Avaya Solution & Interoperability Test Lab

Application Notes for Polycom® SpectraLink® 8400 Series Wireless Telephones and Avaya IP Office – Issue 1.0

Abstract

These Application Notes describe the procedures for configuring Polycom® SpectraLink® 8400 Series Wireless Telephones which were compliance tested with Avaya IP Office.

The overall objective of the interoperability compliance testing is to verify Polycom® SpectraLink® 8400 Series Wireless Telephones functionalities in an environment comprised of Avaya IP Office and various Avaya H.323, SIP IP Telephones, and DCP telephones.

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 procedures for configuring Polycom® SpectraLink® 8400 Series Wireless Telephones (8440 and 8450) which were compliance tested with Avaya IP Office.

Polycom® SpectraLink® 8400 series Telephones (herein referred to as SpectraLink 8400 Series) improve productivity and responsiveness for on-site mobile professionals across a wide range of industries, including healthcare, retail, manufacturing and hospitality. Built on open standards, SpectraLink 8400 Series transforms the delivery of mobile enterprise applications by bringing the power of thin client and browser technology to front-line professionals in an easy-to-use and easy-to-manage interface. Additionally, SpectraLink 8400 Series supports a broad range of interfaces to enterprise-grade PBX, wireless LAN, and infrastructures to deliver maximum interoperability with the low cost of ownership.

These Application Notes assume that Communication Manager and Session Manager are already installed and basic configuration steps have been performed. Only steps relevant to this compliance test will be described in this document. For further details on configuration steps not covered in this document, consult references [1] and [2].

2. General Test Approach and Test Results

The general test approach was to place calls to and from SpectraLink 8400 Series and exercise basic telephone operations. The main objectives were to verify the following:

- Registration
- Codecs (G.711MU and G.729A)
- Inbound calls
- Outbound calls
- Hold/Resume
- Call termination (origination/destination)
- Transfer with Shuffling enabled (origination/destination/ attended/unattended)
- Transfer with Shuffling disabled (origination/destination/ attended/unattended)
- Three party conference (origination/destination)
- Avaya Feature Name Extension (FNE)
    - Call Park
    - Call Pickup
    - Call Forward (Unconditional, Busy/no answer)
- MWI
- Voicemail
- Serviceability

2.1. Interoperability Compliance Testing

The interoperability compliance test included features and serviceability. The focus of interoperability compliance testing was primarily on verifying call establishment on SpectraLink 8400 Series. SpectraLink 8400 Series operations such as inbound calls, outbound calls,

hold/resume, transfer, conference, short code, and SpectraLink 8400 Series interactions with Avaya IP Office, and Avaya SIP, H.323, and digital telephones were verified. The serviceability testing introduced failure scenarios to see if SpectraLink 8400 Series can recover from failures.

2.2. Test Results

The test objectives were verified. For serviceability testing, SpectraLink 8400 Series operated properly after recovering from failures such as cable disconnects, and resets of SpectraLink 8400 Series and Avaya IP Office. SpectraLink 8400 Series successfully negotiated the codec that was used. The features tested worked as expected.

2.3. Support

Technical support on SpectraLink 8400 Series can be obtained through the following:

- **Phone:** (978) 292-5000, and select Option 3.
- **Web:** http://www.polycom.com/support/index.html

3. Reference Configuration

Figure 1 illustrates a sample configuration consisting of an Avaya IP Office and SpectraLink 8400 Series. Avaya Aura® System Manager, Avaya Aura® Session Manager, and Avaya S8300D with G450 were included in the test to provide an inter-switch test scenario. For completeness, Avaya 5610 and 1616-I H.323 IP Telephones, Avaya 9600 Series SIP IP Telephones, Avaya 9600 Series H.323 IP Telephones, and Avaya 6400 and 1416 Series Digital Telephones, are included in **Figure 1** to demonstrate calls between the SIP-based SpectraLink 8400 Series and Avaya SIP, H.323, and digital telephones.

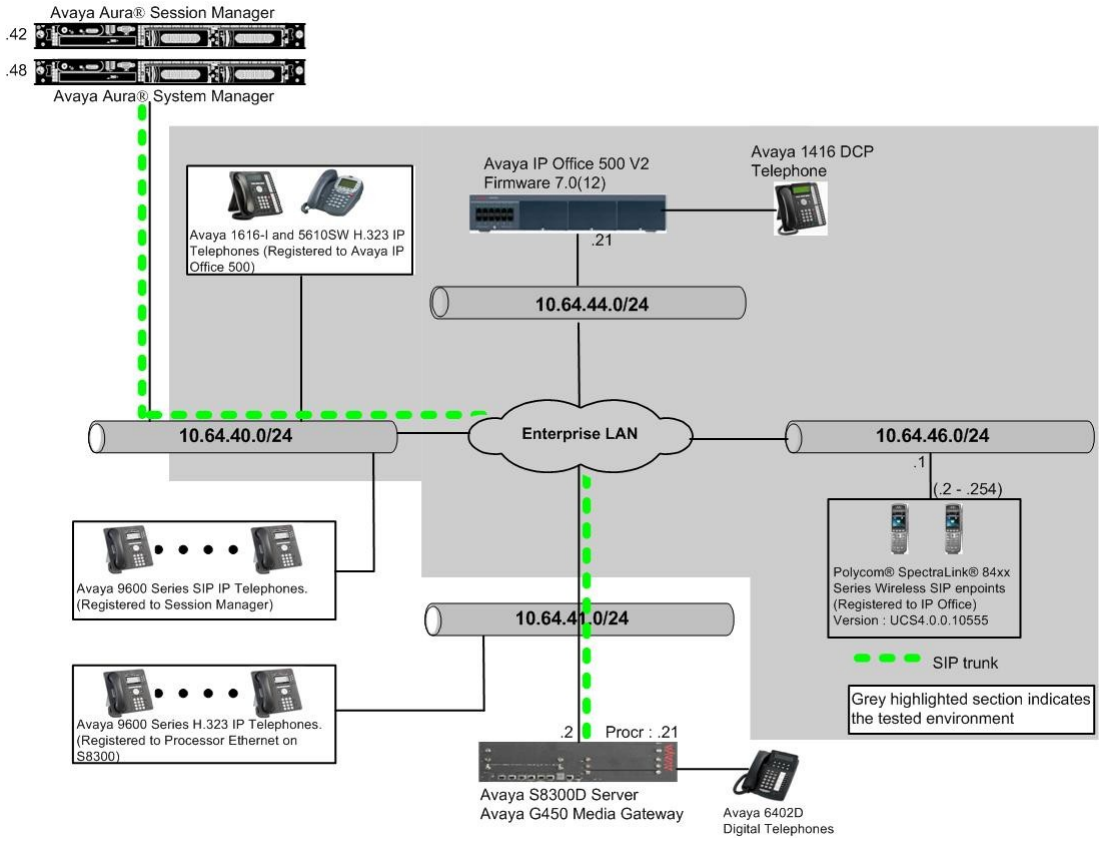


Figure 1: Test Configuration of Polycom SpectraLink 8400 Series Wireless Telephones with Avaya IP Office

4. Equipment and Software Validated

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

Equipment		Software/Firmware
Avaya IP Office 500 V2		7.0(12)
Avaya IP Office Manager		9.0(3)
Avaya S8300D Media Server with Avaya G450 Media Gateway		Avaya Aura® Communication Manager 6.0.1 (R016x.00.1.510.1) with SP2 (00.1.510.1-18860)
Avaya Aura® System Manager		6.1.5.0
Avaya Aura® Session Manager		6.1.1.0.611023
Avaya H.323 IP Telephones on IP Office		
	5610 (H.323) 1616-I (H.323)	2.9.1 1.22
Avaya 1416 Digital Telephone on IP Office		-
Avaya 9600 Series SIP Telephones on Session Manager		
	9620 (SIP) 9630 (SIP) 9650 (SIP)	2.6.4 2.6.4 2.6.4
Avaya 9600 Series H.323 Telephones on S8300D server		
	9620 (H.323) 9630 (H.323) 9650 (H.323)	3.1 3.1 3.1
Avaya 6408D+ Digital Telephone		-
SpectraLink 8400 Series		4.0.0.16545

5. Configure Avaya IP Office

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

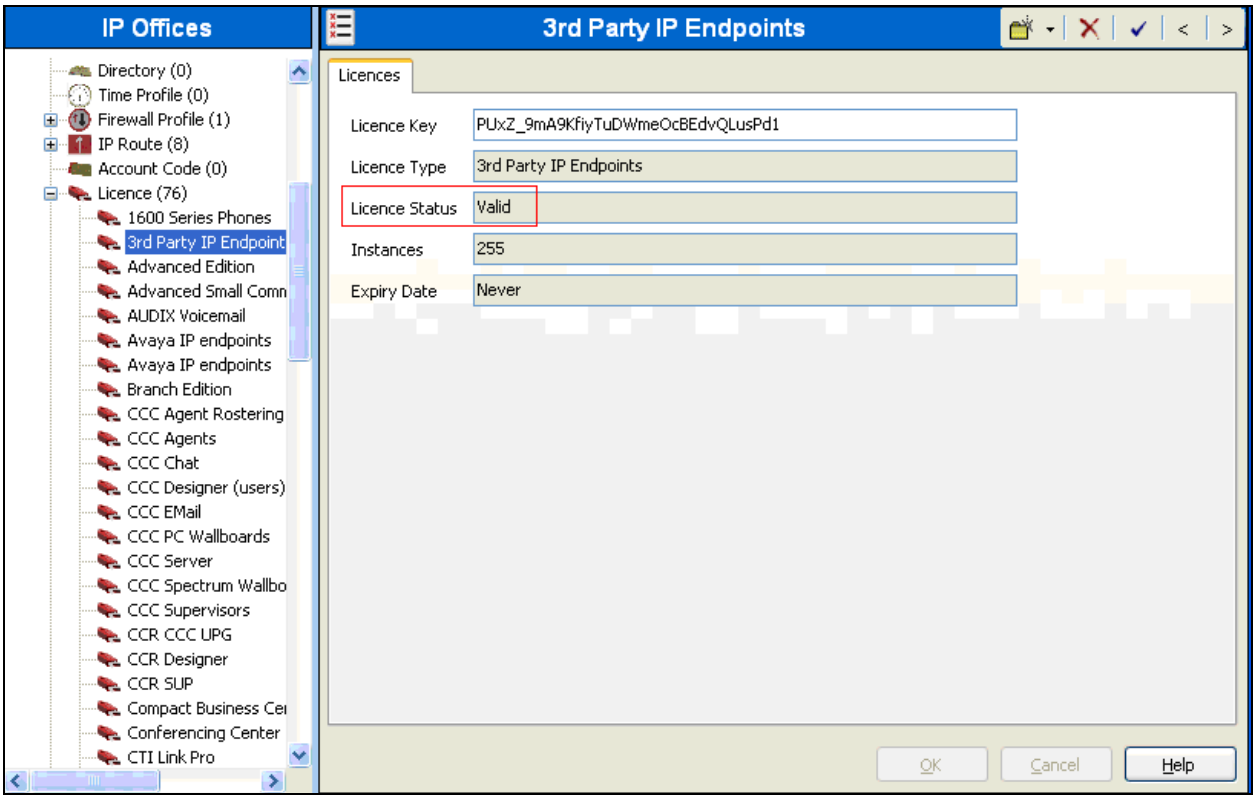
- Verify IP Office license
- Obtain LAN IP address
- Administer SIP registrar
- Administer SIP extensions
- Administer SIP users

These steps are performed from the Avaya IP Office Manager.

5.1. Verify IP Office License

From a PC running the Avaya IP Office Manager application, select **Start → All Programs → IP Office → Manager** to launch the Manager application. Select the proper IP Office system if there are more than one IP Office system, and log in with the appropriate credentials.

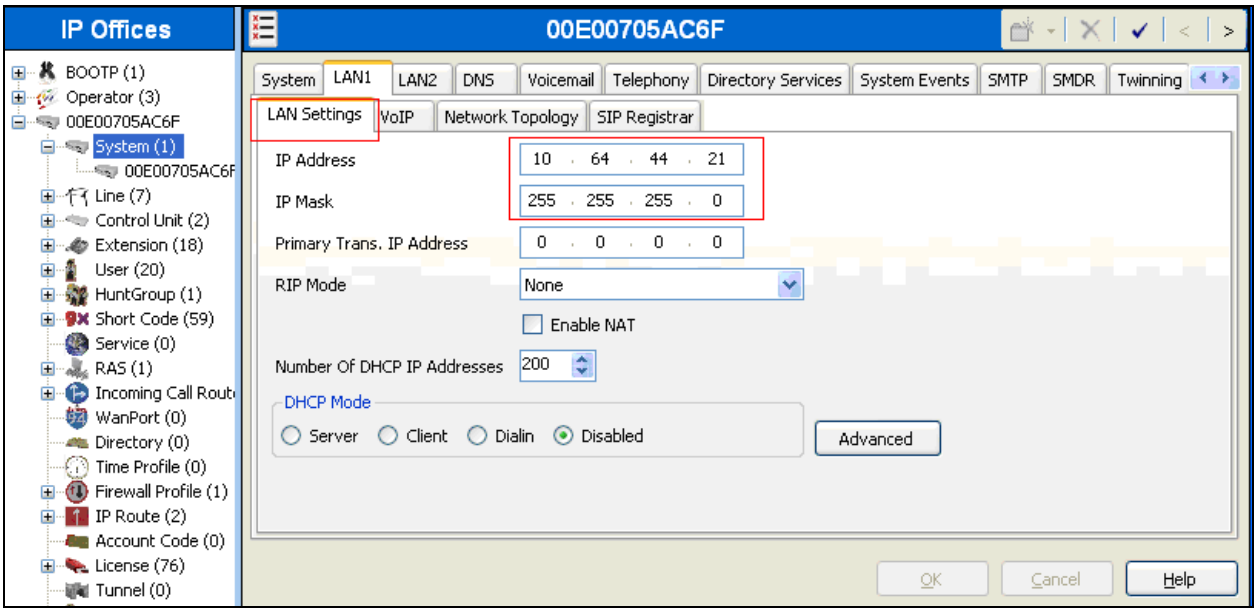
The Avaya IP Office Manager screen is displayed. From the configuration tree in the left pane, select **Licence → 3rd Party IP Endpoints** to display the Avaya IP endpoints screen in the right pane. Verify that the License Status field is set to **Valid**.



5.2. Obtain LAN IP Address

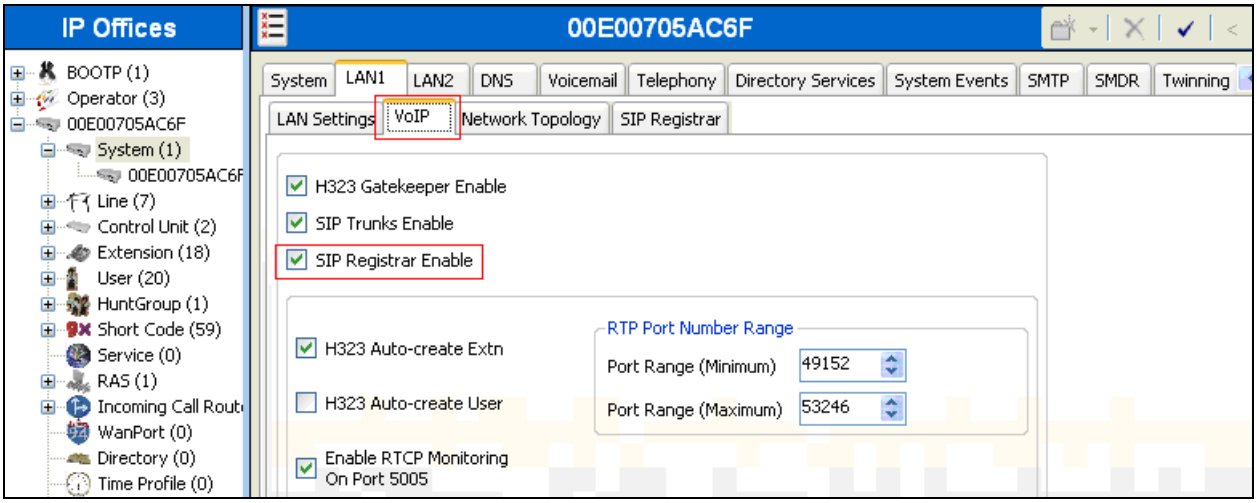
From the configuration tree in the left pane, select **System** to display the System screen in the right pane. Select the **LAN1** tab, followed by the **LAN Settings** sub-tab in the right pane. Make a note of the **IP Address**, which will be used later to configure SpectraLink 8400 Series.

Note: During the initial configuration of Avaya IP Office, the LAN1 was configured on the private network side and LAN2 was configured on the public network side. Avaya IP Office can support SIP extensions on the LAN1 and/or LAN2 interfaces, but the compliance test used the LAN1 interface. Thus, only the LAN1 configuration will be discussed in these Application Notes.

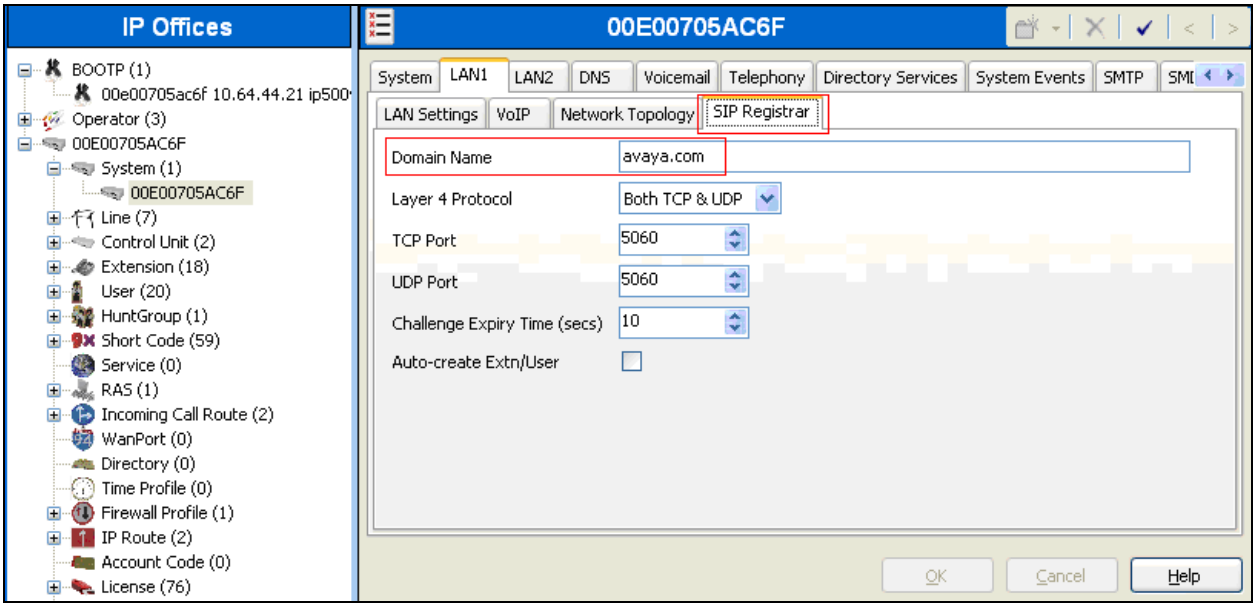


5.3. Administer SIP Registrar

Select the **VoIP** sub-tab. Ensure that **SIP Registrar Enable** is checked, as shown below.

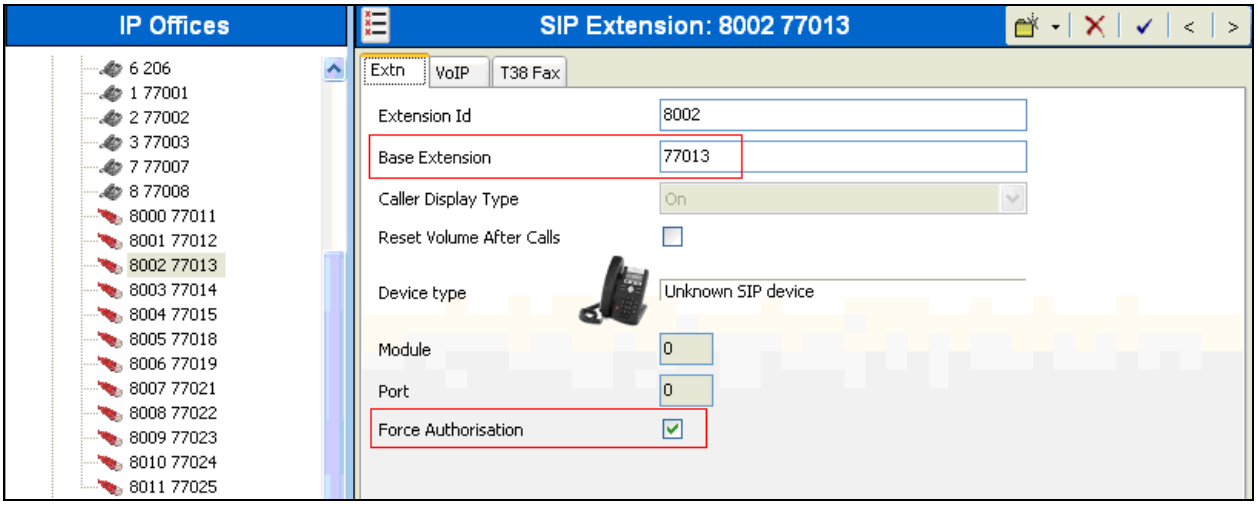


Select the **SIP Registrar** sub-tab, and enter a valid Domain Name for SIP endpoints to use for registration with IP Office. In the compliance testing, the **Domain Name** field was set to **avaya.com**. If the **Domain Name** field is left blank, then the SIP endpoints will use the LAN IP address for registration.



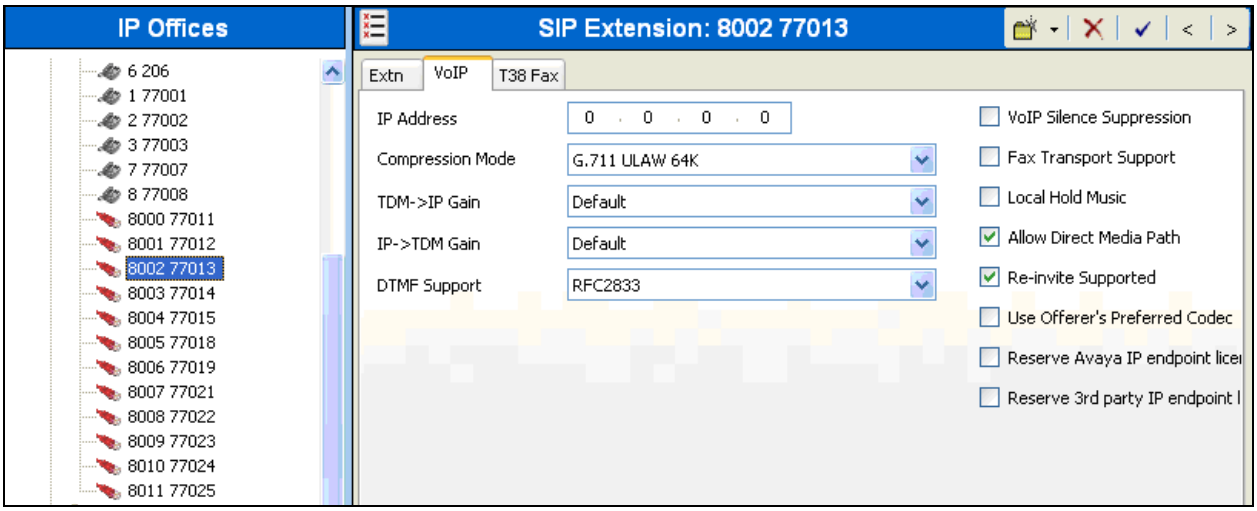
5.4. Administer SIP Extensions

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 desired digits for the **Base Extension** field, and retain the default check in the **Force Authorization** field as shown below.



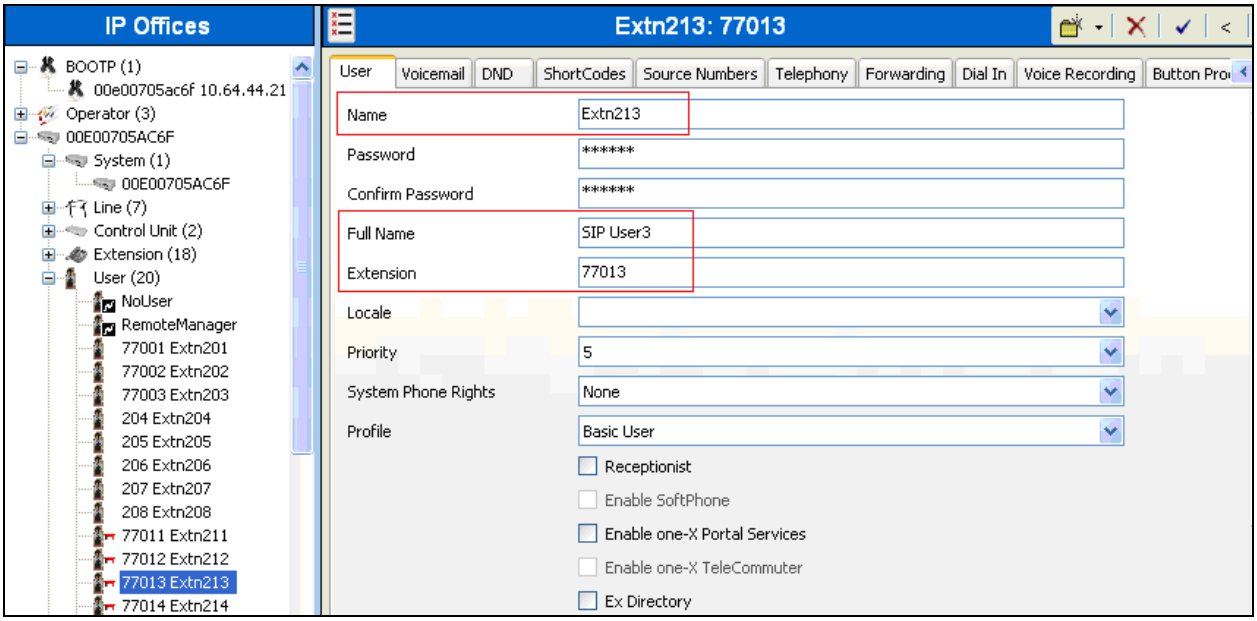
Select the **VoIP** tab, and retain the default values in all fields.

Repeat this section to add a new SIP extension for each SpectraLink 8400 Series. During the compliance test, extensions 77011, 77012 and 77013 were created for SpectraLink 8400 Series.

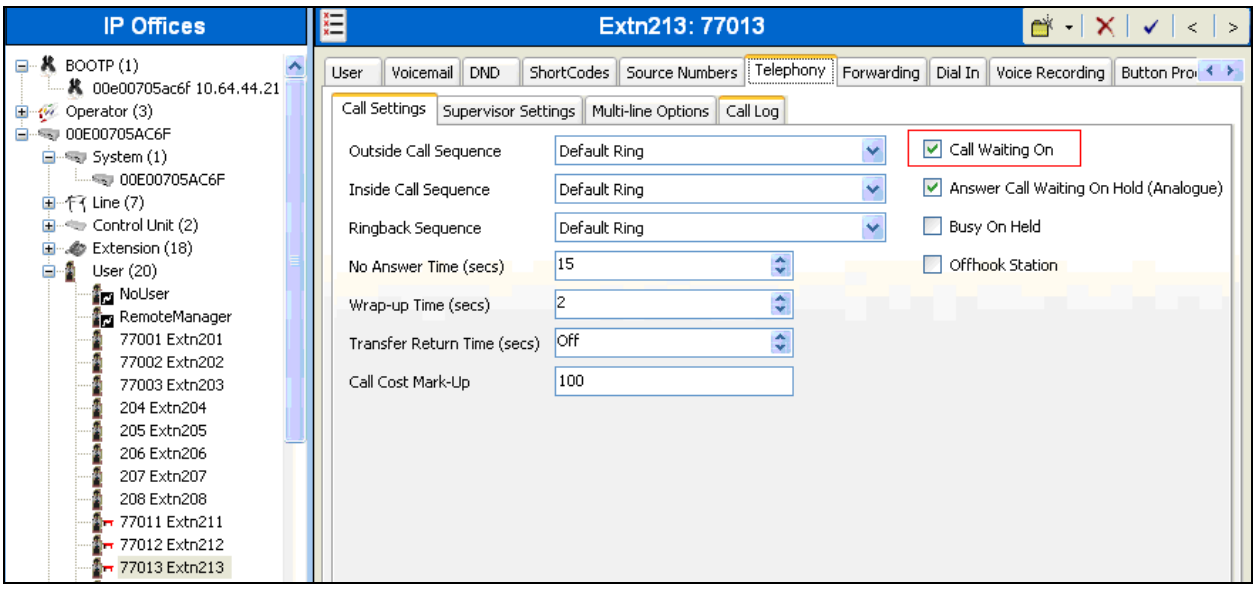


5.5. Administer SIP Users

From 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**.

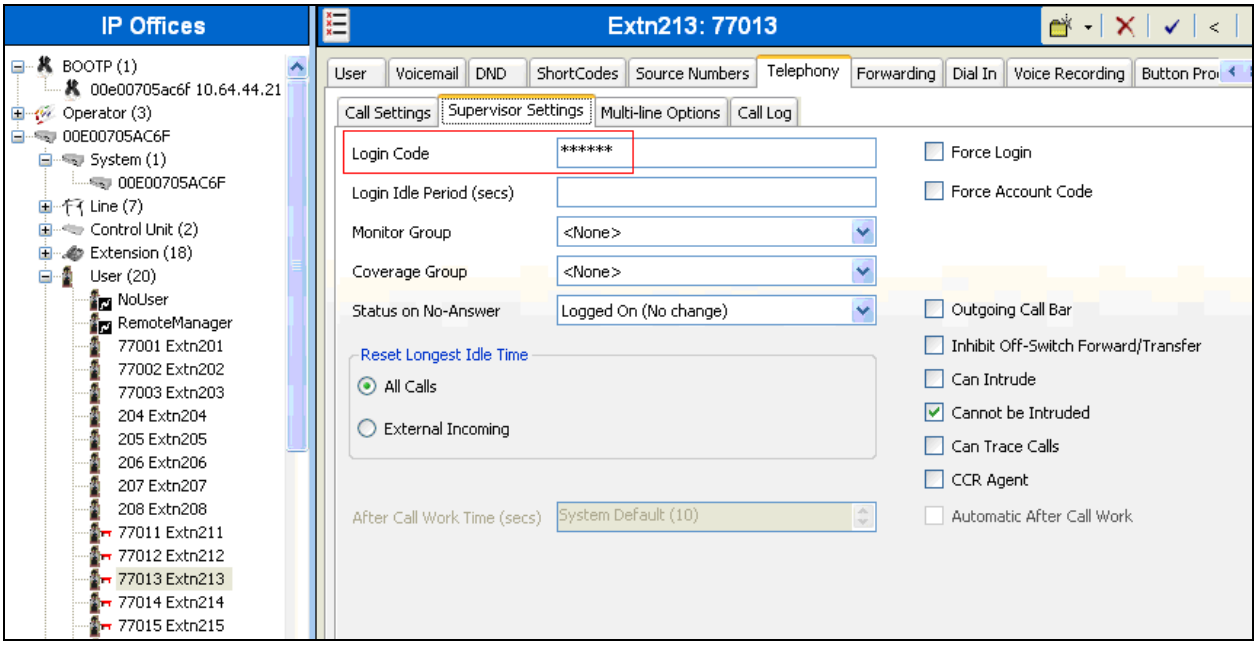


Select the **Telephony** tab, followed by the **Call Settings** sub-tab. Check the **Call Waiting On** field, as shown below.



Select the **Supervisor Settings** tab, and enter a desired **Login Code**.

Repeat this section for each SIP extension from **Section 5.4**.



6. Configure Polycom SpectraLink 8400 Series Wireless Telephone

This section provides steps to configure SpectraLink 8400 Series. The latest firmware was provided by Polycom SpectraLink. For additional information regarding configuring the SpectraLink 8400 series handsets please refer to the latest product documentation available at www.polycom.com. The following files need to be configured, as the phone boots up to register with Avaya IP Office:

- **00907a0cd950.cfg** – The first file that the phone searches while booting up is **<MAC>.cfg** file. The header, **00907a0cd950**, indicates the MAC address of SpectraLink 8400 Series. In this configuration file, there are sub-configuration files that are listed under CONFIG_FILES field; sip_77013.cfg. During the compliance test, sip_77013.cfg was modified.

```
<?xml version="1.0" encoding="utf-8" standalone="yes"?>
<!-- Default Master SIP Configuration File-->
<!-- Edit and rename this file to <Ethernet-address>.cfg for each phone.-->
<!-- $Revision: 1.14 $  $Date: 2005/07/27 18:43:30 $ -->
<APPLICATION APP_FILE_PATH="sip.ld" APP_NET_LOAD_FILE_PATH=""
CONFIG_FILES="sip_77013.cfg" MISC_FILES="" LOG_FILE_DIRECTORY=""
OVERRIDES_DIRECTORY="" CONTACTS_DIRECTORY="" />
```

- **sip_77013.cfg** – This is an extension configuration file. This file includes UserID, Password, Fully Qualified Domain Name (FQDN) of the phone, and the IP address of Avaya IP Office.

```
<?xml version="1.0" encoding="utf-8"?>
<PHONE_CONFIG>
  <reg reg.1.address="77013@avaya.com" reg.1.displayName="77013" reg.1.label="77013"
reg.1.auth.userId="77013" reg.1.auth.password="123456"
reg.1.server.1.address="10.64.44.21" reg.1.server.1.port="5060" />
<msg.mwi msg.mwi.1.subscribe="77013@avaya.com" />
</PHONE_CONFIG>
```

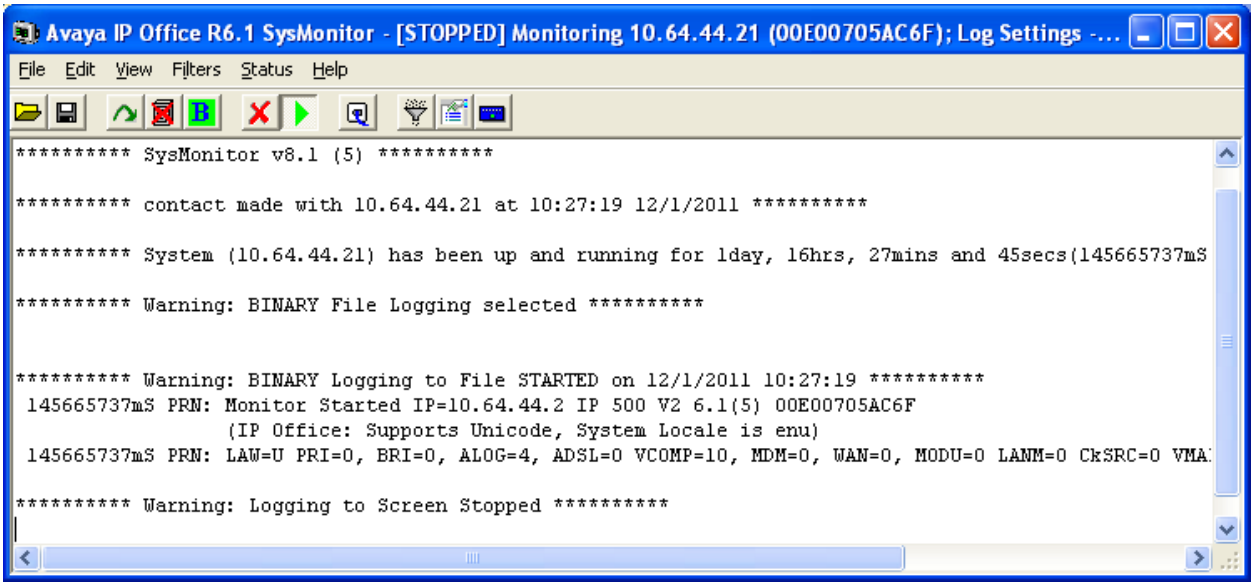
- To work with Avaya IP Office short code, launch a web browser, enter **http://<IP address of SpectraLink 8400 Series >** in the URL, and log in with the appropriate credentials. Modify **Digitmap** to match the dial plan configuration on Avaya IP Office. In the compliance testing, the value "***xx*xT|*xxT**" was used to allow for dial strings prefixed with digits, "*****", or "#".

- Disable the **RemoveEnd-Of-Dial Marker** field. Click **Submit**.

7. Verification Steps

The following steps may be used to verify the configuration:

- From a PC running the Avaya IP Office Monitor application, select **Start → Programs → IP Office → Monitor** to launch the application. The **Avaya IP Office R6.1 SysMonitor** screen is displayed, as shown below. Select **Status → SIP Phone Status** from the top menu.



- Verify that there is an entry for each SpectraLink 8400 Series extension from **Section 5.4** and the Status is **SIP: Registered**.

- Place calls to and from SpectraLink 8400 Series Wireless telephones and verify that the calls are successfully established with two-way talk path.

8. Conclusion

SpectraLink 8400 Series was compliance tested with Avaya IP Office (Version 7.0.12). SpectraLink 8400 Series (UCS 4.0.0.16545) functioned properly for feature and serviceability. During compliance testing, SpectraLink 8400 Series successfully registered with Avaya IP Office, placed and received calls to and from SIP and non-SIP telephones, and executed other telephony features like three-way conference, transfers, hold, etc.

9. Additional References

The following Avaya product documentation can be found at http://support.avaya.com

[1] *Avaya IP Office Manager*, May 2011, Release 7.0, Issue 26h, Document Number 15-601011.

The following document was provided by Polycom.

[2] *Polycom® SpectraLink® 8400 Series Wireless Handset User Guide*, February 2011, 1725-36720-001 Rev A

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.