiple calls, blind and attended transfer, and 3-party conference.
- Call transfers and conference calls across the primary and expansion IP Office systems while Spectralink Versity was registered with the primary and expansion IP Office systems.
- Extended telephony features using Avaya IP Office short codes for wakeup calls, Do Not Disturb, Call Forward, Follow Me, Call Park/Unpark, and Call Pickup.
- Voicemail coverage, MWI support, and logging into voicemail system to retrieve voice messages.
- Use of programmable buttons on the Spectralink Versity.
- Proper system recovery after a restart of the Spectralink Versity and loss of IP network connectivity.

2.2. Test Results

All test cases passed with the following observations:

There are a few specific blind transfer scenarios, listed below, that may result in no audio after a blind transfer is completed. These blind transfer scenarios involve a blind transfer between IP Office Server Edition and IP Office 500 V2 Expansion only, connected via an SCN trunk with Media Security set to *Preferred*.

- Spectralink Versity calls another Spectralink Versity, both registered to IP Office Server Edition. The Spectralink Versity that originated the call performs a blind transfer to Spectralink Versity on the IP Office 500 V2 Expansion.

- Spectralink Versity calls another Spectralink Versity, both registered to IP Office 500 V2 Expansion. The Spectralink Versity that originated the call performs a blind transfer to Spectralink Versity on the IP Office Server Edition.

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- An Avaya J100 Series SIP Deskphone on IP Office 500 V2 Expansion calls Spectralink Versity on IP Office Server Edition. The Spectralink Versity performs a blind transfer to an Avaya 96x1 H.323 Deskphone on IP Office 500 V2 Expansion.

As mentioned, these issues occurred when Media Security was set to *Preferred* for the SCN trunk between IP Office Server Edition and IP Office 500 V2 Expansion. If Media Security were set to *Disabled*, the aforementioned blind transfer issues wouldn't occur. Avaya is investigating these issues.

2.3. Support

For technical support and information on Spectralink Versity Enterprise Wi-Fi Smartphones, contact Spectralink technical support at:

- Phone: 1-800-775-5330
- Website: https://support.spectralink.com/
- Email: technicalsupport@spectralink.com

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3. Reference Configuration

Figure 1 illustrates a sample configuration consisting of Spectralink Versity Enterprise Wi-Fi Smartphones with Avaya IP Office Server Edition at the Main site and an Avaya IP Office 500 V2 Expansion System at the Remote site. Spectralink Versity and Avaya H.323/SIP deskphones registered with Avaya IP Office Server Edition and Avaya IP Office 500 V2 Expansion System via SIP. An access point was used to provide Spectralink Versity with access to the 802.11 wireless network. In addition, a DHCP server (not shown) was used to provide IP network settings to Spectralink Versity.

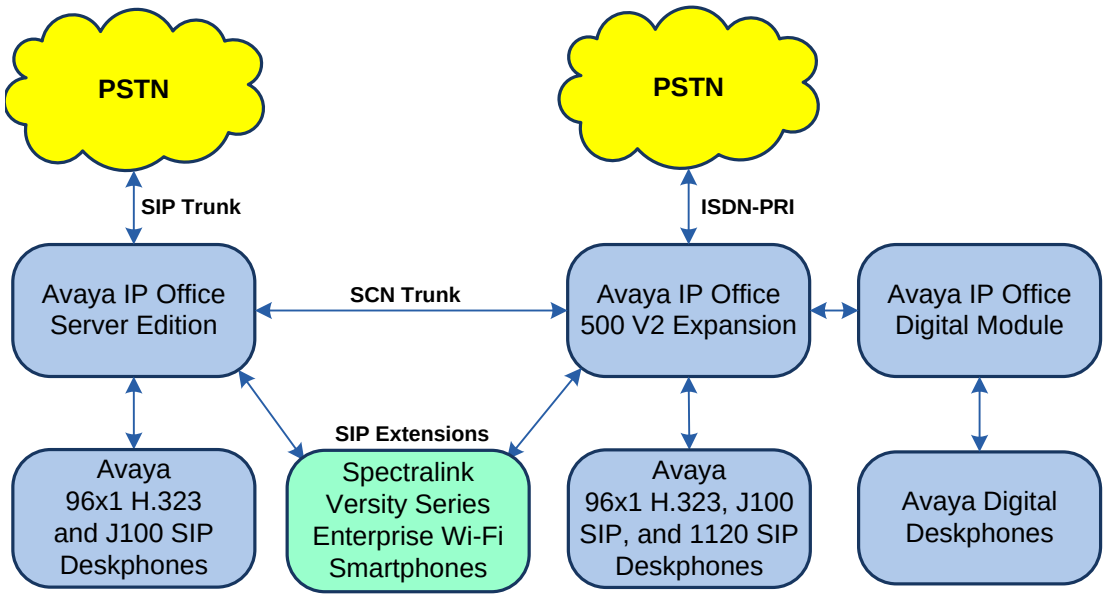

Figure 1: Spectralink Versity Enterprise Wi-Fi Smartphones with Avaya IP Office

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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 Server Edition	11.1.0.2.0 build 14
Avaya IP Office 500 V2 Expansion System	11.1.0.2.0 build 14
Avaya 96x1 Series IP Deskphones	6.8304 (H.323)
Avaya J129 Deskphone	4.0.6.0.8 (SIP)
Spectralink Versity Enterprise Wi-Fi Smartphones	13.1.27141 (BizPhone Application) 2.1.0.894 (Versity 95, 96 Series – Android 10) 1.2.0.611 (Versity 92 Series – Android 10)

Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office 500 V2 and also when deployed with IP Office Server Edition in all configurations.

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5. Configure Avaya IP Office Server Edition

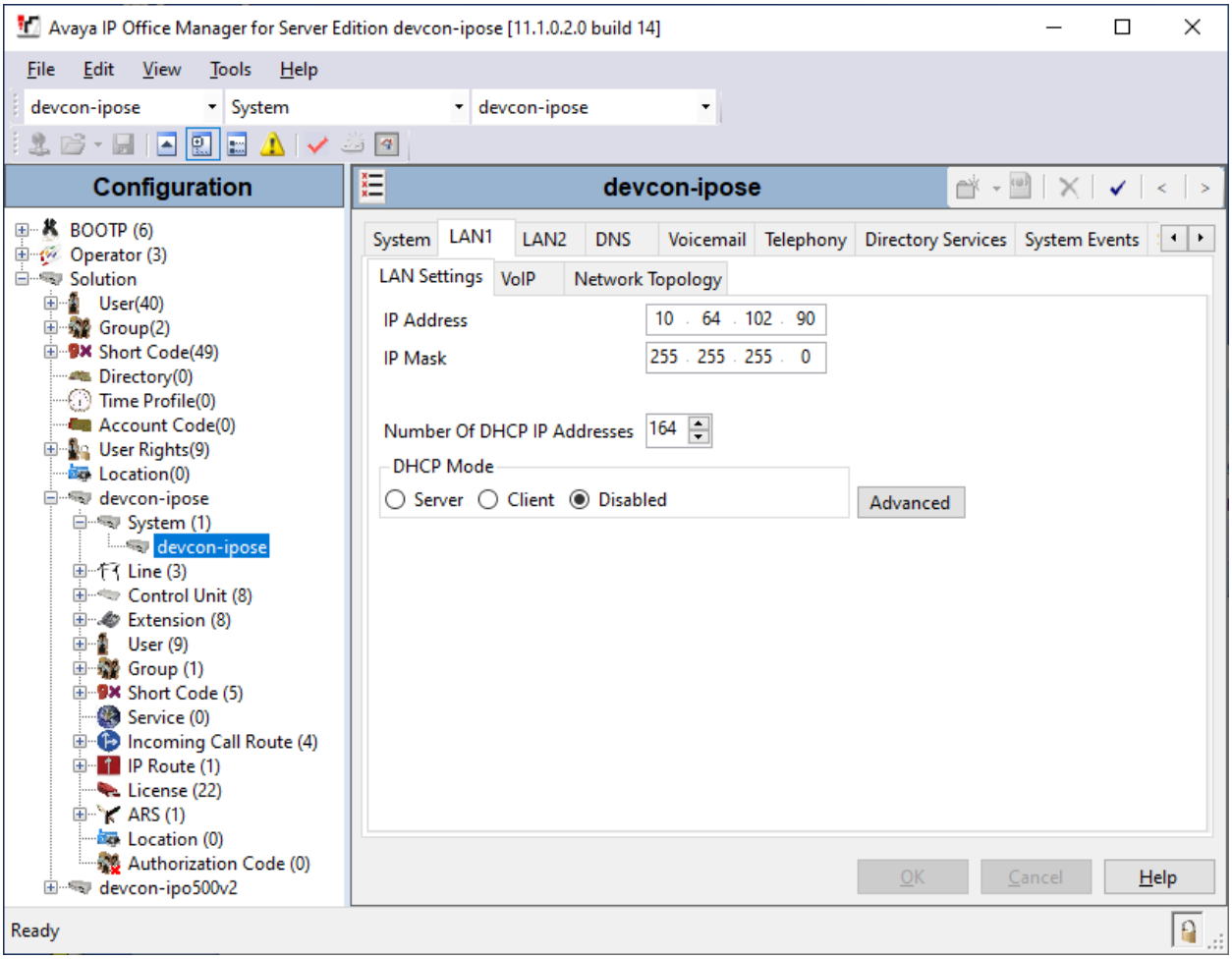
This section provides the procedures for configuring Avaya IP Office Server Edition. The procedures include the following areas:

- Obtain LAN IP address
- Administer SIP registrar
- Administer SIP extension for Spectralink Versity
- Administer SIP user for Spectralink Versity

Note: This section covers the configuration of Avaya IP Office Server Edition, but the configuration is the same for Avaya IP Office 500 V2 Expansion System.

5.1. 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 Spectralink Versity.



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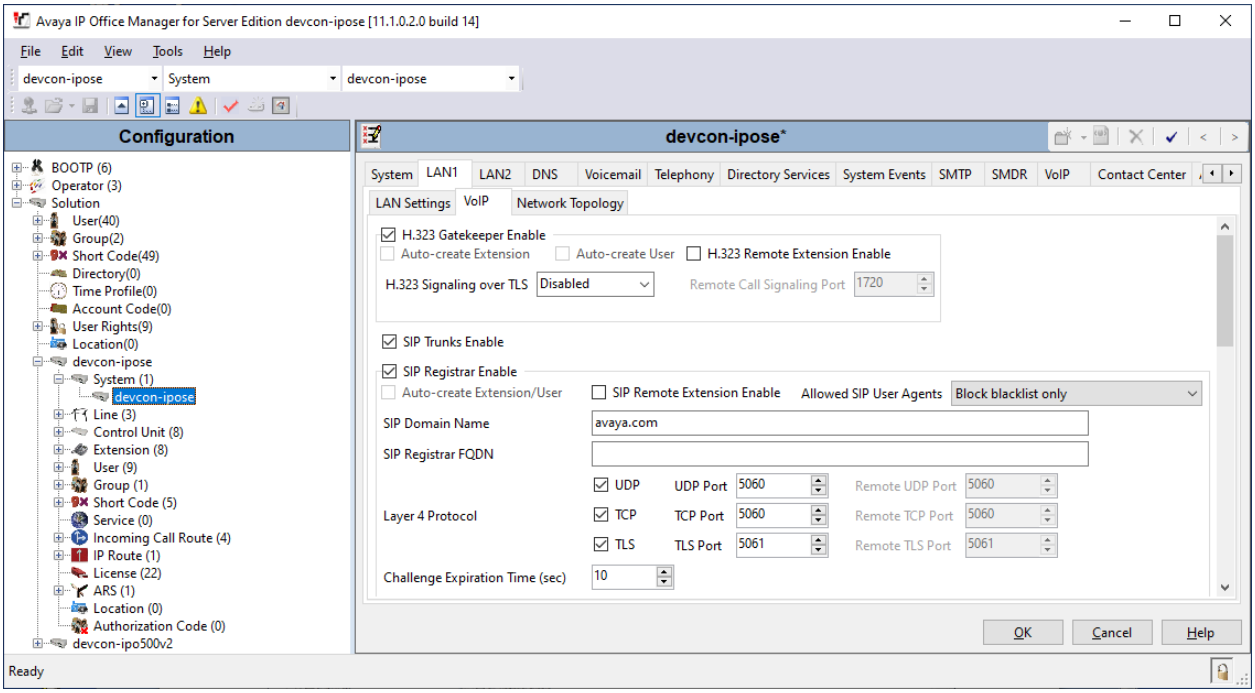
5.2. Administer SIP Registrar

Select the **VoIP** sub-tab. Ensure that **SIP Registrar Enable** is checked and enter a valid **Domain Name**. In the compliance testing, the **Domain Name** field was set to *avaya.com*. UDP transport protocol was enabled for the **Layer 4 Protocol**, which was used by Spectralink Versity.



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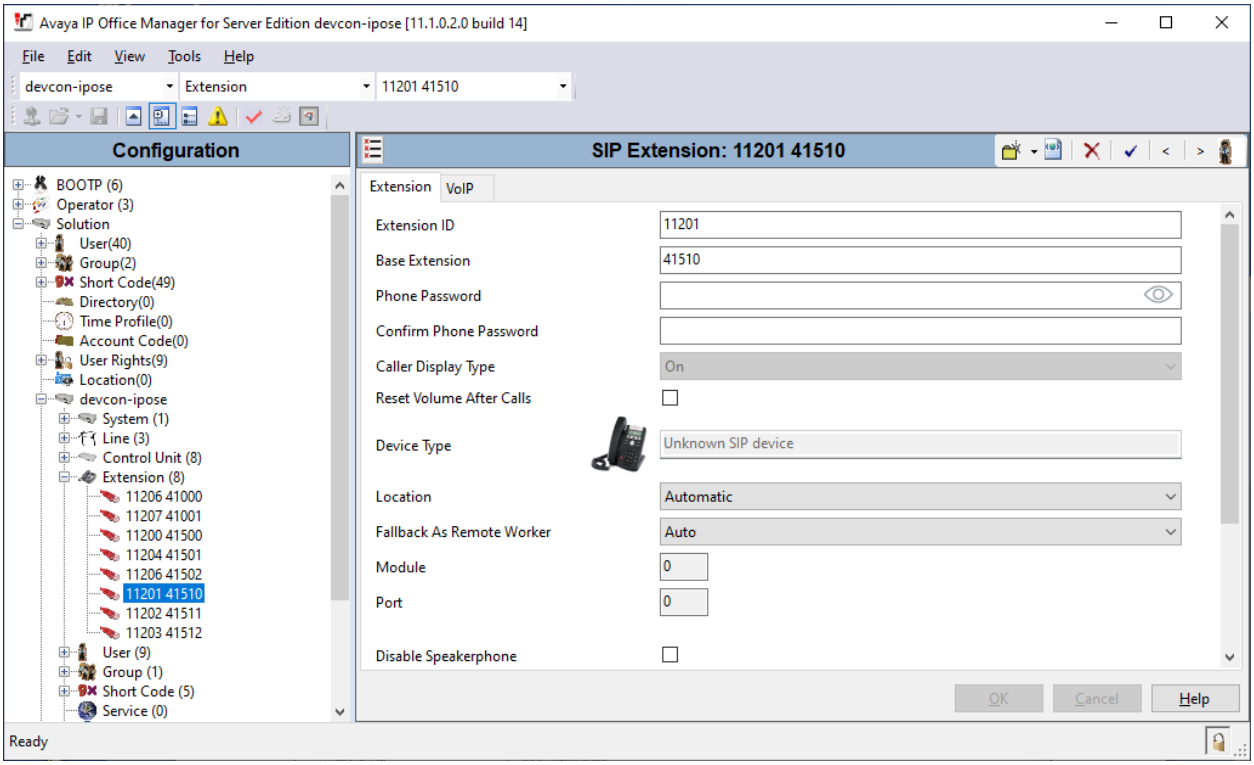
5.3. Administer SIP Extension for Spectralink Versity

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 as shown below. In this example, Spectralink Versity was assigned extension *41510*. This is the extension that Spectralink Versity will use to register with IP Office Server Edition.



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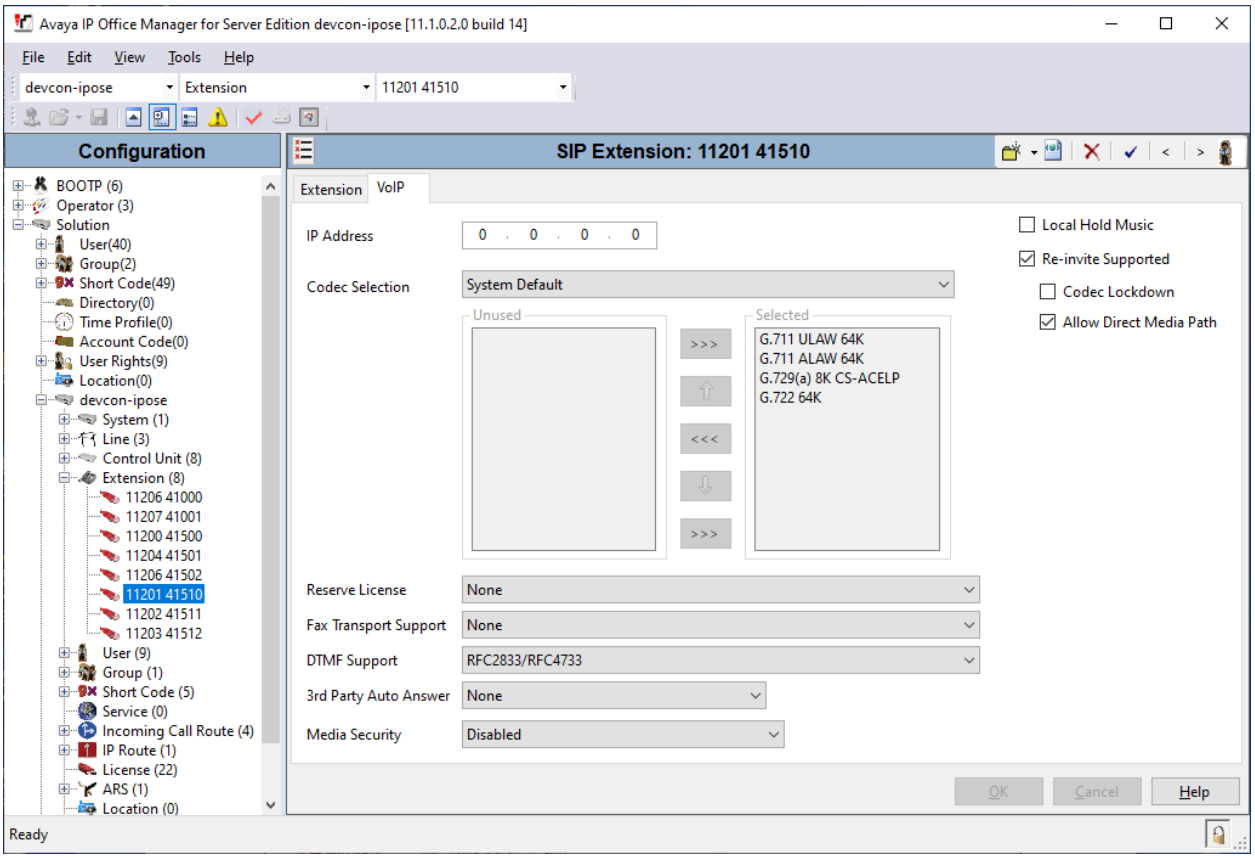
Select the **VoIP** tab and retain the default values in the all fields. During the compliance test, Spectralink Versity was tested with G.711, G.729, and G.722 codecs. Enable **Allow Direct Media Path** so that audio/RTP flows directly between two SIP endpoints without using media resources in Avaya IP Office Server Edition. Media Security was disabled for Spectralink Versity.



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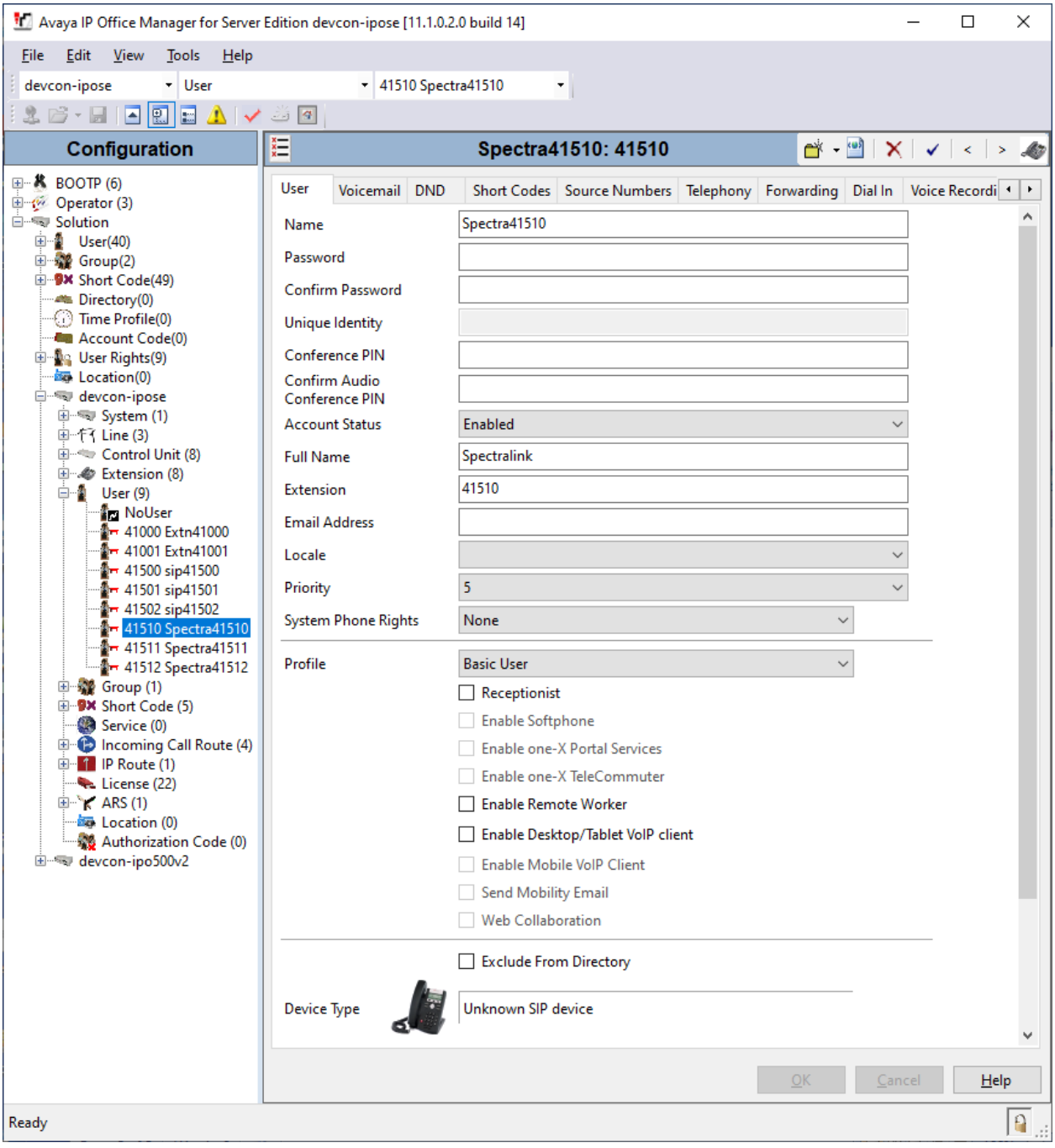
5.4. Administer SIP User for Spectralink Versity

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 above.



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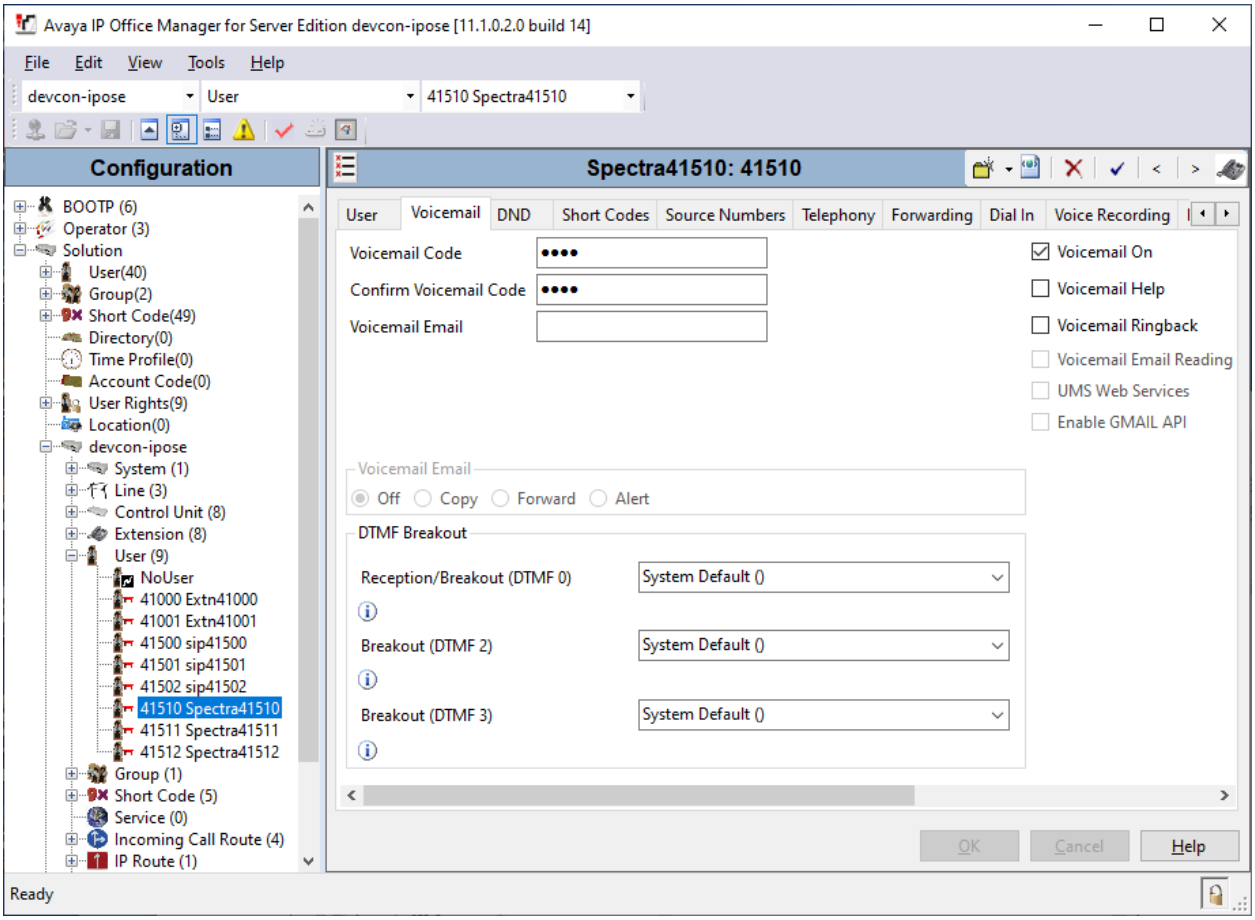
Select the **Voicemail** tab and select **Voicemail On** to enable voicemail for Spectralink Versity.



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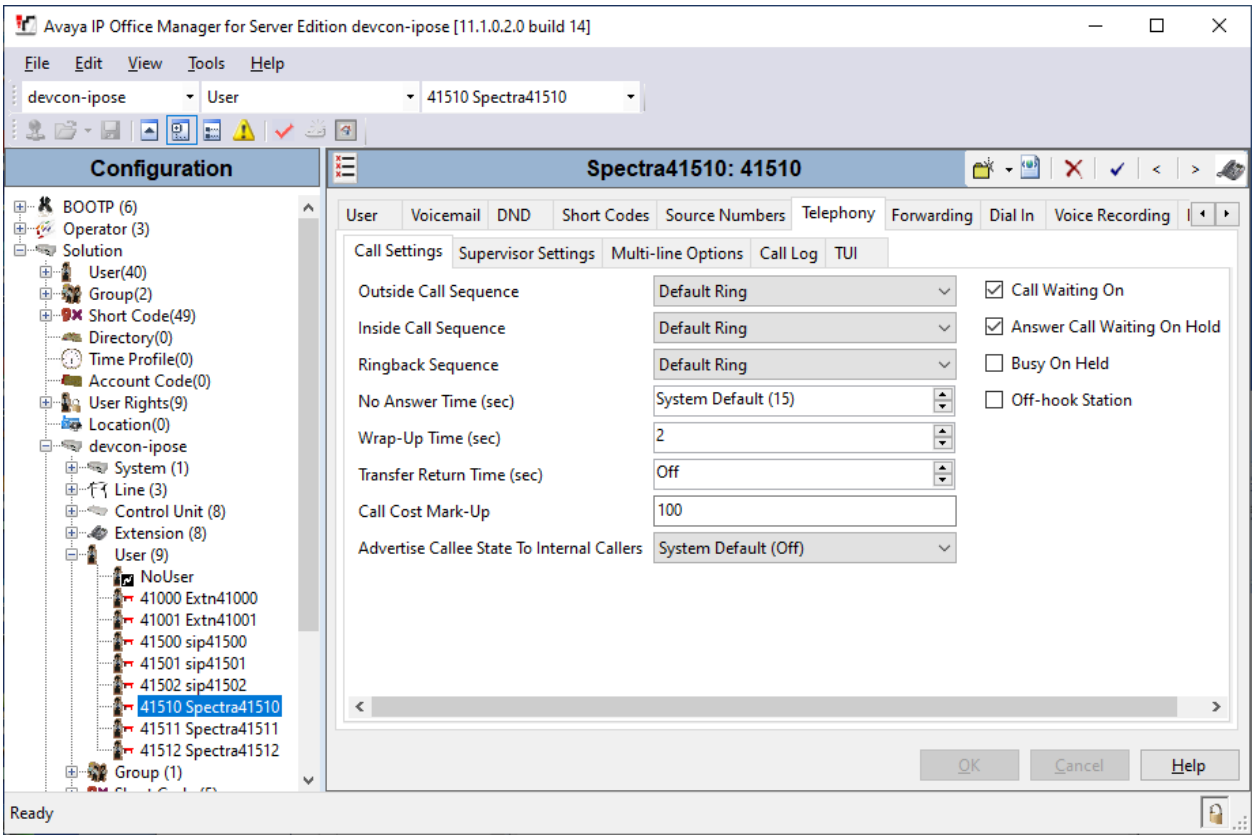
Select the **Telephony** tab followed by the **Call Settings** sub-tab. Note the settings below for the user.

Note: Call Waiting is required to allow a secondary incoming call to Spectralink Versity; otherwise, a second incoming call would be denied.



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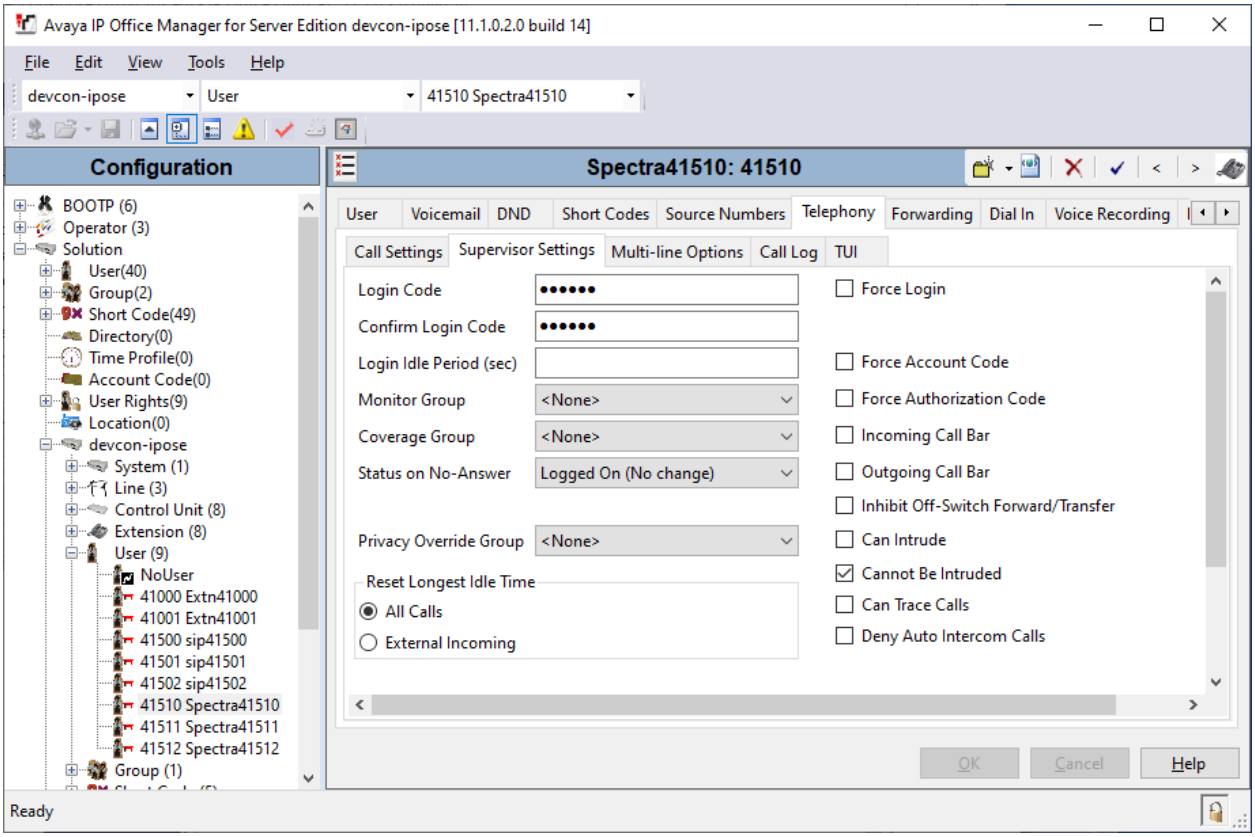
Select the **Supervisor Settings** sub-tab and enter a desired **Login Code**. The **Login Code** is the password that will be used by Spectralink Versity to register with IP Office Server Edition. The **Login Code** is configured in the **Registration 1 → Password** parameter on Spectralink Versity.



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6. Configure Spectralink Versity Enterprise Wi-Fi Smartphones

This section covers the SIP configuration of the Spectralink Versity Enterprise Wi-Fi Smartphones. Refer to **[2]** for more information on configuring Spectralink Versity. The configuration was performed via the **Biz Phone Settings** menu on the smartphone. The procedure covers the following areas:

- Configure DHCP Server
- Configure SIP Phone Settings

6.1. Configure DHCP Server

Spectralink Versity must first acquire several IP network settings before proceeding with provisioning. These settings were automatically obtained from a DHCP server. Alternatively, Spectralink Versity could be configured with static IP addresses, but for the compliance test, a DHCP server was used.

In addition to obtaining IPv4 addresses from the DHCP server for each Spectralink Versity, the DHCP server also provided the following settings:

- Option 3: Default Gateway
- Option 6: DNS Server (optional)

6.2. Configure SIP Phone Settings

Click on the **Biz Phone** app icon on the smartphone as shown below.

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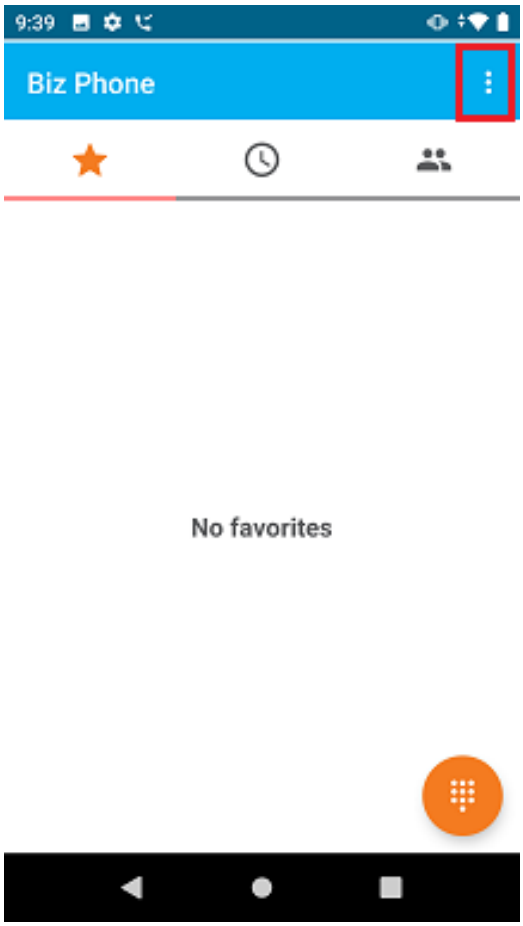
In the **Biz Phone** screen shown below, click on the overflow menu (i.e., 3 dots in upper right-hand corner).



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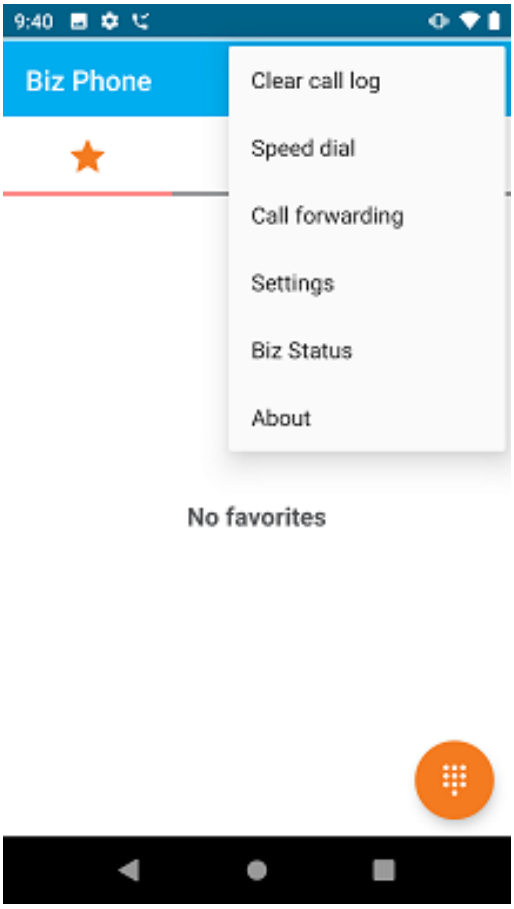
From the menu, select **Settings** to access the **Biz Phone settings**.



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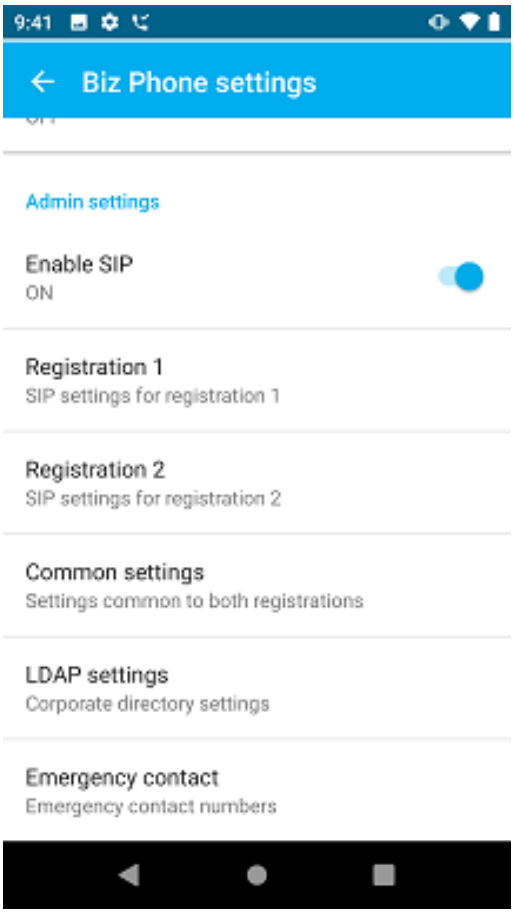
Under the **Admin settings** section, turn on the **Enable SIP** option as shown below and select the **Registration 1** option to display the SIP settings.



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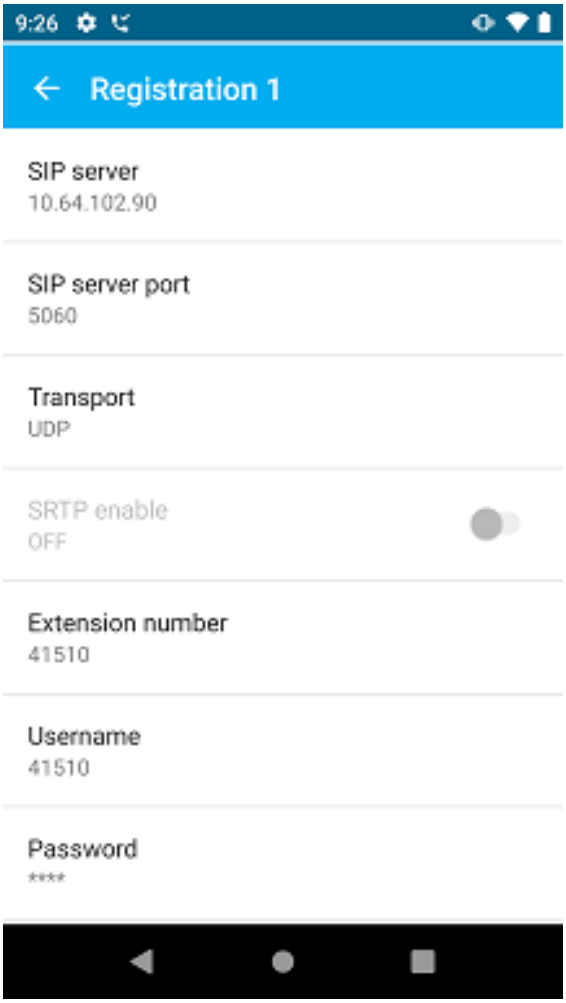
In the **Registration 1** screen, configure the following parameters:

- **SIP server:** Set to IP Office Server Edition LAN1 IP address (e.g., *10.64.102.90*).
- **SIP server port:** Set to appropriate SIP port (e.g., *5060*).
- **Transport:** Set to *UDP* transport protocol.
- **SRTP enable:** Disable this option.
- **Extension number:** Set to the SIP extension (e.g., *41510*).
- **Username:** Set to the SIP extension (e.g., *41510*).
- **Password:** Set to the SIP password specified as the **Login Code** in **Section 5.4**.



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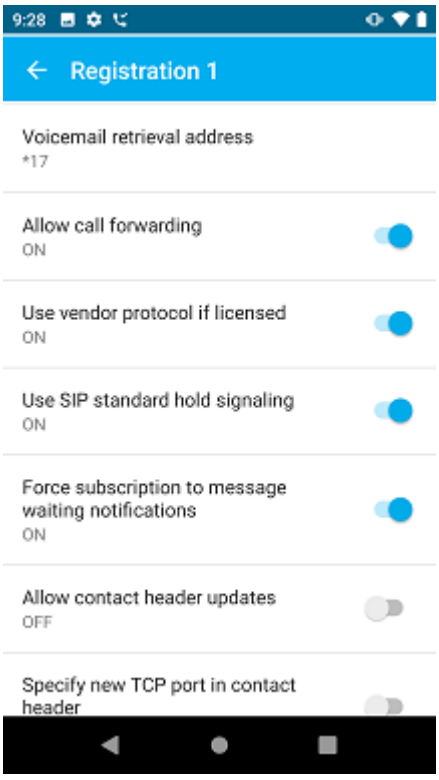
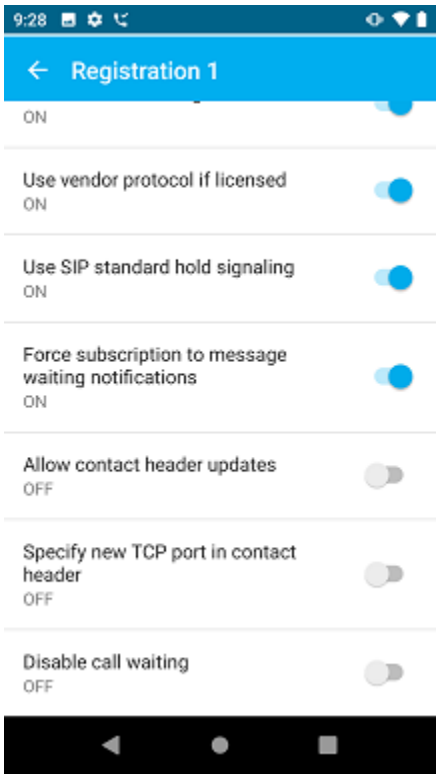
Scroll down to the bottom half of the **Registration 1** screen and configure the following parameters:

- **Voicemail retrieval address:** Set to the Voicemail Collect shortcode on IP Office (e.g., **17*).
- **Force subscription to message Waiting notifications:** Enable this option.
- **Disable call waiting:** Set to *OFF*.

Accept the default values for the remaining parameters.





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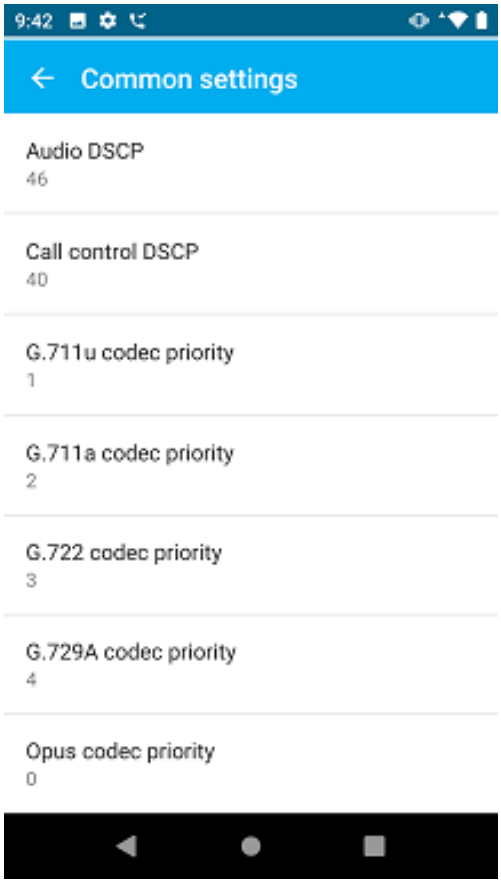
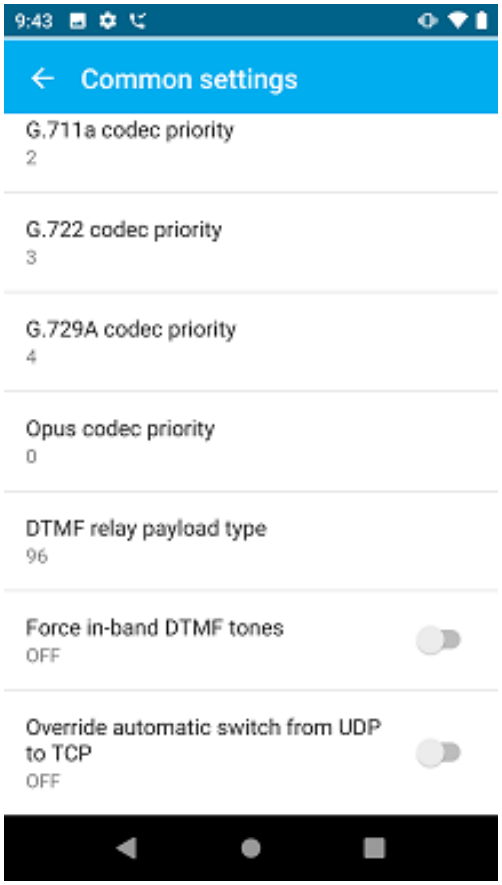
In the main screen of the **Biz Phone** application, select **Common settings** (not shown) to prioritize the codecs as needed.





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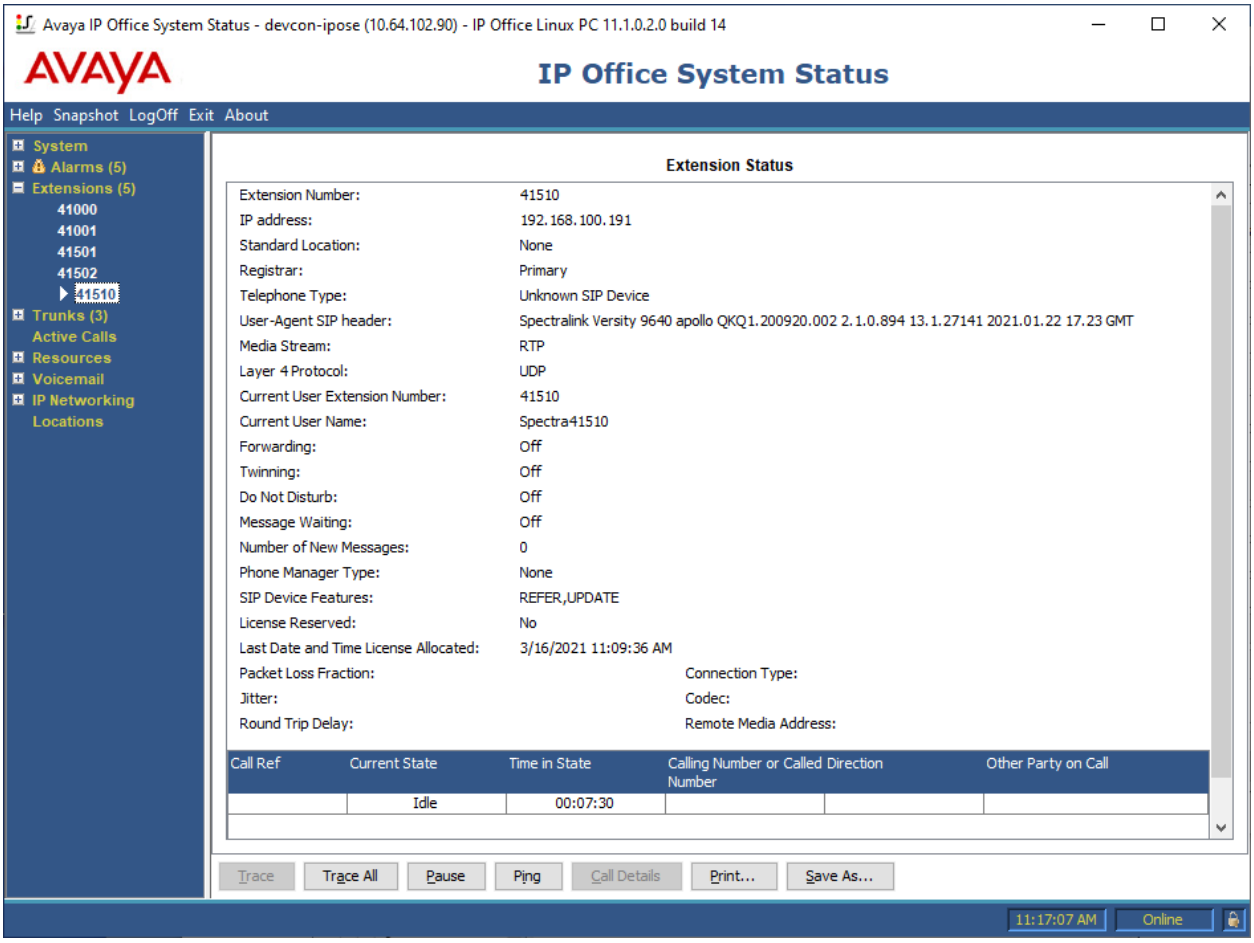
6.3. Verification Steps

This section provides the tests that can be performed to verify proper configuration of a Spectralink Versity Enterprise Wi-Fi Smartphone with Avaya IP Office Server Edition.

1. Verify that Spectralink Versity has successfully registered with IP Office Server Edition. Launch **IP Office System Status** and navigate to **Extensions → <*SIP Extension*>,** where <*SIP Extension*> is the Spectralink Versity extension. Verify that the **Current State** is *Idle* as shown below.



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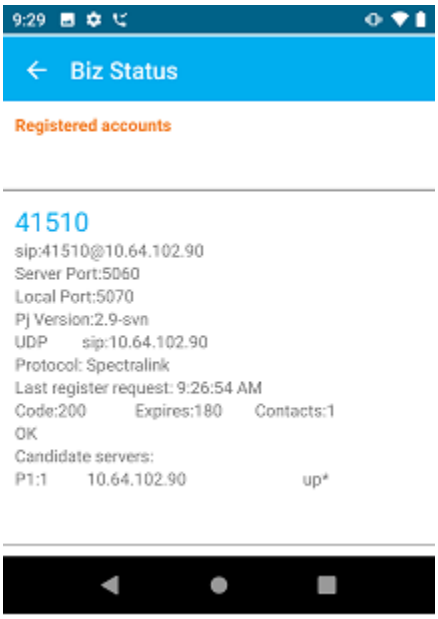
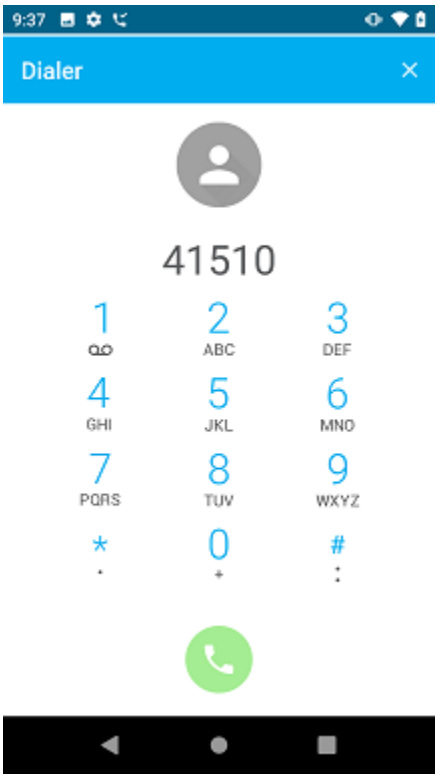
2. Alternatively, the registration status can also be checked on Spectralink Versity by opening the **Biz Status** application. Note that the server status on the last line indicates an *up** status.



3. From the Spectralink Versity Dialer shown below, place a call to an Avaya IP Deskphone or another Spectralink Versity smartphone. While the call is active, basic telephony features can be exercised to verify proper operation.



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7. Conclusion

These Application Notes have described the administration steps required to integrate Spectralink Versity Enterprise Wi-Fi Smartphones with Avaya IP Office Server Edition 11.1. The Spectralink Versity Enterprise Wi-Fi Smartphones successfully registered with IP Office Server Edition and IP Office 500 V2 Expansion System, and basic and supplementary telephony features were verified. All test cases passed with observations noted in **Section 2.2.**

8. Additional References

This section references the Avaya and Spectralink documentation relevant to these Application Notes.

[1] *Administering Avaya IP Office™ Platform Manager*, Release 11.1.1, Issue 29, February 2021, available at http://support.avaya.com.

[2] *Spectralink Versity Smartphone User Guide*, Release 1.8, 720-0060-000 version H, May 2020, available at https://support.spectralink.com/versity.

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