AVAYA

DevConnect Program

Application Notes for VTech NG-S3311/S3412 SIP Slim Hotel Phone Version 3.3.3.12 with Avaya IP Office Server Edition Release 11.1.3 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for VTech NG-S3311/S3412 SIP Slim Hotel Phones to interoperate with Avaya IP Office Server Edition Release 11.1.3 and Avaya IP Office 500V2 Release 11.1.3. VTech NG-S3311 hospitality phones register with Avaya IP Office as a SIP endpoint in support of voice communications.

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 Avaya DevConnect Program.

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1. Introduction

These Application Notes describe the configuration steps required for VTech NG-S3311/S3412 SIP Hotel Phones to interoperate with Avaya IP Office Server Edition 11.1.3 and Avaya IP Office 500V2 11.1.3. VTech NG-S3311/S3412 SIP Hotel Phones register to Avaya IP Office Server Edition as a SIP endpoint. Compliance testing used the VTech NG-S3311 1-line corded Hotel Phone as a representative model. See **Attachment 1** which provides details of VTech NG-S3412 SIP Hotel Phone equivalency to the NG-S3311 SIP Hotel Phone model.

In the compliance testing, Avaya IP Office Server Edition system consists of Avaya IP Office Primary Linux running on Virtualized Environment and a 500V2 Expansion.

2. General Test Approach and Test Results

The general test approach was to place calls to and from VTech NG-S3311 and exercise basic telephone operations.

As the purpose of these phones is for hotel guest rooms, certain functionality considered to be standard on Avaya endpoints is not supported and therefore was not tested. For example, VTech NG-S3311 does not support hold, transfer and conference. More details on these limitations are described in the Test Results in **Section 2.2**.

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 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 interface between Avaya systems and VTech NG-S3311 enabled capabilities of TLS/SRTP.

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2.1. Interoperability Compliance Testing

The following areas were evaluated in the interoperability compliance test:
- Registration of VTech NG-S3311 to IP Office.
- Basic call features: Answer, Mute/Un-mute, Drop, Message Waiting Indicator, DTMF, Call Pickup, Call Waiting, and Call Forward.
- Codec negotiation, Media Shuffling, and Session Refresh Interval.
- Hospitality features: Automatic Wakeup Call and Do Not Disturb.
- Serviceability testing to validate recovery from network connectivity loss.

2.2. Test Results

All test cases were executed. The following observations were made during the testing:
- VTech NG-S3311 does not support the following features.
  - Call Park
  - Hold and Resume
  - Transfer
  - Conference
  - VTech NG-S3311 programmable buttons do not support feature access codes requiring secondary input.
- VTech NG-S3311 does not support SDP negotiation capabilities per (RFC5939) between SRTP and non-SRTP modes so codec sets for the phones must not offer both modes. Media Security for the associated extensions should be set to Enforced.

2.3. Support

Technical support for VTech NG-S3311/S3412 SIP Hotel Phones can be obtained at:
- Phone: 1 (888) 907-2007
- https://vtechhotelphones.com

3. Reference Configuration

Figure 1 illustrates the test configuration diagram for VTech NG-S3311 SIP Slim Hotel Phone integrated with Avaya IP Office Server Edition and Avaya IP Office 500V2.
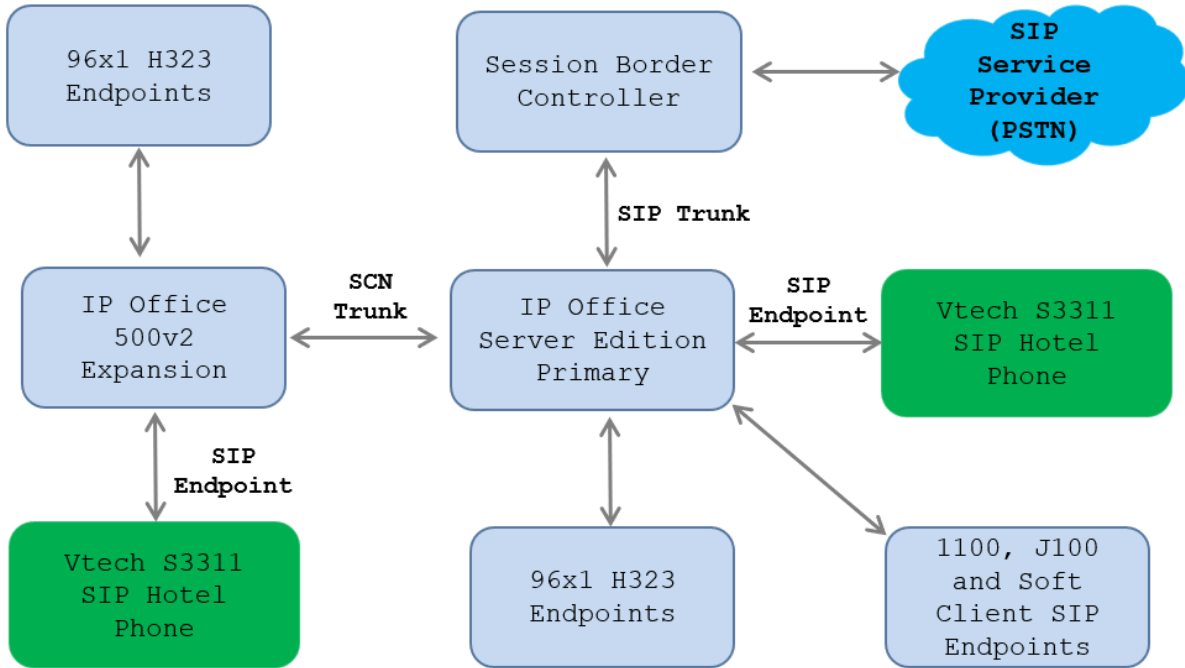
Figure 1: Avaya Test Configuration for VTech NG-S3311

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4. Equipment and Software Validated

The following equipment and software were used for the compliance test provided:

Equipment/Software	Release/Version
Avaya IP Office Server Edition Running on Virtual Environment	11.1.3 Build 23
Avaya IP Office 500V2 Expansion System	11.1.3 Build 23
Avaya Session Border Controller	10.1.2.0-64-23285
Avaya IP Office Manager	11.1.3 Build 23
Avaya J100 Series Deskphones	4.1.2.0.11 (SIP) 6.8.5.4.10 (H.323)
Avaya 96x1 Deskphones	7.1.15 (SIP) 6.8.5.4.10 (H.323)
VTech NG-S3311/S3412 SIP Slim Hotelphone	3.3.3.12

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:
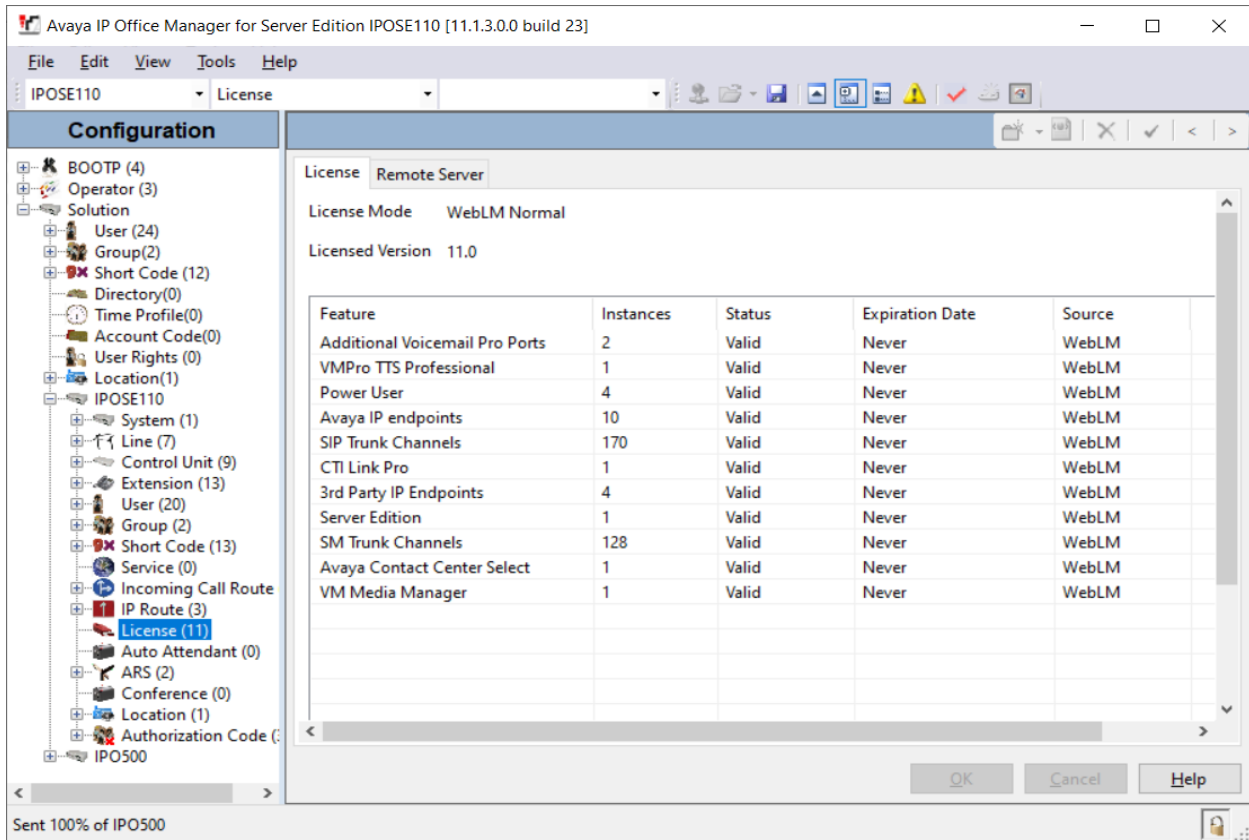
- Verify License
- Obtain LAN IP address
- Administer SIP registrar
- Administer SIP extensions
- Administer SIP users

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. Verify License

From a PC running the **IP Office Admin** Suite installed, invoke **IP Office Manager.** Select the proper primary IP Office system, and log in using the appropriate credentials. The Avaya IP Office Manager for Server Edition screen is displayed.
From the configuration tree in the left pane, select **License** under the IP Office system that will be used to display a list of licenses in the right pane. Verify that there are sufficient licenses for **3rd Party IP Endpoints** as shown below.

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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 (*e.g., 10.33.1.110*), which will be used in **Section 6.3** to configure VTech NG-S3311.

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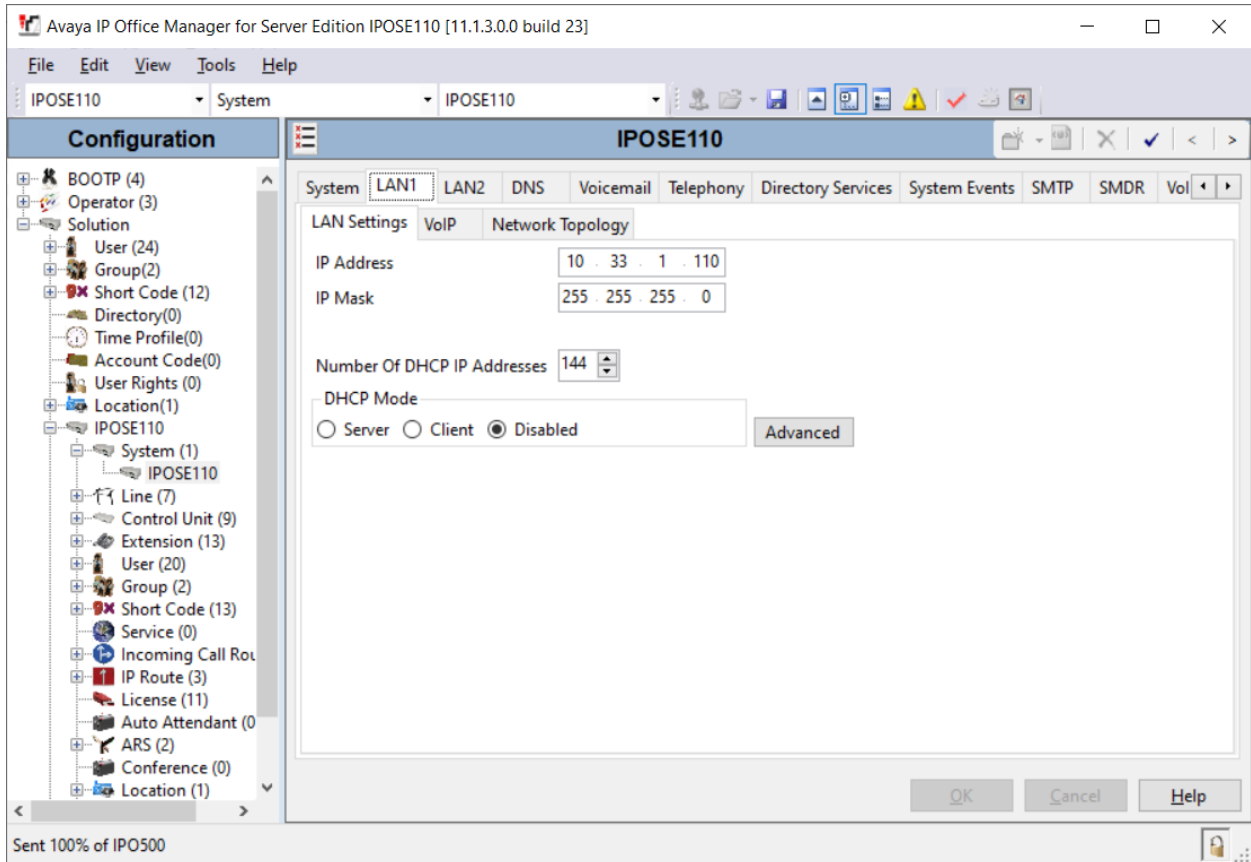
5.3. Administer SIP Registrar

Select the **VoIP** sub-tab. Ensure that **SIP Registrar Enable** is checked and enter a valid **Domain Name**. In the compliance testing, the **SIP Domain Name** field was set to *ipocc.com*. TLS transport protocol was enabled for the **Layer 4 Protocol**, which was also used by VTech NG-S3311W.

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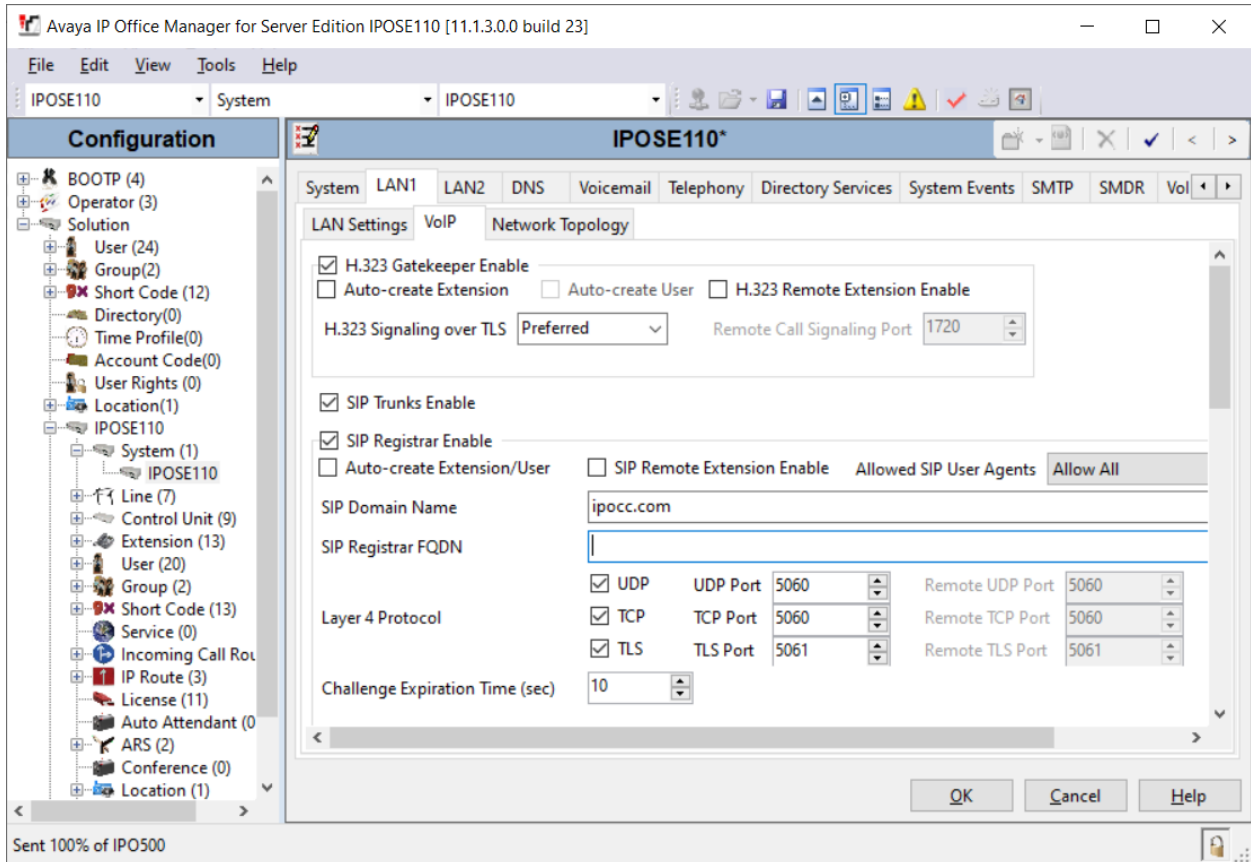
5.4. Administer SIP Extensions

From the configuration tree in the left pane, right-click on **Extension** and select **New → SIP Extension** from the pop-up list (not shown) to add a new SIP extension. Enter the desired extension for the **Base Extension** field as shown below. In this example, VTech NG-S3311 was assigned extension *4307*. This is the extension that VTech NG-S3311 will use to register with IP Office Server Edition. Enter an appropriate password. This will be used by VTech NG-S3311 to register to IP Office Server.

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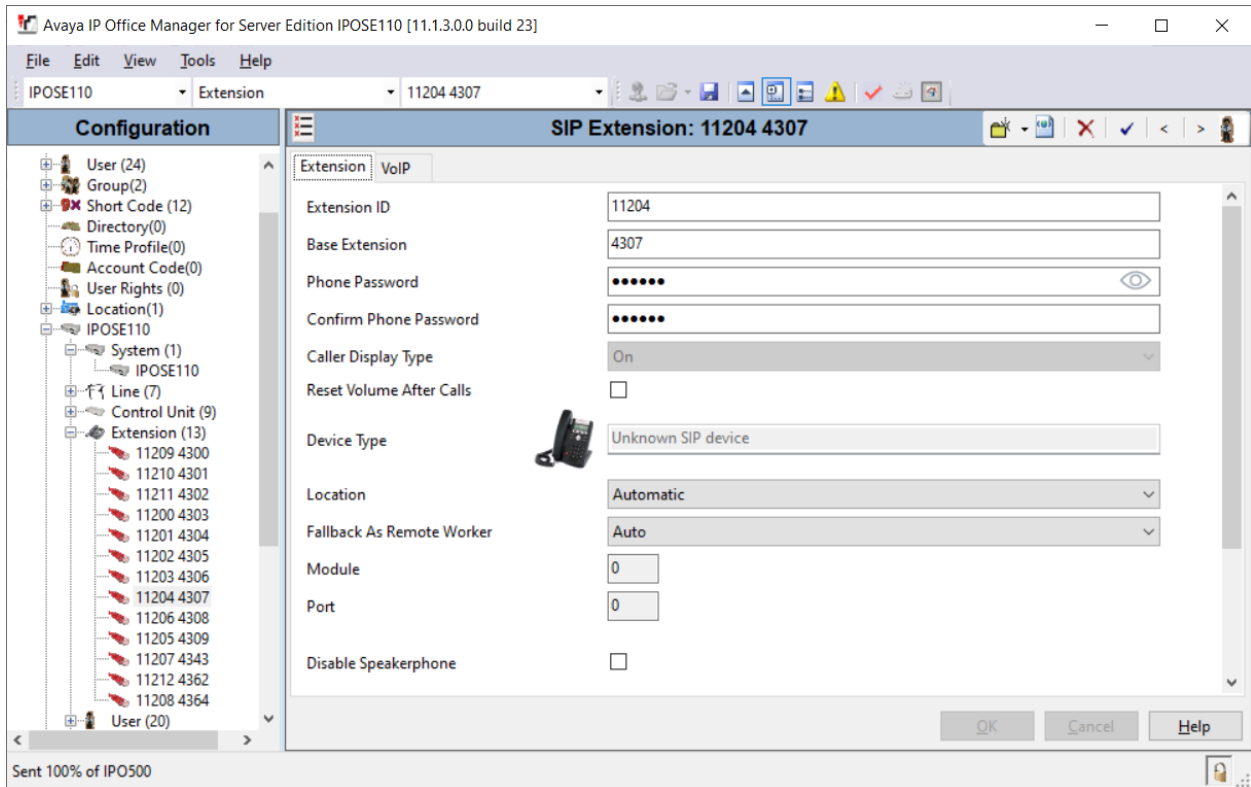
Select the **VoIP** tab. The codec selection shown below is configured with *G.711 ULAW, G.729 and G.722*. Enable **Allow Direct Media Path** so that audio/RTP may flow directly between two SIP endpoints without using media resources in Avaya IP Office Server Edition. Select *Enforced* for **Media Security** with **Advanced Media Security Options** as seen below.

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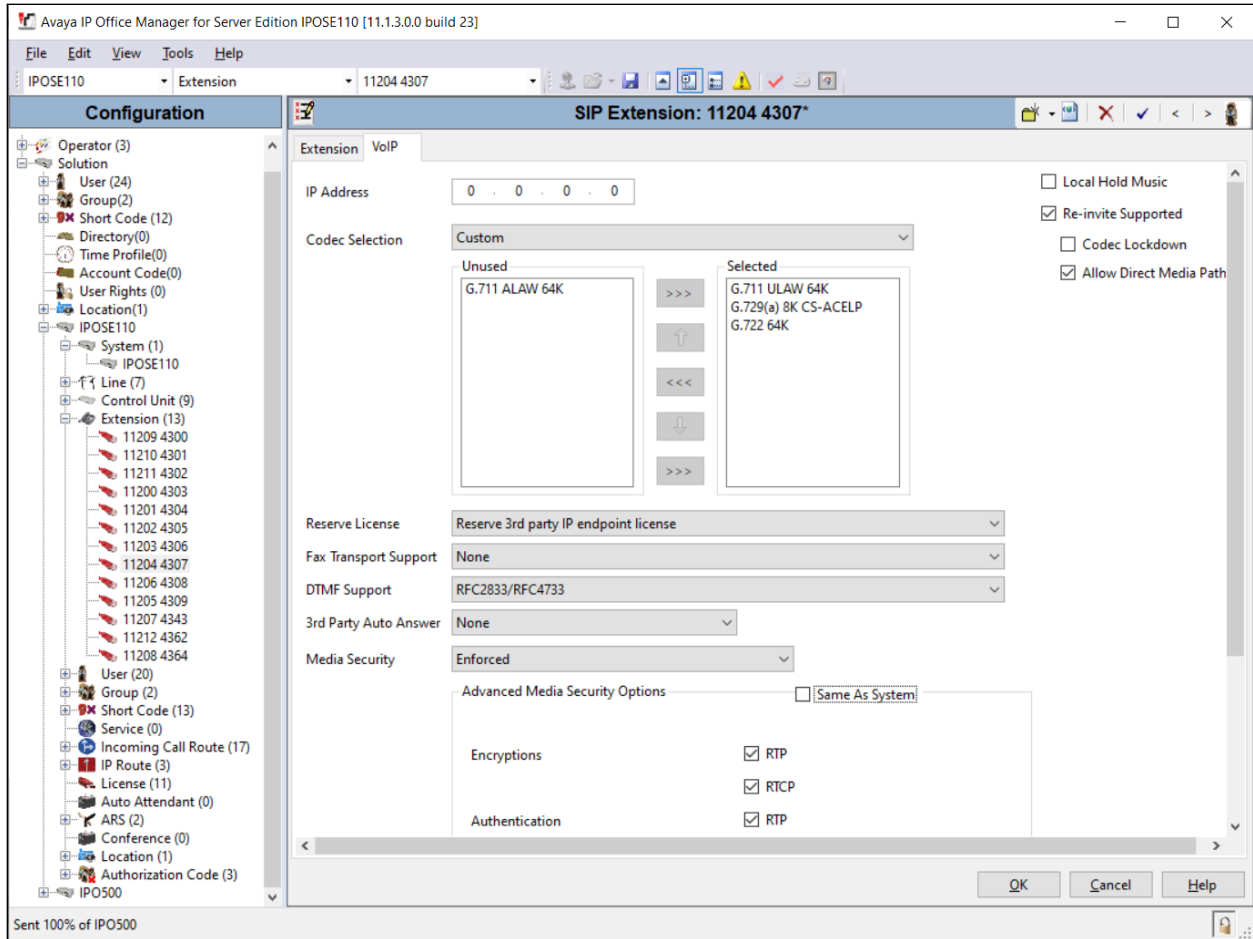
5.5. Administer SIP Users

From the configuration tree in the left pane, right-click on **User** and select **New** from the pop-up list (not shown). Enter a value for the **Name** field (e.g., *VTech S3311*). For the **Extension** field, enter the SIP extension from **Section 5.4** (e.g., *4307*).

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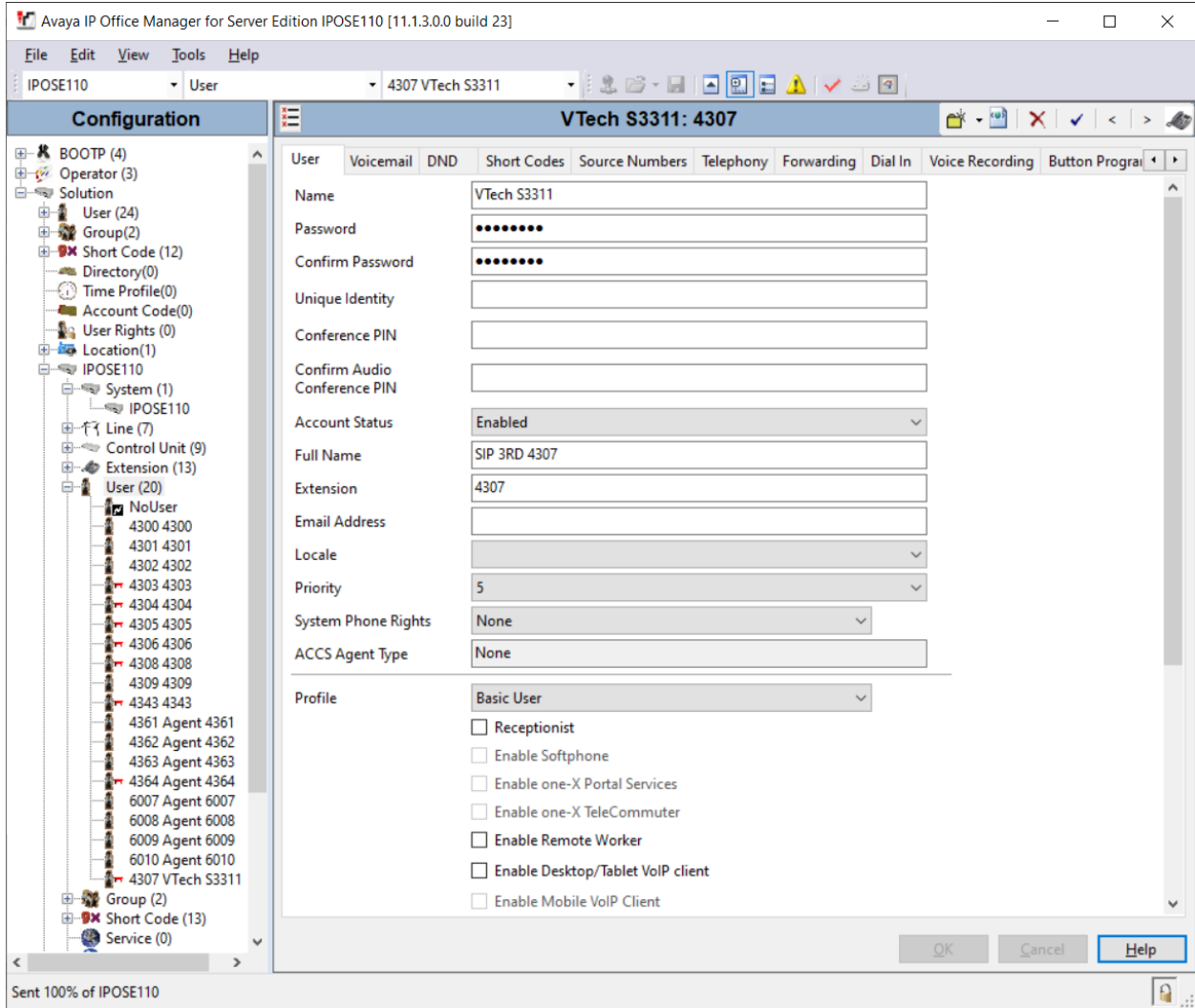
Select the **Voicemail** tab and select **Voicemail On** to enable voicemail. Specify a **Voicemail Code** to be used when logging into voicemail.

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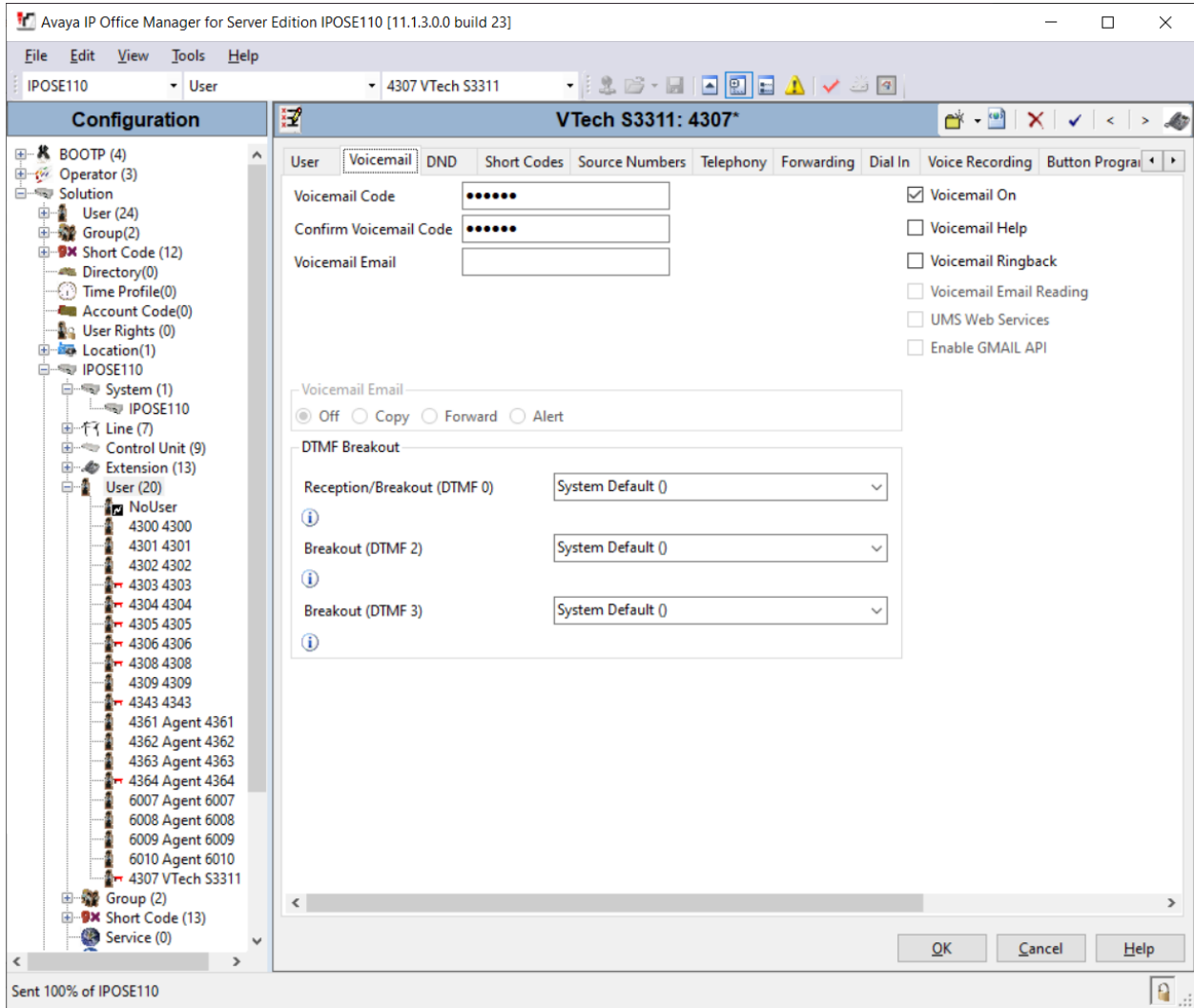
Select the **Telephony** tab followed by the **Call Settings** sub-tab. Note the settings below for the user.

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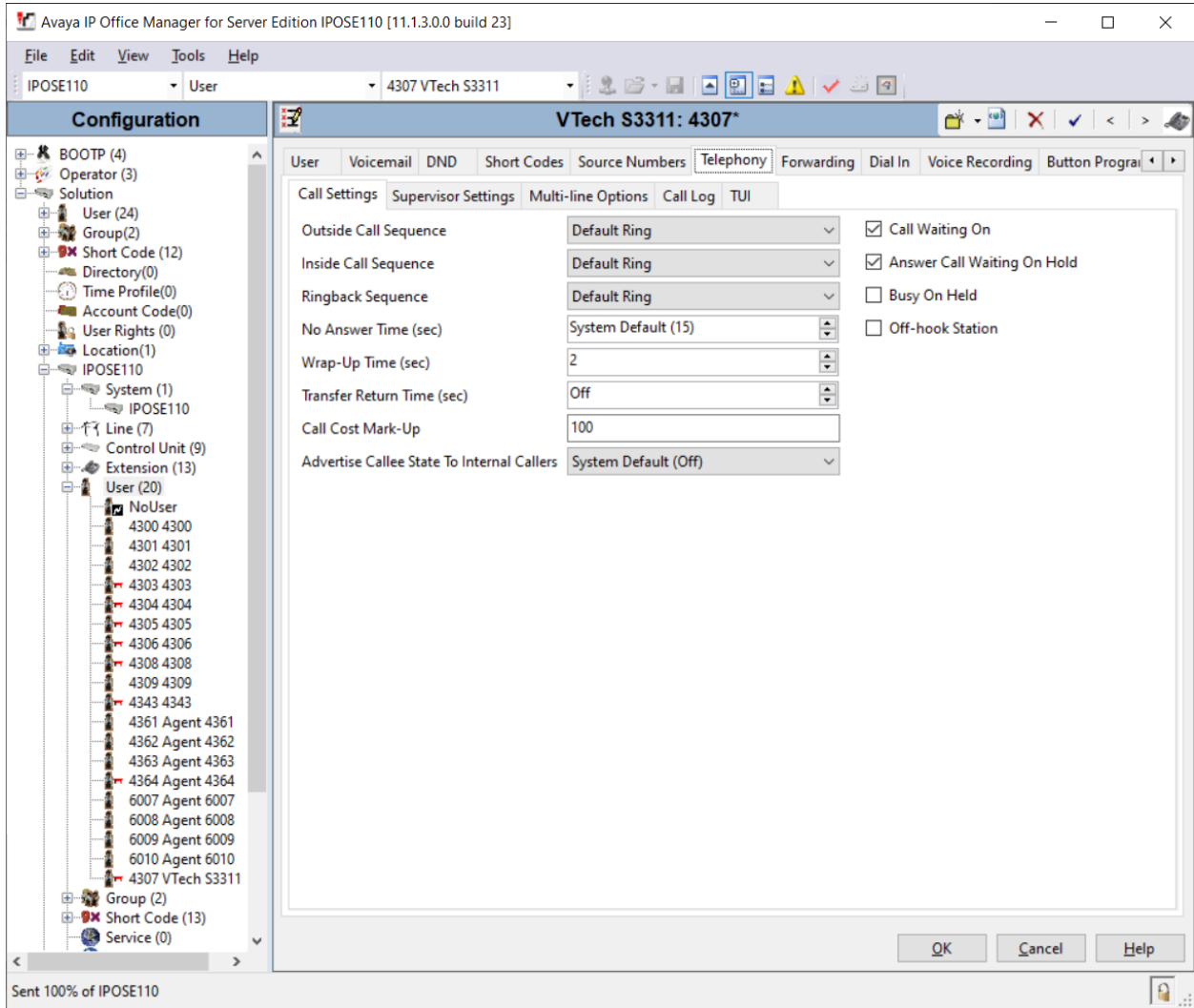
6. Configure VTech NG-S3311 Hotel Phone

The steps to configure VTech NG-S3311 to integrate with Communication manager are as follows:

- Configure IP Address
- Launch Web Interface
- Configure SIP Account
- Install CA Certificate
- Modify Codec Settings
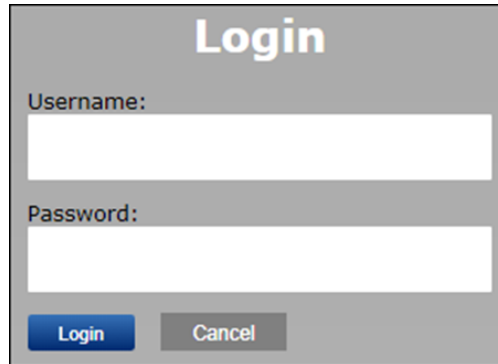
6.1. Configure IP Address

VTech NG-S3311 is configured for DHCP as a factory default. The following steps provide network connectivity and determine the phone's IP address for use in launching administration detailed in **Section 6.2**:

- Connect the NET port of VTech NG-S3311 to a Power over Ethernet (PoE) switch
- Determine the assigned IP address. Use the built-in voice menu which will read out the IP address. The voice menu is accessed by pressing **SPEAKER * * * ***. For more information, refer to VTech NG-S3311 user manual obtained at http://vtechhotelphones.com.
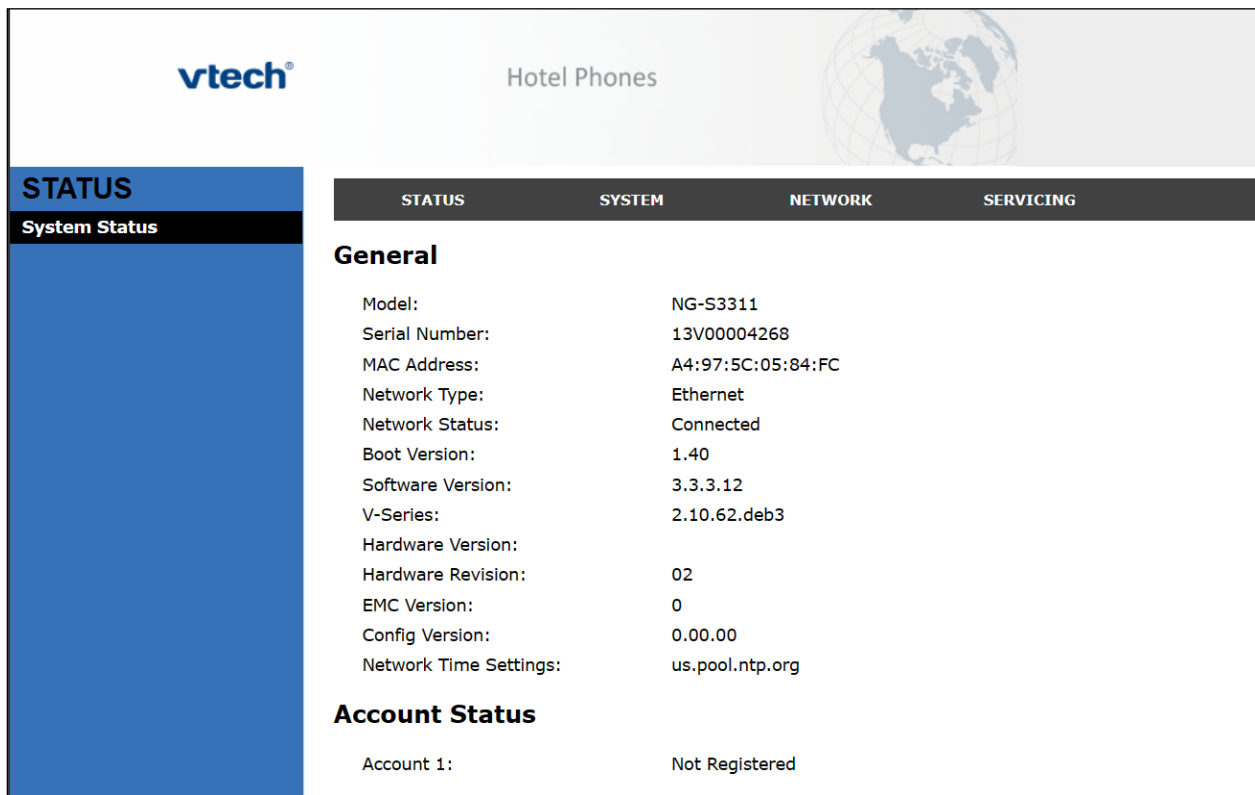
6.2. Launch Web Interface

The phone administration is done though a web interface. To access web administration, invoke the web login page using the **IP address** obtained from **Section 6.1** using the URL **https://<IP address>**. The login prompt is displayed.

Enter the appropriate **Username** and **Password.** Once logged in, the default settings display. The status for VTech NG-S3311 is shown.

Note: If firmware upgrades are needed, consult the configuration guide for instructions Refer to http://vtechhotelphones.com.

6.3. Configure SIP Account

To register VTech NG-S3311 to Session Manager, Select **System** from the toolbar, then **Account 1** from the left-hand side list. Under the **General Account Settings** heading, input the following:

- **Enable Account:**   Click the corresponding checkbox
- **Account Label**:   A descriptive string (e.g., *NG3311*)
- **Display Name**:   The desired display name (e.g., *Vtech 4307*)
- **User Identifier**:   An appropriate string (e.g., *4307*)
- **Authentication Name**:   Enter the extension number (e.g., *4307*)
- **Authentication Password**:   Enter the password
- Keep other fields as default

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Under the **SIP Server** heading, enter the following:
- **Server Address**: IP Office Server Edition LAN1 IP address (e.g., *10.33.1.110*)
- **Port**: *5061*

Under the **Registration** heading, enter the following:
- **Server Address**: IP Office Server Edition LAN1 IP address (e.g., *10.33.1.110*)
- **Port**: *5061*

Under the Outbound Proxy
- **Server Address**: IP Office Server Edition LAN1 IP address (e.g., *10.33.1.110*)
- **Port**: 5061

SIP Server

Server Address:	10.33.1.110
Port:	5061

Registration

Server Address:	10.33.1.110
Port:	5061
Expiration (secs):	3600
Registration Freq (secs):	10

Outbound Proxy

Server Address:	10.33.1.110
Port:	5061

Backup Outbound Proxy

Server Address:	
Port:	5060

Caller Identity

Source Priority 1:	PAI
Source Priority 2:	RPID
Source Priority 3:	From

Audio

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Continuing on the same page, under the **Audio** heading, select **Enable Voice Encryption (SRTP)**. Under the **Signaling Settings** heading, input the following:

- **Local SIP Port:** *5061*
- **Transport:** *TLS*

Under the **Voicemail Settings** header, select **Enable MWI Subscription.** Click **Save** (not shown).

6.4. Install CA Certificate

To install the CA certificate, select **SERVICING** from the toolbar, then **Trusted Certificates** from the left-hand side list. Click on **Choose File** and select the CA certificate. Click **Import**. The CA should appear in the **Trusted Certificate** list.

Note: The System Manager CA certificate file must be installed in the VTech NG-S3311 **Trusted Certificate** store for validation of the Session Manager identity certificate offered during the TLS handshake.

	STATUS	SYSTEM	NETWORK	SERVICING

SERVICING

- Reboot
- Time and Date
- Firmware Upgrade
  - Auto Upgrade
  - Manual Upgrade
- Provisioning
- Security
- Certificates
  - Device
  - **Trusted Certificates**
- Tr069
- System Logs
- SIP Trace

Trusted Certificate

Select All ☐

Total: 5	Issue to	Issue by	Expiration	Protected
☐	Vtech Business Phone Intermediate CA	Vtech Business Phone Root CA	Feb 28 07:26:03 2036 GMT	☑
☐	thawte Primary Root CA - G3	thawte Primary Root CA - G3	Dec 1 23:59:59 2037 GMT	☑
☐	VeriSign Universal Root Certification Authority	VeriSign Universal Root Certification Authority	Dec 1 23:59:59 2037 GMT	☑
☐	DigiCert High Assurance EV Root CA	DigiCert High Assurance EV Root CA	Nov 10 00:00:00 2031 GMT	☑
☐	System Manager CA	System Manager CA	Apr 6 11:58:03 2048 GMT	☐

[Delete Selected Entries]   [Protect Selected Entries]

☐ Only accept trusted certificates

[Save]

Import Trusted Certificate: | No file chosen | [Choose File]
[Import]

6.5. Modify Codec Settings

Modify the codec settings by selecting **SYSTEM** in the toolbar and **Account 1** in the left hand side selections. Under the **Audio** heading, select the desired codecs in priority.

Audio

Codec Priority 1:	G.711u
Codec Priority 2:	G.711a
Codec Priority 3:	G.729a/b
Codec Priority 4:	G.726
Codec Priority 5:	G.722
Codec priority 6:	None
Codec priority 7:	iLBC

☑ Enable Voice Encryption (SRTP)
☐ Enable G.729 Annex B
Preferred Packetization Time (ms): 20
DTMF Payload Type: 101

6.6. General Call Settings

General call settings can be configured under **System** → **Call Settings** → **Account 1** such as anonymous call reject, enable anonymous call and call forward.

SYSTEM

SIP Account Management
 Account 1
Call Settings
 Account 1
User Preferences
Speed Dial Settings
Paging Zones
Emergency Dialing Settings

STATUS　　SYSTEM　　NETWORK　　SERVICING

SYSTEM CALL SETTINGS 1

General Call Settings

☐ Anonymous Call Reject
☐ Enable Anonymous Call
Ringer Tone: 1

Call Forward

☐ Enable Call Forward Always
Target Number: 4303
☑ Enable Call Forward Busy
Target Number: 4300
☐ Enable Call Forward No Answer
Target Number: 4300
Delay: 4 rings

Save

7. Verification Steps

The proper configuration of VTech NG-S3311 with Avaya IP Office Server Edition is verified by the following steps.

7.1. Registration Status

Verify that VTech NG-S3311 has successfully registered with IP Office. From a PC with **IP Office Admin Suite** installed, invoke **IP Office System Status**. Navigate to the VTech NG-S3311 extension and verify **Media Stream** is set to *SRTP*, **Layer 4 Protocol** is set to *TLS*, and **Current State** is shown as *Idle*.

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Registration status can also be seen from the VTech NG-S3311 web interface. Select **SYSTEM** from the toolbar, then **System Status** from the left-hand side list. Under **Account Status**, the account should show *Registered*.

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7.2. Basic Calls

Establish a call between VTech NG-S3311 and a local Avaya SIP desk phone. In **IP Office System Status**, navigate to the SIP extension and verify the **Current State** is *Connected* as shown below.

8. Conclusion

These Application Notes describe the configuration steps required to integrate VTech NG-S3311/NG-S3412 SIP Slim Hotel Phones with Avaya IP Office Server Edition 11.1.3 and Avaya IP Office 500V2 11.1.3. The VTech NG-S3311/NG-S3412 SIP Slim Hotel Phones register to Avaya IP Office. Calls were then established with Avaya H.323 / SIP desk phones and the PSTN. In addition, basic telephony features were verified. All feature and serviceability test cases were completed successfully with observations noted in **Section 2.2**.

9. Additional References

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

Avaya product documentation is available at https://support.avaya.com.

VTech NG-S3311/NG-S3412 SIP Hotel Phones product documentation is available at https://vtechhotelphones.com.

vtech

VTech Technologies Canada Ltd.

Date: January 22, 2024

Declaration of Conformance

We, VTech Technologies Canada LTD., declare under sole responsibility that product series NG-S3311 and NG-S3412 all share the same hardware circuitry, software, SIP stack, and firmware version. Therefore the products are expected to behave in the same manner. Furthermore, these products are a functional superset of the other products in the NG series. The differences between the different models in the series are detailed in the table below.

Product Name	Model	Description
NG-S3311	NG-S3311	Next Gen Cordless SIP Hospitality Room Phone
NG-S3412	NG-S3412	Next Gen Cordless SIP Hospitality Room Phone

 Please do not hesitate to contact should you require further information.
Thank you,

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